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Developing a model that defines the relationship between a performance measurement system and other organisational entities

De Wet, Elmar

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Developing a model that defines the relationship between a performance measurement system and other organisational entities

Elmar de Wet

A thesis submitted for the degree of Doctor on Business Administration

University of Bath

School of Management

April 2008

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“Proverbs 3: 5-6: Trust in the LORD with all your heart and lean not on your own understanding; in all your ways acknowledge Him, and He will make your paths straight.”

ABSTRACT

Many articles have been written on the design and implementation of performance measurement systems. In this regard literature also indicates the high failure rate associated with implementation. When the various issues assigned to failure are analysed, a number of these issues can be categorised as systemic issues. This research defines these systemic issues as contextual issues – those issues outside of a performance measurement system, yet having an impact on its functioning and performance as a system.

This research explains how systems theory was used to construct a model that defines twelve contextual entities, seen as key entities influencing the functioning of a performance measurement system. These twelve entities are organisational culture, management commitment and support, information architecture, performance measurement process owner, overall status of IT/IS, organisational structure, evaluation process and information flow, performance management system, strategic planning process, policies and procedures, “other” measurement processes, and resources. The model also defines the relationship between each of these entities and a performance measurement system.

When the model is applied in practice it determines the strength of the relationship between each entity and a performance measurement system. Based on the strength of each relationship, an organisational learning experience is created that provides a perspective on the performance measurement readiness of an organisation.

This study focuses on strengthening the relevancy and applicability of the model by applying the model at two public universities in South Africa. The specific research focus was to generate an understanding of whether different contexts prompted any changes to the model. The research concludes by indicating that context changed the model in minor ways and also that the universities perceived the model to be relevant. Based on these findings stronger claims can thus be made in terms of the model’s relevancy and applicability.

LIST OF ABBREVIATIONS

CEO	Chief Executive Officer
CIO	Chief Information Officer
CSRC	Central Students' Representative Council
CUT	Central University of Technology, Free State
DoE	Department of Education
DVC	Deputy Vice-Chancellor
ED	Executive Director
EM	Executive Management
EXCO	Executive Committee of Executive Management
HE	Higher Education
HEI(s)	Higher Education Institution(s)
IS	Information Systems
IT	Information Technology
LAN	Local Area Network
PC	Personal Computer
PMS	Performance Measurement System
SET	Science, Engineering and Technology
VC	Vice-Chancellor
VP	Vice-Principal
WAN	Wide Area Network

CHAPTER ONE

Setting the scene

1.1 INTRODUCTION

Globally there is a revolution in the development or redesign of performance measurement systems as organisations respond to continuous changes in their respective operating environments. In a private-sector study on the differences between companies that are good and companies that are great, a key finding partially explains this global revolution (Collins, 2001). Collins highlights that great companies differentiate themselves from good companies by expressing a much stronger notion to deal with the brutal facts of reality. The underlying principle embedded in this finding was the willingness and desire of the management of these great companies to want to know what was really going on in and around the organisation. The role played by information provision in an operating environment that has these characteristics is important, and increasingly companies look towards their performance measurement systems for information infusion. In order to deal with the brutal facts, the facts must be known.

The public sector has also not been exempt from these pressures of measurement and monitoring. The expansion of the use and application of the word “audit” beyond the domain of financial accountancy has also largely manifested in the systems that shape our daily lives (Power, 2003; Shore, 2004). This expansion of the concept of audit is shaping our public sector institutions and our working environments and is influencing our sense of self. Shore (2004) specifically indicates that auditing technologies like benchmarks, performance indicators and ratings are being used to reinvent public sector institutions. Public-sector institutions are seeking to be more effective and are held accountable for spending public money, while the public in general requires more transparency. Performance measurement and performance measurement systems are becoming the “technology” of monitoring public accountability.

Similarly public higher education internationally has been impacted by this trend (Patton, 1996; Scott, 2001; Shattock, 2003; Taylor, 2001). Deem (1998) also indicates that these systemic influences in higher education (HE) themselves have manifested in the development of what can be described as “new managerialism”. National measurement systems for public higher education are in place in France, Britain, the Netherlands, Scandinavia, Australia and New Zealand (Atkinson-Grosjean & Grosjean, 2000; Dill & Soo, 2005). These national measurement systems driven by the various governments may differ, but all the governments have one

thing in common and that is to ensure that the public money allocated to higher education demonstrates value for money. Lewis, Terumasa and Dundar (2001: 74) indicate that *“higher education in most countries has been faced with greater demands to demonstrate its worth and to account for its use of public resources, partly as a result of fierce competition for tightened state funds and partly as a result of other restructuring taking place throughout the public sector”*. The accountability question is no longer about whether the funds are spent appropriately, but rather what higher education manages to achieve with the public money received and how well it is utilised.

Although not having national league tables, in South Africa and specifically at the Central University of Technology, Free State (CUT), a public higher education institution (HEI), the experience is no different. The Department of Education (DoE) as the primary stakeholder in public HE consistently provides HEIs in the country with sets of performance targets (CUT, 2003; DoE, 2001; DoE, 2004). This measurement focus by the DoE, together with other external and internal institutional drivers, has forced the CUT to enhance institutional performance measurement – hence executive management’s approval of the implementation of an integrated performance measurement system for the institution.

The CUT’s response to these systemic pressures and changes is just another example of Neely’s (1999) indication that performance measurement systems are a high priority on organisational agendas, either to be implemented or for existing systems to be changed. Equally true to this observation is the fact that performance measurement systems have a high failure rate, especially if it is assumed that the majority of performance measurement systems that are implemented are scorecard oriented. In this regard McCunn (1998) indicates that the failure rate associated with scorecard implementation may be as high as 70%. When a system’s implementation fails, it wastes a sufficient amount of time and money, and affected organisations potentially develop inertia to implementing other change initiatives. Olsson, Øvretveit and Kammerlind (2003:240) indicate this as follows: *“When change projects fail, investments such as money, time and human resources are wasted and organisational willingness to embrace other change initiatives diminishes.”* These risks should also be balanced with the observation made by Schatz (2000) that measurement-focused organisations outperform less-disciplined competitors by 35% on an average three-year return on investment (ROI). Within this context a prominent research question emerged, namely *“How can the CUT minimise the risks associated with the implementation of an institutional performance measurement system?”*

In response to this question a model was developed (De Wet, 2005a) to describe the relationship between a performance measurement system

and eleven internal organisational entities seen as influencing the functioning of a performance measurement system. These eleven entities are organisational culture, information architecture, overall information technology/information systems (IT/IS) perspective, management commitment and support, evaluation process and information flow through this process, organisational structures, performance measurement process owner, performance management system, strategic planning process, policies and procedures, and “other” measurement processes. The purpose of this model is to reflect upon the strengths of these relationships. To enable this purpose to be realised an application methodology was developed to apply the model in practice (De Wet, 2005b). The model was applied once at the CUT, and one of the research recommendations was that this model should be further developed to strengthen its relevancy and applicability (De Wet, 2006). The three individual research assignments (De Wet, 2005a; De Wet, 2005b; De Wet, 2006) were completed within part one of the DBA programme at the University of Bath and underpins the research conducted in this thesis. This thesis is required to complete part two of the DBA programme. All three assignments were of an exploratory nature and without them it would not have been possible to conduct the research for this thesis.

To have followed this approach has had certain implications, and this thesis may differ slightly from a “normal” thesis. In this regard, the key differences that may be found compared with a more conventional research approach are 1) the thesis already starts at a certain point of departure in that it builds on previous work and 2) the reader will not find a specific chapter covering a complete literature study. Instead, the reader will find – in the chapter on the conceptual development and practical definition of the model (Chapter two) – discussions of how literature was studied, how a gap was identified, and how it was used to argue the case for the development of the model.

Therefore, the focus of the thesis is on refining the model in order to make a stronger claim in terms of the model’s relevancy and applicability.

1.2 SIGNIFICANCE OF THE STUDY

Neely, Gregory and Platts (1995) indicate that a performance measurement system interacts with a wider environment. In this regard, the model makes its most significant contribution to knowledge by focusing specifically on a unique description of this wider environment. As a conceptual framework the model provides a new holistic perspective as to how this context – this wider environment within which a performance measurement system operates – can be understood.

The scope of this context is restricted by focusing only on the internal boundaries of an organisation. Within this internal context the model describes certain systemic entities that have an impact upon the implementation of a performance measurement system. These entities are not necessarily unknown, hence the contribution of the model lies within the way in which these entities are brought together, namely in a more systematic way by clearly separating system issues from systemic issues. Part of the contribution to knowledge also lies within the definition of the relationship between each entity and a performance measurement system. Again, the individual issues applicable to each definition are not necessarily unknown, but the way in which the model brings them together creates a new definition as to how each entity can potentially influence the implementation of a performance measurement system.

The model's contribution to managerial practice is illustrated when the model is applied in practice. Although the model generates conceptual knowledge around the entities and relationships, it is through the process of application that the model creates organisational learning around these entities and relationships, by no longer reflecting on them as concepts but rather as organisational realities. By assessing the strength of each relationship the model creates an understanding as to whether each entity is either an enabler or a barrier towards the implementation of a performance measurement system. In assessing each strength it also provides the reason, based on the definition of the relationship, as to why the relationship is perceived to be strong or weak. When this level of organisational learning is generated it creates an understanding of how "performance measurement ready" an organisation is. It indicates the potential systemic risks regarding the implementation of a performance measurement system, relating to the specific organisational environment of its application.

1.3 LAYOUT OF THE THESIS

As the research in the thesis builds on previous work done as part of phase one of the DBA programme, it is important to indicate the exact layout of the thesis and also the way in which some of the work done in phase one of the DBA programme is brought into certain sections of the thesis.

Chapter two of the thesis starts by explaining the need for a model that can generate an organisational perspective on performance measurement readiness and how such a model was initially constructed as a concept. It then provides a synthesis of the literature studied (assignment two of phase one of the DBA programme), explains how each entity was identified for inclusion in the model, and defines the potential issues describing the

relationship between a performance measurement system and each of these entities.

Chapter three provides an overview of the application of the model within one public HE institution in South Africa – this research was conducted as part of assignments three and four of phase one of the DBA programme. It starts by providing insight into the design of the application methodology required to apply the model in practice before then going on to explain the context within which the model was applied and providing a general summary of the performance measurement readiness assessment of the CUT. The chapter concludes by indicating that the process of application prompted minor changes to the model. These changes are then listed with a recommendation that they be incorporated in future applications of the model.

Chapter four articulates the specific research objective of the thesis, namely to put the model through a further process of application and through this process to learn more about the model's relevancy and applicability. It explains the importance of having to now apply the model within a different context to that of the CUT and defines this new context in terms of three contextual dimensions.

Chapter five covers the research methodology of the thesis. It starts by explaining that the nature of the topic under investigation requires an interpretivistic methodological framework to guide the research. It motivates that the specific research strategy should be a case study, indicates the research design considerations, and provides the detailed design. The chapter concludes by elaborating on the issues of pre-testing and piloting, data distribution and collection, as well as validity.

Chapter six provides a general overview of the contexts of the universities (Universities U and N) at which the model was applied. It provides details regarding each university, namely its institutional classification in terms of the public HE landscape, as well as certain institutional characteristics. The contextual description of the universities is completed by providing an overview of each university's status regarding its institutional performance measurement system.

Chapter seven reflects the findings and discussions arising from the study of the process of application as informed by the universities' contexts. It summarises the key finding per research stage and discusses the findings in relation to the model's relevancy and applicability.

Chapter eight draws conclusions about the learning generated through the process of application by specifically referring to the concept of performance measurement readiness. It discusses this concept and the

findings in general within the gap as initially identified in the literature (assignment two of phase one of the DBA programme) and also the findings in relation to developments in the latest performance measurement literature. It concludes by generating further conceptual insight into the concept of performance measurement readiness by comparing some of the data from the application of the model at the CUT with data from its application at Universities U and N.

Chapter nine is the concluding chapter of the thesis. It commences with a brief overview of the model's lifecycle before summarising the learning generated by the research by reflecting on the research methodology and the process of application as informed by the contexts of the two universities. It concludes with the claims made and describes the way forward in terms of further research and application of the model.

CHAPTER TWO

The model – Conceptual description and practical definition

2.1 PERFORMANCE MEASUREMENT SYSTEM AND ITS OPERATING CONTEXT

In an attempt to gain an understanding of the risks associated with the implementation of a performance measurement system at the CUT, it became evident that implementation failures can broadly be categorised as system issues and systemic issues – system issues here defined as those issues relating to the performance measurement system itself and systemic issues as those issues outside the performance measurement system, yet impacting on the functioning of the system. It is this latter part – the systemic issues and the concept of context – that played a major role in the development of the model.

Neely *et al.* (1995) stress this importance of context when indicating that the implementation of a performance measurement system will lead to the system interacting with a wider environment. A better understanding of this wider environment comes to the fore when, for example, performance measurement system implementation failures are indicated, specifically underlying issues such as organisational culture and unlinked database architectures (Neely & Bourne, 2000). Some other aspects of what this context potentially is or could be are also indicated by Rouse and Putterill (2003) when indicating the importance of the organisational structure and the evaluation process that is integrated with the structure; by Brignall and Ballantine (1996) when discussing information flows; by Neely (2004) when indicating the importance of having a performance manager who manages the system; by Eccles (1991) when indicating the importance of a link between a performance measurement system and the performance management system; and by Franco and Bourne (2003) when indicating aspects such as management commitment, data processes and IT support.

Based on these observations, De Wet (2005a) demonstrated that the literature studied all indicates aspects or parts of the context wherein a performance measurement system operates and that it could be beneficial if the “total” context or at least the key contextual issues could be defined. This is desirable specifically before a performance measurement system is implemented, as it could potentially minimise the risks associated with implementation. If organisations, in this case the CUT, can reflect on their “performance-measurement” readiness then the risk can be known and managed, hopefully increasing the chance to implement successfully a performance measurement system.

The importance of understanding context is also supported by an underlying premise found in change management theory. The implementation of a performance measurement system can be described as some form of change management intervention and should be managed from this perspective. Burnes (1996) argues that “muddling through change” is not the ideal starting point for managing change, but that there should rather be an attempt to examine exhaustively all options. The starting point for managing change should firstly be to better understand the change to be managed. It is argued that managers can become so involved with the process that they seem to forget the inherent dynamics of the change itself. The management of change is not just another skill that can be added to the managerial repertoire (Wilson, 1992), nor is it simply a recipe from the change management manual. There is a need to better understand change in general by assessing the contextual environment in which the change intervention will occur.

These initial observations regarding context created the first foundation block of the conceptual description of the model, namely that a performance measurement system does not function in isolation but within a broader context, and this context does have an impact on the functioning of a performance measurement system. Every organisation seeking to implement an institutional performance measurement system is instigating some form of organisational change, and the context of this change should be understood. This issue of context led to another question, namely “How can all the issues describing this context, or at least those that are perceived as the most important, be brought together in a holistic manner?”

A guiding factor in searching for an answer was to find a balance between Cooper and Schindler’s (2001:14) definition of management research, namely that “...*practical problem-solving...is conducted to reveal answers to specific questions related to action, performance or policy needs...is directed much more to making immediate managerial decisions*” and Starkey and Madan’s (2001) argument that management research should make a stronger claim in terms of its relevance to management. Relevance should be based less on factors that influence organisational performance and which develop managerial technology, and more on knowledge production in terms of managerial practice and influencing the managerial disciplines. This led to the exploration of the concept of organisational learning and how a model could be constructed to create an organisational learning experience regarding performance measurement, rather than involvement in the inherent “technologies” of a performance measurement system.

2.2 NEED FOR AN ORGANISATIONAL LEARNING EXPERIENCE REGARDING PERFORMANCE MEASUREMENT SYSTEM IMPLEMENTATION

Haines (2000), Hammer (1996) and Senge (1990) all stress the importance of organisational learning to understand certain issues and use systems theory and systems dynamics as the underlying approach to create the organisational learning experience required. As far as performance measurement is concerned, Boland and Fowler (2000:424) support this view and indicate that “...*the generic principles of systems thinking and systems dynamics potentially provide a useful framework within which the issues of performance measurement, performance indicators and improvement initiatives should be considered*”.

Systems thinking as an underlying approach to creating an organisational learning experience created the second building block of the conceptual description of the model, namely that each of the entities in the broader system is related to the others. The systems thinking definition as used by Checkland (1981) describes a system as a set of entities that connect to form a whole. Anderson and Johnson (1997) explain that a system’s parts must all be present for the system to carry out its purpose optimally. These parts must also be arranged in a specific way for the system to carry out its purpose (Coyle, 1996). It is also important that the system has a specific purpose within larger systems, that it maintains its stability through fluctuation and adjustments, and that it has a feedback mechanism. Flood (1995) indicates that the term “systemic” implies taking into account the whole and that the system under study is part of a greater whole.

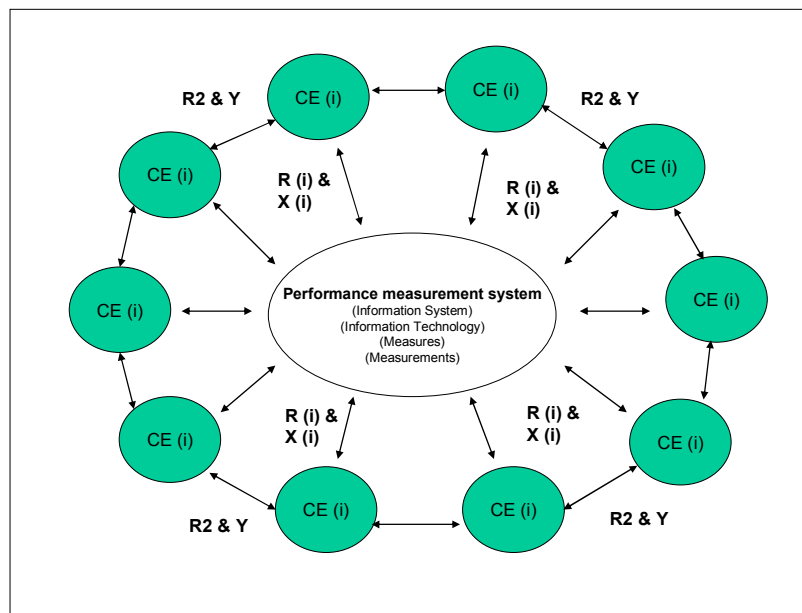
Therefore a need exists to understand an entity (a performance measurement system) – not by dissecting it but by understanding how the entity is connected to and interrelated with other entities external to the entity itself. A performance measurement system ultimately operates in an existing organisational whole, and the way in which the system interacts with this wholeness is important in terms of understanding the behaviour of a performance measurement system. It is not about “technologies” inherent to the system, but about the context within which the system operates and an understanding that this context potentially is multifunctional and multidimensional.

Systems theory also paved the way for the third and final building block in the conceptual description of the model, i.e. that relationships among entities can be described as varying between weak and strong. Von Bertalanffy (1968), the father of systems theory, explained systems theory by defining the universe as a collection of numerous entities that all interact with one another, with the relationship of the interactions varying between weak and strong. The analytical procedure embedded in general systems

theory tries to establish the strength of these relationships. Practically this implies that if the key entities that co-exist with a performance measurement system entity within an organisational context are known and the relationship between each entity and the performance measurement system entity is defined, then the strength of the relationship between each of these entities and the performance measurement system can be determined. Based on the three building blocks as described above, a conceptual model to create this organisational learning experience was developed and is illustrated in Figure 2.1.

2.3 CONCEPTUAL DESCRIPTION OF THE MODEL

Figure 2.1 Conceptual description of the context within which a performance measurement system operates



The key definitions applicable to Figure 2.1 are as follows:

- The performance measurement system entity is collectively defined by the information system (databases and specific systems software), the information technology (desktop software, PC standards and LAN/WAN infrastructure) and the measures and measurements (targets, actuals, performance indicators and benchmarks). These can also be described as the components of the performance measurement system.

- CE(i) – The key contextual entities that describe the context within which a performance measurement system operates (i = 1 - n).
- R(i) – The specific individual one-on-one relationship between each contextual entity and a performance measurement system where each R(i), (i = 1 - n) may be defined by a number of issues (1 - x).
- R2 – The relationship between the various contextual entities.
- X(i) – The inherent strength of the relationship between each CE and a performance measurement system (i = 1 - n).
- Y – The inherent strength of the relationship between each CE and other CEs.

Mathematically the desired outcome of the model can be defined as follows:

For i = 1 - n, for each CE(i), determine X(i) where

$$X = \frac{\sum \text{Strength of R(i) (1 - x)}}{x}$$

As the model is specifically concerned with the issue of a performance measurement system and its context, no outcomes are formulated in terms of the R2s or the Ys. Studying these issues is also too complex and lengthy to undertake in a study of this kind.

Based on this conceptual description, the ideal for the CUT would have been to take an existing model and apply it within the institution, but such was not found. An initial literature review as to whether such a model or components of it do exist primarily indicated the following:

- 1) There are various definitions of performance frameworks/models/systems like the balanced scorecard (Kaplan & Norton, 1992), the performance prism (Neely & Adams, 2001), economic value added (EVA) (Ray, 2001), activity-based costing (Ness & Cucuzza, 1995), the analytical hierarchical model (Lee, Kwak & Han, 1995), and activity-based profitability analysis (ABPA) (Meyer, 2002), to name a few.
- 2) Terms such as frameworks, models and systems are all used interchangeably (Rouse & Putterill, 2003).
- 3) There are many discussions on how to implement some of the abovementioned concepts (Amaratunga, Baldry & Sarshar, 2001; Ashton, 2001; DeFeo, 2000; Letza, 1996; Neely, Adams & Crowe, 2001).
- 4) Various references are made to the issues impacting on the design and implementation of measurement systems in general (Kennerley & Neely, 2002; Neely & Bourne, 2000; Neely, Mills, Platts, Richards,

Gregory, Bourne & Kennerley, 2000; Neely, Richards, Mills, Platts & Bourne, 1997; Bourne, Mills, Wilcox, Neely and Platts, 2000; Reisinger, Cravens & Tell, 2003; Sieger, 1992).

In the absence of an existing model but with the knowledge that large portions of literature do exist that describe and/or define contextual entities, a decision was made to move the model from its conceptual description to a practical definition by populating the conceptual components as described – the CE(i)s and the R(i)s.

2.4 PRACTICAL DEFINITION OF THE MODEL

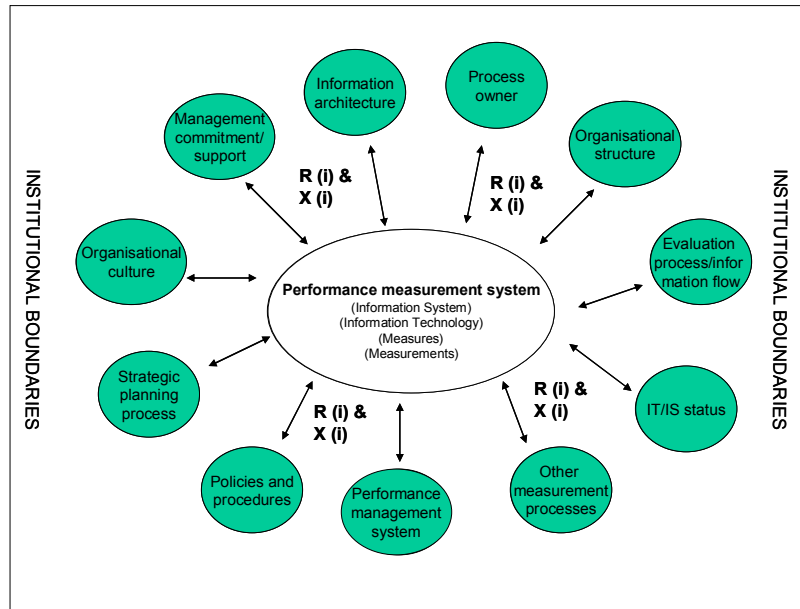
In search of a practical definition of the model, the following demarcations were applied:

- Contextual entities (CEs) should be restricted to only those entities found internally within organisations.
- Relationships (R1s and R2s) should be restricted to only those between a performance measurement system and each contextual entity (R1s).
- The relationship between an entity and a performance measurement system should be defined in such a way that it reflects on the strength of the relationship.

Using these demarcations, eleven key contextual entities (CE(i)s) were defined (Figure 2.2). These are:

- Organisational culture
- Information architecture
- Information technology/information systems
- Management commitment and support
- Evaluation process and information flow
- Organisational structures
- Performance measurement process owner
- Performance management system
- Strategic planning process
- Policies and procedures
- “Other” measurement processes

Figure 2.2 Model defining the relationship between key organisational entities and a performance measurement system



The 11 entities indicated in Figure 2.2 were deduced from the literature after having deployed a literature study as a desired research methodology. Herewith a brief synopsis of the specific literature studied and subsequently used to select the entities indicated in Figure 2.2. This work was originally completed during the period November 2004 to April 2005 as part of assignment two of phase one of the DBA programme.

The literature study included literature on performance measurement in general (mostly private sector oriented), performance measurement literature in the public sector, and performance measurement literature in HE – the latter two areas being chosen on grounds of the CUT being a public HE institution. The specific literature assessed within these three broad categories was literature that could reflect upon 1) the challenges and failures associated with the implementation of performance measurement systems, 2) the various systemic issues related to the implementation of performance measurement systems, and 3) literature that covered issues related to the organisational context within which performance measurement systems operate.

The following table (**Table 2.1**) indicates the literature that was used in deducing the model.

Table 2.1 Literature that implicated the eleven entities' inclusion in the model

Entity	Implicated in literature	Specific reference
Organisational culture	<ul style="list-style-type: none"> • Collins, 2001 • Franco and Bourne, 2003 • Kennerley and Neely, 2002 • Meekings, 1995 • Neely, 2004 • Bourne <i>et al.</i>, 2000 • Neely and Bourne, 2000 • Neely <i>et al.</i>, 1995 • Lingle and Schiemann, 1996 • Rouse and Putterill, 2003 • Wade and Recardo, 2001 	<ul style="list-style-type: none"> • Companies showing great (rather than good) performance have demonstrated an ability to deal with the brutal facts brought to the fore by their performance measurement systems. • Performance measurement in general should be used for improvement, not for control. • Measurement integrity is encouraged by open and honest discussion of performance, a no-blame culture, and the discouraging of "gaming behaviour". Resistance to measurement is a barrier in terms of the evolution of performance measurement systems. • A fear of personal risk. What will be the personal risk implications if "my" performance indicators reflect poor performance? • Fear of measurement, because it is perceived that it might be critical of individuals (blaming and shaming). Performance data is also considered to be a source of power or a control device. • Resistance to measurement. • All too often measurement initiatives fail because of difficulties experienced during the implementation phase. One area of difficulty is that of political challenges. Measurement is used as the proverbial big stick, and measurement data is used to score points. Where there is a culture of blame, people start to focus on how the measures can be manipulated. • Resistance to measurement. If blaming is part of an organisation's culture it could encourage people within the organisation to lie about performance. • Some aspects of organisational culture are highlighted, e.g. teamwork, willingness to take risks, and self-monitoring. • Organisational culture affects the performance measurement system, not just in terms of its interaction with the organisational structure but also with regard to resource capabilities as implicated by planning and specific outcomes. • The strongest change lever in the organisational architecture is the performance measurement system, which must take cognisance of the many activities to be performed to enable the system to operate

		effectively. It is therefore necessary to understand the inherent culture embedded in the organisational architecture.
Management commitment and support	<ul style="list-style-type: none"> • Bourne <i>et al.</i>, 2000 • Eccles, 1991 • Franco and Bourne, 2003 • Grifel, 1994 • Parker, 2000 	<ul style="list-style-type: none"> • Senior management's commitment is essential for the successful implementation of change – beware of it waning in the light of other organisational distractions. • It is important that senior managers, executive managers and specifically the chief executive officer are committed to the performance measurement system. • Management leadership and commitment is underpinned by the desire for the system. • There should be clear support from the top for the system to be implemented, and those at the top should trust those responsible for implementing the system. • The organisation's senior managers must fully support the measurement regime.
Information architecture	<ul style="list-style-type: none"> • Brignall and Ballantine, 1996 • De Bruijn, 2002 • DeFeo, 2000 • Eccles, 1991 • Lohman, Fortuin and Wouters, 2004 • Meekings, 1995 	<ul style="list-style-type: none"> • Those companies with well-developed corporate information architectures are likely to find that their ability to develop and support performance measurement systems is greatly enhanced. • In assigning meaning to performance measures there should be a ban on a monopoly on meaning-giving. Rather a process should be followed where different meanings compete with one another and from which a selection is then made. • A dictionary of common terminology should be developed so that everyone is speaking the same language when it comes to collecting and analysing data for performance measurement. • Information architecture is important in that it assists the organisation in articulating a common corporate grammar and defining its own special vocabulary. Such information architecture needs to describe the high-level information categories, the methods used to generate this information, and the rules regulating its flow. • Building and sharing a detailed understanding of the definitions of performance metrics is crucial to the development and implementation of the performance measurement system. • A top-to-bottom measurement architecture, wherein every team member and individual understands the key measures of performance, is essential.

Performance measurement manager	<ul style="list-style-type: none"> • Grifel, 1994 • Neely, 2004 • Lohman <i>et al.</i>, 2004 	<ul style="list-style-type: none"> • Is there at least one trained staff member who can monitor and analyse performance data, who is responsible for the coordination of data collection for the entire organisation, and who is politically independent and impartial? • There needs to be an identified performance manager whose role it is to manage the measurement system. • It is important to have a performance measurement manager to manage the overall process.
IT/IS	<ul style="list-style-type: none"> • Bititci, Turner and Begemann, 2000 • Bourne <i>et al.</i>, 2000 • Bourne <i>et al.</i>, 2002 • Brignall and Ballantine, 1996 • Drucker, 1995 • Eccles, 1991 • Kennerley and Neely, 2002 • Lohman <i>et al.</i>, 2004 • Neely and Bourne, 2000 	<ul style="list-style-type: none"> • Information technology is to be used as an integrated platform. • There is a variety of important IT/IS-related issues, e.g. the importance of easy access to data, the importance of training in the use of various technologies, and the shortage of IT support staff. • Some difficulties to overcome when designing and implementing performance measurement systems are issues regarding data access and information technology systems. • An effective existing IT/IS infrastructure is vital to the success of the performance measurement system. Companies that already have a sophisticated IT infrastructure are likely to find that their ability to develop and support performance measurement systems is greatly enhanced. • There should be an understanding of the status of IT in driving the desired information expectations and outcomes. • The issue of importance is that an organisation's information needs should drive the overall IT/IS technologies. • A lack of flexibility in information systems is a barrier to the evolution of measures. • It should be ensured that the metrics dictionary and the ability to deliver data are what drive the IT/IS systems. • Data that is held in unrelated, unlinked databases hampers the ability to integrate these diverse data sets into a single database that can be mined effectively.
Evaluation process and information flow	<ul style="list-style-type: none"> • Brignall and Ballantine, 1996 	<ul style="list-style-type: none"> • It is important for existing information flows and communication channels to provide an enabling structure through which a performance measurement system can operate effectively.

	<ul style="list-style-type: none"> • Rouse and Putterill, 2003 	<ul style="list-style-type: none"> • Evaluation process: Movements from the centre to the outer circles imply widening time horizons and longer periods of performance reporting and evaluation. <p>This issue is not frequently referred to in the literature, but the specific content of these two articles underpins the importance of this issue for public HE in South Africa.</p>
Performance management system	<ul style="list-style-type: none"> • Amaratunga and Baldry, 2002 • Bititci, Carrie and McDevitt, 1997 • Eccles, 1991 • Franco and Bourne, 2003 • Meyer, 2002 • Grifel, 1994 	<ul style="list-style-type: none"> • What is needed is an appropriate incentive structure for processing the performance measurement information generated, so that it becomes attractive and feasible to develop a set of good practices – thus transforming performance measurement into performance management. • At the heart of the performance management process is the information system. This information system is the performance measurement system, which should integrate all relevant information. • It is important to reward people in proportion to their performance with regard to the measures which, according to management, truly matter. • Compensation linked to the performance measurement system is critical for enhancing motivation and commitment. • There should be a link between performance measurement and performance management, but the form and shape it takes must be carefully designed. • There should be a system that rewards risk takers, and managers should be rewarded according to their achievement of performance targets.
Strategic planning process	<ul style="list-style-type: none"> • Bititci, 1994 • Kaplan and Norton, 1996 • Lingle and Schiemann, 1996 • McAdam and Bailie, 2002 	<ul style="list-style-type: none"> • There should be an indication of how the creation of a set of strategic performance measures, priorities and targets has formed the basis of a company's business strategy. • The balanced scorecard as a performance measurement system should be integrated with the business planning process and strategy review. • The art of translating vision and strategy into measurable objectives forces specificity. • It is recommended that measures and measurement systems be derived directly from the strategic planning and implementation

	<ul style="list-style-type: none"> • Meekings, 1995 • Kennerley and Neely, 2002 • Sieger, 1992 	<ul style="list-style-type: none"> • The importance of both the review process and the use of visual communication in this process is emphasised. • The integration of measurement with strategy development and review assists with the evolution of performance measurement systems. • Defining performance measures to support a strategy is a key challenge, and unless measures are tightly defined managers will interpret a strategy's meaning in the context of their own personal view of the organisation.
Policies and procedures	<ul style="list-style-type: none"> • Meltsner and Bellavita, 1983 	<ul style="list-style-type: none"> • This specific issue is not reflected upon in the performance measurement literature, but Meltsner and Bellavita (1983) emphasise the importance of policies and procedures in understanding organisational context. Practical experience has also shown that this issue is important when instigating organisational change.
"Other" measurement systems	<ul style="list-style-type: none"> • Brignall and Ballantine, 1996 • Lingle and Schiemann, 1996 • Johnson and Kaplan, 1987 • Hope and Fraser, 2003 • Neely, 1998 	<ul style="list-style-type: none"> • This specific instance refers to the aspect of integration and that there should not be a situation where a number of systems are used to deliver upon the same performance outcome. Integration implies that the performance measurement system is regarded as a holistic or integrated system of performance measurement, as opposed to a modular system lacking clear integration. It should be a single overarching system that allows managers to access information at the requisite level of detail. • Other existing entrenched measurement systems have defeated more than one attempt to improve management through measures. • The authors advocate three systems in support of "obsolete" management accounting systems, namely process control, product costing, and financial reporting. They indicate that in general these systems should process information from a common integrated database. Practical experience should lead to the integration of these systems over time. • This specific source advocates the required levels of integration of the budgeting system within other "systems" in the organisation. • The regulator tends to impose measurement systems and although it is not an internal measurement system interfering with the performance measurement systems, it is an example of how such

	<ul style="list-style-type: none"> • Moxham and Boaden, 2007 	<p>systems do this.</p> <ul style="list-style-type: none"> • In the voluntary sector (not-for-profit sector) well-meaning donors from the outside impose other measurement systems and this has unintended and disruptive consequences. <p>Although the issue of “other” measurement systems is not frequently discussed in literature the researcher’s practical experience in the area of systems implementation has shown this to be an important aspect in attempting to understand organisational context prior to systems implementation.</p>
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The selection of a specific entity to be part of the eleven as included in Figure 2.2 was dependent on the researcher, with him using the following criteria:

- Number and relevancy of citations;
- Researcher's knowledge of public HE in South Africa and the perceived relevancy of each entity to public HE within the country;
- Researcher's experience as a senior and executive manager in both the private and public HE sector in South Africa, with specific experience within the domain of systems implementation (information technology systems, information systems, performance measurement systems and performance management systems).

Although the researcher used the criteria as indicated, there was constant awareness throughout the process of the importance of building as much content validity (Nardi, 2003) into the model as possible.

Below is a brief motivation as to why an entity as indicated in Figure 2.2 is included in the model as a key entity, plus an indication of the issues that define the relationship (R(i)) between each entity and a performance measurement system.

Relationship R1 – Organisational culture

The importance of culture and its impact on the implementation of a performance measurement system is widely indicated (e.g. Franco & Bourne, 2003; Grifel, 1994; Neely, 2004; Neely & Bourne, 2000; Neely *et al.*, 1995; Rouse & Putterill, 2003; Wade & Recardo, 2001). It is probably one of the most important and also most underestimated components when seeking to bring about change in organisational behaviour, as with the implementation of a performance measurement system.

Potential issues describing the relationship between a performance measurement system and organisational culture are as follows:

- Is the "public" discussion of performance measures acceptable to members of the management team? (Meekings, 1995)
- Is the institution ready to deal with the brutal facts? (Collins, 2001)
- Is there personal risk involved if "my" performance measures reflect poor performance? (Meekings, 1995)
- Does the institution have a culture of blaming? (Meekings, 1995; Neely & Bourne, 2000, Neely *et al.*, 1995)
- Is the purpose of measurement to improve rather than to control? (Franco & Bourne, 2003; Neely, 2004)

- Is sufficient time spent on the discussion and analysis of performance results? (Franco & Bourne, 2003; Grifel, 1994)

Relationship R2 – Management commitment and support

The importance of management commitment to and support of a performance measurement system is indicated by Eccles (1991), Franco and Bourne (2003) and Parker (2000). An important issue regarding commitment is the dichotomy between the issues of “needing to have something” and “commitment” to the thing that is needed. The mere fact that organisations need performance measurement systems does not automatically guarantee that there is management commitment to and support of the system itself, especially where the need is “forced” onto the organisational agenda via external systemic changes.

Potential issues describing the relationship between a performance measurement system and management commitment and support are as follows:

- How strong is management’s desire for the system? (Franco & Bourne, 2003)
- How committed is management to the system? (Parker, 2000)
- Is the CEO committed to the performance measurement system? (Eccles, 1991; Grifel, 1994)

Relationship R3 – Information architecture

Having an information architecture is a key component in the operating context of a performance measurement system (DeFeo, 2000; Eccles, 1991). It is in light of De Bruijn’s (2002) warning that there should be “a ban on the monopoly of meaning giving” that the importance of an information architecture, as defined by Eccles (1991), becomes evident. Meaning and definition should reside in a neutral information architecture. Brignall and Ballantine (1996) also indicate that having a well-developed information architecture greatly enhances a company’s ability to develop performance measurement systems. The role of the information architecture is to assist with legitimising the content of the system. When there are clear definitions of the data elements contained in a performance measurement system discussions can focus on the results and not whether definitions are correct or not. An information architecture assists in achieving common definitions and understanding and is a key tool in the managerial education process involved when seeking to implement a performance measurement system.

Potential issues describing the relationship between a performance measurement system and an information architecture are as follows:

- Does the institution have a common understanding, or use a common language, when talking about performance measurement-related issues and concepts, specifically performance indicators? (Eccles, 1991)
- Is there a dictionary of common data definitions (terminology)? (Brignall & Ballantine, 1996; De Feo, 2000)
- Are there rules (origin, responsible person, frequency of updates) whereby performance data is generated? (Eccles, 1991)

Relationship R4 – Performance measurement manager

The importance of having a performance measurement process owner is best highlighted by Neely's (2004) indication that the organisation should have a performance manager who will manage the measurement system through its continuous cycle of development. Not only this resource but also the organisational location is important (Grifel, 1994).

Potential issues describing the relationship between a performance measurement system and a performance measurement manager (process owner) are as follows:

- Does the institution have a performance manager to manage the measurement system? (Neely, 2004)
- Where is this role placed in the organisational structure? Is this a politically independent and impartial individual? (Grifel, 1994)
- Is this role performed by an existing structure or will it be a new structure?

Relationship R5 – Overall IT/IS status

Brignall and Ballantine (1996), Drucker (1995), Eccles (1991) and Kaplan and Norton (1992), amongst others, describe the important role that IT/IS should play within the development and support of performance measurement systems. However, within the context of populating the model, the specific issue of importance regarding IT/IS is not the technology and/or system in support of the performance measurement system. Here the relevant IT/IS issue is the need to identify where an organisation is regarding its overall development of IT/IS, as it may either support or hinder the development of a performance measurement system (Brignall & Ballantine, 1996). When seeking to implement a performance measurement system the focus of IT/IS should be on the status of the overall organisational IT/IS in which the performance measurement system will be operating and whether this IT/IS can "uphold" a performance measurement system.

Potential issues describing the relationship between a performance measurement system and the overall status of IT/IS are as follows:

- Will the present institutional IT/IS status be able to deliver on the performance measurement expectations or will it be a restriction? (Brignall & Ballantine, 1996)
- Is it possible to integrate the diverse data sets into a single database that can be mined effectively? (Neely & Bourne, 2000)

Relationship R6 – Organisational structure

Within performance measurement the organisational structure, namely the various functional organisational disciplines like marketing, finance and human resources, play an important role. However, the issue here is the organisational structures involved in the performance evaluation process in terms of analysing and discussing performance data (Brignall & Ballantine, 1996; Rouse & Putterill, 2003). These structures determine the level and power of control and define the performance evaluation hierarchy. This is an important issue for public higher education in South Africa and for the CUT, as it has many institutional/organisational structures like a senate, a council, an institutional forum, a student council, faculty boards and various other management structures.

A potential issue describing the relationship between a performance measurement system and organisational structure is as follows:

- Which organisational structures (as evaluators) will be included in the evaluation process and what will be their value-adding contribution to the process? (Rouse & Putterill, 2003)

Relationship R7 – Evaluation process and information flow

Any discussion of the organisational structures involved in performance measurement presupposes the importance of the evaluation process and information flow through the structures and also vice versa. Rouse and Putterill (2003: 798) highlight the real implication when indicating that *“movements from the centre to the outer circles imply widening time horizons and longer periods of performance reporting and evaluation”*. Most organisations have some form of existing evaluation process for evaluating performance results. Such a process has to take cognisance of the desired evaluation process of the performance measurement system or vice versa.

Potential issues describing the relationship between a performance measurement system and the evaluation process and information flow are as follows:

- What will be the information flows and communication channels (the chronological, sequential link) between the structures involved? (Brignall & Ballantine, 1996)
- What will be the duration of the evaluation process – reflecting on the reality value of the information as it flows through the structures?

Relationship R8 – Performance management system

Amaratunga and Baldry (2002) and Bititci *et al.* (1997) highlight the importance of the performance measurement system by indicating that the performance measurement system can be described as the information system for the organisational performance management process. Although in both cases the reference to the performance management system is indicative of the broad organisational performance management process, it also includes the personnel appraisal and review component. Within the context of populating the model, the performance management entity is defined as the latter, namely the performance management process that deals with individual performance evaluation. This view and link is also strongly advocated by Eccles (1991).

Potential issues describing the relationship between a performance measurement system and a performance management system are as follows:

- Will the performance measurement system be linked to the performance management system? (Eccles, 1991)
- Will the indicators in the performance measurement system be used for reward purposes? (Franco & Bourne, 2003)
- Up to what organisational structure/level will the performance measurement system be implemented?
- Will non-performance be punished?

Relationship R9 – Strategic planning process

Bititci (1994), Kaplan and Norton (1996), Lingle and Schiemann (1996), McAdam and Bailie (2002), Meekings (1995) and Sieger (1992) all emphasise the importance of the link between a performance measurement system and the strategic planning process when highlighting the importance of translating business strategy into measurable objectives.

Potential issues describing the relationship between a performance measurement system and a strategic planning process are as follows:

- Are performance measurements being compiled as part of the strategic planning process?

- Is the strategic planning process mature enough to support a performance measurement system (Verweire & Van den Berghe, 2003)?
- Will evaluation of the strategic agenda automatically cover all the performance data of the performance measurement system?
- Is target-setting a joint managerial effort? (Neely, 2004)

Relationship R10 – Policies and procedures

Within the performance measurement literature, policies and procedures are not found to be referred to as either barriers or enablers for system implementation. However, Meltsner and Bellavita (1983) indicate the importance of acknowledging and understanding policy in understanding organisational context. Policies and procedures stipulate principles and rules whereby the staff of organisations should operate, as well as the order in which they should do so. Therefore, institutional policies and procedures may exist that could inhibit the smooth functioning of a performance measurement system.

The researcher, as practitioner in the area of general systems implementation, has also found these to be important when preparing an environment for system implementation. Based on these two observations, this specific entity has been included in the construction of the model.

A potential issue describing the relationship between a performance measurement system and policies and procedures is as follows:

- Are there policies and procedures, specifically relating to the other contextual entities as defined in the model, that might impact on the implementation and functioning of a performance measurement system?

Relationship R11 – “Other” measurement processes

The importance of gaining insight into the impact of “other” measurement systems on the implementation of a performance measurement system is not frequently found and discussed in the literature assessed. However, in the literature studied there are key observations made that relate to this specific entity. Johnson and Kaplan (1987) acknowledge the need for the integration of measurement systems, but indicate that integration should not be the end goal, as it might not be possible to achieve certain desired levels of integration. This notion for integration is supported by an example from Hope and Fraser (2003) when advocating a potential framework for the integration of a budgeting system with its other organisational components.

Neely (1998) and Moxham and Boaden (2007) highlight the issue of “other” measurement processes by indicating how “other/external” measurement systems that are imposed can disrupt the functioning of the performance measurement system itself. Although these two examples are not focusing on how “other” internal measurement systems can disrupt the functioning of a performance measurement system, they are indicative of how such systems can do this.

Brignall and Ballantine (1996) argue in favour of integrating all performance measures into a single overarching system. Their argument indicates the importance of integration, and hence they question the role that “other” measurement processes should play. The issue of integration leads to an important question, namely what should happen to all the other existing measurement systems within the organisation when an institutional performance measurement system is implemented? It is important to know whether these “other” measurement processes/systems will become integrated into the single system and/or whether they will become obsolete over time. A major operational burden for staff is having to keep various measurement systems alive and then having to report the same information to different stakeholders.

Potential issues describing the relationship between a performance measurement system and “other” measurement processes are as follows:

- What measurement processes/systems other than the “institutional” performance measurement system does the “institution” have?
- What is the relationship between these processes/systems and the performance measurement system?
- Will the performance measurement system replace other existing measurement processes/systems?

Other important aspects in support of the practical definition of the model

Other important aspects concluded upon and/or recommended in the process of practically defining the model are as follows:

- 1) Although the need for the model originated within a public HEI in South Africa, the defined model was completely deduced from literature in the private and public sector. The HE literature did not contribute to the definition of the model. There are many references to the historic development of performance measurement in HE (Jordan, 1989; Mertens & Bormans, 1990; Sizer, 1990) and the development of performance measures/indicators for HE (Cave, Hanney, Kogan & Trevett, 1988; Johnes & Taylor, 1990; Jordan, 1989; Smith, McKnight & Naylor, 2000), but articles identifying and elaborating on the contextual

issues pertaining to the conceptual description as provided were not found. The only issue referring to HE was an article by Vakkuri and Meklin (2003) indicating that HEIs operate in the knowledge-based economy and that performance measurement in these organisations involves problems of search and application. Their key finding was that the inherent nature of the performance measurement system, namely to provide a technology of accountability (Mayston, 1993), and the culture embedded in the knowledge organisations (HEIs), are in conflict.

- 2) The model is by no means perfect, but it has established a framework that can assist in providing a different understanding regarding the implementation of a performance measurement system.

With the completion of the conceptual design of the model it was time to pursue its practical application. This process is explained in the next chapter.

CHAPTER THREE

The model in practice

3.1 INTRODUCTION

This chapter provides an overview of the application of the model at the CUT. It briefly explains issues pertinent to the development of the application methodology and the practical application at the CUT and summarises changes to the model as initiated by this process.

3.2 ISSUES RELATING TO THE APPLICATION METHODOLOGY

With the definition of the model as indicated, the first step towards practical application within the CUT was to design an application methodology. In defining the methodology two issues prompt careful consideration in terms of design, namely the multidimensional content of the model and the “wholeness” that is required when applying the model.

The multidimensional content of the model is demonstrated by having eleven entities that cover a variety of disciplines, functions, technologies and structures. An application methodology has to take this complexity into account. Using systems theory as the basis of the model signifies the “wholeness” required in its application. Mere subsets of the model cannot be tested, as this would violate the principles embedded in the theoretical foundation of the model. Having a view on the relationship of each of the entities with a performance measurement system is time specific and requires a holistic “once-off” snapshot of the organisational reality.

As indicated, the main purpose of the model is to determine the strength of a performance measurement system’s relationship with each of its respective contextual entities. The determined strength should indicate whether this entity is either an enabler (having a strong relationship) or a barrier (having a weak relationship) in terms of the perceived functioning of a performance measurement system. In this regard the issues of data collection and data requirement and presentation play a major role.

3.2.1 Process of data collection

De Vaus (2002) and Remenyi, Williams, Money and Swartz (1998) indicate that the same research instruments (questionnaire, structured interview, in-depth interview, observation and content analysis) can be used to conduct a survey, experiment or case study, but that the choice of design is largely determined by the data collection required.

As far as data collection was concerned, it was difficult to extract information across multidimensional entities. Some of the entities were highly technical in nature and did not allow for questions to be asked via a questionnaire. Some issues were also concerned with facts and not perceptions and in such instances the study of records was involved. Based on these variations across the embedded nature of each entity, the three primary research instruments decided upon were a general questionnaire, a structured interview regarding the IT/IS entity, and the study of records. Jointly, these three instruments constructed the holism required to apply the model in practice.

The following table (Table 3.1) indicates how the research instruments were utilised to cover data collection pertaining to each entity in the model.

Table 3.1 Research instruments for data collection

Organisational entity	Research instrument		
	Questionnaire	IT/IS interview	Study of records
Organisational culture	x		
Information architecture	x		x
Information technology/ information systems		x	
Management commitment and support	x		
Evaluation process and information flow	x		x
Organisational structure	x		
Performance measurement process owner			x
Performance management system	x		
Strategic planning process	x		x
Policies and procedures	x		x
“Other” measurement processes	x		x

3.2.2 Data required and the presentation thereof

In determining the choice of research design, De Vaus (2002) indicates the role of data required to enable data analysis. The following key issues are important in terms of data requirements and presentation:

- 1) De Wet (2005b) indicates that the questionnaire did not cover factual questions, but rather focused on eliciting perceptions and judgments regarding various issues. In exploring these perceptions and judgments the questionnaire focused both on establishing perceptions regarding current institutional performance measurement practices and on seeking judgments on performance measurement's best practices. The questions reflecting performance measurement best practices were all formulated as "should be" questions. The reason for this kind of approach lies within the nature of the model in that it attempts to establish perceptions and judgments regarding the relationship between each entity and the performance measurement system from an enabling or barrier point of view. When reflecting on the strength of a relationship (R1-R11) that is not deemed to be covered sufficiently by reflecting on current practice, it is important to receive judgments regarding best practice statements in relation to potential future application. Jointly these two views reflect on the enabling or barrier potential of each relationship as established via the questionnaire.
- 2) De Wet (2005b) also indicates that each entity in the model has a number of issues that jointly describe each entity's relationship to a performance measurement system. To determine the strength of an entity's relationship, each of the issues pertaining to the entity needed to be assessed. For most entities the issues were assessed using questions in the questionnaire exclusively, or in conjunction with the study of records (Table 3.1). It was only for the entity "overall status of IT/IS" that the issues were assessed exclusively via an interview. When using this approach the following aspects are of importance:
 - a) De Wet (2005b) indicates that the result achieved should be indicative of the overall strength of the relationship and also whether there are issues that may require specific interpretation and intervention. Subsequently each issue, after being assessed, was assigned a value ranging between one (1) and four (4). In the case of an issue being assessed via the questionnaire, the average response to the question (assessing the issue) was used as the assigned value. In a case where the study of records was used to assess an issue, the value pertaining to the issue was assigned by the researcher and a motivation as to the choice of value was provided. In the case of the IT/IS interview, the researcher and the

interviewee attempted to jointly assign the value and provide the motivation for such.

- b) De Wet (2005b) indicates that the scale of measurement should reflect upon the issue of whether a relationship is perceived to be strong or weak. Accordingly, the closer the assigned value is to one (1) the stronger the relationship is, and the closer the assigned value is to four (4) the weaker the relationship is.
- c) All the issues pertaining to a specific entity have an equal weighting when the total average for the entity is calculated.

Points a - c above can be summarised as follows

Entity X	Method of data collection	Potential average	Determined how?
Issue a	Question in questionnaire	2.5	Average of responses
Issue b	Question in questionnaire	3.4	Average of responses
Issue c	Study of records	1.3	By researcher; clearly motivated
Total average for entity, indicating the strength of the relationship		2.4	Average of all issues; equal weighting implied

- 3) De Wet (2005b) indicates that the preferred level of measurement was the Likert scale (Babbie, 1990), which is ordinal by nature, with the range of the scale mostly including the choices of “agree”, “strongly agree”, “disagree” and “strongly disagree”. However, there were other questions/statements for which the measurement scale was still the Likert scale, but with different scales of measurement than the one indicated here. Predominantly two types of Likert scales were used in the questionnaire, namely 1) an “opposing” Likert scale and 2) a “gliding” Likert scale.

In the case of the “opposing” Likert scale the following scales and comparative values were used: “strongly agree”, “agree”, “disagree”, and “strongly disagree”, with respective comparative values of 1, 2, 3 and 4. When numeric values are assigned to this type of Likert scale to calculate averages, the positive and negative scales, when used in summing results, can nullify each other. This is especially true when

the number of responses to a specific question is evenly distributed amongst all possible response categories. In this regard the clustering of responses in specific responses categories should be reflected upon.

For the “gliding” type of Likert scale (e.g. “never”, “seldom”, “frequently”, “always”) comparative values were assigned to the scale in the same manner as for the “opposing” scale, and by default of the type of scale there was no problem calculating averages.

- 4) The majority of questions in the questionnaire had a Likert scale spanning across four response categories. For other questions having three or five response categories, the averages for such questions were not rescaled to four.

De Wet (2005b) indicates that the data to be analysed has to contain the same variables for all the cases (in this instance, people) in the sample or population. The use of a case study or experiment would not provide this type of systematic and consistent order. The systematic observation and standardised approach – consistent answers to consistent questions – can only be achieved by following a survey-based research design (Sapsford, 1999). With the completion of the application methodology it was possible to apply the model at the CUT.

3.3 APPLICATION OF THE MODEL AT THE CUT

3.3.1 CUT context

The CUT was established in 1982 as a technikon (polytechnic) and is situated in the town of Bloemfontein in the Free State province of South Africa. With the restructuring of the HE landscape in 2002 the CUT remained one of 6 technikons but had to incorporate a campus of another traditional university (RHESSA, 2001). In 2004 the technikon received the status of a university of technology. In 2006 the university had the following characteristics (CUT, 2006):

The CUT was offering science, engineering and technology (SET) oriented programmes. It had an academic structure comprising three faculties (Engineering, Information & Communication Technology, Management Sciences, and Health & Environmental Sciences), heads of schools and heads of programmes. The support services section of the university included administration, academic support and development, human resources, finance and operations, student services, and advancement and marketing.

In 2006 the university had 10 458 students (headcount enrolments), with 58% residing in the Faculty of Management Sciences, 33% in the Faculty of Engineering, Information and Communication Technology, and 9% in the Faculty of Health and Environmental Sciences. A total of 1 705 students were accommodated at the Welkom campus whilst the remainder were enrolled at the Bloemfontein campus. Of the total number of students, 269 were enrolled as postgraduate students. The total number of graduates was 2 319 of which 27 were postgraduates.

The university had 850 permanent staff members. The management structure of the university is comprised of the Vice-Chancellor, Deputy Vice-Chancellor (DVC): Academic, DVC: Student Services, DVC: Marketing and Advancement, Registrar, Executive Director (ED): Finance and Operations, and ED: Human Resources.

3.3.2 Sampling

The two research instruments requiring sampling were the questionnaire and the IT/IS interview. In determining a sample for the questionnaire the factors most relevant in influencing the sample were indicated as the specific context of the research (in this case performance measurement) and the multidisciplinary content of the model. This implied that the managers of the CUT were the most likely to respond, both in terms of the context and content. This managerial component, classified as such by the CUT's grading system, identified 130 staff members. De Wet (2005b) indicates that in terms of time and effort, the researcher would not have been able to cope with these volumes. Further purposive selection (Babbie, 1990; Czaja & Blair, 1996; Thiétart, 2001) was done based upon the assumptions that:

- 1) It is more likely for higher graded managers to be more informed regarding **current** institutional performance measurement practices and organisational content than lower graded managerial staff.
- 2) Higher graded managers are more **knowledgeable regarding the concepts** of performance measurement in general.
- 3) Higher graded managers should **express their judgments** regarding performance measurement best practices, as they represent the majority of the potential user group of the system to be implemented.

Based on these criteria the final population was defined as being inclusive of support services staff (Peromnes staff gradings P1-P5 and job title of Senior Director and upwards) and academic staff (gradings 2005-2010 and job title of Head of School and upwards). The support services and academic components consisted of 29 and 21 incumbents respectively.

When these groups were crosschecked with the organisational structures, it came to light that the majority of the academic staff were members of the senate and that the majority of support services staff were either executive managers and/or members of the management teams of executive members and/or managers of specialist units. Doing this crosscheck confirmed that the majority of staff members selected were indeed mostly members of institutional management structures.

In determining a sample for the IT/IS interview the technical content of the interview prompted the selection of the most knowledgeable person at the university in terms of the organisational perspective, namely the CUT's chief information officer (CIO). Again, the selection process was representative of a purposive approach and the researcher's knowledge of the management population.

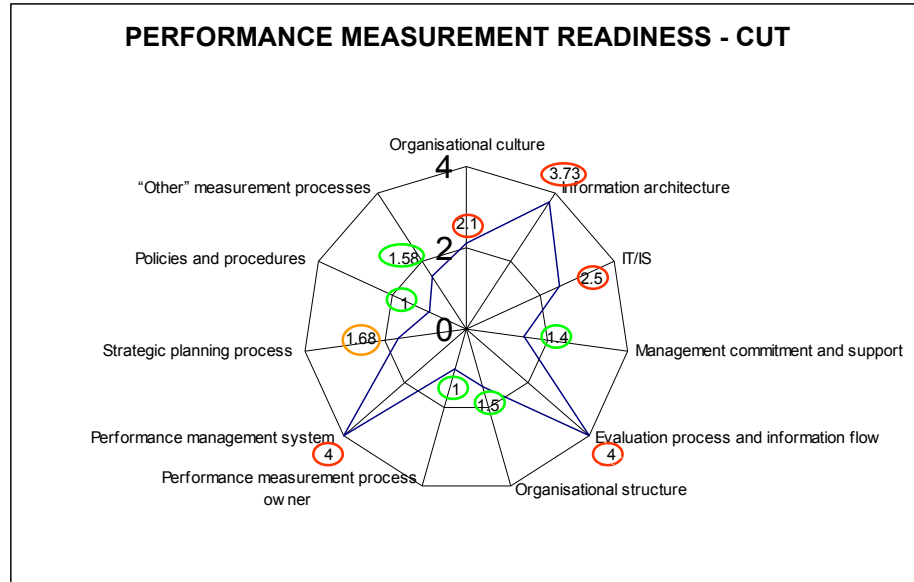
3.3.3 Key results

Using the application methodology as defined by Babbie (1990) and Czaja and Blair (1996), the main aim of the research at the CUT was to generate an understanding of the performance measurement readiness of the CUT. The CUT had a robust performance measurement system in place, and prior to implementing a new performance measurement system it was important to assess the institution's readiness to implement a new system. This organisational learning perspective, as derived from applying the model in practice and using the designed methodology, is as follows (Table 3.2 and Figure 3.1).

Table 3.2 Performance measurement readiness of the CUT

Internal organisational entity	Average score per entity
Organisational culture	2.1
Information architecture	3.73
IT/IS	2.5
Management commitment and support	1.4
Evaluation process and information flow	4
Organisational structure	1.5
Performance measurement process owner	1
Performance management system	4
Strategic planning process	1.68
Policies and procedures	1
"Other" measurement processes	1.58

Figure 3.1 Performance measurement readiness of the CUT



Both Table 3.2 and Figure 3.1 indicate that the CUT has a reasonably high level of performance measurement readiness, with the exception of the entities organisational culture, information architecture, evaluation process and information flow, IT/IS status, and performance management system.

What follows is a summarised discussion of the results. For this purpose the relationships have been categorised in terms of being weak or strong.

3.3.3.1 Strong relationships

Management commitment and support – R2 (Score = 1.4)

The CEO is clearly in favour of the implementation of a new performance measurement system (score = 1). In terms of desire and commitment the management of the CUT mostly indicate that the implementation of an institutional performance measurement system should be amongst the top eight priorities of the CUT (score = 1.58) and should be implemented as a matter of urgency (score = 1.64).

Organisational structure – R6 (Score = 1.5)

The current organisational structures within the CUT that receive some form of performance reporting versus those that, according to indications, should receive an integrated institutional performance report, differ very slightly, hence implicating a strong relationship.

Performance measurement process owner – R4 (Score = 1)

The CUT has a unit for planning and analysis that is performing the role of process owner amongst others. This role and capacity of the structure are sufficient with regard to future developments.

Policies and procedures – R10 (Score = 1)

Five policies are indicated that potentially could have an impact on the implementation or functioning of an institutional performance measurement system. An analysis of the content of these indicates no negative reflection on the implementation or functioning of a performance measurement system.

Other measurement processes – R11 (Score = 1.58)

According to the majority of managers, there should be a single integrated institutional performance measurement system that integrates all “other” measurement systems. This implies a strong vote for other measurement systems to be discontinued in future years.

Strategic planning process – R9 (Score = 1.68)

Overall the strategic planning process entity has a strong relationship with a performance measurement system, but certain issues within this entity are indicative of the potential of management intervention. To explain this perspective, the findings specific to this entity are discussed in more detail.

In assessing the strength of the relationship between a performance measurement system and the organisational strategic planning process, the issues of linkage, maturity of the planning process, coverage and target-setting were explored. The two specific issues that raised concern were the maturity of the planning process and target-setting.

In determining the maturity of the strategic planning process, individual involvement in the development of performance indicators was assessed and the following questions were asked:

Maturity (using the past 24 months as period of reflection)

		Always = 1	Mostly = 2	Frequently = 3	Seldom = 4	Never = 5	Average
16	How often did you use performance measures to measure your areas of management responsibility?	7	8	10	8	1	2.7
		Yourself = 1	Your staff = 2	Used outside expertise = 3			Average
17	Who compiled the majority of the performance measures for your areas of management responsibility?	16	8	9			1.79
		>70% = 1	51%-70% = 2	30%-50% = 3	<30% = 4		Average
18	What percentage of the total area of your management responsibility did the performance measures cover?	12	7	5	4		2.04

In relation to the concept of maturity, the above results indicate some aspects of contradiction. For example, although 74% (25/34 – Always, Mostly, Frequently) of respondents make use of performance measures in managing their individual areas of accountability, only 48% (16/33) compile their own performance measures.

In assessing target-setting the following questions were asked:

Target-setting

		Cannot answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
5	Establishing performance targets for the institution is a joint managerial effort.	1	18	13	1	1	1.55
11	Establishing performance targets for the institution should be a joint managerial effort.	1	16	16	1	0	1.55

Based on question five, 94% (31/33 – Strongly agree, Agree) of the respondents believe that the current practice at the CUT is for performance targets to be jointly established. However, the results from questions 19 and 20 provide some form of validation and bring a different perspective to the fore.

Questions 19 and 20 were asked to establish insight into managers' involvement in compiling performance measures reflecting on institutional performance versus their knowledge of the same.

Managers' knowledge of current institutional performance and their involvement in compiling performance measures at institutional level

		<= 20% = 4	21%-50% = 3	51%- 75% = 2	>75% = 1	Average
19	How many of the present institutional performance targets do you know?	12	7	9	6	2.74

		Never = 3	Occasionally = 2	Frequently = 1		Average
20	Indicate your involvement (last 24 months) in compiling performance measures that reflects on institutional performance.	5	8	21		1.53

In this regard 62% (21/34) are frequently involved in compiling performance measures at institutional level, but only 44% (15/34) know at least 51% or more of the university's performance targets. It therefore seems that managers are involved in compiling measurements, but their level of involvement does not correlate with their level of knowledge.

When comparing these results with the results from questions 5, a further dichotomy seems to exist. In question 5, it was indicated that target-setting (as a current practice) is perceived by 91% of the respondents as being a joint managerial effort. If 91% of respondents believe that joint target-setting is a current practice, then the overall knowledge of the institutional targets should have been better than the 56% of the respondents indicated as knowing 50% or less of the institutional targets.

At the time of the model's application at the CUT, the research was predominantly focused on the results and not on whether the methods used to assess each entity were implicating potential changes to the definition of the entity or the application methodology. The researcher did not assess whether the results might have been a reflection of the appropriateness of the application methodology. A decision was thus made to take this entity as it stands in terms of its definition into further applications of the model and to then evaluate whether the questions and issues assessed do indeed provide a true reflection of the entity. The outcome of this action is discussed later (section 7.3.4.9).

3.3.3.2 Weak relationships

Organisational culture – R1 (Score = 2.1)

The two key issues influencing the tendency towards a weak relationship are firstly blaming, and secondly measurement for control rather than improvement. Managers at the CUT indicated that the university has a culture of blaming (score = 2.81), and it is also perceived that institutional

performance measurement is done more for control than improvement (score = 2.3).

Information architecture – R3 (Score = 3.73)

From the study of records it is evident that the CUT does not have an information architecture or formal general rules as to how data is generated. The questionnaire revealed that managers have no common understanding of the definitions of institutional performance measures (score = 2.91).

Evaluation process and information flow – R7 (Score = 4)

The desired age of performance data is much lower when compared to the actual age of performance data currently serving before institutional structures. This implies that the current meeting dates of institutional structures are completely oblivious to the desired institutional evaluation process. The reality value embedded in the performance data is meaningless. The total evaluation process will have to be redesigned.

Overall IT/IS status – R5 (Score = 2.5)

Although the overall IT/IS status indicates a fairly strong relationship, the fact that there is a lack of IT/IS resource availability puts the implementation and support of a new system at risk.

Performance management system – R8 (Score = 4)

There is a strong indication that the institutional performance measures should be used to manage individual performance (score = 1.59) and that the performance measures should be used for reward purposes (score = 1.72). This indicates a strong link between a performance measurement system and a performance management system. However, the current high score (4) was assigned due to the fact that the university does not have a staff performance management system. Such a future development should include these two issues as indicated.

3.3.3.3 Other important feedback

In a comparative rating by respondents, the following six entities were perceived as having the most effect when implementing a performance measurement system:

	Having the most effect
Management commitment and support	1
Organisational culture	2
Evaluation process and information flow	3
Performance measurement process owner	3
Information architecture	4
Performance management system	5

Please note that two entities (evaluation process and information flow, and performance measurement process owner) received the same comparative score (3).

The meaningfulness of the comparative rating comes to the fore when each of the six entities and its relative position are combined with the actual strength of the relationship with a performance measurement system as determined in the case of the CUT (Table 3.3).

Table 3.3 Five entities perceived as having the most effect on the implementation of a performance measurement system, and the associated strength of their relationship with a performance measurement system

	Having the most effect	Strength of relationship with a performance measurement system
Management commitment and support	1	1.4
Organisational culture	2	2.1
Evaluation process and information flow	3	4
Performance measurement process owner	3	1
Information architecture	4	3.73
Performance management system	5	4

From Table 3.3 it is evident that the CUT's evaluation process and information flow, the information architecture and the performance management system are three entities that have weak relationships with a performance measurement system, indicating a low level of performance measurement readiness. The fact that they were also perceived as amongst the entities as "having the most effect on" the implementation of a performance measurement system implies that serious consideration should be given to addressing the issues within these entities prior to the implementation of a new performance measurement system.

3.4 CHANGES TO THE MODEL

During the course of writing the application methodology (De Wet, 2005b) and applying the model in practice (De Wet, 2006), some issues were indicated that resulted in changes to the model. These changes affected the model both in terms of its conceptual definition and the application methodology. What follows is a summary of these changes:

Relationship R6 – Organisational structure

The issues describing the relationship are as follows:

- Which organisational structures (as evaluators) will be included in the evaluation process and what will be their value-adding contribution to the process?

In developing the methodology De Wet (2005b) indicates that the value-added component is too complex to determine and is mostly defined in the statutes of the institutional structures, and that knowing the value added will not really add any further value to the model. This aspect is thus excluded from the model.

Relationship R8 – Performance management system

The issues describing the relationship are as follows:

- Will the performance measurement system be linked to the performance management system?
- Will the indicators in the performance measurement system be used for reward purposes?
- Up to what organisational structure/level will the performance measurement system be implemented?
- Will non-achievement be punished?

In developing the methodology De Wet (2005b) indicates that 1) the issue of cascading will not be addressed, as it is more a function of system design than of influencing performance measurement readiness, and 2) the issue of punishment for non-achievement will not be addressed, as it is rather a function of performance management. Both questions are thus excluded from the model.

Relationship R5 – Overall IT/IS status

The issues describing the relationship are as follows:

- Will the present institutional IT/IS status be able to deliver on the performance measurement expectations or will it be a restriction?
- Is it possible to integrate the diverse data sets into a single database that can be mined effectively?

To gain an organisational perspective on these two issues the following five questions were posed to the CUT's IT/IS knowledge expert:

1. Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?
2. Will the operational systems architecture enable or hinder the implementation of a performance measurement system?
3. Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?
4. Is it possible to integrate the diverse data sets into a single database that can be mined effectively?
5. After having explored all the previous views please rate the following statement: *The CUT's current IT/IS status will serve as an enabler when wanting to implement an institutional performance measurement system* – Agree/Strongly agree/Disagree/Strongly disagree.

When using broad questions like these to explore certain issues, Henning (2004) indicates the importance of engaging with respondents on the basis of shared knowledge production. This approach was specifically followed in the interview regarding this entity. Although the questions are still structured it allows for a process whereby the researcher and the interviewee can jointly explore views and shape potential solutions. It allows for a more conversational-type approach where the discussion can move from a more "factual" approach to a more "opinionated" approach. In using this approach some improvements arose that assisted with further clarification and definition of the issues defining the relationship of the IT/IS entity. These issues are indicated below.

- When assessing the database architecture the key issues in determining the strength of the relationship should be **diversity** and **fragmentation**. For example, does the organisation have a single database system (e.g. Oracle) or does it have multiple database systems (e.g. Oracle, Natural Adabas, etc.)? Are these database systems situated on a single technology platform or are they fragmented across various technology platforms? The higher the level of diversity and fragmentation, the weaker the strength of the relationship, as it becomes more complex to extract and integrate data from various diverse databases into a singular view.
- When assessing the systems architecture the key issue in determining the strength of the relationship should be **diversity**. For example, does the organisation have a “single integrated” operational system with various modules for payroll, debtor management, fleet management, human resources management, etc. or are each of these “modules” a single stand-alone system having its own systems definition (unique software, data definitions, etc.)? Again, the more diverse the systems architecture, the weaker the relationship, as it is more complex to manage data capturing, data quality and overall integration.
- When assessing the information technology architecture, the key issues in determining the strength of the relationship should be the **level of standardisation** of end-user technology, **speed** between the desktop and local area networks (LANs) and overall **status** of end-user technology (new, old, etc.).
- A key issue that emerged from the interview with the knowledge expert was the challenges with regard to IT/IS resource capacity. *“Human resources as part of the IT area must be expanded. We have the risk, we lose one guy, we lose critical knowledge in the system and that part of the system might disappear.”* This surfaced as a serious issue and at first it was contemplated that this should be an addition of what needs to be assessed as part of the IT/IS entity. However, in discussions with the knowledge expert, De Wet (2006) indicates that this issue could also be applicable to resource availability in general and can potentially lead to the formulation of a twelfth entity in the model, namely resources. In assessing this entity the issues of time, money and people in relation to the implementation of a performance measurement system should be explored.

Although this entity was not envisaged as a key entity at the beginning of the development of the model, an analysis of literature on the issue of resources indicates that it should be considered as another key entity in the model. In studying companies that had attempted to implement performance measurement systems, Bourne, Neely, Platts and Mills (2002) reported that all companies indicated the issues of time and effort as being important issues to be dealt with. In the case of companies having successfully implemented their performance measurement systems, effort

was indicated as a specific challenge that had to be overcome. In companies that had failed to implement their performance measurement systems, the issue of effort was cited most frequently as the reason for the discontinuation of the implementation initiatives. Julnes and Holzer (2001) recommend that in developing and implementing performance measures, the organisation should be assessed to reveal the condition of the organisation as it relates to, amongst others, its resources and expertise. In studying the factors affecting the evolution of performance measurement systems, Kennerley and Neely (2002) indicate the lack of human resources as a crucial barrier in terms of the evolutionary process. They emphasise the importance of skills and specifically the lack thereof as a barrier to the process of the evolution of performance measurement systems. Grifel (1994) also indicates that prior to implementation the question should be asked as to whether there is a commitment of resources to support the system.

The key issues defining the relationship between resources and a performance measurement system seem to be the dimensions of availability and skills. Therefore the potential issues describing the relationship between a performance measurement system and resources are as follows:

- Are there sufficient resources available for the implementation of a performance measurement system? (Julnes & Holzer, 2001)
- Are there sufficient organisational skills available to implement a performance measurement system? (Kennerley & Neely, 2002)

This twelfth entity – resources – is herewith formally included as part of the model and is included in the further development of the model as covered later in this document.

As part of the focus on sufficient resources, the specific detail issues assessed are time, people and money. An important note here is that although none of the authors in their elaboration on resources really discuss the issue of money for, or funding of, the performance measurement system, the latter is included as part of the detail assessment. It is almost as if it should be assumed that there is, or should be, sufficient organisational awareness and consideration of the availability of money when seeking to implement and/or maintain a performance measurement system. However, at any given point in time within organisations, there might be many organisational initiatives competing for funding from a single available pool of money, and the issue of sufficient money is therefore deliberately assessed.

Relationship R11 – Other measurement processes

The issues describing the relationship are as follows:

- Which measurement processes other than the institutional performance measurement process does the institution have?
- What is the relationship between these processes and the performance measurement process/system?
- Will the performance measurement process/system replace other existing measurement processes/systems?

De Wet (2006) indicates that during the practical application it became apparent that the second issue has more to do with actual implementation and that the time and effort spent on such will not really assist with the scope of the research as it stands. This question was thus deleted from the model. The first issue should be rephrased to clarify the risk component, and should read as follows: *“What is the magnitude of other existing measurement processes/systems?”* The focus of this question is to gain a brief overview of the number, scope and comprehensiveness of “other” measurement systems. The more systems there are and the broader their scope, the higher the risk embedded in the entity.

In reflecting on the process of application, De Wet (2006) concludes that it was possible to apply the model and that the model was capable of generating a perspective in line with its purpose. However, a key question was, *“How relevant and applicable is all of this, specifically in light of the model having been applied exclusively at one university in public HE in South Africa?”*

This question framed further research on the model and is explained in the next chapter.

CHAPTER FOUR

Research problem

The application of the model at the CUT indicated that the key point of departure for future research on the model should be a continuation of the process of development. The overall research problem thus remains the issue of “developing a model that describes the relationship between a performance measurement system and other internal organisational entities”. However, what frames future research should be the issues of relevancy and applicability. For purposes of this research these two concepts are defined as follows:

- Relevancy – “Is there a need for a model like this?” To be relevant the model needs to demonstrate that it is necessary and that it provides outputs that can be used by the institutions needing it.
- Applicability – “Can the model be applied in practice?” To be applicable the model needs to demonstrate that it is fairly stable in terms of its ability to be implemented and that it is not highly context dependent.

Therefore the purpose of this research is simply to develop the model in such a way that stronger claims can be made in terms of its relevancy and applicability. The research outcomes must satisfy this objective.

The first step in exploring the shape to be taken on by such a process of development was to assess the key learning points as generated from the design and application of the model; specifically those pertaining to the content of the model and the process of application. From the content of the model the following are key learning points:

- 1) Firstly, the model has sufficient content validity (Nardi, 2003). Although the model has been deduced from literature, that is the work of the researcher, the content from which it has been deduced can be interpreted as the views and opinions of the experts.
- 2) Secondly, the model in totality, although stemming from a need within the CUT as a public HEI, has been deduced from literature outside of HE.

From the process of application the following are key learning points:

- 1) Firstly, the model was only been applied once within a university (the CUT) within the broad context of public HE in South Africa.
- 2) Secondly, it was possible to fulfil the purpose of the model, namely to determine the strength of the relationships between entities and a

performance measurement system – in this case before the actual implementation of a new institutional performance measurement system.

- 3) Thirdly, the process of practical application did indicate some changes to the model.

Based on these key learning points and a study of the literature on model development, the main points of departure as to what a potential further process of development could entail are indicated as follows:

Opening up the content of the model to the scrutiny of either a group of experts or non-experts would probably be of no value. If it were to be opened up to a group of “experts”, there is a likelihood that the experts would agree that the content is largely acceptable, relevant and applicable. In their book *“Professions, Competence and Informal Learning”*, the authors Graham Cheetham and Geoff Chivers propose a model of competence and claim that they validated the model by asking professionals to comment on it. In a review of this book Haigh (2006:108) comments as follows on this process of validation: *“Not surprisingly, there is agreement that all these elements make up professional competence”*. The point that Haigh makes is that it should be expected of experts to have a favourable view of their own work. The futility of such an exercise is also indicated in the development and testing of a model to predict the outcome of organisational change (Olsson *et al.*, 2003). As part of the process of testing their model for internal reliability and consistency, the model was rated by a panel of experts. Part of this process was reflected on as follows: *“This test does not tell if the model can predict real improvement projects; however, it tells if the model can accurately predict the views of the experts who developed it”*. The key argument around the issue of futility lies within the subsequent paragraph, namely: *“If this test is not passed there are small chances that the model will work in reality”*. As a final outcome of this process they conclude as follows: *“The correlation between the model and the experts gave an R^2 of 0.72. This is regarded as sufficient to proceed testing the model against real cases”* (Olsson *et al.*, 2003:245). Both cases clearly illustrate that when experts have to scrutinise or critique their “own” work, there seems to be a high likelihood that they will voice a majority vote of confidence in their own views, perceptions and observations.

On the other hand, if the model is opened up to comments from a group of people that are not necessarily experts (e.g. a group of managers) and the comments indicate serious contradictions with the model’s current definition, the embedded content validity of the model will be challenged in a manner that will not necessarily allow meaningful deductions. Based on these arguments, the opening up of the content of the model is thus not

considered as part of a further process of development. However, it may be worthwhile to include in the further process of development some key questions addressing some aspects related to the content of the model, for example: Which of these entities are perceived as the most important? What could be added/deleted from the model?

The logical next step in the process of further development thus seems to lie within the further application of the model. Firstly, it was through this process of application at the CUT that changes to the model were implied (De Wet, 2006). Secondly, although the literature on model development is not very clear in terms of what a “normal” process of model development should entail, there seems to be support for this approach of further application of the model.

In developing a “six markets” model applicable to relationship marketing, Payne, Ballantyne and Christopher (2005) define the objective of their research as focusing on the development and refinement of a model by testing its applicability in a wide range of organisational contexts. They conclude by indicating that it may be valuable to test the model further across organisations in specific market sectors. Comparing results between organisations in the same industry sector may suggest further enhancements suitable for use in the specific industry settings. In a study conducted by Bourne, Kennerley and Franco-Santos (2005) they used multiple case studies within a single organisation and found that such an approach has certain disadvantages. In this case a major disadvantage is the issue of validity, since findings based on research conducted within a single organisation might not be relevant in a wider context. They conclude by recommending that further research be conducted in multiple organisations to assess replicability and applicability in a wider cross-section of the industry. These views provide evidence in support of the notion that a further process of development should entail further application of the model. It also provides some indication as to the importance of context in the process of model development and how the context could be differentiated to make stronger claims.

The second step in exploring the shape to be taken by the process of development involves the issue of context. Again the starting point for gaining insight in this regard is to assess the original context in which the model was applied within the CUT.

This context can be described by referring to three differentiated contextual levels. The CUT functions within public HE in South Africa, with this public HE being state funded and controlled. This level – public HE – can be defined as the first level differentiating the context of application. The CUT also has a specific institutional form, namely a university of technology. This level – institutional form – can be defined as the second level

differentiating the context of application. This second level was drastically altered by the restructuring of the public HE landscape in South Africa, which served to create four different types of institutional formats within public HE (RHESSA, 2001):

- A – Traditional universities that have remained as such
- B – Traditional universities that have merged with other universities
- C – Universities that have become comprehensive universities (the merging of universities with technikons)
- D - Technikons that remained technikons (later to become universities of technology)

Within this second level of the context of application, the various types of institutional forms (A - D) can also be further differentiated in terms of unique institutional characteristics like size, shape, management structures, students and staff. This level – unique institutional characteristics – can be defined as the third level differentiating the context of application.

Using these definitions of contextual layers and based on the reflections of Bourne *et al.* (2005) it seems appropriate that for a further process of application the first contextual level, namely public HE, should be kept constant. One application at this level (within the CUT) does limit claims to be made in terms of relevancy and applicability. Secondly, the DBA programme is about HE and it would not make sense to allow as yet for contextual “drift” at the first level – public HE in South Africa – to either the public or business sector.

Based on these arguments, further development of the model is thus based upon 1) further application of the model, 2) retaining the first level of the context of application, i.e. public HE, and 3) applying the model at universities belonging to categories A, B and/or C. This allows for a different context in terms of institutional forms, as well as unique institutional characteristics.

In terms of contextual differences, the matter of the status of institutional performance measurement systems within other public HEIs is an important issue. There might be some universities that already have performance measurement systems in place but would still like to apply the model based on their specific needs and motivation. Such an example might provide good insight into the relevance and applicability of the model, specifically in terms of which entities are relevant or not and based on what context. Hence, this contextual difference – the status of the performance measurement systems at other public HEIs – will not be purposefully sought when attempting to gain access to universities, as it might limit accessibility.

The next chapter describes how the model was taken through this process of further development as framed by the parameters indicated in this chapter.

CHAPTER FIVE

Research methodology

5.1 METHODOLOGICAL FRAMEWORK

Henning (2004) indicates that methodology is the “epistemological home of an inquiry”, hence the need to create an overall methodological framework for the research. In determining such an overall framework, the key point of consideration was the nature of the research problem. With regard to developing the methodological framework for research projects, Gill and Johnson (2002) and Remenyi *et al.* (1998) indicate the importance of understanding the nature of the research problem. McNeill and Chapman (2005) articulate it slightly differently by indicating that the choice of methodology is primarily based on the nature of the topic under investigation. Based on the explanation of the development of the model thus far and the unpacking of the research problem, the issue that best characterises the “topic under investigation” is the process of application. The researcher wanted to learn about the model by studying the model’s dynamics as it was put through a process of application (Figure 5.1). It was the studying of this process in different contexts that had to inform the researcher in terms of 1) which elements of the model seemed to be relevant and applicable, 2) in what conditions (context) and 3) based on what perceptions and needs (Figure 5.2).

Figure 5.1 Broad definition of the process of application

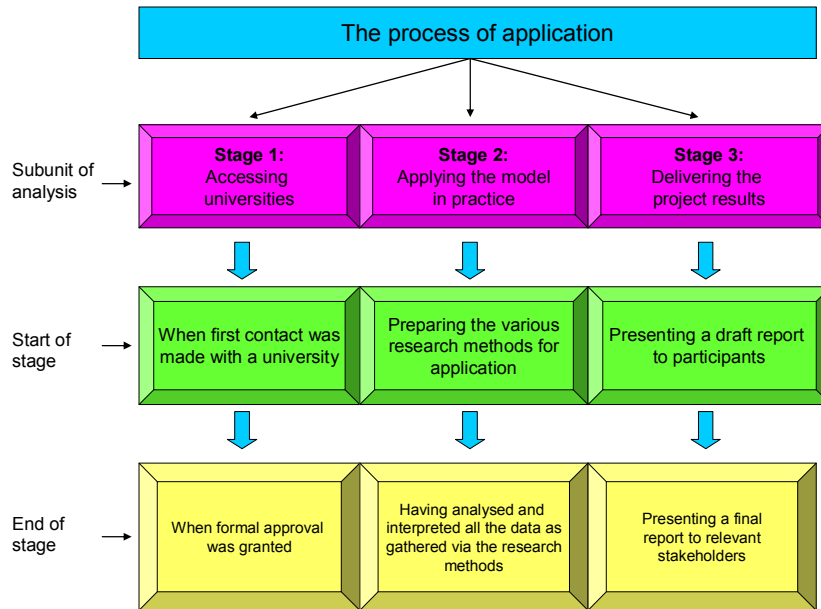
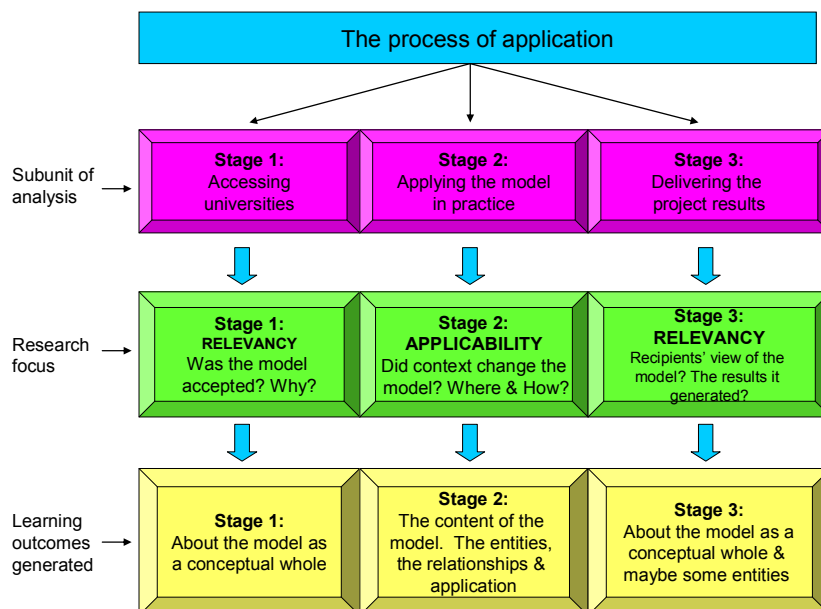


Figure 5.2 Holistic research overview of how the process of application was studied



(Note: For the remainder of this document these three distinct sub-processes are referred to as stages one, two and three of the process of application and also the research.)

Figure 5.2 explains exactly what the researcher wanted to do, namely 1) to study stages one and three of the process of application and to determine what these stages could reveal about the model's relevancy and 2) to study stage two of the process of application and to determine what this stage could reveal about the model's applicability.

From a methodological point of view it is also important at this point to explain the difference between the research conducted here and the research conducted within the CUT, as explained in Chapter three. With the application of the model at the CUT the focus was on ensuring that the application methodology as developed could work in practice and then using the results generated by that model. The choice of methodological framework was largely influenced by the strong theoretical foundation of the model, with specific questions being asked during the collection of data, and the specific data set required for each entity within the model being identified. In instances such as this, Collis and Hussey (2003) propose a positivistically inclined methodological framework. Hence, the research at the CUT was conducted within a positivistic methodological framework using a survey-based research design (Sapsford, 1999). Here however, although the model was again applied in practice, the nature of the topic under investigation changed completely.

With this research the researcher was interested in learning from 1) stages one and three of the process of application in relation to the relevancy of the model and 2) stage two of the process of application in relation to the applicability of the model. Thus, the research now conducted was research into the process rather than into the results or the significance of the results (Gillham, 2000) – the latter being the case at the CUT.

Other issues considered within the overall framing of the research methodology were:

- 1) The model as a new model did not as yet have a standard application methodology, informed and designed on the basis of application within different contexts. It was important for the researcher to gain first-hand experience in this regard and this required the researcher to stay close to the model throughout the study of the process of application. A major implication of this was that the researcher had to conduct the total research as a self-administered study. However, in this regard Saunders, Lewis and Thornhill (2003) indicate that the researcher should still ensure that the nature of the topic under investigation, rather than resource

considerations, drives the choice of methodology and method. Hence, this specific issue did not influence the choice of methodological framework, but was factored into the research design.

- 2) The model is a new model – in a sense a work under construction – and therefore the data and cases available were limited and still had to be constructed and analysed. These datasets and cases are not in relation to the results of the model, but rather the model itself as a concept and a construct - hence, the specific demarcation of the process of application within the contextual differentiation as articulated in the research problem (Chapter four). This aspect also pre-empts the reflexivity embedded in studying the process of application and is indicative of the exploratory nature (Collis & Hussey, 2003) of the research.
- 3) Stage one (access) and stage two (the alignment of the model to universities' contexts prior to implementation) were indicative of knowledge transfer that had to take place. Both involved small groups of people to whom knowledge about the model had to be transferred to enable them to make judgments and to generate perceptions. This again clearly demonstrates the inquisitive nature of the research.

The nature of the topic under investigation and the considerations as indicated were a clear indication that the research had to be conducted within an interpretivistic methodological framework (Collis & Hussey, 2003; Gill & Johnson, 2002; Maylor & Blackmon, 2005). If it was only about the application of the model to obtain results, the positivistic paradigm, as in the case of the CUT, would have sufficed, but as the nature of the topic under investigation clearly indicated, this was not the case.

5.2 RESEARCH STRATEGY

Within an overall interpretivistic methodological framework there are a number of research strategies that can be used, with potentially the most prominent being action research, case study, ethnography, and grounded theory (Collis & Hussey, 2003; Gill & Johnson, 2002; Maylor & Blackmon, 2005; Punch, 1998). Based on the fact that a process of application was studied as a single unit of analysis (Collis & Hussey, 2003) it was decided that the overall research strategy should take on the shape of a case study. Creswell (2003) supports this view when indicating that a case study is something where a researcher explores a programme, event or process in depth. Yin (2003) indicates that a case study is generally the preferred strategy when the research is concerned with “how” or “why” questions. In this instance the research focused on exactly these questions, namely “why” was the model accepted and did this have any implications for the model’s relevancy, “how” and “why” was the model changed when applying

it in different contexts, and “how” did this reflect on the model’s applicability? Punch (1998) and Yin (2003) probably describe case studies best when stating that a case study is more of a strategy than a method, and that a case study is not a specific technique but a way of shaping the logic of design, data collection techniques and specific approaches to organising and analysing data.

To ensure that this case study as a research strategy was clearly demarcated, the four characteristics of a typical case (Punch, 1998) were used to validate whether the issues as described thus far were in line with these characteristics.

Is the case under study a bounded system?

The case under study was a distinguishable bounded system, namely a process of application belonging to a model. It was therefore clearly separable from the contexts of the universities at which it was applied.

Is the case a case of something?

A clear indication has been given of what was studied. The process of application (Figures 5.1 and 5.2) was studied as the overall unit of analysis, and outcomes were used to gain an understanding of the implications for the model.

Is there an explicit attempt to preserve the wholeness, unity and integrity of the case?

An overview has been given (Figure 5.1) of how the wholeness of the process was studied by describing it in three stages, including a focus on the details of each stage.

Is it likely that multiple sources of data and multiple data collection methods are to be used

Figures 5.1 and 5.2 explain how the model was put through the process of application within the contextual differentiation (Chapter 4) and therefore supports the likelihood of using multiple sources of data and data collection methods.

Having used these four characteristics described by Punch (1998), it can be concluded that the case as it has been described was in line with these characteristics. Also embedded in these characteristics was the basic type of design taken on by the case study. Yin (2003) argues that there are four types of case study design, namely single-case designs, single-case (embedded) designs, multiple-case designs, and multiple-case (embedded) designs. Based on these definitions, it is clear that the research took on a multiple-case (embedded) design – the first reason being that the overall unit of analysis (the process of application) had three different subunits of analysis, thus categorising the case as being embedded rather than

holistic, and the second reason being that the issue of context, as described in Chapter four, prompted the application of the model at more than one university, thus categorising the study as a multiple case.

However, Yin (2003) warns against the potential pitfalls when having to follow an embedded design. There has to be caution against focusing too much on the subunits of analysis, as the study can fail to return to the larger unit of analysis. It will be demonstrated that in this case there was constant focus on ensuring that the total process of application consistently remained the target of the study.

5.3 RESEARCH DESIGN

5.3.1 Introduction

The research design was primarily informed by what the researcher wanted to learn from each stage (Figure 5.2) and the resource implications of being a single researcher. The most important considerations regarding these two issues were as follows:

Learning outcomes required from each stage

During stage one the researcher was interested in gaining access to universities and “selling” the product (the model). Studying this stage had to provide evidence in terms of the relevancy of the model and thus the potential contribution of the model to managerial practice – for example, was the model accepted and if so, based on what motivation, terms and conditions? Learning from this stage had to focus on the model as a conceptual whole and not on subsets of the model.

During stage two the model was applied practically within universities. Studying this stage had to provide the researcher with information on whether or not the definitions of the model were holding up in practice. The focus was on gaining an understanding of whether the different contexts in which the model was applied were in fact prompting changes to the model, and if so, at what level, i.e. the entity level and/or the relationship level and/or the application methodology level. Learning from this stage had to focus on the content of the model, the entities, the definition of relationships, and the application methodology.

During stage three the model outcomes were provided to each university. Studying this stage had to inform the researcher about the recipients’ views on the model. Did the practitioners believe that the actual performance measurement readiness perspective as generated was a helpful perspective that could be used by the universities? Studying this stage had to provide evidence in terms of the model’s relevancy and thus also an

indication of its potential contribution to managerial practice. Learning at this stage was focused on the model as a conceptual whole.

The key design implications stemming from the specific learning outcomes required were: 1) the type of engagement – knowledge transfer and then allowing time to receive judgements and perceptions - did not allow for large groups of university staff to be involved and, 2) there had to be some form of continuity of university staff throughout the three phases. More or less the same people had to be involved in terms of gathering judgments and obtaining perceptions. These two aspects related specifically to stage one and stage two (alignment of the model to university context) of the research.

Resource implications

The biggest resource implication that had to be factored into the design was the issue of time. Although it was possible to have time lapses between the various stages of the research, it was not possible to have large time lapses within each stage, specifically stage two of the research. Systems theory as the underlying theory of the model required an organisational “snapshot” of the organisational realities related to the 12 entities in the model. The strength of entities belonging to the same system cannot be studied too disjointedly in terms of timeframes, as systems theory does not allow for this type of flexibility in that it defies the concept of interrelatedness. Secondly, the multidimensional view of the model – 12 entities covering diverse organisational perspectives – required a broad organisational overview that again had to be completed within a relatively short period of time.

Knowing that all the above had to be done by one person prompted two specific design implications, namely the use of mixed methods (Creswell, 2003), and mostly these methods had to have an underlying “positivistic flavour” (Hussey & Hussey, 1997) – the latter simply implying questionnaires with few open-ended questions, highly structured interviews, and data collection in general that is focused and not time consuming.

The specific research design issues covered over the remainder of this section – accessibility, sampling, ethics, and research methods – indicate how the considerations described above were factored into the detailed design.

5.3.2 Accessibility

Both Gill and Johnson (2002) and Saunders *et al.* (2003) indicate that good research ideas and topics are sometimes jeopardised by the researcher

not having given sufficient attention to the issue of accessibility. This was an important aspect applicable to the research, as the research as a whole hinged on the issue of accessibility (stage one). Not only was it required in terms of being able to apply the model, but it was also studied as part of the process of application.

It was initially perceived that the issue of access might prove to be a challenge, but in the end this proved not to be the case. Crucial issues that assisted the researcher in gaining access were the identification of appropriate gatekeepers (Denscombe, 2003; Neuman, 2006) and the use of existing contacts (Saunders *et al.*, 2003). Saunders *et al.* (2003) also indicate that a key strategy should be to allow for sufficient time to arrange physical access. This consideration did prove to be extremely helpful, as it took almost two months to gain access to each university. However, being aware of this potential delay enabled the research planning to discount this into the overall approach towards the research.

As access was a key issue within the research, this also impacted on the issue of sampling, i.e. having to choose universities to access and also having to choose groups within those universities to potentially participate in the research.

5.3.3 Sampling

The process of sampling covered two levels, namely the need to select universities and the need to select groups within each university to engage with via a range of potential methods.

5.3.3.1 *Selecting universities*

As indicated (Chapter four) the categories from which universities could potentially be selected were traditional universities (Category A), traditional universities having merged (Category B), comprehensive universities (Category C) and universities of technology (Category D).

According to RHESSA (2001) the number of universities per category is as follows:

- Category A = 6 universities
- Category B = 5 universities
- Category C = 4 universities
- Category D = 6 universities

The selection of universities was based on the following criteria:

- 1) The status of institutional performance measurement within a university would play no role in the process (Chapter four).
- 2) The researcher would be the sole researcher, hence the number of universities that could be selected was limited (section 5.1.2).
- 3) Being a single researcher also implied limited time to travel long distances, hence the geographical location of universities was important, with those in closer proximity to the CUT being considered.
- 4) Whether the researcher knew potential gatekeepers (section 5.3.1) was a major factor in selecting universities.
- 5) The model was to preferably be applied at universities belonging to categories A, B and/or C (Chapter four), and therefore universities of technology (Category D) were excluded, as the model had already been applied at the CUT, a university of technology.
- 6) The selection process was not concerned with having to draw any conclusions about the public HE population in South Africa.

These perspectives indicate that the selection process was framed by a non-probability perspective (Cooper & Schindler, 2003; Saunders *et al.*, 2003). The various practical considerations (geographic location, time and potential gatekeepers) also warranted a complete purposive (subjective) approach (Babbie, 1990; Czaja & Blair, 1996). In general this approach was consistent with the exploratory nature embedded in the overall interpretivistic methodological framework.

Based on constraints embedded in the selection criteria, the number of universities selected was restricted to two. It would not have been possible to conduct research at more than two universities, whilst conducting research at only one would have defied the objective of the research, namely to further apply the model in different contexts. With the selection criteria in mind and a restriction of two universities, the researcher purposefully constructed a potential list of universities (Table 5.1). A decision was made to follow such an approach, as it would have provided alternatives if the preferred choice of universities had refused to grant access.

Table 5.1 List of potential universities

University	Category	Potential gatekeeper known	Distance from CUT	Other comments
U	A	Yes	10 km	Preferred choice
N	B	Yes	300 km	Preferred choice
NMMU	C	No	600 km	2 nd choice – VC very measurement oriented and has strong links with University U
US	A	Yes	1000 km	2 nd choice
UJ	C	Yes	450 km	2 nd choice

The researcher also felt that if access was not granted, the exclusion of universities in category D and the decision not to allow for “contextual drift” outside of public HE in South Africa would be reconsidered. Fortunately this was not necessary, as it proved possible to gain access to University N and University U, both of which were the researcher’s preferred choices.

After gaining access to the universities the researcher moved the process of sampling from institutional level by focusing on identifying groups within each university.

5.3.3.2 Selecting group(s) within each university

The selection of groups within each university was primarily applicable to stage two of the research, i.e. the group that would have to complete the questionnaire. Although stages one and three also alluded to the possible inclusion of groups, the researcher did not have the opportunity to purposefully select such groups. The groups selected and their involvement during these stages was entirely dependent on the universities. With regard to selecting groups in stage two, it was decided that the choice of groups would be largely dependent on the criteria used and the learning experience gained from having applied the model within the CUT.

The CUT uses the Peromnes staff grading system for support services staff and the JE Manager grading system for academic staff (De Wet, 2006). When the model was applied at the CUT the support services staff

category was defined as level P5 (Peromnes level 5) and higher, and the academia as level 2005 (JE Manager level 5) and higher.

For University N, which also uses the Peromnes grading system, the researcher decided to use the exact definitions as used in the case of the CUT. For University U, which does not use the Peromnes grading system, the researcher decided to use similar generic post names as applicable to a specific Peromnes grade, as found at the CUT and at University N – for example, a Peromnes level 5 for support services at the CUT and University N is usually assigned to the post level of Director. For University U it was then decided to include all support services staff at the level of Director and higher. The same approach was used to determine the relevant academic component within University U.

Following this process resulted in a group of 114 staff for University N (85 support services and 29 academic staff) and a group of 34 staff for University U (23 support services and 11 academic staff). It was also decided that both groups were small enough in terms of size and potential volumes of data and would be utilised as total populations. Hence, further detailed sampling within these groups was not applicable.

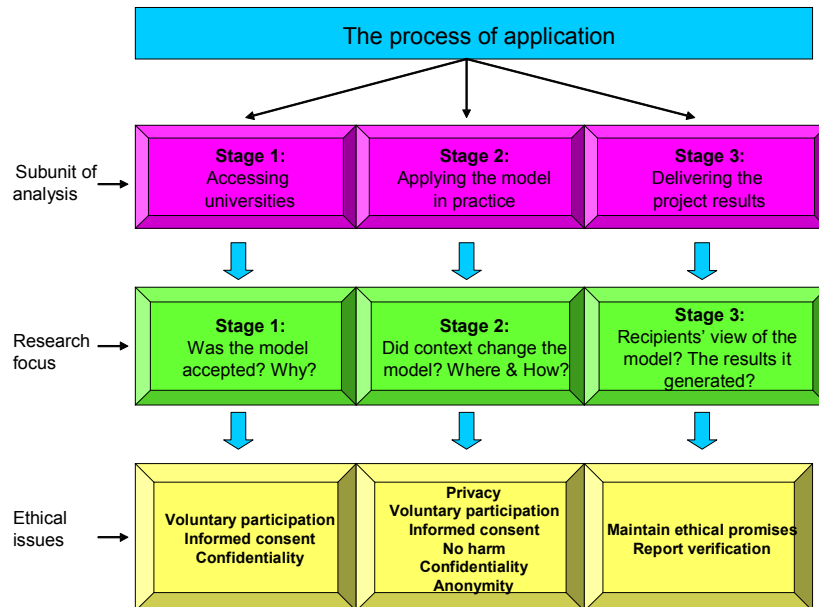
The universities as institutions and the individuals as part of the groups, and their involvement in studying the process of application, prompted numerous ethical considerations.

5.3.4 Ethics

Many references in literature are made to the ethical implications involved in research (Nardi, 2003; Remenyi *et al.*, 1998; Sapsford, 1999; Saunders *et al.*, 2003). In determining the ethical considerations relevant to this research, the three subsections as defined by Saunders *et al.* (2003) were used as a framework. These three subsections are 1) ethical issues during the design and initial access stages, 2) ethical issues during the data collection stage, and 3) ethical issues related to the analysis and reporting stages (Figure 5.3). The reason for this choice was that these stages were similar to the stages of studying the process of application (Figure 5.2).

The primary definitions of ethical issues as raised by De Vaus (2002) are used to highlight the various ethical considerations, namely voluntary participation, informed consent, no harm, confidentiality, anonymity and privacy.

Figure 5.3 Ethical issues pertaining to each stage of the research



5.3.4.1 Ethical issues during stage one (access)

During stage one, the issues of voluntary participation and informed consent were important and were addressed at institutional level. Voluntary participation implies that participants must feel that they are not being forced to participate in the research (Bryman & Bell, 2003; Denscombe, 2003; Neuman, 2006). The researcher therefore had to ensure that the gatekeeper within each university received sufficient information to enable him/her to decide whether the university might wish to participate in the research. Specific details shared with the gatekeepers were the conceptual definition of the model, its purpose, its outcomes, the potential benefits for the university, as well as the fact that the research was part of a doctoral programme. Once a gatekeeper had shown interest in the model and indicated the possibility of its application at that particular university, the researcher requested that the appropriate channels applicable to each university be followed in seeking official approval to conduct research there.

The content of such a formal request (Appendix A – Formal request to conduct research at University N and Appendix B – Formal request to conduct research at University U) included the issues as initially discussed with each gatekeeper plus a detailed scope of the research. The latter

indicated the various research methods to be used (questionnaire, interviews and the study of records), the population required for the questionnaire, the potential individuals to be interviewed, the potential documents that might be required, an indication of discussions with certain individuals to construct the university's context, some logistical arrangements, the language usage (English and/or Afrikaans) for both the questionnaire and the final report, and the fact that there was no cost implication for the university.

The issue of language was an important one to clarify, as both universities or subsets thereof are predominantly traditionally Afrikaans-speaking universities. On the other hand the research was intended for a student studying at an English-speaking university. For University N the use of English for the questionnaire, the covering letter and the final report was not problematic. For University U, in accordance with its language policy, the questionnaire and covering letter had to be provided in both English and Afrikaans. It was also agreed that as the researcher is fully bilingual in Afrikaans and English, any other engagements with staff (interviews and general discussions) would be conducted in the staff member's choice of language.

The formal request also asked for clarity on the ethical issues surrounding confidentiality, e.g. must the researcher sign a statement of confidentiality and can the thesis refer to the universities as University N and University U respectively? Lastly, the request for approval indicated that a discussion with the universities' managements would be required when handing over the outcomes of the application of the model. It was assumed that this overall approach in stage one sufficiently addressed the issue of informed consent, and at institutional level participation was perceived as completely voluntary.

None of the discussions at this stage were tape-recorded, as the researcher was of the opinion that excessively "formalising" the initial process might jeopardise the issue of access.

5.3.4.2 Ethical issues during stage two (data collection)

The first ethical issue considered during this stage was the issue of sponsor or client ethics (Cooper & Schindler, 2006). As the research had to deliver agreed-upon outputs to each university, the universities in a sense were research clients. The specific issue of importance here was the period of client engagement after approval had been granted. After formal approval to conduct research, the researcher engaged with personnel from each university to determine whether the universities required any changes to the model, including changes to the existing application methodology. The researcher had to be aware that taking the

universities' perspectives and views on board should not lead to the alteration of the exact scope of this stage. For instance, at University N it was indicated that campus M's culture was not conducive to performance measurement and that the campus was restraining the university regarding desired progress in this area. Hence, the gatekeeper's reasoning was that respondents should indicate their resident campus in the questionnaire, which would enable the university to make certain comparisons per campus, thereby providing "evidence" of this cultural divide. The researcher did not feel comfortable with this idea of extracting data sets to "prove certain points" and in the end it was agreed that data per campus, although requested, would not be made available for any comparisons. Fortunately, there were no other "political" issues involving a potential crossing of ethical boundaries.

The second ethical issue addressed at this stage was the issue of privacy (Saunders *et al.*, 2003). As the researcher did not have to invade people's privacy at an intimate and personal level (Neuman, 2006) a decision was made to simply leave the issue of privacy completely in the hands of the potential participants and for their own discretion. Nothing purposive was initiated to deal with privacy.

The ethical issues addressed next during this stage were the issues of voluntary participation and informed consent, but this time at individual level. In this regard, an issue of which the researcher was aware but was not able to interpret was the impact that voluntary participation at institutional level might have on voluntary participation at individual level. Irrespective of any potential impact, the researcher still focused very strongly on the issue of informed consent at individual level, in the hope that it would encourage voluntary participation. To facilitate informed consent, the researcher informed the questionnaire participants in writing and the interview participants verbally (see Appendix C – Covering letter: University N, as well as Appendices D & D1 – Covering letters: University U).

The details covered were the purpose of the study, the universities' need for the study, the fact that the research formed part of the completion of a doctoral programme, the reasons why participants had been selected for the study, and some logistical arrangements. The aim here was to provide prospective participants with as much information as might be needed to make an informed decision about whether or not they wished to participate in the study (Bryman & Bell, 2003). Due to the sizes of the groups and the time constraints, the researcher did not attempt to obtain consent in writing, as encouraged by Denscombe (2003) and Neuman (2006).

Also addressed in the covering letter were the issues of no harm, anonymity and confidentiality. Although the type of research instruments

used did not imply any form of physical harm, it was assumed that participants might feel that they might be harmed psychologically. Babbie (1990), Cooper and Schindler (2003) and Neuman (2006) indicate that ways of dealing with the latter may include guaranteeing and honouring the principles of anonymity and confidentiality. Anonymity means that it should not be possible to identify a respondent, while confidentiality means that the information gathered should be treated as confidential.

In the case of the questionnaire, the researcher was able to guarantee anonymity and confidentiality, and included a statement in this regard in the covering letters (Appendices C, D & D1). Also, knowing the names of respondents would not have added any value to the expected results, as the research was interested in patterns, not specific individual responses. With the practical application of the model at the CUT, part of the nominal data (respondents' gender and age) also proved to be meaningless and of no value. Hence the data required in the questionnaires reflecting on personal data was restricted to only staff category and staff grading, both of which were clustered at a high level, thus making any probable identification impossible.

In the case of interviews at this stage, the researcher guaranteed confidentiality by informing participants verbally at the start of the interview that all information would be treated as such. As already indicated (Babbie, 1990) no interview can assure anonymity, but confidentiality can be guaranteed. In the case of interviews the researcher also required specific consent (Neuman, 2006; Silverman, 2001) regarding the recording of interviews.

Again it was assumed that such a demarcation of anonymity and confidentiality would reflect on the fact that the study was not at all interested in identifying individual opinions or perceptions. The study attempted to gain an understanding of the organisational realities, and hence was interested in the majority opinion or perception regarding the issues under investigation.

All interviews were tape-recorded, based on the principle of informed consent.

5.3.4.3 Ethical issues during stage three (analysis and report-writing)

The two ethical issues that were addressed during this stage were 1) to ensure that the ethical promises as made were maintained and upheld (Saunders *et al.*, 2003) and 2) to ensure that the report on the model outcomes was scrutinised before being handed over to the universities (Saunders *et al.*, 2003). The areas that were specifically monitored were those where individuals were solely responsible for providing an

institutional perspective, e.g. the universities' IT/IS experts for the IT/IS entity. Another aspect was to ensure that all individuals interviewed were satisfied that the written word was an accurate reflection of what they had told the researcher.

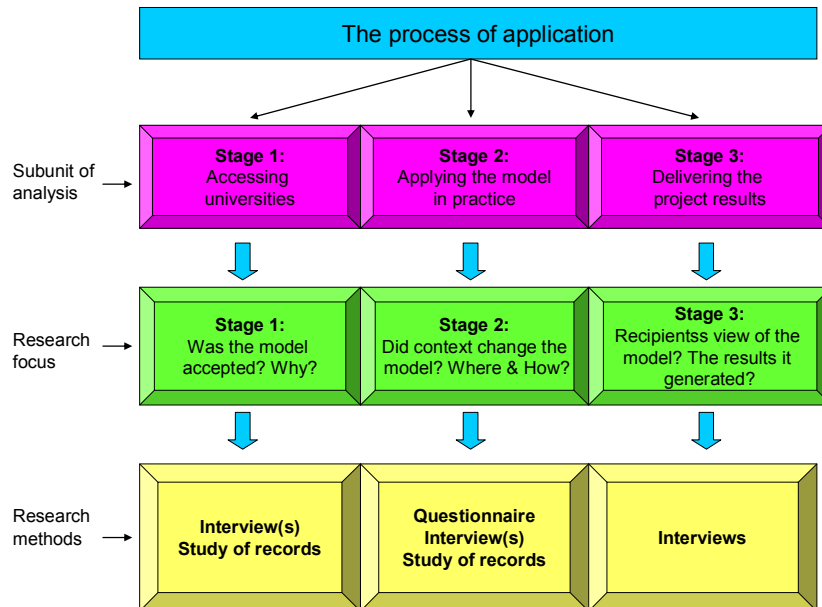
In ensuring the latter, the researcher sent the draft report to the gatekeeper (University N) for distribution to relevant staff with the following message: *"Please read through the report. My expected outcomes: That the report explains issues clearly, is focusing at the right level and is factually correct specifically regarding the areas assessed via interviews"*. Via the gatekeeper of University N it was revealed that everybody who had received the report was satisfied. At University U it was agreed with the gatekeeper that the draft report would be sent directly to each interviewee. Each interviewee subsequently indicated his/her satisfaction with the documentation of the issues as reflected upon during each interview.

The ethical issues as indicated during each stage of the research have already alluded to some of the research methods used. The next section on research methods describes in more detail the various research methods used during each stage of the research.

5.3.5 Research methods

The various research methods that were used are explained in terms of their applicability to the various stages in studying the process of application (Figure 5.4).

Figure 5.4 Research methods applicable to each stage of the research



5.3.5.1 Stage one – Interviewing and the study of records

In stage one the primary research method was the interview. Initially the researcher made contact with the gatekeepers face-to-face and/or telephonically. In all cases these “interviews” were completely unstructured (Denscombe, 2003) yet guided by the broad purpose of the discussion, namely to establish whether each gatekeeper believed that his/her university might be interested in the model. The discussions were always about extracting information regarding this purpose and were very informal (Saunders *et al.*, 2003). At best the researcher probed (Hair, Babin, Money & Samouel, 2003) into the institution’s status regarding performance measurement and in the process sought an opportunity to talk about the model. Crucial to this process was the way in which the researcher introduced the issue (Cooper & Schindler, 2003) around the model and the establishment of good relationships (Cooper & Schindler, 2003).

Once the outcome of the process of formal approval was known, interviews were held with each gatekeeper, specifically in terms of what had transpired throughout the process of approval and how this related to the model as a whole. These interviews were semi-structured (Saunders *et al.*, 2003). The main focus of engagement at this stage was to ascertain views and perceptions regarding the following:

- Was the model accepted for application? Why?

- How did the process of approval proceed? Were there stumbling blocks?
- Did the gatekeepers have to intervene to secure approval?
- Were there at this stage general views and perceptions of the model?
- Did managers feel that the model could assist the university and if so in what way?

5.3.5.2 Stage two

5.3.5.2.1 Introduction

The specific research focus of stage two (Figure 5.3) required that two specific aspects be addressed:

Sub-stage one – The model as it had changed after its application at the CUT (section 3.4), inclusive of the changes to the research instruments (questionnaire, interviews and the study of records), had to be scrutinised to assess whether the universities' contexts presupposed any changes to the model. Any changes to the model were assessed by focusing on the conceptual definition of the model and the application methodology. At the conceptual level the focus was on the 12 entities and the definition of the relationship of each entity. For the application methodology the focus was on whether or not the research instruments had to be adapted.

Sub-stage two – The specific research instruments (the basis of the application methodology) potentially adapted in covering sub-stage one had to be applied at each university to create the overall organisational perspective as generated by the model.

The processes followed regarding these two sub-stages are indicated in the subsequent two sections.

5.3.5.2.2 Stage two, sub-stage one – Participant observation

After the process of formal approval within each university, the researcher had to engage with staff at each university to assess the “applicability” of the model. This entailed that there had to be alignment between each university’s context and the model, specifically the application methodology component. In an attempt to ensure alignment the role performed by the researcher was that of a participant observer (Gill & Johnson, 2002; Gillham, 2000). The term “participant observer” is used, as it is possibly the closest definition of what transpired during this stage. However, it is recognised that observation here is not the observation of people in order to better understand them, but rather the observation of documents (Cooper & Schindler, 2006) within a certain process and how these documents change.

To observe changes to the model, the researcher created a document for each university that created the following perspective: Per entity, it listed the definition of each relationship (the issues to be assessed) and indicated the research method(s) to be used, as well as the results for this entity as per the results from the practical application at the CUT. The latter was done to provide an indication of the organisational perspective created by the model for the specific entity. The following is an example from this documentation:

Entity – management commitment and support

Definition of the relationship:

- *How strong is management’s desire for the system?*
- *How committed is management to the system?*
- *Is the CEO committed to the performance measurement system?*

Assessment method: *Determine what is factual (e.g. Vice-Chancellor’s commitment) via the study of records and interviews, and the rest via general questionnaire.*

Issue: *Frame questions based on status of the institutional performance measurement system (e.g. if an institutional performance measurement system, desire might not be an issue to assess, and commitment might be assessed differently).*

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
4	<i>Implementation of an institutional performance measurement system should be a matter of urgency</i>	1	14	17	2	0	1.64
8	<i>Implementation of an institutional performance measurement system should be amongst the top eight priorities of the CUT</i>	1	14	19	0	0	1.58
S & I	<i>VC's commitment to the implementation of a new performance measurement system</i>						1
	<i>Total average</i>						1.40

This approach informed the universities regarding the definition of each relationship and how each issue within this definition would be assessed. Within both universities this process was launched with a discussion of the documentation with each gatekeeper to clarify and explain issues where applicable. At both universities the gatekeepers were then given time to digest the content and to involve other people in the process if they so desired. The researcher was not involved in these internal deliberations as decided upon by each university. At University U the gatekeeper involved the performance measurement process owner with regard to some entities, but not the entire document. At University U the gatekeeper involved the DVC: Academic Planning in the process.

As a final conclusion to this stage the researcher and each gatekeeper held a one-on-one discussion on the changes to the documentation provided. This joint collaborative approach created an ideal platform for observation and participation, hence creating alignment again based on shared knowledge production (Henning, 2004).

The main focus of this sub-stage within stage two was to obtain inputs prior to the application of the model regarding the following:

- Are there entities that should be left out of the application and why?
- Does every issue within each relationship have to be assessed or are there some issues that could be omitted/changed and why?
- Did any of the above have any impact on the redesign of the research instruments as updated following application at the CUT?

Although the findings with regard to this sub-stage are discussed in detail later, it can be mentioned that University N did not require any changes to any aspect of the model, the entities, the detail issues per relationship, or the application methodology. For University U this was not the case.

5.3.5.2.3 Stage two, sub-stage two – Questionnaires, interviews and the study of records

The completion of sub-stage one of stage two of the research served as input to sub-stage two of stage two, namely the practical application of the model. This implied that the researcher still had to predominantly rely on the general questionnaire, the interviews with the IT/IS knowledge experts and the study of records to gather the data to determine the organisational reality applicable to each university. However, where time allowed, other interviews also took place to enrich the process of data collection, thus also assisting with the process of verification and triangulation (Maylor & Blackmon, 2005). Important issues per research instrument are indicated below:

Questionnaires

Some important aspects regarding the questionnaires (Appendix E – Questionnaire: University N and Appendices F & F1 – Questionnaires: University U) are the following:

- 1) The questionnaires were used to obtain perceptions and views, not factual information.
- 2) To allow organisational realities to be determined, the questionnaires had to be updated with certain university specifics applicable to each university. For example, for question 19 in both questionnaires, the specific institutional structures per university had to be included to enable respondents to answer the question.
- 3) The majority of questions were closed questions, with the main reason for this being the predetermined framework of the model and the demands on the researcher's and respondents' time and effort (Czaja & Blair, 1996; Fowler, 1995; Warwick & Lininger, 1975). Another factor influencing the choice of closed questions, although to a much lesser extent, was the perceived drawbacks associated with the coding and analysis of open-ended questions (Warwick & Lininger, 1975). The general questionnaire was fairly long and, as indicated, time was of the essence.
- 4) Limited coding had to be done. The majority of the open-ended questions were mostly aimed at extracting more information pertaining

to issues already adequately addressed, hence major effort to develop further understanding from coded data was not required (Stake, 1995). Each questionnaire had five open-ended questions (University N – questions 13, 14, 20, 21 & 25 and University U – questions 13, 14, 20, 21 & 22). Question 13 dealt with resources and the expectation was to obtain additional views regarding resources that might shed light on some form(s) of institutional practice. Question 14 pertained to skills and the expectation was to obtain additional views on potential areas/groupings of competence or incompetence both related to implementers and potential recipients of the system. For both questions 13 and 14 some categories did emerge, and post-coding was required (De Vos, 1998). It was expected that question 20 would as a result contain names of policies and procedures. This was in fact the case and these names, as they emerged, were automatically used as codes. Post-coding (De Vaus, 2002) in any other form was not required. Question 21 asked whether managers believe that there are entities/issues, other than the 12 listed, perceived to have an effect/impact on the implementation of performance measurement systems. Question 24 (University N) and question 22 (University U) asked respondents for any further comments regarding institutional performance measurement. No coding was required for question 21, while post-coding was applicable to question 24, as certain themes and categories emerged.

- 5) The levels of measurement were predominantly Likert scale oriented (section 3.2.2). Where a respondent simply had no opinion or had insufficient knowledge to answer a question (Fowler, 1995) a further scale was added to most questions, namely that of “can’t answer”. This category was also explained in the covering letters (Appendices C, D & D1).
- 6) The questions were mixed. Babbie (1990) indicates that the order of questions can influence both the responses and the overall data collection, and a means of overcoming this is to randomise the order of questions. However, in self-administered questionnaires, Babbie’s plea is to be sensitive to the problem by starting the questionnaire with the most interesting questions, while the questions should be non-threatening and the nominal data should be asked at the end. The layout of questions in the questionnaire took these issues into consideration.

Interviews with IT/IS experts

The interviews (Appendix G – Interview with IT/IS experts) conducted with the universities’ IT/IS knowledge experts were altered based on the learning experience gained from the interview with the CUT’s IT/IS knowledge expert (section 3.4). The interview for both universities was a

standard interview, similar for each university. Key aspects of this interview were that 1) the entire interview was framed by its purpose, namely to gather factual information regarding the overall status of IT/IS in each university, and 2) the interview was highly structured.

Study of records

As in the case of the CUT, the study of records relevant to some of the entities was again used to gather or verify factual information (section 3.2.1).

Other interviews

Where time permitted the researcher could for the first time, other than in the case of the CUT, also engage via interviews with other role-players within each university. However, interviews in this “category” were unstructured and mostly took on the form of discussions and conversations (Maylor & Blackmon, 2005). Although unstructured and merely discussion oriented, the content still pertained to the 12 entities, in this instance mostly the information architecture, the performance measurement process owner, the evaluation process and information flow, management commitment and support, and “other” measurement processes within the universities.

Table 5.2 provides an overview of how the various research instruments applicable to stage two of the research were used to gather all the data pertaining to the 12 entities.

Table 5.2 Various research instruments used in stage two of the research

Organisational entity	No. of issues assessed per entity		Research instrument		
			Questionnaire	Interviews	Study of records
N - University N U - University U	N	U			
Organisational culture	6	6	x		
Information architecture	3	3	x	X	x
Information technology/ information systems	4	4		X	
Management commitment and support	3	2	x	X	
Evaluation process and information flow	1	1	x		x
Organisational structure	1	1	x		
Performance measurement process owner	3	3		X	x
Performance management system	2	2	x	X	
Strategic planning process	6	6	x		x
Policies and procedures	2	2	x		x
“Other” measurement processes	2	2	x	x	
Resources	4	4	x		

The main focus of this part of stage two of the research was to ensure that the application methodology was intact, to practically gather the data, and to interpret the results regarding the following:

- The performance measurement readiness of each university.
- What the results told the researcher about the model itself.

The first focus was primarily that of the recipient universities and the second focus primarily that of the researcher.

5.3.5.3 Stage three – Interviews

Stage three of the study focused on debriefing and reflection. The researcher had to make the results available and, as agreed upon with each university, this had to be in the form of a meeting and discussion of

some sort. The purpose of this arrangement was to provide the researcher with another interface for ascertaining views on the model. The main focus of such an engagement was on learning more about the model in terms of the following issues:

- Did the model prove helpful to the university?
- What does the university see as being the model's strengths and/or weaknesses?
- Does the university now better understand the context within which a performance measurement system operates?
- Does the university believe that there are any shortcomings in the model?

It was originally assumed that the research methods used would be a combination of observation and group interviewing – for example, when communicating the results the researcher would purposefully attempt to be a participant observer (Gill & Johnson, 2002; Gillham, 2000). In this role the researcher would listen to what the audience was saying and would probably be able to ask questions for clarification. If, by means of this method, answers to questions on perceptions and views are not satisfactorily covered, the researcher may at the end of the communication process seek a brief group interview (Gillham, 2000).

However, this final engagement with each university did not play out as intended. For University N this planned process was not possible, as the internal activities of the university did not permit engagement of this sort. Staff members were simply too busy towards the end of the second academic term of 2007, and a meeting of this nature could not be arranged. It was decided that feedback on the model would be restricted to three individuals (interviewees N1, N2 & N4) involved with the model prior to its application at the university. As part of the process of upholding ethical aspects, each of these interviewees received a draft report. The researcher engaged telephonically with each individual, requesting consent to ascertain their views via a process of e-mail interviewing (Cooper & Schindler, 2006). The individuals agreed to this, and e-mails were sent with the following two questions:

- Do you believe the model is relevant and that it has practical value?
- Does the model generate an organisational perspective that can assist managers/organisations with the issue of performance measurement?

All three individuals at University N provided feedback.

For University U the same process unfolded and it was also not possible to engage with a group of people on the outcomes as presented in a final draft report. However, at University U the problem was not finding time on

the institutional agenda, but rather the fact that the “sponsor” of the research, the Vice-Rector: Academic Planning, had resigned at the end of July 2007 and there was no longer an internal driver for the project. In conjunction with the gatekeeper a decision was then made to send the final report to all members of the university’s executive management. Accompanying the final draft report were the following two questions:

- To what extent do you think the model is useful for higher education institutions?
- To what extent do you think the perspectives generated by the model could be applicable to the university in implementing an institutional performance measurement system (should the university decide to do so)?

Only three individuals from this group responded, while four individuals indicated that they were simply too busy to provide feedback but would like to do so at a later stage.

Some of the research methods as explained in this section required some form of pre-testing before they could be put into practice.

5.4 PRE-TESTING AND PILOTING

Babbie (1990) as well as Czaja and Blair (1996) differentiate between pre-testing and piloting. Pre-testing implies that individual components of the research methodology (questionnaire, sample design, etc.) are tested before the official research is conducted, whilst a pilot study implies that the entire research methodology is run through, but focusing on a few respondents only. Based on these definitions no pilot studies were conducted and in a sense it can be argued that the application of the model at the CUT served as an ideal pilot study for this research, especially for stage two of the research.

The only data collection method that was pre-tested was the questionnaire. Within the CUT the questionnaire had been pre-tested among a few fellow DBA students (De Wet, 2006). This exercise proved fruitful in terms of not only discovering errors but also providing training to the researcher (Cooper & Schindler, 2006). Based on this experience the questionnaire was again pre-tested amongst two key stakeholders at each university, specifically to check for institutional accuracy and interpretability. The covering letters accompanying the questionnaires were pre-tested in the same manner.

The structured interviews regarding the IT/IS entity were not pre-tested, as the content had been clarified extensively during the interview at the CUT

(section 3.4). No other interviews were pre-tested either, as their nature was mostly exploratory, generating questions as the interview process unfolded (Maylor & Blackmon, 2005).

Just as the practical application at the CUT assisted with the issues of pre-testing and piloting, it also provided assistance with regard to the issue of distribution and collection.

5.5 DISTRIBUTION AND COLLECTION

The process of distribution focused mainly on the questionnaire. For both universities the questionnaire was distributed via their internal postal service. The gatekeepers and researcher were not comfortable with the idea of electronic distribution, since it was argued that it might impact negatively on response rates and the process should be made as easy as possible. In this regard each respondent was mailed a covering letter, a questionnaire and an enclosed envelope bearing a return address.

Each covering letter was sent out under the name of the university and was signed by the relevant staff member under whose auspices the study was conducted (Appendices C, D & D1). In the case of University N it was the performance management process owner and in the case of University U the DVC: Academic Planning. Once completed, each questionnaire was mailed via the enclosed envelope to the return address of the gatekeeper within each university.

At University N the gatekeeper conducted follow-up communication with all the recipients every week for three weeks after the date of distribution. At University U the gatekeeper once had to make use of follow-up communication after the deadline for returning the questionnaires.

All the interviews were conducted according to a protocol that included the following: introducing the purpose of the research (Cooper & Schindler, 2001), in the case of consent taping the interviews (Babbie, 1990), reading the questions as written (Fowler & Mangione, 1990) if not too unstructured, having the right location (in this case mostly the offices of the various interviewees), reconfirming confidentiality (Alvesson & Deetz, 2000), and where possible allowing shared knowledge production (Henning, 2004).

The process of distribution and collection was completed when the draft reports containing the findings per university were made available to each university to scrutinise the findings and to provide comments on the content.

A summary of the various research activities within each university is indicated in the next section.

5.6 OVERVIEW OF RESEARCH ACTIVITIES WITHIN EACH UNIVERSITY

5.6.1 University N

During stage one the researcher held interviews with the performance measurement process owner (*interviewee N1*) and the performance management process owner (*interviewee N2 – also the gatekeeper*). During stage two the researcher held interviews with the performance measurement process owner (*interviewee N1*), the performance management process owner (*interviewee N2*) and an information management specialist (*interviewee N3*), as well as a group interview with two IT/IS specialists (*interviewees N4 & N5*).

The overall questionnaire return rate was 50% (57 out of 114). The overall return rate for academic staff was 43.5% and for support services staff 69%.

	Total university		
	Out	Ret	% Ret.
Academic staff	85	37	43.5%
Support services staff	29	20	69.0%
Total	114	57	50.0%

Out – Questionnaires sent out

Ret – Number of questionnaires returned

During stage two the researcher also studied various documents as prompted by Table 5.2

During stage three the researcher conducted electronic interviews with interviewees N1, N2 and N4 and received formal written input from all.

5.6.2 University U

During stage one the researcher held interviews with the performance measurement process owner (*interviewee U1 – also the gatekeeper*). During stage two the researcher held interviews with the performance measurement process owner (*interviewee U1*), the performance management process owner (*interviewee U2*), an information management specialist (*interviewee U3*) and an IT/IS specialist (*interviewee U4*).

The overall questionnaire return rate was 73.5% (25 out of 34). The overall return rate for academic staff was 72.7% and for support services staff 73.9%.

	Total university		
	Out	Ret	% Ret
Academic staff	11	8	72.7%
Support services staff	23	17	73.9%
Total	34	25	73.5%

During stage two the researcher also studied various documents as prompted by Table 5.2

During stage three the researcher, via the gatekeeper, requested a group of people to respond electronically to two questions. Three people provided written input.

The chapter on research methodology is concluded with a final reflection on issues relating to validity.

5.7 VALIDITY

As far as validity is concerned, it is important to reflect upon three issues applicable to validity and as framed by the specific methodological points of departure. These issues are the position of the researcher in the research, the broad issue of triangulation, and construct validity.

5.7.1 Researcher's position in the research

With regard to the issue of validity, Creswell (1994) as well as Johnson and Duberley (2000) highlight the importance of the relationship between the researcher and the researched. However, Denscombe (2003) argues that this relationship reflects more on objectivity than validity. However, despite these differences, it was deemed an important issue applicable to this research and hence it is reflected upon – specifically the fact that a researcher can be closely associated with a problem, but can choose a methodology that keeps the researcher at a distance so as to indicate objectivity. Lategan and Lues (2005:9) indicate that “... *in the theory of science every researcher has his/her own methodological pre-hypotheses*

and value statement. These pre-assumptions should not be identified as similar to prejudice”.

The issue of the position of the researcher in the research was informed by the decision that no staff from the universities would be included in the researcher's one-man research team (section 5.1.2). Such an approach has an advantage in that it minimises the client's influence on results, but it has a disadvantage in that it can raise questions about the researcher's own objectivity and distance within and throughout the research. Some examples in terms of demonstrating objectivity are as follows:

- 1) In stage one, with regard to the issue of access, the researcher asked that a formal process of approval be followed. Although the researcher relied on the gatekeepers to explain what had happened during this process, the researcher was never a player and was completely removed from this process.
- 2) In addressing both sub-stages in stage two of the research the model, as a conceptual construct, again served as a proverbial neutral and anonymous middle-man. The respondents at large did not respond to a researcher but to a model. This analogy to a large extent is also true for stage three of the research.

Describing the distance between the researcher and the researched as indicated hopefully assisted in demonstrating the issue of objectivity.

5.7.2 Triangulation

One of the advantages of conducting a case study is that it provides space for various research methods to be used, which creates a platform for triangulation (Denscombe, 2003; Gillham, 2000; Silverman, 2001; Yin, 2003). The two specific forms applicable to this case study are the issues of methodological triangulation (Stake, 1995) or multiple methods (Maylor & Blackmon, 2005) and multiple sources of data, specifically multiple informants (Maylor & Blackmon, 2005). This first concept means that data on a particular issue gathered via a specific research method can be compared with data on the same issue gathered via a different research method. The second concept means that more than one person is asked the same question. What follows are some examples of these two forms of triangulation as used in the research.

Stage one of the research

In stage one the researcher planned to validate the issue of access using two different methods. Inputs as to the reasons for granting access were obtained from the gatekeepers via interviews. At the same time the

researcher requested all gatekeepers to provide e-mail correspondence and formal documents (e.g. minutes of meetings) to allow the researcher to also assess whether these internal documents reflected upon the issues in the same light as the information gathered via the interviews. Although the latter did not shed light on the issue at all, it was still an attempt to ensure validity of some sort.

Stage two of the research

Stage two of the research provided ample opportunities for triangulation in that the same questions, on the same issues, were posed to a number of interviewees. For example, views on the information architecture were obtained from two to three different sources (multiple-source triangulation) and these responses could be verified with responses from the questionnaire (multiple-method triangulation). Another example was the validation of issues covered in the IT/IS interview with the knowledge experts, with responses from the information specialists on the same matter. However, this was only made possible by the fact that the researcher simply had more time available when visiting the universities. This again stresses the importance of time, effort and resources associated with triangulation in general (Stake, 1995).

Arising from all the examples indicated, it is important to note Silverman's (2001) warning against some of the approaches as outlined by arguing that each method takes place in a specific context, hence it can be problematic to simply compare the findings of various sources on the same issue. However, this research cannot be defined as purely social research and thus it is perceived that the methods as indicated enriched the findings.

5.7.3 Construct validity

Yin (2003) indicates that the issue of triangulation itself seems to enhance construct validity. However, the specific issue focused upon in order to create a certain level of construct validity were the following:

As part of the ethical issues in stage three of the research, it was indicated that the draft reports on the model's outcomes had been scrutinised by staff participating in the research before the final reports were officially handed over to the universities (section 5.3.3.3). This process of taking one's findings to a position where the findings can be verified by respondents is known as respondent validation (Silverman, 2001). Denscombe (2003) also advocates the importance of verifying information with respondents, especially in the case of interviews and observation. Although none of the interviewees at University U or University N required changes to the content of the reports, the fact that participants and informants were able to comment on such a draft as a "true" reflection and

were given the opportunity to provide comments and inputs enhanced the construct validity of the research (Yin, 2003). This approach is also widely supported by Stake (1995) in describing the process of member checking, meaning that people who were part of the study are granted the opportunity to ascertain whether evidence reflecting upon them is indeed an acceptable reflection. Stake (1995) indicates that this type of input should not be about bending the facts, but rather about portraying any reflection in such a way that it is acceptable to the people involved.

The research methodology generated information that allowed the researcher to construct the specific context, as defined (Chapter four), for each university. This context is discussed in the next chapter.

CHAPTER SIX

Universities' contexts

6.1 INTRODUCTION

Before the detailed findings are highlighted (Chapter seven) it is important that some contextual aspects relating to the two universities accessed are discussed. This is done not only to provide the necessary unfolding of the case study, but also to provide more background in terms of the levels of contextual differentiation indicated (Chapter four). The issue of context is described by providing a general overview of each university and by providing insight into the status of the institutional performance measurement systems. When describing an overview of each university, the contextual differentiation in terms of institutional form and some unique institutional characteristics will become clear.

6.2 OVERVIEW OF THE UNIVERSITIES

The research methodology (section 5.3.2.1) indicates that the universities granting access for the application of the model should ideally come from categories A (traditional universities), B (traditional merged universities) or C (comprehensive universities). In this regard the universities that granted access fall into category B (University N) and category A (University U).

What the research methodology did not specify were upfront specific criteria as to what would comprise unique institutional characteristics. Chapter four alludes to aspects such as size, shape and staff. The overview regarding each university is therefore simply to inform the reader about how the various universities do in fact differ from one another institutionally and with the understanding that this overview simply provides more background to the case study. The ways in which some of these characteristics might have changed some aspects of the model are indicated in Chapter seven (section 7.3.2).

6.2.1 University N

University N is a “new” university that was created in 2004 after the restructuring of the HE landscape in South Africa (RHESSA, 2001). This university was created through the process of merging a former traditional, predominantly white university (currently campus P of the university), a previously disadvantaged black university (currently campus M of the university) and a campus of a university predominantly designated for black students (currently campus VT of the university). In 2007, three years after

the merger, the university officially consists of the three campuses and a main institutional office that provides centralised institutional services across the campuses. In 2006 some key statistics of the university (UN, 2006a) were as follows:

The university had 38 736 students (campus M = 8 487, campus P = 26877 and campus VT = 3 372). This headcount enrolment total was made up of 9 573 postgraduate students and 29 163 undergraduate students. A large number and variety of faculties serviced these students. Campus M had faculties of Agriculture, Science & Technology, Commerce & Administration, Education, Human & Social Sciences, and Law. Campus P had faculties of Arts, Natural Sciences, Theology, Educational Sciences, Law, Economic & Management Sciences, Engineering, and Health Sciences. Campus VT had one integrated faculty offering a variety of “cross-faculty” disciplines, as found at the other two campuses.

In 2006 there was a total of 9 821 graduates, of which 875 were at master’s or doctoral level. The total staff complement numbered 4 715, with 2 607 of these positions being permanent staff and 2 108 being temporary staff.

Currently the institutional executive management structure consists of the Vice-Chancellor (VC), the Vice-Principal (VP), three campus directors, the Institutional Director: Finance and Facilities, the Institutional Registrar, the Institutional Director: Human Resources, Students, Innovation and Research, and the Institutional Manager: Corporate Communications.

6.2.2 University U

University U is a traditional university that was established more than 100 years ago (in 1904) (UU, 2006). The university was impacted by the restructuring of the HE landscape in South Africa (RHESSA, 2001) and had to incorporate a campus of a university predominantly designated for black students. The university currently has a main campus (campus B of the university) and another campus situated about 250 kilometres from the main campus (campus Q of the university). In 2006 some key statistics of the university (UU, 2006) were as follows:

The university had around 24 600 students (campus B = 22 600 and campus Q = 2 000). This approximate headcount enrolment figure included 9 454 postgraduate and 13 842 undergraduate students. The university had six faculties, namely the faculties of Economic & Management Sciences, Health Sciences, Law, Natural & Agricultural Sciences, Humanities, and Theology.

There was a total of 5 219 graduates, of which 4 612 were at undergraduate level and 607 at postgraduate level. The total permanent staff complement numbered 1 637.

The current institutional executive management structure consists of the Vice-Chancellor (VC), the Vice-Rector: Academic Planning, the Vice-Rector: Academic Operations, the Vice-Rector: Student Affairs, the Chief Director: Community Service, the Chief Director: Resources, the General Registrar, and the Registrar: Strategic Planning.

6.3 STATUS OF AN INSTITUTIONAL PERFORMANCE MEASUREMENT SYSTEM WITHIN EACH UNIVERSITY

When the research problem was clarified it was stated that in terms of assessing the impact of context on the model, the status of institutional performance measurement systems for the universities that granted access was an important issue (Chapter four). The reasoning was that it might provide insight into the applicability of the model, specifically in terms of how issues related to this contextual dimension may change the model. However, it was also stated that this issue as part of context would not be purposefully sought when attempting to access universities, as it may have limited accessibility.

It must be noted that when the status of an institutional performance measurement system for each university was analysed it soon became evident that focusing only on the status of the system served to narrow the focus on properly articulating the totality of this contextual dimension. A reflection only on whether or not there was a system and, if so, its status, was not sufficient to portray a true reflection of the context as far as performance measurement systems were concerned.

The detailed description of this part of the context therefore includes other relevant performance measurement aspects related to the status of the respective institutional performance measurement systems. This approach was adopted simply to provide the reader with more background. How this part of the context influenced the model is also discussed in detail in Chapter seven (sections 7.3.2 & 7.3.3).

6.3.1 University N

Campus P of the university has a long and strong history of performance measurement. This campus also had an institutional performance measurement system prior to the merger in 2004. Conceptually this system was based on a balanced scorecard approach, but was adapted for an academic enterprise. Performance data was made available to various

levels of management on a monthly basis. With the merger the university's management decided not to introduce this system to the "new" university, the main reason being that for one campus (campus P) good data was available and for others not. Politically the management was concerned that this could generate a situation that could be viewed as discriminatory and might also have created a situation where it was perceived that one campus was trying to portray itself as better than the others (interviewee N1). At present the university therefore has no institutional performance measurement system in place. During the interview with interviewee N1 the researcher posed the following question: *"Is it correct to say that the university has no report with institutional performance measures that is put forward to any form of structure, and this is where you now want to move towards?"* Interviewee N1 responded: *"Correct, this is what we have had and the reasons for having to let it go I indicated to you"*.

However, the fact that there is no system does not imply that there is no performance measurement. The university's institutional plan (UN, 2006b) indicates that the implementation of an integrated performance management and measurement system is one of the priorities of the university. In this regard interviewee N2 indicated that the university has since the beginning of 2006 been busy with the implementation of the performance management system and that the focus has now clearly moved towards populating the management system with sound performance measures. It is also envisaged that once implemented the institutional performance measurement system will be rolled out to fairly low levels within the university (interviewee N1).

Whilst the university has put the implementation of a performance measurement system on hold, it also continues to focus on two aspects in support of the measurement focus. One aspect is that of benchmarking and the other is that of having quality data – benchmarking specifically focusing on public HE in South Africa and data quality focusing on ensuring that the data of the campuses, other than campus P, is brought up to standard (interviewee N1).

These endeavours are well supported by the Vice-Chancellor (the former Vice-Chancellor of campus P) who is extremely measurement oriented. The majority of staff interviewed indicated the Vice-Chancellor's focus on and orientation towards measurement. The current institutional plan also contains numerous performance measures covering a wide spectrum of university matters.

6.3.2 University U

University U does not have a performance measurement system. However, unlike University N, this university is almost completely measurement inert. In this regard interviewee U1 made the following statement: *“The VC gets very uncomfortable with the issue of measurement, as his view is that there are so many things that can’t be measured.”* This view, although restricted to that of one person only, also manifests in the university’s strategic plan (UU, 2005). There are no outputs measures in the strategic plan (e.g. student numbers, pass rates, research outputs). The majority of measures are activity oriented with deadlines only relating to a specific year (e.g. Finalise and implement an electronic funding database for research: Timeframe = 2006; Compile an investigation into poor student performance in conjunction with faculties and relevant support services: Timeframe = 2006) (UU, 2005).

Interviewee U1 also stated the following: *“We have measuring mechanisms....but just about reporting back, measuring of specific objectives in the strategic plan, but these are not quantitative criteria. It is qualitative and gets monitored but not according to specific criteria...we don’t have quantitative performance measurement at institutional level.”*

Progress on performance as articulated in the strategic plan is also assessed only once a year. In a sense the university is talking about monitoring rather than measuring (interviewee U1). The following perspective by interviewee U1 probably best sums up the university’s measurement context: *“I don’t think we are strong on measurement and this goes hand in hand with a certain management perspective, we don’t believe that everything can be measured.”*

This chapter provided insight in terms of the three contextual dimensions as defined in Chapter four, namely the specific institutional forms, some unique institutional characteristics and the status of an institutional performance measurement system within each university. The next chapter (section 7.3) alludes in more detail to how these three contextual dimensions as described influenced certain components of the model.

CHAPTER SEVEN

Findings and discussion

7.1 INTRODUCTION

In starting the process of presenting and discussing the findings it is important to reconfirm how the story of this case study unfolds. The research methodology indicates that the “topic” under investigation is that of the process of application and this by focusing on three subunits of analysis, i.e. stage one, stage two and stage three (Figure 5.2). The methodology therefore clearly frames this to also be the point of departure for the presentation and discussion of findings. It is therefore not a case of telling the stories of University N and University U as stand-alone stories, but rather telling the story of each stage and how what was found within each university better explains the findings within each of these stages.

A final issue to be noted is that in the research methodology (section 5.1.1) it is indicated that the research is about learning from the model and that this process is seen as a reflexive process. Hence, after discussing the findings of each stage, the researcher consistently reflects upon the key issues learnt. Practically, this means that after each phase in the research there is a summary highlighting the key points and/or issues stemming from that specific stage.

What now follows is a stage-by-stage reflection on and discussion of the findings.

7.2 STAGE ONE – ACCESSING UNIVERSITIES

7.2.1 Key findings

The research focus at this stage was primarily to determine whether the model was accepted or rejected and why. The main findings of this stage were as follows.

- 1) The first two universities approached did grant access.

It was anticipated that the issue of access would be more difficult than what it actually played out to be. This can be mainly attributed to 1) those issues having an indirect impact on gaining access and 2) those issues having a direct impact on gaining access. Indirect issues here are defined as those issues that the researcher could influence directly. Direct issues here are defined as those issues over which the researcher had no control

and could not influence – hence they were completely university dependent.

Although not tested in any way, the following indirect issues seem to have contributed to the researcher gaining access with much less difficulty than initially expected. Firstly, the generic informal process that was followed (section 5.3.4.1) did seem to somehow pique the gatekeepers' interest in the model. During the initial telephonic discussions with both gatekeepers, they showed interest in the model's potential value for the universities. The outcome of these initial discussions was the arrangement of formal meetings between each gatekeeper and the researcher. At both these meetings the model was formally discussed. These discussions focused on the model as a concept and what it aspires to achieve as a construct, as well as the twelve entities and the definition of the relationship of each entity with a performance measurement system. After these initial discussions the universities more formally expressed their interest in the model.

Secondly, the documentation provided prior to the meetings (section 5.3.3.1) did help to generate the desired understanding about the model and its potential use. At both meetings some common issues were evident, namely that each gatekeeper had also invited another person from their university to attend the meeting and that everybody attending the meeting had read the documentation. Questions were put to the researcher directly stemming from sideline comments made by individuals on the documentation they had received.

The direct issues influencing the acceptance of the model were based on the universities' individual performance measurement driving forces and perceptions of what they thought the model could assist them with. As far as these driving forces and perceptions were concerned, the following issues were traceable for each university:

Firstly, the basic driving force for University N is that the implementation of an integrated performance measurement and management system is a strategic priority in their institutional plan (UN, 2006b). Secondly, the university is seeking to get the scorecard process applicable to campus P off the ground for the entire university. In the interview on this issue the following remark was made: *"We have a VC that is obsessive about it and at each meeting he is talking about it...this thing is not negotiable, it is inescapable"* (interviewee N1). Thirdly, the previous statement also indicates the VC's direct commitment to and support of the implementation of an institutional performance measurement system. Fourthly, the university has an integrated perspective on performance measurement and performance management. Both interviewees N1 and N2 indicated that for their university the start of performance measurement is performance

management. In this regard, performance management has progressed far within the university. It is a process that again is driven from the top. Interviewee N1 indicated during the month of December 2006 the VC aligned his own performance contract with the university's institutional plan and this process is now filtering through the university with an expectation to reach junior lecturer level by the end of 2007. Their dilemma is that they are now starting to require performance data, hence the need for performance measures and an institutional performance measurement system.

The university had three perceptions of what they thought the model could achieve for them (interviewees N1 & N2). Firstly, there was the perception that it could assist them with making policy decisions regarding performance measurement. Secondly, the university believed that the model outcomes could assist them in better planning for any potential implementation of a system. Thirdly, there was a perception that the model could provide a strong mandate in support of an institutional performance measurement system. A consistent theme echoed was that campus M of the university is holding the university back, as it does not as yet embrace the issues of performance measurement and performance management. If they could receive a strong mandate for a system via the model outcomes it could assist in bridging this gap.

For University U the driving forces were neither as clear nor as specific as in the case of University N. Just after University U granted approval for the study the gatekeeper was asked: *"How did it go?"* The response was: *"The guys are very cautious"* (interviewee U1). In a follow-up interview with interviewee U1 he was asked to clarify this initial response and stated as follows: *"I don't think being cautious is probably the correct phrase. I think it is important that an impression is not created that we are definitely going to implement a system."* The essence of why University U wanted the study to be conducted is best summarised by the following excerpt from the covering letter as finalised and signed by the Vice-Rector: Academic Planning: *"The (University Name) has over the past ten years made good progress with regard to strategic planning at institutional level. However, measurement of organisational performance against agreed-upon targets and indicators has not yet occurred. In addition, the (University Name) is in the process of implementing a performance management system for staff. For the improvement of organisational performance it is important to interpret staff performance within the context of organisational performance and vice versa. The inclusion of institutional performance measurement within a broad system of performance management will also be of value in informing management better as to the progress made towards achieving goals as set out in the strategic plan of the (University Name). These perceived benefits of institutional performance measurement prompted the (University Name) to participate in a study to assess the **readiness** of the*

institution for organisational performance measurement” (Appendix D – Covering letter: University U).

2) Both universities granted access after relevant formal application processes, applicable to each university, were followed.

The details of what transpired in the formal process of application in each university indicate important issues. Firstly the model was discussed within both universities without any direct influence from the researcher in this process. A key issue of note was that the researcher was not required to get involved to make any presentations to certain groups or university structures. Within this formal application process the researcher was thus never in a position to influence outcomes. Secondly the model, or to be more specific what it could deliver, was now scrutinised by more people than just the gatekeepers. Thirdly the people to whom it was put forward had the executive powers to either grant or deny access. Fourthly in both instances the process of formal application was concluded when the researcher was informed formally about the outcome of the approval process.

At University N the formal process followed was that the gatekeeper provided the Institutional Director: Research with the formal documentation (Appendix A – Formal request to conduct research at University N) as provided by the researcher. The Institutional Director granted access and the researcher was formally informed via e-mail of this decision. When asking interviewee N2 about what exactly transpired in the process it was mentioned that the Executive Director was very excited about the model. *“He was so excited about the model that he already completed the questionnaire. I had to tell him that he will have to redo that when he gets a questionnaire through a formal process”* (interviewee N2).

At University U the process that was followed was that the gatekeeper took the formal documentation (Appendix B – Formal request to conduct research at University U) to executive management and at this meeting the research was approved. In this regard the researcher received a formally approved executive management resolution on the matter that read as follows: *“Approval granted to Mr Elmar de Wet for conducting of research at the (name of university) on an institutional Performance Measurement System”* (UU, 2007).

3) Neither of the gatekeepers in any way had to interfere with the formal process of approval.

Although the model stands at the centre of the research it must be accepted that the process of approval focused more on the individual merits of the model than on the model as a conceptual construct – in other

words, not on its implicit details. Both gatekeepers confirmed that it was the value-adding properties of the model and the perspective it potentially could generate for each university that were “approved”. However an important issue is that neither of the gatekeepers (interviewees N2 & U1) had to interfere with the process in an effort to secure approval or had to lobby before meetings to secure anybody’s support. The gatekeepers did not pressure anybody and nobody involved in the process of approval was under any obligation to approve the research, nor did they have to force the issue of acceptance at any of the institutional structures where the application for approval served. The model indirectly, as supported by the documentation provided (Appendices A & B) and the introduction of each gatekeeper, seemed to pass the test of acceptance on its own merits.

4) Throughout this stage the perceptions and views of the model and its potential value for each university were looked upon favourably.

A reflection in this regard, apart from the instances already indicated above, was when the model was discussed informally with the Deputy Vice-Chancellor (DVC): Academic of campus P of University N.

As University N has three campuses and an institutional office, the researcher thought it fit to talk to somebody from a campus to establish whether the questionnaire might create potential areas of misinterpretation around the concept of an **institutional** performance measurement system. Part of this discussion was to explain the model, its deduction, construction and purpose. Apart from not foreseeing any potential areas for misinterpretation in the questionnaire, the DVC was extremely excited about the model and indicated that she could not wait to see the outcomes of the model for the university.

7.2.2 Summary

- It must be assumed that the researcher’s personal “marketing effort” with regard to the model, backed by supportive documentation, definitely helped to secure access. However, the magnitude of this contribution is not known.
- The model was accepted on the basis of specific driving forces, needs and perceptions as relevant to each university. Whatever these specific issues were, the main reasons for granting access related to the purpose of the model, namely to generate an organisational perspective providing a comprehensive understanding of the organisational context within which a performance measurement system operates. This perspective was relevant not only as a concept but also as a means to portray an individual organisational reality applicable to each university.

- It can probably be assumed that some part of gaining access for the application of the model had to do with the fact that university staff would like to assist fellow colleagues who are studying towards their degrees. In this case, the researcher is studying towards a DBA degree. However, the above reflections clearly indicate that this issue was not one of the key issues that formed the basis for acceptance of the model for application.
- It is also accepted that the universities did not allow the application of the model based on the fact that they would receive a specific research outcome for free. In initial discussions and only related to University U, interviewee U1 indicated as follows: *“To be quite frank if we can get something for free that can help us, why not?”* Although this aspect was alluded to by the gatekeeper of this university, it again was not one of the key issues on which acceptance of the model for application was based.
- It is also clear that neither of the gatekeepers had to intervene or “interfere” to get the model accepted for application.
- The outcome of this stage can be summarised by stating that the merits of the model itself as a concept and its potential value for the universities have been a necessity and in the end a sufficient condition for being accepted. This is perceived as a vote of confidence in terms of the relevance of the model.

The conclusion of stage one of the research paved the way for the model to be practically applied within each university. The next stage of the research, stage two, elaborates on the key findings of this stage in more detail.

7.3 STAGE TWO – APPLYING THE MODEL IN PRACTICE

7.3.1 Introduction

The findings of stage two of the research, namely the practical application of the model within each university, are presented based on the two key sub-stages focused upon (section 5.3.4.2.1). The first sub-stage was to determine whether there were any contextual issues that prompted changes to the model prior to its application. The second sub-stage was to apply the model, inclusive of any new changes, and to determine the organisational reality pertaining to each university.

What now follows is a reflection on and discussion of the findings as per these two sub-stages.

7.3.2 Stage two, sub-stage one – Contextual dimensions that prompted changes to the model prior to its application

The main focus of this part of stage two of the research was to determine whether context prompted any changes to the model prior to its application. The two issues of importance here are defined by the phrases “context” and “changes to the model”. As these two concepts were integrated at this stage of the research, it is important to reconfirm their specific definitions. As far as “context” is concerned the research problem (Chapter four) and the universities’ context (Chapter six) define context as consisting of three dimensions, namely institutional form (contextual layer two), unique institutional characteristics (contextual layer three) and the status of an institutional performance measurement system. As far as the phrase “changes to the model” is concerned there are two areas that are important: The research methodology (section 5.3.4.2.1) indicates that the phrase “changes to the model” has a conceptual component, namely the twelve entities and the respective definition of the relationship of each with a performance measurement system. “Changes to the model” also has a process component (sections 5.3.4.2.2 & 5.3.4.2.3), namely the application methodology.

Hence, the main purpose was to determine whether any of the three contextual dimensions prompted any changes to the model and if so whether at the entity level, relationship level and/or the application methodology. How these two concepts were integrated to present the findings applicable to this sub-stage of stage two of the research is indicated in Table 7.1. The numeric values indicate the number of changes to the model as prompted by the specific contextual dimension.

Table 7.1 Analytical framework used to analyse whether contextual issues prompted changes to the model prior to its application

Contextual dimension	Changes to the model		
	Entity level	Definition of relationship	Application methodology
Institutional form	N/A	N/A	N/A
Unique institutional characteristics	0	1	3
Status of institutional performance measurement systems	0	1	4

N/A – Not applicable

Based on this framework the findings are as follows:

- 1) As already indicated (section 5.3.4.2.2) University N did not require any changes to the model, and the suggested changes prompted all originated from University U.
- 2) It was not possible to determine whether any changes to the model were prompted by the contextual dimension of institutional form, hence the “not applicable (N/A)” response as indicated.

It is the researcher’s view that, in the end, institutional form is too abstract as a concept to be able to assign origin of change to this level of abstraction – for example, is the fact that University N required no changes to the model a reflection of their institutional form or rather of institutional characteristics unique to the university? Institutional form in this case (section 6.2) means that University N is a merged university that is for all practical purposes a new university only 3 years old (three years after the merger in 2004). What meaning does this have? Or is it rather something embedded in the institutional form that influenced the university to not require any changes to the model (something like the organisational culture, the management style, the value system, or the size and/or shape of the university)?

Thus the researcher felt that it would not make sense to assign origin of change to the contextual dimension of institutional form. Whatever the institutional form, it is assumed that it would rather be something embedded in this form that would prompt any changes. At this level of abstraction – unique institutional characteristics – greater meaning can be assigned to the origin of change. However, as will be discussed in the remainder of this section, it was still difficult to determine the exact unique institutional characteristic(s) that prompted changes.

- 3) The contextual dimension **unique institutional characteristics** did prompt minor changes to the model.

This contextual dimension prompted one change to the model in respect of one issue forming part of the definition of the relationship of the entity **organisational culture**.

Change no.	Entity	Issue as part of definition of relationship	Change required	Specific issue prompting change
1	Organisational culture	Is the institution ready to deal with the brutal facts? (Issue 2 of the definition of the relationship)	The word "brutal" to be omitted.	The word "brutal" is too harsh for public HE and is more suitable for the world of business.

This contextual dimension prompted three changes to the model in terms of the **application methodology**, specifically some questions as originally formulated in the questionnaire.

Change no.	Questionnaire (Entity)	Question	Change required	Specific issue prompting change
2	Organisational culture	Institutional performance measurement at the (University Name) is done more for business improvement than for business control. (Question 1)	The word "business" to be omitted.	The academic enterprise is not a business. Words better articulating the academic enterprise to be used.
3	Organisational culture	The (University Name) is ready to deal with the brutal facts regarding its institutional performance. (Question 4)	The word "brutal" to be omitted.	The word "brutal" is too harsh for public HE and is more suitable for the world of business.
4	Performance management system	The information contained in an institutional performance measurement system (if trustworthy) should be used for reward purposes. (Question 12)	The term "for reward purposes" to be changed to "for monetary reward purposes".	Could assist the university in integrating the performance measurement system and the performance management system.

It was a challenge to assign some of these changes to any specific institutional characteristic. Where the identification of the origin was not straightforward, a motivation is provided as to why a specific origin is assigned.

Changes one to three were probably prompted by the university's institutional culture. The university is a traditional university (Category A), over one hundred years old, and is still very traditional in its ways of thinking about the academic enterprise, for instance interviewees U1, U2 and U3 all referred to the Vice-Chancellor as the VC, Rector or Prof. "X". In comparison all the interviewees at University N referred to the Vice-Chancellor by first name. In fact everybody at University N seems to call

everybody else by their first name, irrespective of the level of academic qualification, years of service or professional standing in the university. It is therefore accepted that words like “brutal” and “business” are too harsh for University U, whilst University N, which is very businesslike in its approach towards the academic enterprise, did not have any problem with these definitions.

Change 4 was prompted by the university’s current efforts to implement a performance management system. They specifically wanted the focus to be on monetary reward rather than just reward in general. The reason for this was that they wanted to establish whether they would have to change their implementation framework for the performance management system.

- 4) The contextual dimension “status of an institutional performance measurement system” prompted minor changes to the model

This contextual dimension prompted one change to the model in terms of one issue forming part of the definition of the relationship of the entity **management commitment and support**.

Change no.	Entity	Issue as part of definition of relationship	Change required	Specific issue prompting change
5	Management commitment and support	Is the CEO committed to the performance measurement system? (Issue 3 of the definition of the relationship)	To be deleted from the definition.	The VC is not measurement oriented. It was argued that it probably makes political sense to not include it.

This contextual dimension prompted four changes to the model in terms of the **application methodology**, again specifically some questions in the questionnaire.

Change no.	Questionnaire (Entity)	Issue	Change required	Specific issue prompting change
6	Strategic planning process	Establishing performance targets for the institution is a joint managerial effort. (Question 5)	Establishing performance targets as set out in the strategic priorities and challenges of the (University Name) strategic plan is a joint managerial effort.	The current practice to be more specifically demarcated so that managers can better relate to the issue.

7	Throughout the questionnaire	Performance measures.	Performance indicators to rather be used	The term “performance indicators” would be more generally understood at the university.
8	Question used for validation	How many of the present institutional performance targets do you know? (Question 22)	To be deleted from questionnaire	Not relevant, as the university does not have quantifiable performance targets.
9	Question used for validation	Indicate your involvement (last 24 months) in compiling performance measures that reflect on institutional performance.	To be deleted from the questionnaire	Not relevant, as the university does not have quantifiable performance targets.

It can be argued that change 5 is an issue that has to do with protecting the VC based on how the VC’s role is perceived at the university. However, this is rather perceived as an issue dealing with the VC’s view of performance measurement and this view has a direct impact on the status of performance measurement at the university. Interviewee U1 clearly indicated as follows: “*The VC’s view regarding measurement is well known and accepted in the university. Why include it if it is known?*” (interviewee U1).

Changes 6 to 9 were required as a direct result of the fact that performance measurement and a performance measurement system are not well-established concepts and practices at the university. Interviewee U1 continuously re-emphasised that the university participants, as far as the questionnaire was concerned, should be able to relate to the questions being asked, hence the changes as required.

- 5) Apart from the changes prompted by the two contextual dimensions as indicated there were also other minor changes to the model, all in terms of the application methodology and again focusing on the questionnaire. As in the case of the contextual dimensions it was only University U that indicated these changes.

Questionnaire (Entity)	Question	Change required	Issue prompting the change
Organisational culture	Managers are publicly blamed (inside the (University Name)) in cases of poor individual performance. (Question 6)	Managers are publicly blamed (inside the (University Name)) for perceived poor individual performance.	Definite poor performance not to be suggested.

Organisational culture	The (University Name) spends sufficient time on the discussion and analysis of institutional performance results. (Question 10)	Within the (University Name) sufficient time is spent on the discussion and analysis of institutional performance results.	The term “within” better demarcates the boundaries and enhances the meaning.
Strategic planning process	Who compiled the majority of the performance measures for your areas of management responsibility? (Question 17)	“Line manager” to be added as a response category in the university’s planning unit.	Could be other response categories to those already indicated.
Management commitment and support	Implementation of an institutional performance measurement system should be among the top eight priorities. (Question 11)	The word “eight” to be deleted, with reference only made to top priorities.	No reason to specify eight priorities, as the term “top priorities” should be a sufficiently clear demarcation.

The above-mentioned changes were value-adding in nature in that they enhanced clarity and/or improved the articulation of the questions, but did not change the meaning of questions.

- 6) As far as the application methodology was concerned it was only the questionnaire that required changes. Both universities accepted the processes for the study of records and it was agreed by both gatekeepers that institutional records as required would be made available. Similarly both universities accepted the interview with the IT/IS experts.

7.3.3 Stage two, sub-stage one – Summary

It is perceived that scrutiny of the model prior to application was intensive as far as depth was concerned, but not intensive as far as level of exposure was concerned. The changes are only those made by two individuals from one university and overall only four people participated in this process. Still, this process was a great learning opportunity and the following are key issues learnt from this experience:

- In general the model as a conceptual framework stood up well to this process of scrutiny.

Both universities required all 12 entities to be included in the application with no deletions and/or new additions. The definitions of the relationships all remained the same except for one issue that formed part of the entity **organisational culture** and another that formed part of the entity **management commitment and support**. This implies that the model as a conceptual construct was to a large extent declared “applicable” by the four individuals at the two universities

- Context as defined and as applicable to the universities had very little impact on the model.

It was not possible to assign origin of change to the contextual dimension of institutional form.

Although it was possible to assign origin of change to the contextual dimension of unique institutional characteristics, the changes were minor and it remains a challenge to further differentiate this contextual dimension in terms of identifying the specific unique issue that prompted a specific change.

The area where the model was impacted most in terms of change was the application methodology and specifically the questionnaire as the key data-gathering instrument. However, changes in this area were still minor and insignificant.

- The practice of involving university staff in the model, both at conceptual level and in the application methodology, was a time-consuming but worthy exercise. Although no changes were required by University N, the input from both universities made a definite contribution. The researcher experienced this input as very positive and helpful, especially regarding the questionnaire as a key component of the application methodology.

A key issue in terms of reflection is whether the changes as accommodated are perceived as temporary or permanent – temporary changes meaning changes to “accommodate” the specific context of University U and permanent changes meaning that the changes will be accommodated in the future application of the model. The following is the researcher’s view as to how these matters will be dealt with in terms of future applications within public HE.

Organisational culture

- The word “brutal” will not be deleted from the model, as it creates a sense of reality as to what performance measurement is there for. It needs to portray organisational reality as is and the word “brutal” might be a harsh expression, but it reflects the openness that needs to exist to allow universities to face the facts. The issue as part of the original definition of the relationship (change 1) will be retained, as will the question as part of the application methodology (change 3).
- The word “business” will be deleted from the model. It is accepted that the word “business” might create negative feelings for public HEIs in South Africa. Within the application methodology (change 2) the

question will be rephrased as follows: “Institutional performance measurement at the (University Name) is done more for the purpose of ~~business~~ improvement than for the purpose of ~~business~~ control”

- The other minor changes to allow for better phrasing of two questions (questions 6 & 10) in the questionnaire are accepted, since they assist with clarity.

Management’s commitment and support

- The issue of the Vice-Chancellor’s (CEO’s) commitment towards the implementation of a new performance measurement system (deleted for University U – change 5) will be retained as an issue as part of the definition of the relationship of the entity.
- The word “eight” will be retained as part of question 11, i.e. Implementation of an institutional performance measurement system should be among the top eight priorities of the (University Name), since it provides a clearer sense of purpose and focus than merely “top priorities”.

Performance management system

- The focus on **monetary** reward purposes rather than just reward purposes will not be retained (change 4). The link between a performance measurement system and the performance measurement system using only reward provides a broad concept to express a view on linkage. **Monetary** reward as required by University U provides too narrow a definition to assess the dimension of linkage. The application methodology (question 12) will remain as is.

Strategic planning process

- The specific demarcation to be able to relate better to question 5 (change 6) is not retained, since it was a specific request for a specific purpose.

Other minor changes

- Change 7 (replacing “performance measures” with “performance indicators”) is considered for retention, as it accepted that it might be a more understandable terminology.
- Changes 8 and 9 (the questions used for validation) will not be deleted from the questionnaire, but might be adapted.

The conclusion of this sub-stage of stage two of the research was a necessary pre-condition and provided the input required to proceed with the second sub-stage of stage two of the research, namely to now

practically use the application methodology to apply the model within both universities.

7.3.4 Stage two, sub-stage two – Assessing each entity

The main focus of this part of stage two of the research was to determine the strength of the relationship of each entity. These results were then used to determine the performance measurement readiness of each university and to generate further learning about the model. A key issue for noting is that the results are not discussed here in terms of their meaning for each university. The research methodology (section 5.1.1.2) indicates that the outcomes generated by the model – the score per entity – are not the primary focus of the researcher. These outcomes are the focus of the recipient universities; hence a report was compiled for each university to interpret the various findings for them (Appendix H – Report on the performance measurement readiness of University N and Appendix I – Report on the performance measurement readiness of University U). The discussion of the findings is therefore a continuation of the process of reflection, and in this instance also a reflection on what the results are implicating and indicating about the model itself.

The specific findings per entity are portrayed using the interpretation as indicated in section 3.2.2, and for most of the 12 entities the format in Table 7.2 is used.

- 1) For each entity the issues that were assessed to determine the strength of the relationship are listed.
- 2) Each issue is assigned a “number” or an “S” and/or an “I” – where “number” implies the number of the question in the questionnaire, where “S” implies that the issue was assessed via the study of records, and where “I” implies that the issue was assessed via an interview.
- 3) Where “number” is used to qualify an issue the responses per the questionnaire (see “a-e”) and the average are indicated (see “x”).
- 4) Where an “S” and/or “I” is used to qualify an issue the average score is assigned by the researcher, for interviews mostly in conjunction with the interviewees (see “y” and “z”).
- 5) The total average score for the entity (see “n”) is the average score for all issues (“x”, “y”, “z”).

Table 7.2 Format for presenting data for most entities

ENTITY X		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Questionnaire number	Issue 1 – Question as per questionnaire	a	c	c	d	e	x
S & I	Issue 2						y
S	Issue 3						z
	Total average						n

What now follows is a detailed discussion of each of the entities based on the results for each university.

7.3.4.1 *Organisational culture*

In determining the strength of the relationship between a performance measurement system and organisational culture (R1) the following issues were assessed:

- Is the “public” discussion of performance measures acceptable to members of the management team?
- Is the institution ready to deal with the brutal facts?
- Is there personal risk involved if “my” performance measures reflect poor performance?
- Does the institution have a culture of blaming?
- Is the purpose of measurement to improve rather than to control?
- Is sufficient time spent on the discussion and analysis of performance results?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
1	Institutional performance measurement at the (University Name) is done more for business improvement than for business control.	8	5	26	7	5	1.92
2	Institutional performance should be discussed publicly throughout the (University Name).	0	27	26	2	0	1.55
4	The (University Name) is ready to deal with the brutal facts regarding its institutional performance.	8	2	17	24	5	2.29
6	Managers are publicly blamed (inside the (University Name)) in cases of poor individual performance.	8	4	19	22	3	2.14
8	Institutional performance should be discussed publicly throughout the (University Name) even if it reflects negatively on individual performance.	0	21	27	8	1	1.81
10	The (University Name) spends sufficient time on the discussion and analysis of institutional performance results.	7	2	9	29	10	2.58
	Total average						2.05

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
1	Institutional performance measurement at the (University Name) should primarily be a management quality improvement tool rather than a control mechanism.	0	17	6	1	1	1.44
2	Institutional performance should be discussed publicly throughout the (University Name).	1	15	9	0	0	1.32
4	The (University Name) is ready to deal with the facts (positive/negative) resulting from an institutional performance measurement system.	3	0	8	10	3	2.42
6	Managers are publicly blamed (inside the (University Name)) for perceived poor individual performance.	2	4	12	7	0	1.96
8	Institutional performance should be discussed publicly throughout the (University Name) even if it may reflect negatively on individual performance.	0	5	13	5	1	2.08
10	Within the (University Name) sufficient time is spent on the discussion and analysis of institutional performance results.	1	0	5	11	8	3.00
	Total average						2.04

The responses, based on the questions as defined, provide sufficient reflection on potential risk areas embedded in the entity **organisational culture**. It clearly indicates potential risk areas that could or should be considered for some form of management intervention. Although not addressed here, but addressed in each of the reports (Appendices H & I), the various issues as assessed can be interpreted easily in terms of the embedded risk found in the issue. For instance, Collins (2001) indicates that if organisations are not ready to face the brutal facts regarding their organisational performance (question 4) this might contribute towards inertia in moving the organisation forward. The process of rationalising – getting bogged down with the status of the current state – will supersede action. Similarly, Neely and Bourne (2000) indicate that if there is a culture of blaming it might be a challenge to find accurate data in the measurement system.

Another beneficial aspect from the results is that this whole entity merely portrays perceptions around each individual issue. Section 5.3.4.2.3 indicates that the questionnaire is about obtaining perceptions and is interested in portraying this view. The advantage of the model is that it leaves these issues for the university to further assess. They should discover for themselves, hopefully through processes of dialogue, the real truth of the matter (what really causes these perceptions). For both universities the respective reports (Appendices H & I) recommend the following: *“Where relevant the university should identify the institutional practices that should be changed to enhance the organisational culture. The results merely indicate perceptions hence it potentially identified symptoms embedded in the culture rather than the causes.”*

The application methodology to assess this entity, namely six questions per questionnaire, provides a fairly easy and simplistic way to create a perceived organisational reality regarding the entity. However, it is accepted that a different method, e.g. a group or focus group interview (Cooper & Schindler, 2006), might create a different learning experience for the researcher, again not so much in terms of results but in terms of different views on how the issues relating to organisational culture are currently defined.

An issue that could be used to verify some of the content of this entity or that can even be added in terms of the current definition of the relationship is whether a culture of measurement exists within the universities. In describing the contextual dimension “status of an institutional performance measurement system” (section 6.3), it was identified as being too narrow a definition to create a proper construction of the context. A question to enhance this part of the context should rather be: *“Does the university have a culture of measurement?”* This question or approach will not only frame this part of the context more inclusively, but could also enrich the entity **organisational culture**. This question should potentially become part of the questionnaire, including an open-ended component prompting examples and/or better clarification of why a certain response category was indicated.

In general, the perspectives generated with regard to organisational culture are sufficient to at least create some sort of awareness regarding the importance of organisational culture as indicated by, amongst others, Franco and Bourne (2003), Grifel (1994) and Neely (2004).

7.3.4.2 Management commitment and support

In determining the strength of the relationship between a performance measurement system and management commitment and support (R2) the following issues were assessed:

- How strong is management's desire for the system?
- How committed is management to the system?
- Is the CEO committed to the performance measurement system?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
7	Implementation of an institutional performance measurement system should be a matter of urgency.	1	22	29	5	0	1.67
11	Implementation of an institutional performance measurement system should be among the top eight priorities of the (University Name).	3	13	36	4	1	1.77
S&I	VC's commitment to the implementation of a new performance measurement system for the university.						1.00
	Total average						1.48

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
	<i>N/A – Not applicable</i>						
7	Implementation of an institutional performance measurement system should be a matter of urgency.	0	11	11	3	0	1.68
11	Implementation of an institutional performance measurement system should be among the top priorities of the (University Name).	0	7	14	3	1	1.92
S&I	VC's commitment for the implementation of a new performance measurement system for the university.						N/A
	Total average						1.80

De Wet (2005b) indicates that it might be a challenge to assess commitment and support and argues that the issues of urgency and order of priority should be used to do so. The challenge lies in not confusing management commitment and support with the need to have a system. For instance, although both universities expressed their need for a system (interviewees N1, N2 & U1) it does not automatically mean that there is management commitment to and support of a system. The outcomes of questions 7 and 11 thus support this entity effectively in that they create a clear mandate for implementation.

Both universities obtained strong mandates (scores of 1.48 and 1.8 respectively) to proceed at some point in the future with the implementation of an institutional performance measurement system. Obviously this does not guarantee commitment and support, but it at least provides a sound principle that can be continuously referred to if required. At University N (question 11 – score = 1.92) where it was agreed that implementation should be amongst the top eight priorities, it provides an even stronger mandate in terms of focus and purpose.

Another aspect of this entity is that the questions as posed bypass the issue of a system being forced down from the top. Respondents' choices and preferences create the outcome and the subsequent mandate for implementation or not.

Assessing the VC's commitment as a separate issue (via interviews and the study of records) also proved to have advantages in that it could be identified and dealt with separately. Where organisational dynamics, as in the case of University U (interviewee U1), required that it rather not form part of the assessment, it could be dealt with as such.

The definition of the relationship and the application methodology therefore seems to do justice to the importance of this entity as indicated by Eccles (1991), Franco and Bourne (2003) and Parker (2000).

7.3.4.3 Information architecture

In determining the strength of the relationship between a performance measurement system and an information architecture (R3) the following issues were assessed:

- Does the institution have a common understanding or use a common language when talking about performance measurement-related issues and concepts, specifically performance indicators?
- Is there a dictionary of common data definitions (terminology)?
- Are there rules (the origin, who is responsible, frequency of updates) whereby performance data will be generated?

The results for University N were as follows:

		Average
S & I's	Does the (University Name) have a common information architecture?	3
S & I's	Does a data dictionary exist where key data elements are defined?	3
S & I's	Do rules on how data is generated exist?	3
Total average		3

The results for University U were as follows:

		Average
S & I's	Does the (University Name) have a common information architecture?	2.8
S & I's	Does a data dictionary exist where key data elements are defined?	2.8
S & I's	Do rules on how data is generated exist?	2.8
Total average		2.8

The importance of having this entity in the model and assessing it in accordance with the definition of the relationship is definitely supported by the findings. The two key issues here are the issue of “giving meaning” and the issue of “legitimising” the content of a performance measurement system.

The interviews relevant to this issue all indicated that the universities have legitimate information architectures (interviewees U1, U2, N1 & N3). However, closer scrutiny of the matter revealed that this was not correct. A search for formal documentation within the universities regarding the above three issues indicated that these issues do not formally exist in the public domain where they are available to all staff, specifically managers. Both reports (Appendices H & I) reflect as follows: *“....some of these issues do exist but predominantly so in “technical terms” and as derived from the various system definitions.... This is problematic, as the ideal situation would be to have clear definitions and rules that are well documented, user-friendly and available to all.”* There was a very clear “technical”

monopoly on the issue of meaning-giving exclusively owned by a number of technical people – an issue that De Bruijn (2002) explicitly warns against. As interviewee N4 put it: *“If you look at HEMIS and the various definitions around it...there are many people that don’t have an idea how to compile it from the raw data.”*

The above issues were also validated by the following question, and the results for the respective universities were as follows:

University N:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
3	Managers have a common understanding of the definitions of institutional performance measures.	4	2	12	27	10	2.67
	Total average						2.67

University U:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
3	Managers have a common understanding of the definitions of institutional performance indicators.	2	1	6	11	3	2.52
	Total average						2.52

Question 3 definitely adds value to the entity in that it assists with the process of validation. At both universities there was a clear indication from the majority of managers that speaking a common performance measurement language is a problematic issue. This finding relates well to the previous results as indicated.

As far as the issue of legitimising is concerned, both reports (Appendices H & I) recommend as follows: *“That the university develops an information architecture (at least with clear data definitions, single source of data origin, person/group(s) accountable for making it available). These definitions will be needed to legitimise the content of any future performance measurement system. If not, the risk remains that the “talks in the boardrooms” can be about the data all the time (its accuracy and reliability) instead of being focused on the performance reality value embedded in the data. Such a document should be readily available to all managers and should be used to continuously reinforce the issue of common understanding.”*

This entity, its definition and application methodology definitely relate to Eccles’ (1991) observation about the importance of an information architecture in facilitating the “speaking and understanding” of a common performance measurement language.

7.3.4.4 Performance measurement process owner

In determining the strength of the relationship between a performance measurement system and performance measurement process owner (R4) the following issues were assessed:

- Does the institution have a performance manager who will manage the measurement system?
- Where is this role placed in the organisational structure? Is this a politically independent and impartial individual?
- Is this role performed by an existing structure or will it be a new structure?

The results for University N were as follows:

		Average
I	Does the institution have a performance manager who will manage the performance measurement system?	1
	Total average	1

The results for University N were as follows:

		Average
I	Does the institution have a performance manager who will manage the performance measurement system?	1
Total average		1

The objective of this assessment is mainly to find support for Neely's (2004) reflection on the importance of having a performance measurement process owner that can manage the system throughout its lifecycle. The current definition of the relationship and application methodology brings sufficient evidence to the fore to determine the risk perspective embedded in the entity.

Based on interviews (interviewees N1, N2, U1 & U2) it is evident that both universities have process owners for institutional performance measurement. At University U the performance measurement process owner reports directly to the Vice-Chancellor of the university and predominantly performs the role of institutional planning. At University N the performance measurement process owner also reports directly to the Vice-Chancellor and mostly works with the university's strategic projects of which institutional performance measurement is one. Irrespective of the scope, both these individuals currently take on the organisational ownership for the development of key performance indicators and performance evaluation and monitoring. Both performance measurement process owners also assumed that they would continue to be the performance measurement process owners following the implementation of an institutional performance measurement system.

A difficult issue that was not determined was whether these respective roles are perceived by the rest of the managers to be independent and impartial. The researcher feels that it could result in too much "personal" exposure of the process owners, and this aspect should rather be highlighted as an important issue when a management report is created for a recipient research sponsor.

Not being able to assess this aspect also brought into dispute the inclusion of the organisational location of this position in the definition of the relationship. These issues can be deleted from the model and should rather be addressed in terms of recommendations associated with having a performance measurement process owner or not.

7.3.4.5 Overall status of IT/IS

In determining the strength of the relationship between a performance measurement system and the overall status of IT/IS (R5) the following issues were assessed:

- Will the present institutional IT/IS status be able to deliver on the performance measurement expectations or will it be a restriction?
- Is it possible to integrate the diverse data sets into a single database that can be mined effectively?

Due to the technical nature of this entity it is the only entity whereby the organisational reality is determined by using one interview as the only form of assessment – in the case of University U with one person and in the case of University N with a small group of two people. The interview used was altered after the learning experience gained from the CUT and it was the first time that the questions asked were more focused and specifically so around the issues as indicated (section 3.4).

The results for University N were as follows:

		Average
I	Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?	1.5
I's	Will the operational systems architecture enable or hinder the implementation of a performance measurement system?	1.5
I	Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?	1.5
I's	Is it possible to integrate the diverse data sets into a single database that can be mined effectively?	1.5
	Total average	1.5

The results for University U were as follows:

		Average
I	Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?	1.5
I's	Will the operational systems architecture enable or hinder the implementation of a performance measurement system?	1.5
I	Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?	1.8
I's	Is it possible to integrate the diverse data sets into a single database that can be mined effectively?	1.5
	Total average	1.5

These questions were very simplistically phrased in order to assess, at a high level, very complex technological issues. However, the changes as generated (section 3.4) through the process of shared knowledge production (Henning, 2004) largely simplified the process of assessing the issues related to this entity.

Assessing the database architecture along the lines of diversity and fragmentation provided a clear focus. Via the responses from interviewees N3, N4, N5 and U4, it was immediately evident where the mission-critical systems reside. Similarly, the focus on diversity for the systems architecture and the focus on the level of standardisation of end-user technology, the speed between desktop and local area networks (LANs) and overall status of end-user technology (new, old, etc.) for the overall technology architecture provided clear perspectives. Being able to now focus on these more conceptually inclined definitions, the technology and technological issues became less of an issue. For instance, in the case of assessing the database architecture the focus was not on what technologies are deployed, but rather on whether these technologies create fragmentation and diversity. Such a focused assessment definitely simplifies the process of identifying where an organisation is regarding its overall development of IT/IS and whether it will support or hinder the implementation and development of a performance measurement system (Brignall & Ballantine, 1996).

The application methodology (conducting an interview) does have clear advantages in terms of further knowledge production as advocated by Henning (2004). It is probably the one area in the model that illustrates the potential of an interview to accumulatively build on an existing knowledge

framework. This approach was followed with this entity since the inception of the model and again created the opportunity for fresh perspectives on the definition of the relationship of this entity, with two new issues being identified and added to the definition of this entity.

In the interviews with interviewees N4 and N5 it was mentioned that other IT/IS-related components such as information literacy, computer literacy and the overall status of data quality are also influencing the ability to practice performance measurement at University N. This “new” knowledge was brought into discussions and interviews with other university staff perceived as knowledgeable to comment on these aspects. For instance, when asked to elaborate on the level of information literacy amongst the managers, interviewee N5 answered as follows: *“Poor to minimum. We experience it as dramatic. People many times do not seem able to interpret what is in front of them.”* When these three issues were further explored with interviewee U4 it was decided that in future the issue of information literacy and the overall status of data quality should be included in the definition of the relationship and hence also in future assessment.

7.3.4.6 Organisational structures

In determining the strength of the relationship between a performance measurement system and organisational structures (R6) the following issues were assessed:

- Which organisational structures (as evaluators) will be included in the evaluation process?

The results for University N were as follows:

	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)
Institutional structures		
Line managers' management meetings	52	91.23%
Institutional management (IM)	44	77.19%
Council	40	70.18%
Senate	39	68.42%
Subcommittees of Council	31	54.39%
SRC	27	47.37%
Institutional Forum	25	43.86%
Convocation	14	24.56%
Other	3	5.26%

The results for University U were as follows:

Institutional structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)
Senate	20	80.00%
EXCO	20	80.00%
Faculty management committees	20	80.00%
EM	19	76.00%
Line managers' management meetings	19	76.00%
Council	18	72.00%
Subcommittees of Council	17	68.00%
Institutional Forum	14	56.00%
CSRC	12	48.00%
Other	2	8.00%

The first objective of this assessment was to gain a perspective on what a desired performance measurement hierarchy for each university should look like. The main issue here, as highlighted by Brignall and Ballantine (1996) and Rouse and Putterill (2003), is to assess what organisational structures should be involved in the performance evaluation process to analyse and discuss performance data. The second objective is to reflect upon this desired perspective against current practice in each university. It is through this latter process that the embedded risk becomes clear.

As far as the first objective is concerned the data provides a very good perspective on what structures should be involved in this process. A surprising aspect is the high premium that is placed on the involvement of line managers' management meetings in the process. For both universities it was also recommended that only the structures in bold print be included in the evaluation process (Appendices H & I).

As far as objective two is concerned it was not possible to compare the desired structures against the current practice, as no university had an integrated performance measurement report serving before structures. However it was agreed with interviewees U1, N1 and N2 that the majority of structures indicated as part of the desired perspective are important structures already involved in some form of performance reporting, and although perceived risk is low, it became slightly elevated by the high premium that respondents placed on line managers' management meetings as a key structure to be involved in the institutional evaluation process. For both universities a score of 1.8 was allocated to this entity.

The definition of the relationship and the application methodology provide sufficient perspective regarding the importance and risk aspects pertaining to this entity.

7.3.4.7 Evaluation process and information flow

In determining the strength of the relationship between a performance measurement system and the evaluation process and information flow (R7) the following issues were assessed:

- What will be the information flows and communication channels (the chronological, sequential link) between the structures involved?
- What will be the duration of the evaluation process – reflecting on the reality value of the information as it flows through the structures?

The results for University N were as follows:

Institutional structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)	Required age of data (weeks) - Average	Required age of data (weeks) - Median
Line managers' management meetings	52	91.23%	4.45	4
Institutional management (IM)	44	77.19%	5.21	4
Council	40	70.18%	6.23	4
Senate	39	68.42%	5.66	4
Subcommittees of Council	31	54.39%	5.12	4
SRC	27	47.37%	6	4
Institutional Forum	25	43.86%	5.83	4
Convocation	14	24.56%	6.14	4
Other	3	5.26%	4	4

The results for University U were as follows:

Institutional structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)	Required age of data (weeks) - Average	Required age of data (weeks) - Median
Senate	20	80.00%	7.85	8.00
EXCO	20	80.00%	6.10	6.50
Faculty management committees	20	80.00%	5.90	4.00
EM	19	76.00%	6.05	5.00
Line managers' management meetings	19	76.00%	5.42	4.00
Council	18	72.00%	7.44	7.50
Subcommittees of Council	17	68.00%	8.06	12.00
Institutional Forum	14	56.00%	8.50	12.00
CSRC	12	48.00%	7.50	7.00
Other	2	8.00%	12.00	12.00

The findings provide good insight in terms of a possible sequential link between structures in the evaluation process and the desired age of data when performance data has to serve before the various institutional structures as indicated. The issues of importance here appear in the “required age of data” columns. The average and median were calculated for these columns to establish which perspective best generates a desired order between the structures. For instance, for University N, based on the values in this column (**average**), a performance report should first go to the line managers’ management meetings (score = 4.45) and should lastly serve before Council (score = 6.23). Using this approach, the order and link between the structures for both universities were clear, with the only exception being that of the order of the subcommittees of Council. In both cases the **average** value for this structure was an “abnormal” value. Based on this pattern and also with the knowledge that subcommittees of Council cannot meet after the Council, an “ideal” evaluation process for University N was recommended as follows (Appendix H): *“First the line managers’ management meetings, then the institutional management, then Senate, then subcommittees of Council and lastly Council.”*

The same column, “required age of data (average or mean)”, is also used to provide a perspective on the age of performance data when serving before the various institutional structures. For instance, for University N

this perspective was explained as follows (Appendix H): *“The **average** required age of performance data when serving before institutional structures should range between 4.45 and 6.23 weeks. This implies that managers represented in the various structures within the university will be satisfied if on average the data that serves before them is between 4 and 6 weeks old.”*

As with the previous entity it was not possible to reflect on the risk aspects by comparing current practice with the desired perspective, as the universities do not have single integrated performance reports. A decision was made to generate some form of risk perspective by comparing the desired practice as generated with the current meeting practices of each university around the key structures (Senate, Council, subcommittees of Council, EXCO, EM). For University U this reflection led to the following conclusion (Appendix I): *The **average** required age of performance data is much less if compared with the present meeting dates of these structures within the (University Name). The implication therefore is one where the current meeting dates of the institutional structures as implicated seem to be oblivious to a desired institutional evaluation process as indicated. If such a process is continued the reality value embedded in the performance data becomes meaningless [Note: At another university where this model was applied the required age of performance data was indicated as 2 to 5.5 weeks whilst the current practice in the university indicated this period to range from 3.3 to 10.5 weeks].*

Based on the responses and reflection there is definitely high risk involved regarding this entity, and a score of 3.5 was assigned to this entity for both universities. It was also highlighted that the risk associated with this entity is enlarged by the fact that in the entity **organisational culture** the issue that attracted the highest score (3 and 2.58 respectively for each university) was that the universities at present do not spend sufficient time on the discussion and analysis of performance results.

The key issue for consideration here is as follows (Appendices H & I): *“Will meeting dates of institutional structures be determined based on the needs as expressed or will the evaluation process have to fit into current standard meeting arrangements, the latter which will seriously compromise the reality value embedded in performance data?”*

These again are highly simplistic but helpful perspectives in line with the view of Rouse and Putterill (2003) that movements from the centre to the outer circles imply widening time horizons and longer periods of performance reporting and evaluation. The longer these are the greater the risk as the reality value embedded in performance reporting becomes less and less. Each time the evaluation process accommodates another part of the organisational structure the evaluation process is lengthened,

while broadening time horizons (Rouse & Putterill, 2003) distort the “reality value” of the information. The risk not only impacts upon the potential ability to make decisions using old data, but increases to where it can put the total investment in a performance measurement system at risk.

7.3.4.8 Performance management system

In determining the strength of the relationship between a performance measurement system and a performance management system (R8) the following issues were assessed:

- Will the performance measurement system be linked to the performance management system?
- Will the indicators in the performance measurement system be used for reward purposes?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
9	The information contained in the institutional performance measurement system (if trustworthy) should be used to manage individual performance.	2	17	34	2	1	1.70
12	The information contained in the institutional performance management system (if trustworthy) should be used for reward purposes.	4	13	33	6	0	1.73
	Total average						1.71

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
9	The relevant information contained in the institutional performance measurement system (if trustworthy) should be used to manage individual performance.	1	4	19	1	0	1.80
12	The information contained in an institutional performance measurement system (if trustworthy) should be used for monetary reward purposes.	2	6	11	6	0	1.84
	Total average						1.82

From the respective strategic plans of each university (UN, 2006b; UU, 2005) it is clear that the implementation of a performance management system is a strategic priority for both. However, what is interesting is the notion of both universities to also envisage the performance measurement system as supporting the performance management system. For instance, the covering letter (Appendix D) for University U states as follows: *“For the improvement of organisational performance it is important to interpret staff performance within the context of organisational performance and vice versa. The inclusion of institutional performance measurement within a broad system of performance management....”*.

For University N the strategic plan indicates one of the strategies as follows (UN, 2006b): *“The implementation of an integrated performance measurement and performance management system.”* Both these approaches are supportive of the perspective of Amaratunga and Baldry (2002) and Bititci *et al.* (1997) that the performance measurement system can be described as the information system for the organisational performance management system. These practices by the universities, in support of literature, emphasise the importance of the relationship between this entity and a performance measurement system. However, what could be a contentious issue is the manner in which the relationship is defined.

In assessing the strength of the relationship the issues of reward and individual performance management are used to obtain perceptions regarding the perceived strength of the link between the two entities. For both universities the scores (1.51 and 1.82) provide a mandate for a strong link to exist. As far as the model is concerned, this is the sole purpose of assessing this entity. The model does not seek to get involved in current

debates regarding the downfalls of appraising and compensating people's performance (Meyer, 2002), nor does the model get into the details of how such a link should be established in practice. This is for each university to decide. The fact is, if there is not a strong link, especially in the manner as defined, what will then be the purpose of measuring performance? Dickinson and Robinson (1994) indicate that what organisations measure ultimately affects behaviour and that performance appraisal systems encourage people to concentrate on measured aspects of their performance.

At minimum the model seeks to establish whether there is a strong link, thus indicating a strong mandate to ensure proper integration between the performance measurement system and the performance management system. The current definition of the relationship and application methodology provides sufficient information to be able to assess this.

7.3.4.9 Strategic planning process

In determining the strength of the relationship between a performance measurement system and organisational structures of IT/IS (R9) the following issues were assessed:

- Are performance measurements being compiled as part of the strategic planning process?
- Is the strategic planning process mature enough to support a performance measurement system?
- Will evaluation of the strategic agenda automatically cover all the performance data of the performance measurement system?
- Is target-setting a joint managerial effort?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
5	Establishing performance targets for the university is a joint managerial effort.	0	16	32	8	1	1.89
		Always = 1	Mostly = 2	Frequently = 3	Seldom = 4	Never = 5	Average
16	How often did you use performance measures to measure your areas of management responsibility?	10	11	25	9	0	2.60
		Yourself = 1	Your staff = 2	Used outside expertise = 3			Average
17	Who compiled the majority of the performance measures for your areas of management responsibility?	30	13	9	0	0	1.60
		>70% = 1	51%-70% = 2	30%-50% = 3	<30% = 4		Average
18	What percentage of the total area of your management responsibility did the performance measures cover?	21	13	10	10	0	2.17
S	Is there a linkage between the strategic planning process and performance measurement?						1
S	How well covered are the strategic performance indicators in the strategic planning process?						1
	Total average						1.71

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
5	Establishing performance targets as set out in the strategic priorities and challenges of the (University Name's) strategic plan is a joint managerial effort.	0	7	15	1	1	1.83
		Always = 1	Mostly = 2	Frequently = 3	Seldom = 4	Never = 5	Average
16	How often did you use performance indicators to measure your areas of management responsibility?	3	3	8	10	0	2.92
		Yourself = 1	Line manager = 2	Your staff = 3	University planning unit = 4	Used outside expertise = 5	Average
17	Who compiled the majority of the performance indicators for your areas of management responsibility?	10	9	0	0	0	1.47
		>70% = 1	51%-70% = 2	30%-50% = 3	<30% = 4		Average
18	What percentage of the total area of your management responsibility did the performance indicators cover?	5	6	7	4	0	2.45
S	Is there a linkage between the strategic planning process and performance measurement?						2.5
S	How well covered are the strategic performance indicators in the strategic planning process?						3
	Total average						2.41

Although the importance of having this entity in the model is emphasised in the literature, e.g. Bititci (1994), Kaplan and Norton (1996) and McAdam and Bailie (2002), the practical assessment of this entity still proves to be a challenge. De Wet (2005b) indicates that the definition of the relationship probes the issues of linkage, maturity, coverage and joint target-setting. Of these the issues of linkage and coverage as assessed through the study of records (the rows in the above two tables indicated by “S”) prove to be straightforward to assess and the data observed can be interpreted with ease.

The two issues of target-setting and maturity, which proved to be challenging at the CUT (section 3.3.3.1), continued to be challenging in this instance. Question 5 deals with the issue of assessing joint target-setting, and for both universities the respondents perceive this to be the case for their respective universities (University U = 1.83 and University N = 1.89). However, in the case of the CUT (having a similar kind of result) the issue was validated via other questions (section 3.3.3.1) and doubt was cast over the initial finding as portrayed by the questionnaire result. The two issues specifically used for validation purposes were that of knowledge of the present institutional performance targets and involvement in compiling institutional performance measures. For University N the questionnaire result was validated in similar fashion and again it cast doubt over the finding as per the questionnaire. For University U it was decided upfront that this issue should not be crosschecked, as interviewee U1 felt that crosschecking would not bring to the fore a view different to the current one. Hence it can now be stated with more confidence that the issue of target-setting having to be a joint managerial effort (Neely, 2004) should remain part of the definition of the relationship for the entity. However, the current application methodology (question 5 and the questions used for validation) should be altered to ensure more reliable data.

The issue of the maturity of the strategic planning process was assessed via questions 16, 17 and 18. In this instance De Wet (2005b) indicates that determining the maturity of a strategic planning process might be very difficult. It was initially decided that maturity would be assessed by reflecting upon how managers as individuals are dealing with the issue of performance measurement, since individual maturity might reflect somehow on the maturity of the institutional process. However, although the data generated might be reliable and valid in terms of individuals' involvement, it still does not provide a sense of a “true reflection” of the maturity of the institutional strategic planning process. The following table illustrates this.

		U	N
16	How often did you use performance indicators to measure your areas of management responsibility?	2.92	2.60
17	Who compiled the majority of the performance indicators for your areas of management responsibility?	1.47	1.60
18	What percentage of the total area of your management responsibility did the performance indicators cover?	2.45	2.17

What creates the aspect of reasonable doubt is the fact that University N has a definite culture of measurement whilst University U does not, yet the reflection on individual involvement regarding performance measures/ indicators is almost the same. This perspective was expected to look substantially different. Therefore, the maturity of the strategic planning process should remain an issue as part of the definition of the relationship for this entity, but it is also a matter of the current application methodology that has to be altered.

Please note that the above findings and the interpretation thereof were retained in the reports to the universities. The adaptations will only be made for future applications.

7.3.4.10 Policies and procedures

In determining the strength of the relationship between a performance measurement system and policies and procedures (R10) the following issues were assessed:

- Are there policies and procedures, specifically relating to the other institutional contextual entities as defined in the model, that might impact on the implementation and functioning of a performance measurement system?

The results for University N were as follows:

20	Are you aware of any policies and/or procedures that may impact on the implementation of an institutional performance measurement system? Please name them	No. of responses	Studied further	Average weighting
	A = Performance management policy	2	Y	1
	B = Quality assurance policies	2	N	
	C = Reward policies	1	Y	1
	D = Student recruitment procedures	1	N	
	E = Political transformation	1	N	
	F = Language policy	1	N	
	Total average			1

The results for University U were as follows:

20	Are you aware of any policies and/or procedures that may impact on the implementation of an institutional performance measurement system? Please name them	No. of responses	Studied further	Average weighting
	A = Performance management policy	2	N	
	B = Quality assurance policies	1	Y	1
	C = Planning policies	1	N	
	D = Employment equity policy	1	N	
	E = Provincial agreement	1	N	
	Total average			1

The objective of assessing this entity was to determine whether there are institutional policies and procedures that could inhibit the implementation and functioning of a performance measurement system. The questionnaire was used to identify policies and procedures that, according to respondents, might impact upon the implementation of an institutional performance measurement system. Based on these responses and in conjunction with staff from each university (interviewees N2 & U1) a decision was made as to what relevant policies/procedures required further detailed assessment (see the “Y’s” in the column “**Studied further**”). Studying the policies as indicated did not reveal any issues perceived to have a negative impact on performance measurement systems, hence a score of one was assigned for this entity for both universities.

However, where the application methodology might fall short is the area as articulated in the report to University U (Appendix I): “...it is also assumed

that all policies that might have risk implications have been indicated.” The researcher relied on the respondents to provide policies and procedures that they perceive to be influential; hence other policies that might be impacting upon the implementation of an institutional performance measurement system could be overlooked.

This definition of the relationship and the application methodology provides sufficient information to indicate the importance of policy in understanding organisational context, as highlighted by Meltsner and Bellavita (1983).

7.3.4.11 “Other” measurement processes

In determining the strength of the relationship between a performance measurement system and other measurement processes (R11) the following issues were assessed:

- What is the magnitude of other existing measurement processes/systems?
- Will the performance measurement system replace other existing measurement processes/systems?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
15	The performance measures reflecting upon institutional performance should be integrated into a single system.	5	5	38	9	0	1.89
	Total average						1.89

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
15	All performance indicators reflecting upon institutional performance should be integrated into a single system.	3	4	11	6	1	1.92
	Total average						1.92

The relationship of this entity as originally defined was changed following application at the CUT (section 3.4). After these changes the findings as determined from each university provided sufficient data to be able to assess the strength of the relationship between this entity and an institutional performance measurement system. Question 15 adds value in that the result provides a clear mandate as to how respondents perceive the institutional performance measurement system to coexist with other measurement systems. In this case, for both universities, a clear mandate was given for a single integrated performance measurement system.

However, the risk aspect related to this entity lies in the issue of how many other measurement systems there are in the organisation and what should become of them if an institutional performance measurement system is implemented. The report to University U (Appendix I) indicates as follows: *“However, the real risk embedded in this entity is when a mandate is provided that a single system should be created but there seems to be a number of stand-alone systems/processes that might contain key operational data applicable to performance measurement of some sort. If there are a number of these “other processes and/or systems” present in the operating environment it might create serious problems, as various similar issues for different audiences are presented via different reports, whilst there usually is a reasonable overlap in report content.”*

To better assess the risk perspective the researcher therefore adapted the application methodology by also asking the following question in interviews: *“Does the university have other key measurement systems/processes and what will become of them if an institutional performance measurement system is implemented?”* For both universities the number of other performance measurement systems was limited and largely focused on the respective quality improvement systems (interviewees U4, N4, N1 & U1). It was also the collective view of interviewees N1, N4 and U1 that these “other” systems should over time “collapse” into a single integrated

measurement system. Based on these views, scores of 1.5 (University N) and 1.8 (University U) were assigned to this entity.

The adapted definition of the relationship and application methodology provides sufficient information to assess Brignall and Ballantine’s (1996) argument in favour of the integration of all performance measures into a single overarching system.

7.3.4.12 Resources

This is an entirely new entity that was added to the model after application at the CUT (section 3.4) and it was the first time that this entity was assessed. In determining the strength of the relationship between a performance measurement system and the overall status of resources (R12) the following issues were assessed:

- Are there sufficient resources available for the implementation of a performance measurement system?
- Are there sufficient organisational skills available to implement a performance measurement system?

The results for University N were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
13	There are sufficient resources available to implement an institutional performance measurement system.						
a.	Money	13	2	17	18	7	2.07
b.	Time	6	1	19	23	7	2.43
c.	People	7	2	22	21	4	2.23
14	There are sufficient organisational skills available to implement a performance measurement system.	9	2	27	16	2	2.00
	Total average						2.18

The results for University U were as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
13	There are sufficient resources available to implement an institutional performance measurement system.						
a.	Money	5	3	6	6	5	2.12
b.	Time	2	2	6	6	9	2.72
c.	People	3	4	2	6	10	2.64
14	There are sufficient organisational skills available to implement a performance measurement system.	3	3	10	6	3	2.12
	Total average						2.40

The objective of assessing this entity was to establish respondents' views regarding the sufficiency of resources and skills. In this regard the findings satisfy the recommendation of Julnes and Holzer (2001) that in order to develop and implement performance measures, the organisation should be assessed to reveal the condition of the organisation as it relates to, amongst others, its resources and expertise. Although at high level only, it clearly indicates respondents' perceptions. An area that seems to be slightly problematic is that of money, as there was a relative high number of "Can't answer" responses. The reason for this is probably that the availability of money was perceived by respondents to be a factual issue rather than an issue of perception, especially when compared with the following original motivation of the researcher to include money as part of the definition of the relationship (section 3.4): *"An important note here is that although none of the authors in their elaboration on resources really discuss the issue of money for or funding of the performance measurement system, the latter will be included as part of the detailed assessment. It almost seems as if it should be assumed that there is, or should be, sufficient organisational awareness and consideration of the availability of money when wanting to implement and/or maintain a performance measurement system."*

An important issue stemming from the findings is the issue of time. Both universities seem to agree that this issue carries the highest potential risk. This is an important finding, especially in light of the fact that both universities also agree that the implementation of an institutional performance measurement system should be a matter of urgency and should be amongst the top priorities of the university. In this regard Bourne *et al.* (2002) clearly indicate that in studying companies that had attempted

to implement performance measurement systems, the issues of time and effort were important issues to be dealt with.

Both questions 13 and 14 also had an open-ended component attached, asking for any comments. An issue highlighted by University N (four responses) was that the enhancement of managerial skill and competence should be a focus area if a system is implemented. University U on the other hand emphasised the role of the human resources department (three responses) in the implementation of an institutional performance measurement system. A generic issue for all was that training (six responses) will be a key requirement if a system is to be implemented.

In general it seems as if the definition of the relationship and the application methodology (assessment via the questionnaire) provided sufficient data to assess the potential risk embedded in this entity. It answers to Grifel's (1994) indication that before implementation commences the question should be asked as to whether there is a commitment of resources to support the system.

7.3.5 Stage two, sub-stage two – Summary

- The application methodology in general proved to be robust and sufficient in terms of providing an organisational reality as based on the various definitions of the relationship of each entity. There were areas where the application methodology was yet not sufficient in terms of providing the perspective required to make informed deductions, specifically the entity of strategic planning. Overall, this stage of the research reflects positively on the applicability of the model. The majority of the results reflect well on what the model aspires to determine, namely the strength of each relationship based on the specific definition of each.
- There were few and minor changes to the model at the level of the definition of relationships and the application methodology. The following is a summary per entity.

Organisational culture

An issue stemming from the discussion on the context of universities (section 6.3) is that a potential question should be included in the questionnaire asking for inputs on the issue of "a culture of measurement". It will not be added to the definition of the entity **organisational culture**, but will be assessed as a stand-alone issue to verify the results as obtained via the entity **organisational culture** (section 7.3.4.1). A new question in the questionnaire could read as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
X	The (University Name) has a culture of measurement.						
	Please motivate your answer:						

Performance management process owner

- The issues of “political independence and impartiality” and “organisational location” of the process owner are deleted from the definition of the relationship of the entity.

Overall status of IT/IS

- The aspects of “information literacy” and “overall status of data quality” will be added to enrich the current definition of the relationship of this entity. The application methodology will be changed to include these two issues in the interview with the IT/IS experts, but will also be included in the questionnaire as a manner of validation. Potential questions could read as follows:

		Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
X	Managers at (University Name) have sufficient information literacy skills.						

X		Can't answer = 0	Very good = 1	Good = 2	Poor = 3	Very poor = 4	Average
	Indicate your perception regarding the overall data quality of the university.						

Strategic planning process

- This entity requires a total rethink of the application methodology used for two issues as part of the definition of the relationship. The two issues are that of determining whether target-setting is a joint managerial effort and whether the strategic planning process is mature enough to support a performance measurement system. It has already been indicated that these issues as part of the definition of the relationship are sufficient and it is the application methodology that requires changing. The approach should rather be to gain an understanding of the organisational reality pertaining to these issues via the process of interviewing and this potentially in a semi-structured manner. The application methodology for the model in general has for this case study incorporated more interviews than before and it will be possible to simply extend questions on these two issues to a similar audience and also to broaden the audience to possibly include one or two individuals from the planning fraternity. Potential questions to be included in an interview situation are:
 - Describe the process of target-setting in the university.
 - Do you believe that this is a joint process?
 - Do you believe that there is agreement on targets, and does agreement matter for the university?
 - Describe at a high level your strategic planning process.
 - Is a similar process followed every year?
 - How does the planning process deal with the issue of performance measures/indicators?
 - How does the aspect of monitoring and evaluation come to the fore in this process?

Resources

- This new entity adds value to the model. The definition of the relationship and the implementation methodology provides sufficient information to assess the organisational reality; hence it should be

retained as part of the model. The issue of money will be retained in the model and if future results of the model application are found to be similar to the results of the case study it will be deleted from the model.

The conclusion of the second stage of the research put the researcher in a position to provide each university with a report on its respective level of performance measurement readiness (Appendices H & I). The next stage of the research, stage three, indicates further implications for the model when universities engage with the model outcomes as contained in these reports.

7.4 STAGE THREE – DELIVERING THE RESEARCH RESULTS

The main focus at this stage was to engage with managers at the various universities to gather further views on the model (section 5.3.4.3). The main findings were as follows:

- Although exposure of the model was restricted at this stage, as indicated by the adaptation to the research method (section 5.3.4.3) there was no doubt in the few respondents' minds as to the relevance of the model and the helpfulness of the perspective it generates.

Via a telephonic discussion (5 June 2007: 12:27 pm) with interviewee N2 at University U, the following remarks were made: *"The model is very relevant and helped us a lot. The main thing is that it provided us with a strong mandate. The model outcomes will also play a strong role in the upgrading of our strategic plan."* In an e-mail response to the two questions as posed (section 5.3.4.3), interviewee N2 also responded as follows: *"We are satisfied with the pointers that your investigation pointed out. It gave us structure regarding where we stand with performance measurement."* In the same e-mail reference was made to a third party as follows: *"...some of your findings will be used in terms of the quality improvement initiatives with the focus on our HEQC audit."*

The other e-mail response received from interviewee N1 contained the following comment: *"The value of the model lies in the fact that it reflects a particular perspective. One knows in the back of one's mind that, because measuring = steering, performance measurement cannot be implemented without difficulty. Most managers are aware of this, but then are not sure of what they should be concentrating upon if they are seeking to prepare an organisation to undertake a process of performance measurement. The result is that performance measurement is implemented, and the preparation turns into an "ex post facto" means of damage control.*

The most important value of your model lies in the fact that it provides managers with a catalogue of the parameters on which they should be concentrating. The fact that it also gives a metric is a bonus.”

Interviewee N4 (an IT/IS expert) responded as follows: *“I believe your approach to performance measurement is healthy but I don’t think all risk factors are taken into account. The things that still concern me are: 1. The measurement system can place a lot of pressure on operating processes if too many things are measured. 2. If we don’t get the processes, structures and systems stabilised, year-on-year comparisons and trend analysis will not be possible. 3. In our university the information management group and the IT group are structurally separated and this creates difficulty in terms of integrated information provision.”*

These latter comments do not reflect on the model at all and rather highlight more specific problems related to organisational stability.

The three responses received from University U (interviewee U2 and two unknown respondents) also positively support the model. All indicated their belief that it is a useful model for HE, that the information/perspective as provided is clear regarding potential barriers and enablers, and that the outcomes provide the university with a very good basis from which to engage in further discussions regarding performance measurement at the university. Interviewee U2 concluded her feedback as follows: *“I believe the perspectives are actually the brutal reality which top management needs to deal with. With regard to ‘culture’ I might add that evidence of poor feedback/ discussions due to time constraints is already evident in certain cases in the individual PM system.”*

- The variety of comments, although few in number, definitely indicates that the perspectives generate some form of organisational learning and that this is not only restricted to the content of performance measurement.

The various comments include terms like “quality improvement initiatives”, “strategic plan” and “performance management”. It thus seems as if the model outcomes will not only be used for the implementation of performance measurement systems.

7.4.1 Stage three – Summary

It is important to once again emphasise the limited exposure of the model in this stage, and from a research point of view this stage of the research

was disappointing. The results might have been similar in the case of group interaction of some sort, but group interaction would have allowed for more interaction and engagement. However, the few comments made were highly supportive of what the model stands for. What probably does count in favour of this process is the fact that some individuals who responded (interviewees U2, N1, N2 & N4) were the same individuals involved with the model during the process of application. Therefore, what might be lacking in terms of “expected” broader exposure is in a sense countered by the “in-depth” exposure and positive comments from the respondents.

7.5 SUMMARY OF KEY FINDINGS WHEN STUDYING THE PROCESS OF APPLICATION

Upon the commencement of this chapter the model had already been applied once, at the CUT, after which it was subsequently adapted (as described in Chapter three). This chapter (Chapter seven) has explained how the model was applied further, still within the broad context of public HE in South Africa but now focusing on two diverse universities (University U and University N). It has also been indicated that this process of further application had a different purpose than the process of application at the CUT. At the CUT the research conducted was for purposes of establishing whether the application methodology for applying the model in practice was sufficient to deliver a perspective on performance measurement readiness. The CUT also required the results of the study to enable the implementation of a new performance measurement system.

However, the research focus and the subsequent research process explained and followed in this chapter have a different purpose altogether. The researcher was not primarily interested in the results that the model generated – namely the perspective on the performance measurement readiness of each university – but instead the researcher’s primary focus in this instance was on studying this process of application as informed by the context of two public universities and to establish what could be learnt from the model. This process of application has thus been divided into three sub-stages, namely stage one, stage two and stage three. What follows is a high-level summary of the findings within each of these stages.

During stage one of the process of application, the researcher focused on whether the model had been accepted and why. The results of this stage revealed the following:

- The model was accepted by the first two universities that were approached to determine whether they would like to participate in the research. It was also indicated that access to these universities was granted predominantly on the basis of the model’s potential ability to

create perspective around the issue of performance measurement readiness.

- The model was accepted by both universities, yet they had clearly distinct contexts as far as their overall status of institutional performance measurement was concerned. University N had a strong culture of performance measurement and University U completely the opposite.

Within stage two of the process of application the researcher was interested in whether the universities' contexts, namely their institutional form and/or unique institutional characteristics and/or individual status regarding an institutional performance measurement system, would imply changes to the model. It was also important in the event of any changes to determine whether such changes lay at the entity level of the model or the way in which the relationship was defined, or whether changes would have to be made to the application methodology. To determine the results of this stage, prior to implementation the researcher had to engage extensively with people within each university to assess which parts of the context, if any, changed what parts of the model. The first issue focused upon was whether components of the model had to change. In this regard the results were as follows:

- **Entity level** - No changes were required in terms of the entity level of the model, and both universities required all 12 entities to be included within the application.
- **Definition of relationships** - Two changes were required to the model in terms of the definition of relationships. University U required a change to one issue being part of the definition of the relationship of the entity **organisational culture** and also required one change to one issue being part of the definition of the relationship of the entity **management commitment and support**.
- **Application methodology** - University U required very few and minor changes in terms of the application methodology of the model, and where so, mostly regarding the phrasing of questions in the questionnaire.

The second issue focused upon was determining what aspect of the universities' context caused the changes to the model. In this regard the results were as follows:

- Context as defined (the institutional form and characteristics of each university and the status of its institutional performance measurement system) had very little impact on the model.
- It was not always possible to assign the changes required in the model to any of the three contextual dimensions as indicated.

- The overall application methodology, once altered with the above-mentioned changes, proved able to generate an organisational reality for each university in terms of its status of performance measurement readiness. The one area where the application methodology will have to be altered slightly for future applications is the entity **strategic planning process**.

Within stage three of the process of application the researcher was interested in gaining further inputs (views/perceptions) on the relevancy of the model. To obtain results regarding this aspect the researcher engaged with people at each university once the handover of the performance measurement readiness reports was done. The results of this stage indicated the following:

- All respondents participating in this stage had no doubt about the model's relevancy or the helpfulness of the performance readiness perspective it generates.
- It was also indicated that the performance measurement readiness perspectives as generated would be used not only to enhance the implementation process of institutional performance measurement systems but would be used for issues like quality improvement, performance management, and strategic planning.

All these findings support the purpose of studying the process of application, namely to make stronger claims in terms of the relevancy and applicability of the model.

The next chapter builds on the findings of the application of the model and specifically the concept of performance measurement readiness.

CHAPTER EIGHT

Performance measurement readiness

8.1 INTRODUCTION

This chapter attempts to conclude the process of learning about the model by focusing mostly on the concept of performance measurement readiness. Firstly it provides an overview of this concept within the context of the gap as originally identified from literature; secondly it reflects on this concept within the context of some of the latest performance measurement literature, and thirdly it creates an enhanced understanding of the concept of performance measurement readiness by comparing some of the research results for the CUT and Universities U and N.

8.2 DISCUSSION OF PERFORMANCE MEASUREMENT READINESS WITHIN THE CONTEXT OF THE ORIGINAL DEDUCTION OF THE MODEL

The need for a model that could generate a perspective on performance measurement readiness was initially framed as follows:

Performance measurement literature indicates that the failure rate associated with the implementation of scorecard-oriented performance measurement systems may be as high as 70% (McCunn, 1998). The literature also covers quite extensively the reasons for implementation failures/problems (challenges) associated with implementation (e.g. Bourne, *et al.*, 2000; Bourne, *et al.*, 2002; Bourne, Neely, Mills & Platts, 2003; Grifel, 1994; Meekings, 1995; Neely & Bourne, 2000; Schneiderman, 1999). After an analysis of this literature on implementation failures/challenges De Wet (2005a) made two observations: 1) the literature does not clearly identify and assign implementation failures/challenges as contextual issues and 2) there are no attempts to propagate the issue of identifying and understanding the implementation risks prior to implementation.

With regard to the observation that literature does not clearly identify implementation failures/challenges as systemic contextual issues, De Wet (2005a) indicates that there should be further attempts to explore the view of Neely, *et al.* (1995) that a performance measurement system interacts with a wider organisational environment. It is also indicated that the specific exploration should build on the premise found in change management, namely that if a change management intervention (the implementation of a performance management system) is planned there should be an attempt to better understand the context within which the

change will take place (Burnes, 1996; Wilson, 1992). In this regard Boland and Fowler (2000) advocate that systems thinking and system dynamics provide a useful framework to explain such issues. A system's parts must all be present for the system to carry out its purpose optimally (Anderson & Johnson, 1997) and the parts must be arranged in a specific way for the system to carry out its purpose (Coyle, 1996).

With regard to the observation that the risks associated with systems implementation are not propagated strongly enough as a pre-implementation methodology – specifically to create perspective on the potential conduciveness of the operating environment towards implementation – De Wet (2005a) indicates that there should be further attempts to build on what Grifel (1994) calls a readiness assessment.

These two gaps in the literature – the perceived lack of a clear perspective on the systemic context within which a performance measurement system operates, and the perceived lack of a “readiness assessment” as a pre-implementation methodology – formed the basis for deducing the model.

The model was thus initially deduced from literature with the following purpose in mind: 1) to create a better understanding of the context within which a performance measurement system will operate once implemented, and 2) to create perspective on this context prior to implementation by applying the model in practice. In articulating this purpose as a conceptual construct, De Wet (2005a) phrases this as “performance measurement readiness”, building on Grifel's (1994) reference to “readiness assessment”. The definition of the phrase is formally articulated by De Wet (2006) as follows: “... *performance measurement readiness is simply a term that is used to describe the conduciveness of each entity in the model towards the implementation of a performance measurement system*”.

Conduciveness (De Wet, 2006) means that if the score for an entity is tending more towards a numeric value of one rather than four the relationship is strong and this implies that the entity serves as a potential enabler when seeking to implement a performance measurement system. The opposite also holds true, i.e. if the score for an entity is tending more towards a numeric value of four the relationship is weak and the entity serves as a potential barrier when seeking to implement a performance measurement system.

When reflecting on the findings of the research within the context of the literature originally studied and used to deduce the model, it is obvious that the findings of the research still support the researcher's two observations and thus also the need for a model that can create perspective on performance measurement readiness. The following discussion explains this claim.

Initially when attempts were made to gain access to universities (stage one of studying the process of application) both universities formally approved the performance measurement readiness assessment based on what they believed the model could generate for them – namely a perspective on their individual status of performance measurement readiness. The fact that the process of approval at both universities was formalised, and the fact that the first two universities approached approved the assessments, supports the need for a model such as this.

At the end of stage three of studying the process of application it was indicated that each university had received a management report indicating their respective profiles regarding performance measurement readiness. In essence what follows is what each university received:

- 1) Reports (Appendices H & I) that provided each university with a spider diagram summarising the scores of each entity within the model (Table 8.1 and Figure 8.1). University U also requested that their management report should have an executive summary.
- 2) Indicated in these reports and discussed per entity were the results for each issue forming part of an entity and an indication of whether an entity and/or an issue being part of an entity was conducive to the implementation of an institutional performance measurement system.

To assist the universities with the interpretation of conduciveness, they were provided with the following criteria (Appendices H & I):

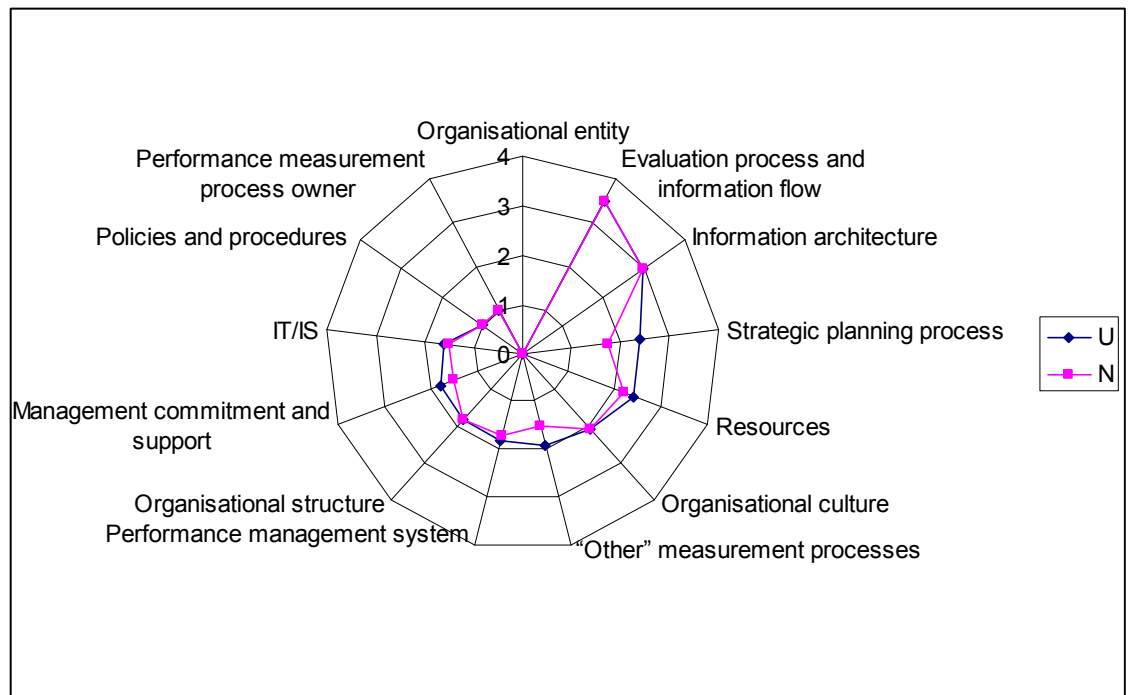
Score for entity and/or issue	Interpretation
1-2.1	Low risk, positively supporting the implementation of an institutional performance measurement system
>2.1, < 2,75	Potentially problematic, should be considered for possible management intervention before the system is implemented
≥2.75, ≤ 4	High risk, should require management intervention before the system is implemented

(Note: The overview at this level, which is done per entity, does not indicate the issues in some of the entities that might have high individual scores and be perceived as high-risk issues)

Table 8.1 Performance measurement readiness of Universities U and N

Organisational entity	U Score	N Score
Evaluation process and information flow	3.5	3.5
Information architecture	3	3
Strategic planning process	2.41	1.71
Resources	2.4	2.18
Organisational culture	2.04	2.05
“Other” measurement processes	1.92	1.5
Performance management system	1.82	1.71
Organisational structure	1.8	1.8
Management commitment and support	1.8	1.48
IT/IS	1.58	1.5
Policies and procedures	1	1
Performance measurement process owner	1	1

Figure 8.1 Performance measurement readiness of Universities U and N



The following example explains in more detail what each university received per entity in support of Figure 8.1 and Table 8.1. This specific example for the entity **organisational culture** for University N (Excerpt from Appendix H) is included merely for **illustrative purposes**.

“The issues assessed as part of this entity were the “public” discussion of performance measures, the university’s readiness to deal with the reality of its performance results, whether there is a notion to blame and shame, whether the focus is on improvement rather than control, and whether the university spends sufficient time internally on the discussion and analysis of performance results. The results were as follows:

	<i>Can't answer = 0</i>	<i>Strongly agree = 1</i>	<i>Agree = 2</i>	<i>Disagree = 3</i>	<i>Strongly disagree = 4</i>	<i>Average</i>
<i>Institutional performance measurement at the university is done more for business improvement than for business control.</i>	8	5	26	7	5	1.92
<i>Institutional performance should be discussed publicly throughout the university.</i>	0	27	26	2	0	1.55
<i>The university is ready to deal with the brutal facts regarding its institutional performance.</i>	8	2	17	24	5	2.29
<i>Managers are publicly blamed (inside the university) in cases of poor individual performance.</i>	8	4	19	22	3	2.14
<i>Institutional performance should be discussed publicly throughout the university even if it reflects negatively on individual performance.</i>	0	21	27	8	1	1.81
<i>The university spends sufficient time on the discussion and analysis of institutional performance results.</i>	7	2	9	29	10	2.58
<i>Total average</i>						2.05

Based on the criteria used, the organisational culture of the university does not seem to pose any serious risks in seeking to implement an institutional performance measurement system. However, the three areas that might require some further elaboration and discussion within the university are the perceptions that 1) the university is not ready to deal with the facts regarding its performance, 2) insufficient time is spent on the discussion and analysis of performance results, and 3) there seems to be perceived public blaming and shaming.

The key risks associated with each of these three issues are as follows: 1) If there is no readiness to deal with the facts as portrayed by a measurement system, the process of rationalising may supersede action; 2) If there seems to be public blaming and shaming there might be strong resistance towards implementation and it might also be problematic to get correct data in/from the system; 3) If there is insufficient time spent on the

analysis and discussion of performance results the total investment and effort in implementing a system might be compromised.

Recommendation 1:

- *The university must ensure that managers understand that performance measurement is about process, outputs and outcomes and not about people; hence performance debates should never be about people. People issues should always be addressed via the performance management process.*
- *The university should unpack the perception that insufficient time is spent on institutional performance results and also determine what will be perceived as sufficient time.*
- *Where relevant the university should identify the institutional practices that should be changed to enhance the organisational culture. The results merely indicate perceptions, hence they potentially identify symptoms embedded in the culture rather than the causes.”*

Having received the individual outcomes as indicated in Figure 8.1 and Table 8.1 the universities no longer had a perceived understanding of what the model could do for them. The spider diagrams, tables, various findings based on their own situation, and an indication of the impact of these findings on system implementation provided an understanding of their own respective organisational realities. When, after handing over the management reports, the universities were asked (Section 7.3) as to whether they believed that the model outcomes were of value to them, the responses received were overwhelmingly in support of the perspective that the model generates. In this regard Interviewee N1 responded as follows: *“The value of the model lies in the fact that it reflects a particular perspective. One knows in the back of one’s mind that, because measuring = steering, performance measurement cannot be implemented without difficulty. Most managers are aware of this, but then are not sure of what they should be concentrating upon if they are seeking to prepare an organisation to undertake a process of performance measurement. The result is that performance measurement is implemented, and the preparation turns into an “ex post facto” means of damage control.*

The most important value of your model lies in the fact that it provides managers with a catalogue of the parameters on which they should be concentrating. The fact that it also gives a metric is a bonus.”

8.3 DISCUSSION OF PERFORMANCE MEASUREMENT READINESS WITHIN THE CONTEXT OF SOME OF THE LATEST PERFORMANCE MEASUREMENT LITERATURE

Before the perspective of performance measurement readiness is also discussed within the context of some of the latest literature on performance measurement it is important to indicate the following:

- The model was deduced from literature between November 2004 and April 2005 (see Chapter two) and thus included only literature published up until the end of 2004.
- Whilst enrolled in the DBA programme the researcher thought it good practice to not attempt to reconfigure the model in any way through a further process of literature study, since this potentially could have complicated the learning process, as the model would have been a changing phenomenon.
- The exception to the above was when practical application at the CUT indicated that the model should be enhanced to include a 12th entity, namely **resources**.

The above synopsis implies that for a discussion of the findings of the research within the context of the latest literature, only literature from 2005 onwards and related to the purpose of the model and the scope of the research is brought into this discussion. In an assessment of this literature the researcher makes the following observations:

- 1) There is still lack of clarity on a common understanding of the internal organisational context within which performance measurement systems operate.
- 2) There seems to be growing support for the concept of readiness assessments.
- 3) There is continued support, in the form of further research, for some of the entities and the definition of their relationship with a performance measurement system.
- 4) There are definite areas related to some entities that now could be considered in terms of enhancing the original deduction of the model.
- 5) Some of the entities originally included in the model (Chapter two), based on practical experience, are still not discussed in performance measurement literature.

Each of these observations is now discussed in more detail.

No common understanding of the internal organisational context within which performance measurement systems operate

The model's main purpose is to be able to conceptually (the model as a conceptual construct) and organisationally (the results generated when the model is practically applied within an organisation) inform managers as to what they should institutionally and contextually be aware of when seeking to implement performance measurement systems. In this regard Vakurri and Meklin (2006) confirm that institutional context creates a framework for performance measurement. They state that when people are designing and/or implementing performance measurement systems they are influenced by the institutional conditions of their working environments. However, Franco-Santos and Bourne (2005) indicate that few authors pay attention to the contextual issues that are related to performance measurement systems. Neither is there clear agreement about the factors and contexts influencing the use of performance measurement systems (Henri, 2006). It is precisely this "vague" organisational context that the model attempts to demarcate by explicitly creating a definition of this context based on internal systemic issues impacting on the functioning of a performance measurement system. However, this is done with a clear indication and understanding that the model as developed 1) is not perfect, 2) is the work of one individual, and 3) is only informed by the contexts of three public universities in South Africa. This is therefore an area that remains a gap in the literature and will require further research (Van Dooren, 2005).

Growing support for the concept of readiness assessments

The application of the model at the CUT and Universities U and N clearly demonstrated the relevancy of the model specifically related to its application prior to implementation. Regarding this issue and the concept of readiness assessment, there now seems to be growing support in the literature. At a conceptual level Halachmi (2005) broadly promotes a "testing of the water" before "diving in". More specifically and in relation to research into the relationship between organisational culture and performance measurement systems, Henri (2006) indicates that managers should be aware of the values on which their organisations rely before implementing a performance measurement system. Similarly Bourne (2005) indicates that a readiness assessment should be conducted in terms of the perceived benefits and priorities that a performance measurement system will have in relation to other projects with which it may have to compete. Although these notions are supported and perceived as positive developments, it is the researcher's view that the aspiration should be to bring together these various sets of "stand-alone" readiness assessments into a single holistic framework providing a single

integrated readiness perspective. This is what the model attempts to provide using the specific “systemic” demarcation as indicated.

There is continued support for some of the entities and their relationship with a performance measurement system

Some of the latest literature indicates to **components** of the model as follows:

Author(s)	Entity	Definition of relationship	Application methodology
Bourne, 2005	<ul style="list-style-type: none"> • IT/IS • Management commitment and support • Resources • Organisational Culture 	<ul style="list-style-type: none"> • Data accessibility • Management’s desire for the system & strength of their commitment • Time/Effort 	<ul style="list-style-type: none"> • Priority of the system in relation to other strategic priorities of the institution
Franco-Santos and Bourne, 2005	<ul style="list-style-type: none"> • Management commitment and support • Performance management system • Culture • Organisational structure 	<ul style="list-style-type: none"> • Reward 	
Van Dooren, 2005	<ul style="list-style-type: none"> • Resources 	<ul style="list-style-type: none"> • Availability 	
Henri, 2006	<ul style="list-style-type: none"> • Organisational culture 	<ul style="list-style-type: none"> • Certain values in the culture 	
Bititci, Mendibil, Nudurupati, Garengo and Turner, 2006	<ul style="list-style-type: none"> • Organisational Culture 		
Tapinos, Dyson and Meadows, 2005	<ul style="list-style-type: none"> • Strategic planning process 	<ul style="list-style-type: none"> • Maturity – feedback mechanism 	

This reflection by some of the latest literature on various components of the model continues to support and confirm the content validity of the original deduction and the inclusion of some of the entities within the model.

Current literature points to potential enhancements to the model

Although there was a purposeful decision to keep the original deduction of the model “constant” for the duration of the DBA programme, there now seems to be some areas within the model that can be furthered enhanced based on developments from the latest literature. For example, the work

done by Bititci *et al.* (2006) focuses on dominant organisational-level cultures (broad cultural topologies) and their impact on performance measurement. Within these dominant cultural types the findings in terms of the various management styles could potentially be included in the model to enhance the definition of the relationship of the entity **organisational culture** – specifically the finding that an authoritative management style is a prerequisite for successful implementation of performance measurement systems.

Some of the entities originally included in the model (Chapter two) based on practical experience are still not discussed in the performance measurement literature

The two entities **policies and procedures** and **“other” measurement processes** originally included in the model on the basis of practical managerial experience rather than a reflection within performance measurement literature (Chapter two) are still not found to be discussed in the literature. However, the application of the model at the CUT and Universities U and N indicated high response rates to these issues, and although the universities’ scores were indicative of strong relationships in these areas these two entities will be retained within the definition of the model.

8.4 DEVELOPING A FURTHER UNDERSTANDING OF THE CONCEPT OF PERFORMANCE MEASUREMENT READINESS

To develop a further understanding of the concept of performance measurement readiness, the results for Universities N and U were combined with those for the CUT (De Wet, 2006). Table 8.3 provides this combined perspective.

Table 8.2 Summary of the performance measurement readiness scores of three public HE institutions in South Africa

Internal organisational entity	CUT	CUT Rank	N	N Rank	U	U Rank	Avg.	Avg. Rank	Med.	Med. Rank
Evaluation process and information flow	4	1	3.5	1	3.5	1	3.67	1	3.50	1
Information architecture	3.73	2	3	2	3	2	3.24	2	3.00	2
Resources			2.18	3	2.4	4	2.29	3	2.29	3
Organisational culture	2.1	3	2.1	4	2	5	2.06	4	2.05	4
Organisational structure	1.5	8	1.8	5	1.8	8	1.70	7	1.80	5
Strategic planning process	1.7	5	1.71	6	2.4	3	1.93	5	1.71	6
Performance management system	1.66	6	1.71	6	1.82	7	1.73	6	1.71	6
IT/IS	1.8	4	1.5	7	1.58	9	1.63	9	1.58	7
“Other” measurement processes	1.58	7	1.5	7	1.92	6	1.67	8	1.58	7
Management commitment and support	1.4	9	1.48	8	1.8	8	1.56	10	1.48	8
Policies and procedures	1	10	1	9	1	10	1.00	11	1.00	9
Performance measurement process owner	1	10	1	9	1	10	1.00	11	1.00	9

The individual scores per university were used to calculate an average (**Avg.**) and median (**Med.**) score for each entity. The scores in the average and median columns were then ranked to create the top five scores for each column (**Avg. rank** and **Med. rank**).

When comparing these two ranking orders (**Avg. rank** and **Med. rank**) the top five entities for both categories are similar (**bold-print** figures in the two columns). These top five entities are **evaluation process and information flow**, **information architecture**, **resources**, **organisational culture**, and **performance management system**. These average and median categories also reflect well when compared with the individual top five entities per university. The only individual entities per university, falling outside the average/median top-five ranking, are organisational structure for University N (score = **1.8**, column **N**) and strategic planning process for University U (score = **2.41**, column **U**).

The key issues stemming from this comparison are as follows:

- Based on the interpretation schedule as provided to the universities it appears that the entities **evaluation process and information flow**, **information architecture** and **resources** have emerged as the three entities that are **most likely** to be **least conducive** when seeking to implement institutional performance measurement systems. Of these three entities it also seems, reflecting on literature (Chapter two and Section 8.3), that only the entities **resources** (frequently) and

information architecture (less frequently) are truly implicated as important contextual issues when seeking to implement performance measurement systems. Regarding the entity **evaluation process and information flow** the opposite is true.

- Two other entities emerged that potentially might be problematic as far as conduciveness is concerned. These are **organisational culture** and **strategic planning process**. Organisational culture has an average and median score of 2.06 and 2.05 respectively, and the individual scores per university range between 2 and 2.1. It is therefore on the edge of the interpretation scale as provided by the researcher, i.e. if the score is >2.1 and < 2.75 then the interpretation of the score should read as follows: *“Potentially problematic, should be considered for possible management intervention **before** the system is implemented”*. As far as the strategic planning process is concerned the respective average and median scores are 1.93 and 1.71. This is well below the recommended cut-off value for action, but there is one university that does have an individual score of 2.4. The literature (Chapter two and Section 8.3) has also implicated these two entities as important considerations when seeking to implement performance measurement systems.
- The entities **organisational structure, performance management system, overall status of IT/IS, “other” measurement processes, management commitment and support, policies and procedures** and **performance measurement process owner** all seem to be conducive to the implementation of institutional performance measurement systems.

To generate a different perspective on the model, the questionnaire respondents at all universities were asked to choose the five entities (from the list of 12 entities, or 11 in the case of the CUT) that they thought would have the most significant impact on the implementation of an institutional performance measurement system by numbering them from 1 to 5 (1 having the most impact). For each university the responses were reworked using a weighted scale. This created a dimension whereby an average for each entity could be calculated that enabled the ranking of the entities from 1 to 5.

The respective results for Universities U and N were again combined with those for the CUT (Table 8.3). As the total number of responses per university varied substantially, no averages or medians were calculated to rank those entities amongst the top five. Rather an approach was adopted to construct what can be called a “consensus view”.

Table 8.3 Summary of the ranking by three public HEIs in South Africa of the five entities perceived as having the most effect on the implementation of an institutional performance measurement system

Internal organisational entity	CUT	N	U	"Consensus" view
Management commitment and support	1	1	1	Should be amongst top five
Performance management system	5	2	3	Should be amongst top five
Organisational culture	2	3	2	Should be amongst top five
Policies and procedures		4		
<i>Strategic planning process</i>	(7)	4	4	<i>Could be</i> amongst top five
Evaluation process and information flow	3	5	5	Should be amongst top five
<i>Performance measurement process owner</i>	3	(6)	4	<i>Could be</i> amongst top five
Information architecture	4			

Where an entity was rated amongst the top five entities by two universities, the respective ranking order of the other university for that entity is added in brackets (columns = **CUT** and **N**). Where an entity was listed as being amongst the top five by only one university that score has been eliminated in terms of making deductions. Where all three universities ranked an entity individually amongst the top five entities, a consensus view was defined as: "Should be amongst the top five". Where two universities ranked an entity amongst the top five and the other university ranked that entity not too far outside the top-five category, the consensus view was assigned as: "Could be amongst the top five".

From the data it is then evident that there is definite "perceived consensus" that **management commitment and support**, **performance management system**, **organisational culture**, and **evaluation process and information flow** should be amongst the five entities having the most effect on the implementation of an institutional performance measurement system (entities in **bold print**). The entities *strategic planning process* and *performance measurement process owner* could be amongst the five entities having the most effect on the implementation of a performance measurement system (entities in *italics*).

Tables 8.2 and 8.3 were also combined to create a perspective on the top five entities most likely to be least conducive to the implementation of a performance measurement system and the top five entities perceived as having the most effect on the implementation of a performance measurement system (Table 8.4).

Table 8.4 Combination of the top five entities most likely to be least conducive and the top five entities perceived as having the most effect on implementation

	Having the most effect					
	Management commitment and support	Performance management system	Organisational culture	Evaluation process and information flow	Strategic planning process	Performance measurement process owner
Least conducive						
Evaluation process and information flow				x		
Information architecture						
Resources						
Organisational culture			x			
Strategic planning process					x	

Apart from an argument that this table probably reaffirms the importance of the three entities that appear in both categories, from a purely research point of view this combination of two tables does not provide further insight into the concept of performance measurement readiness. However, the real value of this table lies in the analytical framework that it provides to potentially serve the purpose of business analysis. The following example explains this statement:

Let us assume that 1) three public HEIs in South Africa, other than those referred to in this chapter, implemented institutional performance measurement systems, 2) none of these universities participated in the application of the model and 3) all the systems implemented were scorecard oriented. According to current literature (McCunn, 1998) this means that 70% of the implementation efforts should have been unsuccessful, implying that at least two of the three universities were unsuccessful in their implementation efforts. Let us further assume that some time after implementation the managements of these two universities grow concerned about the wasted organisational effort and resources (Olsson *et al.*, 2003). In an attempt to improve the functioning of the performance measurement systems the management of each university decides to task one manager to analyse what and where the problems are within the system and to make recommendations. At this point in time a

key business analysis question for each of these managers would probably be: “Where do we start to look and for what?”

In a case such as this, the framework created (Table 8.4) can immediately serve as a potential diagnostic tool, providing an answer to the question raised. Based on the exploration of the concept of performance measurement readiness the framework indicates where the greatest likelihood of “malfunctioning” of the system lies, at least as far as the malfunctioning is caused by systemic issues. The argument is not that the framework will definitely find the problem or problems, even if the causes of these problems are systemic. The researcher merely advocates that the framework might be a very good starting point to discover what is wrong and where. Remember that most of the entities included in the model have been included based on an indication in the literature that they do play a role in the failures and/or challenges associated with the implementation of performance measurement systems.

Hopefully these views on the concept of performance measurement readiness can assist managers in public HE in South Africa with a little more insight regarding the implementation of performance measurement systems, specifically as far as systemic internal organisational entities as defined are concerned.

This chapter is the final chapter reflecting on studying and learning from the process of application. The subsequent chapter serves to conclude the research.

CHAPTER NINE

Conclusions

9.1 INTRODUCTION

The DBA criteria require that as part of the thesis the student should also reflect on aspects related to personal learning and development. In this concluding chapter an attempt is therefore made to do so, but it must be stated upfront that this personal reflection is limited and only highlights certain issues as deemed relevant. This chapter provides a brief overview of the lifecycle of the model and the major learning perspectives, and also serves to highlight the claims that are made before concluding with the way forward.

9.2 OVERVIEW OF THE MODEL'S LIFECYCLE

The model was initiated by a research question asking how the CUT as a public HEI in South Africa could be more successful in the implementation of an institutional performance measurement system, especially within the context of measurement systems having a high failure rate (McCunn, 1998; Neely & Bourne, 2000). With regard to this risk implication when seeking to implement performance measurement systems, the researcher's initial layman's response was: "*We must simply know the risk and then attempt to lower that.*"

In an attempt to understand the risks, a study of literature indicated that implementation failures are covered extensively, and if scrutinised closely can be categorised as system failures and systemic failures (De Wet, 2005a) (section 2.1). The systemic failures – those outside the system itself – became the focus of further research and were categorised as contextual issues. Regarding the issue of context a decision was then made to create a better understanding of this context as advocated by Burnes (1996) and based on the principle as advocated by Grifel (1994), namely that implementing change initiatives calls for an organisational environment that accepts change, with managers creating favourable conditions for it. A performance measurement system operates inside an organisational context and if this context can be understood it may assist with the implementation of performance measurement systems.

It was put forward that systems theory is an ideal theory that can be used to study and explain context, especially in terms of its ability to create an organisational learning experience around the issue of context. Using systems theory and based mostly on literature a conceptual model was

defined (De Wet, 2005a) (section 2.3). A study of literature (De Wet, 2005a) (section 2.3) revealed that such a model did not exist and a decision was made to move the model from its conceptual description to a practical definition. Using mostly literature outside of HE (De Wet 2005a) (section 2.4) the entities were defined, as was the relationship that each entity has with a performance measurement system.

The next phase in the development of the model was to create an application methodology to enable the application of the model in practice (De Wet, 2005b) (sections 3.1 & 3.2). The model was then applied within one public HEI in South Africa using the application methodology as developed (De Wet, 2006) (section 3.3). Apart from one interview another 34 questionnaire respondents participated in the research. From this study it was clear that the model delivered what it set out to deliver, namely to create an organisational learning experience based on the model construction. It was also found that this process of application slightly changed the model at conceptual level and in terms of the application methodology. Based on these findings a decision was then made to further apply the model in a different context to be able to make stronger claims in terms of its relevance and applicability (Chapter four). The model was applied in this context as defined (Chapter four) based on the research methodology developed (Chapter five).

The “cumulative” context that has shaped the model thus far are three public HEIs in South Africa, ± 15 interviews (± 10 interviewees), 116 questionnaire respondents, and the study of various sets of documents as indicated. This “cumulative” context generated insights into the model and created a variety of learning experiences. These are covered in the next section, specifically the findings as per the case study as described. Where relevant, the application of the model within the CUT (De Wet, 2006) is referred to in terms of emphasising certain points.

9.3 LEARNING FROM THE CASE STUDY

The case study as it unfolded generated two specific focus areas of learning for the researcher, namely the research methodology and the model. What follows is what is perceived to be the most important issues.

9.3.1 Research methodology – The ultimate compass

Following the definition of the research problem and the issue of context, a challenge was for the researcher to remain focused within and throughout the complexity that the application of the model demanded. The model, covering 12 diverse organisational entities, had to be applied in different

contexts (two universities) and the focus of the study would be the process of application through three distinct stages.

To understand the researcher's individual learning process and paradigm it is important to reflect on the researcher's own context as far as research is concerned; hence a slight deviation to create this context. Upon commencement of the DBA programme in May 2004 the class was taught research methods by Professor Roger Dale. As a trained business analyst and manager specialising in organisational transformation and having worked in the private sector for most of his career, the researcher's exposure to any form of research methodology was non-existent, both as a subject and as a concept and in terms of understanding the general phraseology relevant to the specific subject. Epistemology, ontology, methodological framework, research strategy and design and how all of these are integrated were foreign to the researcher.

Returning to the research methodology, the key issues learnt in this regard are portrayed by reflecting on the methodology in general, and learning about certain aspects of the methodology as generated by each of the three stages of the research.

9.3.1.1 *Reflecting on the methodology in general*

What helped the researcher to maintain focus throughout this case study was a key guiding principle by Yin (2003), who warns that in an embedded case study there has to be constant focus on the larger unit of analysis. This principle triggered another key aspect, namely that the unit of analysis (the topic under investigation) should be clearly defined (Maylor & Blackmon, 2005; Punch, 1998; Sekeran, 1992). With this as guiding principle the first and most important aspect learnt regarding the research methodology was that once the research methodological framework and strategy are clarified, one probably cannot spend enough time planning the details of the research design. As Thiétart (2001) states, constructing a research design is generally a lengthy process.

In this area much time was spent constructing the unfolding of the envisaged case study. It became the master plan, the proverbial compass for the research to follow. Doing it in such a way allowed the researcher to think critically about what to look for, how to find it, what alternatives there were, what might be found and how the data could be verified. This "speculation" and planning for what should take place created a very strong roadmap, enhanced clarity of thought, and provided a sense of confidence that the research, irrespective of its outcomes, would be doable. Throughout the research the overall research methodology and specifically the research design was used as a constant frame of reference (Hussey & Hussey, 1997). When having to present the findings of the research and

not knowing where to start, a researcher can simply go back to the “plan” and use that, as it logically frames what needs to follow. In Chapter five (the research methodology) a claim was made that the research to follow would demonstrate how the total process of application would consistently remain the target of the study. It can be asserted that the process as highlighted here, as well as the details of the research design (section 5.3), do justice in supporting this claim.

The second issue that provided a great learning opportunity was the use of a case study as the overall research strategy (section 5.2). The opportunity to include different methods and sources of data (Cooper & Schindler, 2006; Maylor & Blackmon, 2005) provided a richness of views and data. However, the embedded diversity that this case study probably could have generated, if explored differently, was limited as indicated by the resource implications (section 5.1.2) and the model itself. Learning about the model was a new learning experience that in itself had to be learnt about.

A third issue of importance was the opportunity that the case study provided for triangulation (section 5.7.2), specifically around the issue of using various research methods to investigate the same issue (Silverman, 2001; Yin, 2003) or just being able to verify the same issue via a similar method using various sources. This is an aspect that the researcher would like to further explore in future when engaged in applications of the model. Although it is more time consuming, it brings richness to the fore that if possible should be explored. Learning from this case study will enhance planning to ensure that such aspects can be built into a future research design.

A further issue, stemming directly from the comments made on triangulation, was the richness that interviews as a research instrument brought to the process of data collection – in particular the informal, unstructured or semi-structured interview (Hussey & Hussey, 1997; Saunders *et al.*, 1997). Although still few in number, this aspect within the case study did grow substantially when compared with the first application of the model at the CUT. Specific reference here is made to the comparable issue applicable to both studies, namely the practical application of the model within the universities (section 7.3.3). Initially planning to interview more people in studying the total process of application made it possible to engage with these same people about some other entities and/or definitions of relationships.

A final issue, although not necessarily a strict methodological issue, was how to deal with being both a researcher and a consultant, with the role of consultant being to provide a clear reflection of the organisational realities and their implications as framed by the design of the model. In this regard

the suggestions given by Maylor and Blackmon (2005) proved to be very helpful. Maylor and Blackmon suggest, amongst other things, that when researchers are confronted with having to be both researcher and consultant, they should clearly visualise these roles within the organisations at which they are conducting research. As a first step to assist with this issue the researcher decided upfront to clearly approach the research as a piece of stand-alone research separate from what had to be done for the universities, namely providing a report they could use to address organisational issues. The contents of the reports were therefore not included in the thesis but were simply added as appendices. A second aspect that was helpful in this regard was the suggestion by Saunders *et al.* (2003) that when a report is provided to participants it should be specifically designed for their purposes. These two perspectives allowed for a much freer form of report-writing. The reports do not contain any referencing to literature and have been written in a style and format suitable for managers. The role of consultant was thus restricted to the issue of report-writing, and being able to make this “methodological” distinction upfront proved to be very helpful.

9.3.1.2 Reflecting on stage one – Access

The specific issue reflected on here is the issue of gaining access, not only because the entire research project was dependent on this aspect but also because it was studied as part of the process of application. The following issues as highlighted by Saunders *et al.* (2003) proved extremely relevant and helpful in securing access:

Allowing sufficient time

If not for the fact that access played such a major part in the research, the researcher would probably have run the risk of attempting to simply get on with it, as per the warning of Saunders *et al.* (2003). However, having to introduce the model informally to determine interest, then more formally via a series of visits to the two universities and then formally through their respective processes for formal approval, warned the researcher beforehand that it might be a time-consuming exercise. Allowing sufficient time was probably the single most important point of learning, especially in terms of how this aspect should be factored into the planning process with access as a key issue.

Using existing contacts and also developing new ones

Suffice to say that if it weren't for the gatekeepers the issue of access might have turned out very differently. In the end, the ease with which access was secured was astounding. Although it was clear that the gatekeepers did not have to push the issue of gaining access, this case

study confirms that the value of knowing gatekeepers (Easterby-Smith, Thorpe & Lowe, 1991) can never be overemphasised. This aspect was also applicable to the research as a whole. The value of the gatekeepers stretched beyond the issue of access only, since they did go to a lot of trouble for the researcher.

Providing a clear account or purpose, and the types of access required

The formal requests for access (Appendices A & B) seemed to provide the relevant decision-makers with sufficient information on exactly what the details of the research would entail. The fact that the model had already been applied at the CUT according to a “tested” application methodology (De Wet, 2005b) enabled the drafting of an accurate overview of what each university could expect in terms of the research. In a sense this application at the CUT served as a complete pilot study (Babbie, 1990; Czaja & Blair, 1996) for sub-stage two of stage two of the research (section 7.3.4) and the researcher could draw on this previous experience to inform the decision-makers as to exactly what the application of the model would entail.

Providing benefits to the organisation granting the researcher access

This aspect, elaborated upon in section 5.1.1, offered a win-win situation for both the researcher and the universities. As both universities wanted to find out more about their performance measurement readiness, an agreement could be reached upfront as to what they could expect to receive from the research. It is the researcher’s view that DBA-type research should distinguish itself from other research in that it should always attempt to bring “something of value” to the participants, something that they can use to bring about improvements. It should never solely be about the researcher and his/her research objectives.

9.3.1.3 Reflecting on stage two – Applying the model in practice

The first sub-stage of stage two of the research involved engagement with the universities in terms of the model in totality, the model as a concept (the entities and the definitions of the relationships) and the specific application methodology. In terms of methodology the process was described as being that of participant observer (section 5.3.4.2.2). However, in hindsight, specifically in terms of what transpired during the specific process, it is probably closer to the concept of what Pawson (1996) calls the realist interview. The aim of the realist interview is to theorise the interview where a set of theory stands at the core of the “interview”. As a prerequisite for this kind of interview, Pawson indicates that the researcher/interviewer should play a much more active and explicit role in teaching the overall structure of the investigation to the subject. This is exactly what transpired during this process, and the value-adding

properties of this process have already been indicated (section 7.3.3). The research design should be planned to better accommodate this aspect from a methodological point of departure. It will probably become a key feature as part of studying the model, as this process is a prerequisite for adapting the model to the specific context of application.

Another key issue that again proved to be of great value at this stage of the research was the unfolding of knowledge through interviews based on the concept of shared knowledge production (Henning, 2004). This specific approach was followed consistently regarding the IT/IS entity and proved to influence this entity continuously, specifically from the definition of the relationship point of view.

An issue that was initially not regarded as important but subsequently proved to be so was that of language. The fact that both English and Afrikaans were used as the languages of research definitely contributed to the process of data gathering. However, in South Africa with its 11 official indigenous languages, the issue of language can easily lead to exclusion, potentially resulting in non-participation. The following, although it cannot be proven, is an example of this.

In the case of University N the agreement was that the questionnaire would only be made available in English. However, one recipient returned an empty questionnaire stating that if he had received the questionnaire in Afrikaans, he would gladly have completed and returned it. This person even provided individual contact details. The researcher did not respond to this invitation, because there was no questionnaire available in Afrikaans and also partially due to the issue of guaranteeing anonymity and confidentiality.

At University U the same agreement was made and just before the questionnaire was sent out the gatekeeper informed the researcher that according to the university's language policy the questionnaire should actually also be made available in Afrikaans. This delayed the process, as both the covering letter (Appendix D) and the questionnaire (Appendix F) had to be translated into Afrikaans (Appendices D1 & F1).

Although it cannot be substantiated, this might be the reason for the significant difference between the response rate of University U (73.5%) and that of University N (50%), especially in light of University N being a strongly Afrikaans-oriented university.

9.3.1.4 *Reflecting on stage three – Handing over of the reports to the universities*

The main lesson learnt from stage three was probably that no matter how good the plan may be, one should be prepared for something to go wrong, as demonstrated by the change that had to be embarked upon in terms of the planned methodology (section 5.3.4.3). In hindsight this part of the research, namely how the results were handed over, should probably have been better formalised with each university. Nonetheless, using the case study method as research strategy allowed for alternatives (electronic interviews rather than participant observation and group interviews, as planned), although it may not necessarily have been the researcher's first choice of method.

9.3.2 Learning about the model

As indicated within the summary of Chapter 7 (Section 7.5) the primary focus of the research was on learning about the model by studying a process of application as informed by the contexts of two public HEIs in South Africa. The learning process was exclusively aimed at being able to make stronger claims in terms of the model's relevancy and applicability.

This process of application was thus divided up and studied as three sub-stages, namely stage one, stage two and stage three. Studying stages one and three informed the researcher about the relevancy of the model, while studying stage two informed the researcher about the applicability of the model. What has been learnt from the model, specifically in relation to relevancy and applicability, is summarised as follows:

During stage one of the process of application, the focus of the research fell on whether the model was accepted and why. The results of this stage revealed the following:

- The model was accepted by the first two universities that were approached to determine whether they would like to participate in the research. Access was granted after having followed formal processes of approval. It was also indicated that access to these universities was granted predominantly on the basis of the model's potential ability to create a perspective on the issue of performance measurement readiness.
- The model was accepted by both universities, yet they each had clearly distinct contexts as far as their overall status of institutional performance measurement, prior to implementation, was concerned. University N had a strong culture of performance measurement and University U completely the opposite.

These issues largely support the relevancy of the model. For the first time the model was now applied outside of the researcher's own institution (the CUT). In promoting the model and its purpose – its ability to create an institutional reflection of performance measurement readiness – no university had to accept the model, no gatekeeper had to force the issue of acceptance, and the researcher did not have to interfere with the process of formal approval, yet the first two universities contacted approved the application of the model. The model's perceived relevancy lies embedded in the model's acceptance by the first two universities. It is referred to as "perceived relevance", as at that stage it was not demonstrated relevance, but merely a perception by the universities' decision makers that the model, irrespective of their individual needs, could potentially bring to the fore a perspective that could assist them in terms of their needs. Both universities had a perception of the model, and by granting access the executive managers within Universities U and N declared the model to be at least slightly more relevant than before.

During stage three of the process of application the researcher was still interested in gaining further inputs (views/perceptions) on the relevance of the model – the difference between stage one and three now being that certain managers within each university had received their respective university's performance readiness assessment. They were thus in a position to ascertain whether the results of the model were useful and whether the results could be used to help them. The results of this stage indicated the following:

- All respondents participating in this stage had no doubt about the model's relevancy or the helpfulness of the performance measurement readiness perspective it generated.
- It was also indicated that the performance measurement readiness perspectives as generated would be used not only to enhance the implementation process of institutional performance measurement systems but also for issues like quality improvement, performance management and strategic planning.

The issue of relevance is thus further strengthened by the model having demonstrated that it can indeed deliver in terms of its purpose. Stage three of the case study (section 7.4) clearly highlights that relevance as expressed by the universities was no longer based on perception but became real in terms of the practical usability of the model outcomes. The model can indeed now make a stronger claim in terms of relevance by having demonstrated relevance.

During stage two of the process of application the researcher was interested in whether the context of each university, namely its institutional form and/or its unique institutional characteristics and/or its individual

status regarding an institutional performance measurement system, would imply changes to the model. It was also important, in the case of any change, to determine whether the change was at the entity level of the model, or in the way in which the relationships were defined, or whether changes were required to be made to the application methodology. To determine the results of this stage the researcher had to engage extensively (prior to the physical application of the model) with people within each university to assess which parts of the context, if any, changed what components of the model. The first issue focused upon was whether any components of the model had to change. In this regard the results were as follows:

- **Entity level** - No changes were required in terms of the entity level of the model, and both universities required all 12 entities to be included within the application.
- **Definition of relationships** - Two changes were required to the model in terms of the definition of relationships. University U required two changes – one issue being part of the definition of the relationship of the entity **organisational culture** and one issue being part of the definition of the relationship of the entity **management commitment and support**.
- **Application methodology** - Very few and minor changes were required in terms of the application methodology of the model, and where so, mostly regarding the phrasing of questions in the questionnaire.

The second issue focused upon was to determine what aspect of the universities' contexts caused the changes to the model. In this regard the results were as follows:

- Context as defined (the institutional form of each university, the institutional characteristics of each university, and the status of its institutional performance measurement systems) had very little impact on the model.
- It was not always possible to assign the change required to any of the three contextual dimensions as indicated.
- The overall application methodology, once altered with the above-mentioned changes, proved to be able to generate an organisational reality for each university regarding its status of performance measurement readiness. The one area where the application methodology will have to be altered slightly for future applications is around the entity **strategic planning process**.

The results of stage two definitely strengthen the model's applicability. The engagement with the universities' practitioner communities prior to application demonstrated that context required almost no changes to the

model. The majority of these changes were also considered to be temporal changes (to accommodate the specific context of University U) and not permanent. The practical application of the model, using the designed application methodology, also clearly demonstrates how the application methodology generated data that enables meaningful interpretation and deduction. Through application the model did what it claimed to do, namely to reflect on each entity's conduciveness to the implementation of institutional performance measurement systems. In short, the model stood up well in the process of application both as a concept and in terms of the application methodology. This is an important issue, as it must be kept in mind that this is a model applied within public HE in South Africa, yet it was derived from literature outside HE (Section 2.4). This issue, as well as the findings in terms of the impact of context on the model, both reflect positively in terms of the robust applicability of the model.

9.3.3 The claims made

It is important to declare upfront what the model does not claim to do. It does not claim to solve anything, but merely claims to provide a different perspective – a perspective that will be explained in terms of its contribution to theory and managerial practice. The development of the model does make a contribution to theory and to managerial practice. These two areas are clearly framed by the model as a conceptual construct and the model in practice; the former highlighting predominantly the contribution to theory and the latter the contribution to managerial practice.

At theoretical level the first contribution made by the research is that it confirms how systems theory can be used to solve a specific managerial problem. It also confirms how systems theory can be used to explain certain phenomena, specifically the phenomenon of context. Systems theory and systems thinking remain sound theories to create an understanding of context. Aronson (2006) differentiates between traditional analysis and systems thinking by indicating that whilst analysis is about separating the individual pieces of what is being studied, systems thinking is about how the thing being studied interacts with the other constituents of the system – a set of elements that interact to produce behaviour – of which it is a part. The model has attempted to demonstrate exactly that.

There may be disagreement on whether the entities are all the entities or the key entities or whether the relationships as defined are accurate in their definition, but what there should not be disagreement about is the view of Boland and Fowler (2000:424), namely: *“... the generic principles of systems thinking and systems dynamics potentially provide a useful*

framework within which the issues of performance measurement, performance indicators and improvement initiatives should be considered.”

This view points to the area where the research probably makes its most significant contribution to theory, namely the model as a conceptual construct. The model provides a new framework to investigate existing phenomena (the implementation of performance measurement systems). This framework, proverbially speaking, is a new pair of spectacles using existing lenses (systems theory) to look at an existing issue (the implementation of performance measurement systems). At this level, the model as a construct is therefore just a piece of theory. It explains the context within which a performance measurement system operates and how the various entities relate to a performance measurement system – the definition of each relationship. However, the moment the model is applied in practice it moves from pure theory to managerial practice.

The entities and definitions of each relationship are not concepts any longer, but become organisational realities relative to the organisation in which the model is applied. In this research the discussion of the two universities, including the references to application at the CUT, also make a contribution at managerial level in terms of the organisational learning experience it provides. This learning experience is enhanced by having metricated the application methodology. The fact that metrics are used makes the organisational reality more real in terms of two aspects, namely embedded risk and conduciveness.

Through the process of application, the model also creates a feedback loop back to theory in that it continuously reflects on the model's theoretical construction. Although minor, it was demonstrated how context did bring about one or two small changes to the model in terms of its conceptual definition. However, through this process of application, the model also generated its' own set of theory – something the researcher calls the “theory of the model”, specifically in the form of the concept of performance measurement readiness. The “theory of the model”, was clearly what led the universities to buy into the application thereof. “Help me understand how performance measurement ready I am.”

In concluding this section, the research also makes a small contribution to theory by reflecting on some key aspects relating to model development. It has been indicated that the literature on model development is not clear as to the logical conceptual steps in model development (Chapter four), probably because each model follows its own unique course of development. However, it is believed that the case study provides some important perspectives in terms of generic model development, namely how theory can be used to construct a model, and secondly the importance of having to design a conceptual model to better understand the meaning

of the research to be embarked upon (Fawcett, 1988). Thirdly, it is believed that the process of application can shed light on how to differentiate context and study the implications thereof on model development. The researcher believes that the latter perspective gives meaning to the concept “applying in different contexts” and hopefully some other students can use the approaches followed in this case study and, through analogy, synthesise the various issues as applicable to their studies.

9.4 THE WAY FORWARD

The way forward is seen as a four-pronged approach, with the four approaches being a research perspective, an academic perspective, a practitioner perspective and a commercial perspective.

From a research perspective the following are potential areas for exploration:

- The model should be further applied within a different macro-contextual level. This will allow for “contextual drift” outside of public HE in South Africa. For future application the research focus will still be on how this “new” context changes the model.
- Another research perspective would be to simply use the model as a diagnostic tool, as indicated in Chapter eight. It would be very interesting to engage with organisations experiencing problems with their performance measurement systems they have implemented and to use the model to diagnose the problem. What will it generate? Will it find anything?
- One can also start to speculate whether a performance measurement readiness perspective as explained and discussed might have implications for certain aspects surrounding performance measurement system implementation. For example, if the results of the assessment are known prior to implementation, will it have implications for design, will it influence practitioners to rethink their implementation methodologies, how will it impact on planned change management interventions, and lastly will it in the end really have enhanced the success rate of implementation?

From an academic perspective it is believed that two articles need to be written, one on the model as a concept and another on the model in practice.

The practitioner perspective is where the model has demonstrated its greatest contribution and the following are areas that could benefit from possible applications:

- The model as it currently stands to be used by managers and practitioners in public HE in South Africa to assist them with the implementation of performance measurement systems. This suggestion is made with a clear understanding that the model is not a solution to a problem, but simply a new way of looking at an existing problem, namely performance measurement system implementation.
- The model simply to be used as a tool of analysis to assist institutions in reflecting on the effectiveness of their evaluation process, including, as one of the universities has indicated, their quality assurance processes.
- The model could be used by quality assurance and HE agencies as a guiding framework to assist institutions with the implementation of evaluation processes.
- External evaluation teams, forming part of HE and quality assurance agencies, might use parts of the model to reconfigure their existing knowledge domains regarding certain areas included in the model.
- Through processes of synthesis the model could be used to configure similar contextual perspectives for others forms of organisational change interventions, e.g. the implementation of a strategic planning process.

From a personal point of view the researcher is most interested in the commercial perspective. The model was defined to assist with the implementation of performance measurement systems. Within this context the model has definite commercial value. If organisations can be convinced that they should first use the model to assess their performance measurement readiness before implementing a performance measurement system, it can open up opportunities for business.

This work concludes with two final comments on the model. The first issue is that the model is not a piece of exact science and therefore should always have a sense of robustness about it. It is not a state-of-the-art, sophisticated and mathematically refined instrument. It simply provides perspective, and perspective is simply about being able to say that one can see something in a different light. One does not even have to be able to see better than before, just differently. It is about being able to say that one knows something differently than before. Again, one does not even have to know more. If the model has generated this perspective and can continue to do so, the researcher as student and practitioner would be satisfied.

The second issue is that the model is not cast in stone. It is the work of one man, informed by the contexts of three universities. This process has clearly indicated changes and adaptations, and the researcher believes that this is what the model is and should be about. A continuous work in progress – not to make it a better work of science but rather a better work for generating perspective.

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APPENDIX A

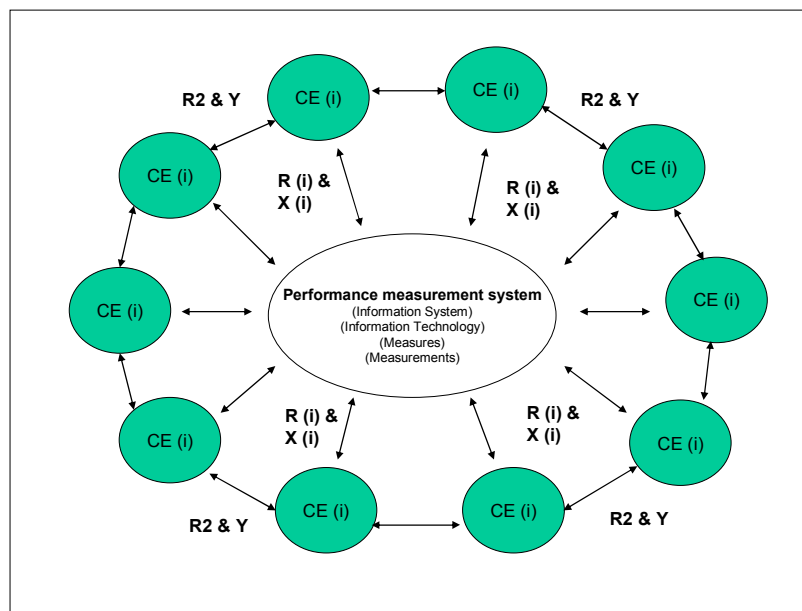
Formal request to conduct research at University N

Versoek om navorsing te doen by Universiteit N

1. Agtergrond

Ek het 'n model ontwikkel ("*Figure 1*") wat die verwantskappe beskryf tussen 'n prestasie meting stelsel ("*performance measurement system*") en ander sleutel organisatoriese entiteite. Die model se teoretiese basis is sisteem teorie en dit impliseer dat 1) elke organisatoriese entiteit 'n unieke verhouding het met 'n prestasie meting stelsel en 2) dat die sterkte van elkeen van hierdie verhoudings bepaal kan word. Die rasionaliteit van die model is om hierdie verhoudings aan te dui as sterk of swak. Die implikasie is dat swak verhoudings tussen entiteite en die prestasie meting stelsel die prestasie meting stelsel se funksionering negatief beïnvloed. Die entiteite ter sprake is organisasie kultuur, die prestasie bestuur stelsel, bestuur se ondersteuning tot die stelsel, 'n inligting argitektuur, die status van die organisatoriese inligtingtegnologie en -stelsels, 'n proses eienaar, organisasie strukture, die evaluerings proses, die strategiese beplanning proses, ander metings prosesse, beleide en prosedures, en hulpbronne.

"Figure 1 Conceptual description of the context within which a performance measurement system operates



The key definitions applicable to this description are the following:

- *The performance measurement system entity is collectively defined by the information system (databases and specific systems software), the information technology (desktop software, PC standards and LAN/WAN infrastructure) and the measures and measurements (targets, actuals, performance indicators and benchmarks). These can also be described as the components of the performance measurement system.*
- *CE(i) – The key contextual entities that describe the context within which a performance measurement system operates (i = 1 - n).*
- *R(i) – The specific individual one-on-one relationship between each contextual entity and a performance measurement system where each R(i), (i = 1 - n) may be defined by a number of issues (1 - x).*
- *R2 – The relationship between the various contextual entities.*
- *X(i) – The inherent strength of the relationship between each CE and a performance measurement system (i = 1 - n).*
- *Y – The inherent strength of the relationship between each CE and other CEs.*

Mathematically the desired outcome of the model can be defined as follows:

For i = 1 - n, for each CE(i), determine X(i) where

$$X = \frac{\sum \text{Strength of } R(i) \text{ (1 - x)}}{x} \quad "$$

Die model kan dus gebruik word om bestuurders te help om hierdie verhoudings binne hulle eie organisasies beter te verstaan en sodoende het die betrokke organisasie 'n groter waarskynlikheid om meer suksesvol te wees rakende die implementering en bestuur van die institusionele prestasie meting stelsel.

2. Versoek

Om die model prakties toe te pas by die Universiteit

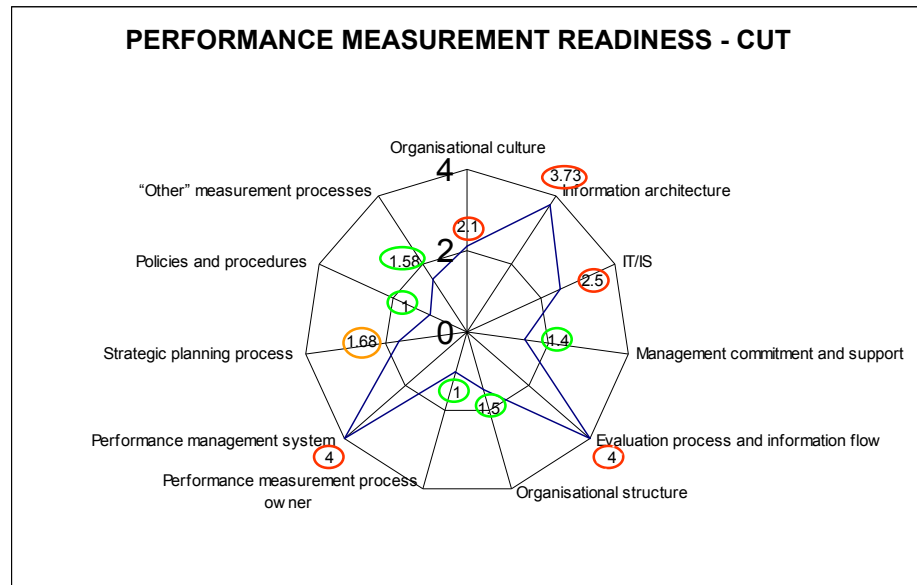
3. Wat behels dit?

1. Dat al drie kampusse en die institusionele kantoor betrek sal word
2. Die voltooiing van 'n vraelys
 - i. Populasie: Peromnes vlak 5 en hoër.
 - ii. 'n Loods toets: 2-3 mense
3. Onderhoude met

- i. Die prestasie meting proses eienaars
 - Prof Chris van der Watt
 - Dr Maarten Venter
 - ii. Die universiteit se IT/IS spesialis
 - iii. Ad hoc onderhoude as die vraelyste verwerk is en dit nodig is vir “triangulation”
 - 4. Gesprekke met
 - i. Persone wat kan help om die konteks van die universiteit korrek te konstrueer.
 - Annetjie de Waal
 - ii. Die universiteit se top bestuur of sekere van die top bestuur om die projek se resultate te oorhandig
 - 5. Die bestudering van sekere universiteits dokumente
 - i. Die Institusionele plan
 - ii. Beleide (waar so aangedui in vraelys)
 - iii. Sekere ad hoc dokumente om feitelike aspekte te ondersteun
4. Spesifieke bepalings
1. Die vraelys sal in Engels wees, aangesien ek studeer aan ‘n oorsese universiteit.
 2. Indien moontlik dat die vraelyste teen die einde van Februarie uitgestuur kan word.
 3. Prof Chris van der Watt se kantoor sal help met sekere logistiek.
 4. Daar is geen koste implikasies vir die universiteit.
 5. Etiese kwessies - teken vir konfidensialiteit? Kan ek verwys na die universiteit as universiteit N in die navorsing?
5. Watter voordele het die studie vir die universiteit?

Via die model sal die universiteit ‘n baie duidelike perspektief kry van hoe die bestuurders van die universiteit die verhoudings tussen die entiteite beskryf. So ‘n perspektief kan bestuur help om te verseker dat die implementering van ‘n prestasie meting stelsel ‘n baie groter kans het om suksesvol te wees. Sien Diagram 1 as ‘n tipiese voorbeeld.

Diagram 1 – ‘n Voorbeeld: Die sterkte van die verhoudings tussen organisatoriese entiteite en ‘n prestasie meting stelsel



So ‘n perspektief sal aangedui word vir elke van die vier groepe (3 kampusse en insitutisionele kantoor) asook vir die universiteit as geheel. Die bepaalde redes (motivering) oor hoekom elke verhouding as sterk of swak uitgebeeld is, sal ingesluit wees.

APPENDIX B

Formal request to conduct research at University U

Request to conduct research at University U

1. Introduction

Globally there is a revolution in the development or redesign of performance measurement systems as organisations are responding to continuous changes in their respective operating environments. Equally true to this observation is the fact that performance measurement systems have a high failure rate, especially if it is assumed that the majority of performance measurement systems implemented are scorecard oriented. In this regard it is indicated that the failure rate associated with scorecard implementation may be as high as 70%.

This broad macro context and the need for performance measurement systems is also applicable to public higher education (HE) internationally and to public HE in South Africa.

Within this context a prominent research question emerged, namely: “How can public HE institutions (HEIs) in South Africa minimise the risks associated with the implementation of institutional performance measurement systems?”

2. Background

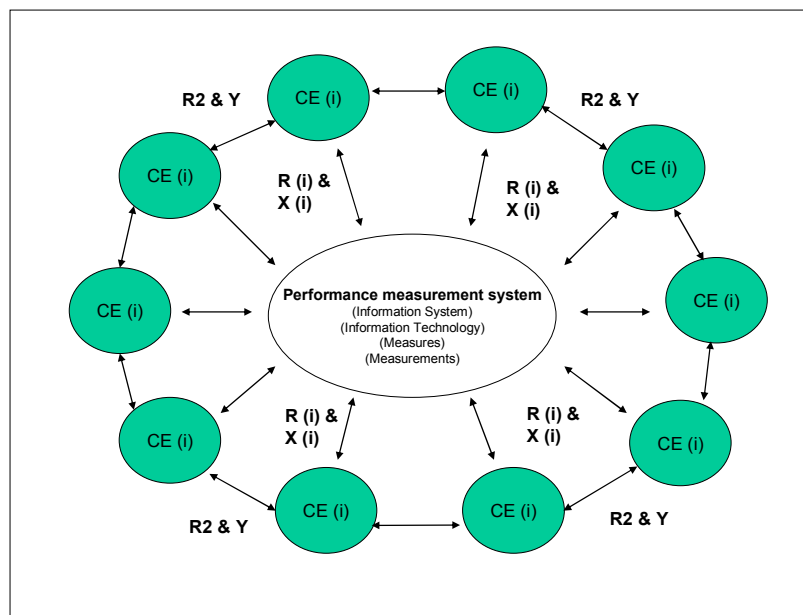
In an attempt to gain an understanding of the risks associated with the implementation of performance measurement systems it became evident that implementation failures in general can broadly be categorised as system issues and systemic issues – system issues here being defined as those issues internal to the performance measurement system itself and systemic issues as those issues external to the performance measurement system, yet impacting on the performance of the system. It is this latter part – the systemic issues and the concept of context – that leads to the development of a model that advocates that if the organisational context within which a performance measurement system operates can be understood, especially before it is implemented, it could potentially minimise the risks associated with implementation.

Figure 1 indicates how the model describes the relationship between a performance measurement system and other key contextual entities. These entities are organisational culture, information architecture, overall information technology/information systems (IT/IS) perspective, management commitment and support, evaluation process and information flow through this process, organisational structures, performance measurement process owner, performance management system, strategic

planning process, policies and procedures, “other” measurement processes, and resources.

Systems theory underpins the theoretical foundation of the model and this implies that 1) each entity has a unique relationship with a performance measurement system, 2) this relationship can be defined, and 3) the strength of this relationship can be determined.

Figure 1 *Conceptual description of the context within which a performance measurement system operates*



The key definitions applicable to this description are the following:

- *The performance measurement system entity is collectively defined by the information system (databases and specific systems software), the information technology (desktop software, PC standards and LAN/WAN infrastructure) and the measures and measurements (targets, actuals, performance indicators and benchmarks). These can also be described as the components of the performance measurement system.*
- *CE(i) – The key contextual entities that describe the context within which a performance measurement system operates (i = 1 - n).*
- *R(i) – The specific individual one-on-one relationship between each contextual entity and a performance measurement system where each R(i), (i = 1 - n) may be defined by a number of issues (1 - x).*

- R_2 – The relationship between the various contextual entities.
- $X(i)$ – The inherent strength of the relationship between each CE and a performance measurement system ($i = 1 - n$).
- Y – The inherent strength of the relationship between each CE and other CEs.

Mathematically the desired outcome of the model can be defined as follows:

For $i = 1 - n$, for each $CE(i)$, determine $X(i)$ where

$$X = \frac{\sum \text{Strength of } R(i)}{x} \quad (1 - x)$$

3. Purpose of the research

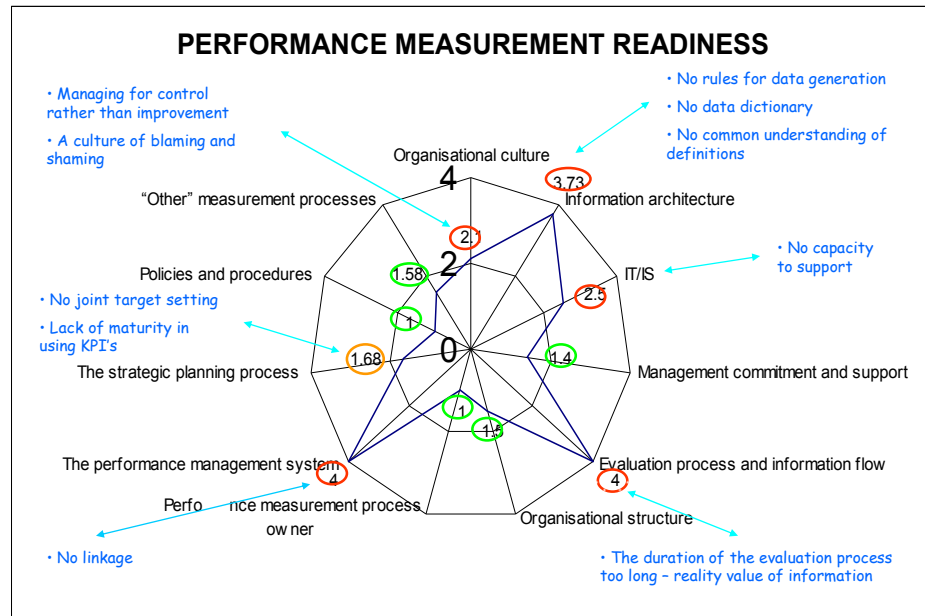
The model can be used by managers to help them to better understand these relationships as indicated within their respective universities. Managers will thus have an enhanced probability of being more successful in implementing a performance measurement system and/or in changing performance measurement practices and/or in simply being able to better understand why their current performance measurement initiatives are working or not.

The application of the model will also assist the researcher in earning a DBA in Higher Education Management.

4. Outcome of the research

Once this model is applied within a university it can generate an organisational learning experience (**figure 2**). At this level the entities describing context are no longer contextual definitions, but have in fact become organisational realities.

Figure 2 An example of the performance measurement readiness of a university



Note: 1 = a strong relationship, 4 = a weak relationship

The university will receive a report that will include such a diagram for the university as a whole, along with associated explanations for having described each relationship as weak or strong.

5. Request

Approval for the model to be applied at University U

6. What does the research entail?

1. The completion of a questionnaire:
 - i. Population: Peromnes grading level 5 and higher
 - ii. A pilot of the questionnaire amongst 2-3 people
2. Interviews with:
 - i. The university's performance measurement process owner
 - ii. The university's IT/IS specialist
 - iii. Ad hoc interviews that may be required for purposes of triangulation
3. Discussions with:
 - i. Individuals who can assist the researcher in correctly describing the context of the university

- ii. The top management of the university or senior managers to hand over the results of the research
- 4. The study of some university documents
 - i. The institutional plan (only the area indicating performance measures and measurements)
 - ii. Policies and procedures (as indicated in the questionnaire)
 - iii. Ad hoc documents to support findings
- 5. Specific issues
 - i. The questionnaire and report will be in English
 - ii. The possibility of conducting the research towards the end of February or the beginning of March
 - iii. Logistics to be addressed with Mr W. Malherbe (e.g. distribution lists, distribution, etc.)
 - iv. Ethics to be clarified – whether the researcher should sign a statement of confidentiality, reference in the thesis to the university as university X, etc.
 - v. No cost implication for the university

APPENDIX C

Covering letter: University N

9 March 2007

Dear Colleague

You are probably aware that the implementation of an integrated performance measurement and management system is one of the priorities in the Institutional Plan. This integrated system will, amongst other things, inform the institutional and campus managements as to the progress made with regard to achieving predetermined performance targets.

As a manager within the university you are influencing and shaping institutional performance, and your input in this regard is important. Consequently we ask that you take a few minutes (\pm 15 min) to complete the enclosed questionnaire and return it to us. Your inputs will also be used for a research project (part of a doctoral programme) that focuses on performance measurement in public higher education.

Enclosed you will find 1) a questionnaire regarding some issues relating to the design and implementation of an institutional performance measurement system and 2) an envelope to be used when returning the completed questionnaire. The return address already appears on the envelope.

It would be highly appreciated if you would return the completed questionnaire by 16 March 2007. Should you have any queries or concerns regarding the questionnaire, feel free to contact Elmar de Wet (051-5073006/7 or 0836450536).

For purposes of both institutional and research use, anonymity and confidentiality are guaranteed.

Thank you
Kind regards



.....

APPENDIX D

Covering letter: University U (English)

22 May 2007

Dear Colleague

The university has over the past ten years made good progress with regard to strategic planning at institutional level. However, measurement of organisational performance against agreed-upon targets and indicators has not yet occurred. In addition, the University is in the process of implementing a performance management system for staff. For the improvement of organisational performance it is important to interpret staff performance within the context of organisational performance and vice versa. The inclusion of institutional performance measurement within a broad system of performance management will also be of value in informing management better as to the progress made towards achieving goals as set out in the Strategic Plan of the university. These perceived benefits of institutional performance measurement prompted the university to participate in a study to assess the **readiness** of the **institution** for **organisational performance measurement**.

Literature indicates that the implementation of performance measurement systems, especially scorecard orientated systems, has a high failure rate. Since the university does not yet have reliable mechanisms to measure institutional performance, the results of this study will be used to gain a better understanding of the risks associated with the implementation of a performance measurement system while also determining the readiness of the university for the implementation of such a system.

As a manager within the university you are influencing and shaping institutional performance, and therefore your input in determining the readiness of the university for such a system is important. You are therefore kindly requested to take a few minutes (± 15 min) to complete the enclosed questionnaire pertaining to an Institutional Performance Measurement System and return it in the enclosed envelope. Your inputs will also be used for a research project (part of a doctoral programme) that focuses on performance measurement in public higher education.

Please return the completed questionnaire by 1 June 2007 to **Willem Malherbe, Planning Unit, First Floor, Room 60, Main Building**. Should you have any queries or concerns regarding the questionnaire, feel free to contact Elmar de Wet (051-5073006/7 or 0836450536).

For purposes of both institutional and research use, anonymity and confidentiality are guaranteed. Thank you for your kind attention and participation.

Kind regards



APPENDIX D1

Covering letter: University U (Afrikaans)

22 Mei 2007

Beste Kollega

Die universiteit het die afgelope tien jaar goeie vordering met strategiese beplanning op institusionele vlak gemaak. Die meting van organisatoriese prestasie teen ooreengekome teikens en aanwysers, het egter nog nie plaasgevind nie. Daarbenewens is die universiteit ook in die proses om 'n prestasiebestuurstelsel vir personeel te implementeer. Vir die verbetering van organisatoriese prestasie is dit belangrik om die prestasie van personeel binne die konteks van organisatoriese prestasie, en omgekeerd, te interpreteer. Die insluiting van institusionele prestasie meting binne 'n breë stelsel van prestasiebestuur, sal ook van waarde wees om bestuur beter in te lig oor die vordering wat gemaak is met die bereiking van doelwitte, soos uiteengesit in die Strategiese Plan van die universiteit. Hierdie waargenome voordele van institusionele prestasie meting het die UV aangespoor om aan 'n studie deel te neem om die **gereedheid** van die **instelling** vir **organisatoriese prestasie meting** te assesser.

Literatuur dui aan dat die implementering van prestasie metingstelsels, veral puntelys-georiënteerde stelsels, 'n hoë mislukkingskoers het. Aangesien die universiteit nog nie oor betroubare meganismes beskik om institusionele prestasie te meet nie, sal die resultate van hierdie studie gebruik word om 'n beter begrip te verkry van die risiko's wat met die implementering van 'n prestasie metingstelsel geassosieer word, terwyl die gereedheid van die UV vir die implementering van die stelsel ook bepaal sal word.

As 'n bestuurder binne die universiteit beïnvloed en gee u vorm aan institusionele prestasie en daarom is u insette wat betref die bepaling van die gereedheid van die universiteit vir so 'n stelsel belangrik. U word daarom vriendelik versoek om 'n paar minute (± 15 min) te neem om die ingeslote vraelys wat verband hou met 'n institusionele prestasie metingstelsel, te voltooi en dit in die koevert wat hierby ingesluit is, terug te besorg. U insette sal ook gebruik word vir 'n navorsingsprojek (deel van 'n doktorsale program) wat op prestasie meting binne openbare hoër onderwys fokus.

Stuur asseblief die voltooide vraelys terug aan **Willem Malherbe, Beplanningseenheid, eerste vloer, kamer 60, Hoofgebou**, teen 1 Junie 2007. Indien u enige navrae of kwessies rakende die vraelys sou hê, kan u gerus met Elmar de Wet (051-5073006/7 of 0836450536) in verbinding tree.

Vir die doeleindes van beide institusionele en navorsingsgebruik, word anonimiteit en vertroulikheid gewaarborg. Dankie vir u aandag en deelname.

Vriendelike groete



APPENDIX E

Questionnaire: University N

Definitions - Questionnaire

1. The **can't answer** option means – no opinion on the matter and/or insufficient information to answer the question
2. IM – Institutional Management
3. SRC – Students' Representative Council

Questionnaire

- A. Please rate the following statements on institutional performance measurement (indicate your answer by means of an “X” in the appropriate box).

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
1	Institutional performance measurement at the university is done more for business improvement than for business control.					
2	Institutional performance should be discussed publicly throughout the university.					
3	Managers have a common understanding of the definitions of institutional performance measures.					
4	The university is ready to deal with the brutal facts regarding its institutional performance.					
5	Establishing performance targets for the university is a joint managerial effort.					
6	Managers are publicly blamed (inside the university) in cases of poor individual performance.					
7	Implementation of an institutional performance measurement system should be a matter of urgency.					
8	Institutional performance should be discussed publicly throughout the university even if it reflects negatively on individual performance.					
9	The information contained in the institutional performance measurement system (if trustworthy) should be used to manage individual performance.					
10	The university spends sufficient time on the discussion and analysis of institutional performance results.					
11	Implementation of an institutional performance measurement system should be among the top eight priorities of the university.					
12	The information contained in the institutional performance management system (if trustworthy) should be used for reward purposes.					

13	There are sufficient resources available to implement an institutional performance measurement system.	Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
a.	Money					
b.	Time					
c.	People					

Any comments:

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
14	There are sufficient organisational skills available to implement a performance measurement system.					

Any comments:

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
15	The performance measures reflecting upon institutional performance should be integrated into a single system.					

B. Please reflect on your own application and involvement regarding performance measurement **during the past 24 months**.

		Always	Mostly	Frequently	Seldom	Never
16	How often did you use performance measures to measure your areas of management responsibility?					

		Yourself	Your staff	Used outside expertise
17	Who compiled the majority of the performance measures for your areas of management responsibility?			

		>70%	51%-70%	30%-50%	<30%
18	What percentage of the total area of your management responsibility did the performance measures cover?				

C. Please answer the following questions regarding institutional performance measurement:

Note: Assume that the institutional performance results are available in a single report

19. a) In **Table 1** below, indicate which of the institutional structures should receive the institutional performance results (**Y = yes, N = no**).

19. b) In **Table 1** below, complete the following (**only where you have indicated Receive = Y**):

The data contained in the performance results as presented to each institutional structure should be no more than **x** weeks old. Please indicate what you feel would be an appropriate value for **x** for each of the structures.

TABLE 1		Age of performance results = Weeks . E.g. 3 means 3 weeks											
Institutional Structures	Receive (Y/N)	1	2	3	4	5	6	7	8	9	10	11	12
SRC													
Subcommittees of Council													
Senate													
Institutional Forum													
IM													
Council													
Convocation													
Line manager's management meetings													
Other institutional structures (please specify).....													

20. Are you aware of any policies and/or procedures that may impact on the implementation of an institutional performance measurement system?

If so, please name them:

D. General

21. Here are 12 entities, indicated as effecting the implementation of performance measurement systems. Rate the 5 that most affect the implementation by numbering them from 1 to 5 (1 being most affecting).

	Your rating	Example
Organisational culture		
An information architecture (common definitions of data and rules as to how data is extracted and compiled)		4
The information technology and information systems of the organisation		
Management commitment and support for the system		2
The evaluation process and information flow through the process		
Organisational structures – the groups that need to receive performance results		1
Having a performance measurement process owner – a body/structure that is accountable for managing the process		
The performance management system of the organisation		5
The strategic planning process of the organisation		
Policies and procedures		3
“Other” measurement processes in the organisation		
Organisational resources		

List any other entities/issues that you believe may also affect the implementation of performance measurement systems:

.....

		≤ 20%	21%-50%	51%- 75%	>75%
22	How many of the present institutional performance targets do you know?				

		Never	Occasionally	Frequently
23	Indicate your involvement (past 24 months) in compiling performance measures that reflect on institutional performance.			

24. Please write down any additional comments you may have regarding institutional performance measurement.

.....

.....

.....

.....

E. Please indicate the following:

		Academic	Support services
25	Your staff category		

		Campus P	Campus M	Campus VT	Institutional office
26	Your institutional "home"				

Thank you for your time and effort

Please use the enclosed envelope to return the questionnaire

APPENDIX F

Questionnaire: University U (English)

Definitions - Questionnaire

1. The **can't answer** option means – no opinion on the matter and/or insufficient information to answer the question
2. **CSRC** – Central Students' Representative Council
3. **EM ("UB")** – Executive Management
4. **EXCO ("UBD")** –Executive Committee of Executive Management
5. **Line managers' management meetings** – The meetings that senior managers have with their staff

Questionnaire

Section A. Please rate the following statements on institutional performance measurement (indicate your answer by means of an “X” in the appropriate box).

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
1	Institutional performance measurement at the university should primarily be a management quality improvement tool rather than a control mechanism.					
2	Institutional performance should be discussed publicly throughout the university.					
3	Managers have a common understanding of the definitions of institutional performance indicators.					
4	The university is ready to deal with the facts (positive/negative) resulting from an institutional performance measurement system.					
5	Determining performance targets as set out in the strategic priorities and challenges of the university's strategic plan is a joint managerial effort.					
6	Managers are publicly blamed (inside the university) for perceived poor individual performance.					
7	Implementation of an institutional performance measurement system should be a matter of urgency.					
8	Even if institutional performance may reflect negatively on individual performance it should be discussed publicly throughout the university.					
9	The relevant information contained in an institutional performance measurement system (if trustworthy) should be used to manage individual performance.					
10	Within the university sufficient time is spent on the discussion and analysis of institutional performance results.					
11	Implementation of an institutional performance measurement system should be among the top priorities of the university.					
12	The information contained in an institutional performance measurement system (if trustworthy) should be used for monetary reward purposes for individual staff members					

13	There are sufficient resources available in the university to implement an institutional performance measurement system.	Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
a.	Money					
b.	Time					
c.	People					
Any comments on resources availability:						

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
14	There are sufficient organisational skills available in the university to implement a performance measurement system.					
Any comments on the availability of organisational skills:						

		Strongly agree	Agree	Disagree	Strongly disagree	Can't answer
15	All performance indicators reflecting upon institutional performance should be integrated into a single system.					

Section B. Please reflect on your own application and involvement regarding performance indicators **during the past 24 months.**

		Always	Mostly	Frequently	Seldom	Never
16	How often do you use performance indicators to measure your areas of management responsibility?					

If **Never**, please go directly to **Section C**

		Yourself	Line Manager	Your staff	UFS Planning Unit	Used outside expertise	Other
17	Who compiled the majority of the performance indicators for your areas of management responsibility?						
If Other , please specify							

		>70%	51%-70%	30%-50%	<30%
18	What percentage of the total area of your management responsibility do the performance indicators cover?				

Section C. Please answer the following questions regarding institutional performance measurement:

Note: Assume that the institutional performance results are available in a single report

19. a) In **Table 1** below, indicate which of the institutional structures should receive the institutional performance results (**Y = yes, N = no**).

19. b) In **Table 1** below, complete the following (**only where you have indicated Receive = Y**):

The data contained in the performance results as presented to each institutional structure should be no more than **x** weeks old. Please indicate what you feel would be an appropriate value for **x** for each of the structures.

TABLE 1		Age of performance results = Weeks . E.g. 3 means 3 weeks											
Institutional Structures	Receive (Y/N)	1	2	3	4	5	6	7	8	9	10	11	12
CSRC													
Subcommittees of Council													
Senate													
Institutional Forum													
EXCO ("UBD")													
Council													
EM ("UB")													
Faculty management committees													
Line managers' management meetings													
Other institutional structures (please specify).....													

20. Are you aware of any policies and/or procedures that may impact (negatively or positively) on the implementation of an institutional performance measurement system?

If so, please name them:

Section D. General

21. The following 12 entities are indicated by literature as impacting on the implementation of performance measurement systems. Choose the 5 that you think will have the biggest impact on the implementation of an institutional performance measurement system at University N by numbering them from 1 to 5 (1 – having the most impact).

	Your rating	Example
Organisational culture		
An information architecture (common definitions of data and rules as to how data is extracted and compiled)		4
The information technology and information systems of the organisation		
Management commitment and support for the system		2
The evaluation process and information flow through the process		
Organisational structures – the groups that need to receive performance results		1
Having a performance measurement process owner – a body/structure that is accountable for managing the process		
The staff performance management system of the organisation		5
The strategic planning process of the organisation		
Policies and procedures		3
“Other” measurement processes in the organisation		
Organisational resources		

List any other entities that you believe may also affect/impact the implementation of an institutional performance measurement system at the university.

.....

22. Please provide any additional comments you may have regarding the implementation of an institutional performance measurement system at the university.

.....
.....
.....
.....

Section E. Please indicate the following:

		Academic	Support services
23	Your staff category		

		Main campus	Campus Q
24	Where you are located		

Thank you for your time and effort

Please use the enclosed envelope to return the questionnaire

APPENDIX F1

Questionnaire: University U (Afrikaans)

Definisies - Vraelys

6. Die opsie “**kan nie antwoord nie**” beteken – geen opinie oor die aangeleentheid nie en/of onvoldoende inligting oor die aangeleentheid om die vraag te beantwoord.
7. **SSR** – Sentrale Studenteraad
8. **UB** – Uitvoerende Bestuur
9. **UBD** – Dagbestuur van die Uitvoerende Bestuur
10. **Lynhoofde-bestuursvergaderings** – Die vergaderings wat senior bestuurders met hul personeel het.

Vraelys

Afdeling A: Beoordeel die volgende stellings oor institusionele prestasiemeting (dui u antwoord aan deur middel van 'n "X" in die toepaslike blokkie).

		Stem beslis saam	Stem saam	Stem nie saam nie	Stem beslis nie saam nie	Kan nie antwoord nie
1	Institusionele prestasiemeting by die universiteit moet primêr 'n bestuursgehalte-verbeteringsinstrument wees eerder as 'n beheermeganisme.					
2	Institusionele prestasie moet regdeur die universiteit openlik bespreek word.					
3	Bestuurders het 'n algemene begrip van die definisies van institusionele prestasie-aanwysers.					
4	Die universiteit is gereed om met die feite (positief/negatief) soos aangedui deur 'n institusionele prestasiemetingstelsel is, te handel.					
5	Die bepaling van prestasieteikens, soos uiteengesit in die strategiese prioriteite en uitdagings van die universiteit se strategiese plan, is 'n gesamentlike bestuurspoging.					
6	Bestuurders word openlik (binne die universiteit) blameer vir individuele prestasie wat nie na wense blyk te wees nie.					
7	Die implementering van 'n institusionele prestasiemetingstelsel moet as 'n saak van dringendheid beskou word.					
8	Institusionele prestasie moet openlik bespreek word regdeur die universiteit selfs indien dit negatief mag reflekteer op individuele prestasie.					
9	Die relevante inligting vervat in 'n institusionele prestasiemetingstelsel (indien betroubaar) moet gebruik word om individuele prestasie te bestuur.					
10	Binne die universiteit word voldoende tyd spandeer aan die bespreking en analise van institusionele prestasieresultate.					
11	Die implementering van 'n institusionele prestasiemetingstelsel moet onder die topprioriteite van die universiteit wees.					
12	Die inligting vervat in 'n institusionele prestasiemetingstelsel (indien betroubaar) moet gebruik word vir geldelike beloningsdoeleindes vir individuele personeellede.					
13	Daar is voldoende hulpbronne in die	Stem	Stem	Stem nie	Stem	Kan nie

	universiteit beskikbaar om 'n institusionele prestasie-metingstelsel te implementeer.	beslis saam	saam	saam nie	beslis nie saam nie	antwoord nie
a.	Geld					
b.	Tyd					
c.	Mense					
Enige opmerkings oor die beskikbaarheid van hulpbronne:						

		Stem beslis saam	Stem saam	Stem nie saam nie	Stem beslis nie saam nie	Kan nie antwoord nie
14	Daar is voldoende organisatoriese vaardighede in die universiteit beskikbaar om 'n prestasie-metingstelsel te implementeer.					
Enige opmerkings oor die beskikbaarheid van organisatoriese vaardighede:						

		Stem beslis saam	Stem saam	Stem nie saam nie	Stem beslis nie saam nie	Kan nie antwoord nie
15	Alle prestasie-aanwysers, wat institusionele prestasie reflekteer moet in 'n enkele stelsel geïntegreer word.					

Afdeling B: Reflekteer op u eie toepassing en betrokkenheid met betrekking tot prestasie-aanwysers **gedurende die afgelope 24 maande.**

		Altyd	Meestal	Dikwels	Selde	Nooit
16	Hoe dikwels gebruik u prestasie-aanwysers om u areas van bestuursverantwoordelikheid te meet?					

Indien **Nooit**, gaan direk na **Afdeling C**

		Uself	Lynhoof	U personeel	UV-beplanningseenheid	Het kundigheid van buite gebruik	Ander
17	Wie het die meerderheid van die prestasie-aanwysers vir u areas van bestuursverantwoordelikheid saamgestel?						
Indien Ander , spesifiseer asseblief.							
		>70%	51%-70%	30%-50%	<30%		

18	Watter persentasie van die totale area van u bestuursverantwoordelikheid word deur die prestasie-aanwysers gedek?				
----	---	--	--	--	--

Afdeling C: Beantwoord die volgende vrae rakende institusionele prestasie-meting:

Let wel: Aanvaar dat die institusionele prestasieresultate in 'n enkele verslag beskikbaar is.

19. a) In **tabel 1** hieronder, dui aan watter van die institusionele strukture die institusionele prestasieverslag moet ontvang (**J = ja, N = nee**).
19. b) In **tabel 1** hieronder, voltooi die volgende (**slegs waar u "Ontvang = J" aangedui het**):

Die data vervat in die prestasieverslag soos aan elke institusionele struktuur aangebied, moet nie meer as **X** weke oud wees nie. Dui asseblief aan wat u voel 'n toepaslike waarde vir **X** vir elk van die strukture sal wees.

TABEL 1		Ouderdom van prestasieresultate = Weke . Bv. 3 beteken 3 weke											
Institusionele strukture	Ontvang (J/N)	1	2	3	4	5	6	7	8	9	10	11	12
SSR													
Subkomitees van die Raad													
Senaat													
Institusionele Forum													
UBD													
Raad													
UB													
Fakulteitsbestuurskomitees													
Lynhoofde-bestuursvergaderings													
Ander institusionele strukture (spesifiseer asseblief).....													

20. Is u bewus van enige beleide en/of prosedures wat 'n impak (negatief of positief) op die implementering van 'n institusionele prestasie-metingstelsel mag hê?

Indien so, noem dit asseblief:

.....

Afdeling D:

Algemeen

21. Die volgende 12 entiteite word deur literatuur aangedui as synde 'n impak te hê op die implementering van prestasiemetingstelsels. Kies die 5 wat u dink die grootste impak op die implementering van 'n institusionele prestasiemetingstelsel by die universiteit kan hê, deur dit van 1 tot 5 te nommer (1 – die meeste impak).

	U beoordeling	Voorbeeld
Kultuur van die organisasie		
'n Inligtingsargitektuur (algemene definisies van data en reëls oor hoe data onttrek en saamgestel word)		4
Die inligtingstegnologie en inligtingstelsels van die organisasie		
Bestuursverbintenis en steun vir die stelsel		2
Die evalueringsproses en inligtingsvloei deur die proses		
Organisasiestrukture – die groepe wat prestasieresultate moet ontvang		1
Om 'n prestasiemetingsprosesseienaar te hê – 'n liggaam/struktuur wat vir die bestuur van die proses verantwoordelik is		
Die personeelprestasiebestuurstelsel van die organisasie		5
Die strategiese beplanningsproses van die organisasie		
Beleide en prosedures		3
“Ander” metingsprosesse in die organisasie		
Organisasië hulpbronne		

Lys enige ander entiteite wat u glo ook die implementering van 'n institusionele prestasiemetingstelsel by die universiteit mag affekteer.

.....

22. Verskaf enige verdere kommentaar wat u mag hê rakende die implementering van 'n institusionele prestasiemetingstelsel by die universiteit.

.....
.....
.....
.....

Afdeling E:

Dui asseblief die volgende aan:

		Akademies	Steun- dienste
23	U personeelkategorie		

		Hoof- kampus	Kampus Q
24	Waar u gesetel is		

Baie dankie vir u tyd en moeite.

Gebruik asseblief die ingeslote kovert om die vraelys terug te stuur.

APPENDIX G

Interview with IT/IS expert

Interview with IT/IS expert

- 1) Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?

Focus on **diversity** and **fragmentation**. E.g. does the organisation have a single database system (e.g. Oracle) or does it have multiple database systems (e.g. Oracle, Natural Adabas, etc.)? Are these database systems situated on a single technology platform or are they fragmented across various technology platforms?

- 2) Will the operational systems architecture enable or hinder the implementation of a performance measurement system?

Focus on **diversity**. E.g. does the organisation have a “single integrated” operational system with various modules for payroll, debtor management, fleet management, human resources management, etc. or are each of these “modules” a single stand-alone system having its own systems definition (unique software, data definitions, etc.)?

- 3) Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?

Focus on **level of standardisation** of end-user technology, **speed** between the desktop and local area networks (LANs) and overall **status** of end-user technology (new, old, etc.).

- 4) Is it possible to integrate the diverse data sets into a single database that can be mined effectively?

- 5) After having explored all the previous views please rate the following statement: *The (University Name's) current IT/IS status will serve as an enabler when wanting to implement an institutional performance measurement system* – Agree / Strongly agree / Disagree / Strongly disagree.

Other questions to ponder:

Sufficient IT/IS resource capacity?

The overall level of computer literacy within the university? Especially the staff that could potentially use an institutional performance measurement system.

The levels of information literacy within the university? Especially the staff that could potentially use an institutional performance measurement system.

APPENDIX H

**Report on the performance measurement readiness of
University N**

THE PERFORMANCE MEASUREMENT READINESS OF UNIVERSITY N

Compiled by E. de Wet

Acknowledgements

I wish to thank the managers who made it possible for me to conduct this study within the university, those who granted permission and those who participated. I am extremely grateful to you all.

A special word of thanks goes to Prof. Chris van der Watt who assisted with so many arrangements. Thank you for your friendship.

Lastly, to everyone who set aside time for interviews, who shared knowledge and provided inputs – I have never come across university staff so kind, friendly and helpful. You do your university proud.

.....
E. de Wet – May 2007

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1. Introduction

The implementation of an integrated performance measurement and management system is a strategic priority of the university. In this regard the university has been busy with the implementation of a performance management system to assist with the process of managing individual performance. However, the success of any performance management system is highly dependent on whether the system contains sound performance measures (indicators) that can reflect upon performance. The university therefore aspires to also implement an institutional performance measurement system that can support the performance management system. Literature indicates, however, that the implementation of performance measurement systems, especially scorecard-oriented systems, has a high rate of failure.

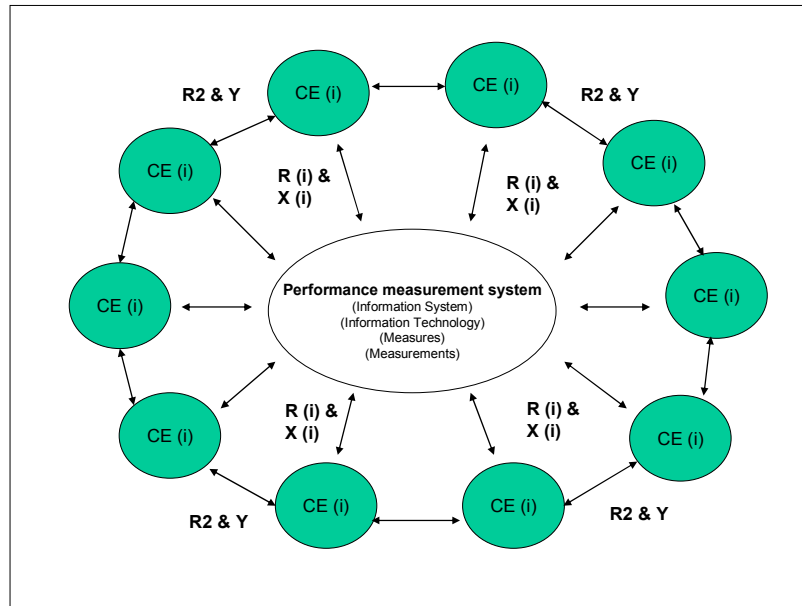
To gain a better understanding of the risks associated with the implementation of such a system a decision was made to approve the application of a model within the university. The key outcome of this exercise is to provide the university, based on its current institutional realities, with an overview of its performance measurement readiness.

2. The model applied at the university

The model (Figure 1) that was used at the university was developed as part of a Doctorate in Business Administration (DBA) programme. The purpose of the model is to create awareness that 1) a performance measurement system does not operate in isolation but rather within a broader organisational environment and 2) that this environment also impacts upon the functioning of a performance measurement system. For the sake of this study the model focused on 12 entities within the university's operating environment. These 12 entities were organisational culture, information architecture, overall information technology/information systems (IT/IS) perspective, management commitment and support, evaluation process and information flow through this process, organisational structures, performance measurement process owner, performance management system, strategic planning process, policies and procedures, "other" measurement processes, and resources.

The model uses systems theory as its theoretical foundation and as an overall outcome it attempts to determine the strength of the relationship between a performance measurement system and each of these 12 pre-identified entities. It is assumed that when managers of the University Understand the perceived reality of the university pertaining to each entity, and know whether the relationship with a performance measurement system is strong or weak, it can improve the university's success rate when seeking to implement an institutional performance measurement system.

Figure 1 Conceptual description of the context within which a performance measurement system operates



The key definitions applicable to this description are the following:

- The performance measurement system entity is collectively defined by the information system (databases and specific systems software), the information technology (desktop software, PC standards and LAN/WAN infrastructure) and the measures and measurements (targets, actuals, performance indicators and benchmarks). These can also be described as the components of the performance measurement system.
- $CE(i)$ – The key contextual entities that describe the context within which a performance measurement system operates ($i = 1 - n$).
- $R(i)$ – The specific individual one-on-one relationship between each contextual entity and a performance measurement system where each $R(i)$, ($i = 1 - n$) may be defined by a number of issues ($1 - x$).
- $R2$ – The relationship between the various contextual entities.
- $X(i)$ – The inherent strength of the relationship between each CE and a performance measurement system ($i = 1 - n$).
- Y – The inherent strength of the relationship between each CE and other CEs.

Mathematically the desired outcome of the model can be defined as follows:

For $i = 1 - n$, for each $CE(i)$, determine $X(i)$ where

$$X = \frac{\sum \text{Strength of } R(i)}{x} (1 - x)$$

3. Methodology

In determining the organisational reality of the university pertaining to each of the 12 entities the various issues per entity were assessed using the following research instruments.

Organisational entity	No. of issues assessed per entity	Research instrument		
		Questionnaire	Interviews	Study of records
Organisational culture	6	x		
Information architecture	3	x	x	x
Information technology/information systems	4		x	
Management commitment and support	3	x	x	
Evaluation process and information flow	1	x		x
Organisational structure	1	x		
Performance measurement process owner	3		x	x
Performance management system	2	x	x	
Strategic planning process	6	x		x
Policies and procedures	2	x		x
“Other” measurement processes	1	x	x	
Resources	4	x		

The most prominent of the research instruments was the questionnaire and in this regard the various response rates were as follows:

	Institutional office			Campus M			Campus P			Campus VT			Total university		
	O	R	% R	O	R	% R	O	R	% R	O	R	% R	O	R	% R
Academic staff	0	0	0.0%	16	6	37.5%	62	28	45.2%	7	3	42.9%	85	37	43.5%
Support services staff	8	5	62.5%	4	1	25.0%	10	9	90.0%	7	5	71.4%	29	20	69.0%
Total	8	5	62.5%	20	7	35.0%	72	37	51.4%	14	8	57.1%	114	57	50.0%

O – Number of questionnaires sent out

R – Number of questionnaires returned

%R - Response rate per category

4. Presentation of findings

The findings are presented by reflecting upon each entity individually. For each entity a brief focus is provided as to what issues, relating to the specific entity, were assessed. For each of these issues a score of between 1 and 4 is assigned. The average score for the whole entity is then calculated by averaging the scores of the individual issues. In this calculation each issue has an equal weighting.

The scale that is used to assign scores to both issues and/or entities should be interpreted as follows:

Score for entity and/or issue	Interpretation
1-2.1	Low risk, positively supporting the implementation of an institutional performance measurement system
>2.1, < 2,75	Potentially problematic, should be considered for possible management intervention before the system is implemented
≥2.75, ≤ 4	High risk, should require management intervention before the system is implemented

5. Key findings

5.1 Organisational culture

The issues assessed as part of this entity were the “public” discussion of performance measures, the university’s readiness to deal with the reality of its performance results, whether there is a notion to blame and shame, whether the focus is on improvement rather than control and whether the

university spends sufficient time internally on the discussion and analysis of performance results. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Institutional performance measurement at the university is done more for business improvement than for business control.	8	5	26	7	5	1.92
Institutional performance should be discussed publicly throughout the university.	0	27	26	2	0	1.55
The university is ready to deal with the brutal facts regarding its institutional performance.	8	2	17	24	5	2.29
Managers are publicly blamed (inside the university) in cases of poor individual performance.	8	4	19	22	3	2.14
Institutional performance should be discussed publicly throughout the university even if it reflects negatively on individual performance.	0	21	27	8	1	1.81
The university spends sufficient time on the discussion and analysis of institutional performance results.	7	2	9	29	10	2.58
Total average						2.05

Based on the criteria used, the organisational culture of the university does not seem to pose any serious risks in seeking to implement an institutional performance measurement system. However, the three areas that might require some further elaboration and discussion within the university are the perceptions that 1) the university is not ready to deal with the facts regarding its performance, 2) insufficient time is spent on the discussion and analysis of performance results and 3) there seems to be perceived public blaming and shaming.

The key risks associated with each of these three issues are as follows: 1) If there is no readiness to deal with the facts as portrayed by a measurement system, the process of rationalising may supersede action. 2) If there seems to be public blaming and shaming there might be strong resistance towards implementation and it might also be problematic to get correct data in/from the system. 3) If there is insufficient time spent on the analysis and discussion of performance results the total investment and effort to implement a system might be compromised.

Recommendation 1:

- The university must ensure that managers understand that performance measurement is about process, outputs and outcomes and not about people; hence performance debates should never be about people. People issues should always be addressed via the performance management process.
- The university should unpack the perception that insufficient time is spent on institutional performance results and also determine what will be perceived as sufficient time.
- Where relevant the university should identify the institutional practices that should be changed to enhance the organisational culture. The results merely indicate perceptions, hence they potentially identify symptoms embedded in the culture rather than the causes.

5.2 Management commitment and support

The issues assessed as part of this entity were managers' perceived desire/need for and commitment to a future system and the VC's commitment to such a system. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Implementation of an institutional performance measurement system should be a matter of urgency.	1	22	29	5	0	1.67
Implementation of an institutional performance measurement system should be among the top eight priorities of the university.	3	13	36	4	1	1.77
VC's commitment for the implementation of a new performance measurement system						1.00
Total average						1.48

These results provide a clear mandate for the implementation of an institutional performance measurement system. There is definitely an urgent need for a system and sufficient support for the implementation. The VC's commitment to such a system is also unquestionable.

This entity should not pose any risk towards the implementation of an institutional performance measurement system.

5.3 Information architecture

The issues assessed as part of this entity were the existence of formal documentation defining the university's information architecture, common definitions of data and whether definite rules exists whereby data is generated (a single source, by whom, etc.). The results were as follows:

	Average
A common information architecture	3
A data dictionary where key data elements are defined	3
Rules as to how data is generated	3
Total average	3

It is highly likely that the university will experience a certain amount of risk with regard to information architecture. A search for formal documentation within the university regarding the above three issues indicated that information on these issues does not formally exist in the public domain where it is available to all staff, specifically managers. However, in the interviews with key people that support these processes it was indicated that some of these issues do exist but predominantly so in "technical terms" and as derived from the various system definitions, e.g. HEMIS and some ORACLE-based systems in the university. This is problematic, as the ideal situation would be to have clear definitions and rules that are well documented, user-friendly and available to all. In crosschecking this issue via the questionnaire (see data below) there also seems to be a clear indication that definitions regarding performance indicators are not commonly understood, even if they do exist somewhere in the university.

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Managers have a common understanding of the definitions of institutional performance measures.	4	2	12	27	10	2.67

Recommendation 2:

- That the university develops information architecture (at least with clear data definitions, a single source of data origin, person/group(s) accountable for making it available). These definitions will be needed to legitimise the content of any future performance measurement system. If not, the risk remains that the talks in the boardrooms can be about data all the time (its accuracy, etc.) instead of being focused on the performance reality value embedded in the data.
- Such a document should be readily available to all managers and should be used to continuously reinforce the issue of common understanding.

5.4 Performance measurement process owner

The issues assessed as part of this entity were whether the university has a performance manager who will manage the measurement system, whether this role is an existing role or whether it should be a new role, and where this position is/or should be located in the organisational structure. The results were as follows:

	Average
Does the university have a performance manager who will manage the performance measurement system?	1
Total average	1

The university should not experience any risk with regard to a performance measurement process owner. The university does have a process owner in place in the form of the Director: Special Projects who reports to the VC. However, although this might suffice in the beginning there should be awareness that the implementation of an institutional performance measurement system might require additional resources but not necessarily in this component of organisational structure.

There also seems to be strong integration and cooperation between the performance measurement process owner and the performance management process owner.

5.5 Overall status of IT (information technology) / IS (information systems)

The issues assessed as part of this entity were whether the present institutional IT/IS status of the university will be able to deliver on future performance measurement expectations and whether it will be possible to

integrate diverse data sets into a single database that can be mined effectively. The results were as follows:

	Average
Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?	1.5
Will the operational systems architecture enable or hinder the implementation of a performance measurement system?	1.5
Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?	1.5
Is it possible to integrate the diverse data sets into a single database that can be mined effectively?	1.5
Total average	1.5

The university's IT and IS will definitely support the implementation of an institutional performance measurement system. The university's database architecture is stable. Diversity and fragmentation are not problematic, as all mission-critical data resides on an ORACLE database. A few small operational applications also run on the MS SQL server. The database technology is also not fragmented across campuses but is rather centralised at a single point.

The university's systems architecture can be defined as a single integrated systems architecture. This is as a result of specific functional systems modules (e.g. HR and Finance) that were implemented as part of the university's move towards the implementation of ORACLE. The little fragmentation that does exist lies within the student system, which is a self-developed system. However, integration is not perceived as a problem, as this system was also developed on ORACLE.

The overall technology architecture is very stable, with a high level of standardisation of end-user technology, including 100 Mb LANs to the desktop. The university also has a replacement policy that specifies the replacement of technology after three years. The latter implies that the total end-user technology base is and remains fairly consistent and new.

The university should not experience problems when seeking to integrate diverse data sets into single database(s) to be mined effectively.

5.6 Organisational structures

The key issue of assessment here was to ascertain what institutional structures should receive an institutional performance report. The results were as follows:

	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)
Institutional structures		
Line managers' management meetings	52	91.23%
Institutional Management (IM)	44	77.19%
Council	40	70.18%
Senate	39	68.42%
Subcommittees of Council	31	54.39%
SRC	27	47.37%
Institutional Forum	25	43.86%
Convocation	14	24.56%
Other	3	5.26%

An ideal reflection on whether this entity holds potential risk for the university would be to compare current practice with the results. As the university does not have a single performance report as yet it was not possible to identify any current practices as far as structure is concerned. However, the results do indicate two issues of note: Firstly, a definite view as to what structures should be involved in the evaluation process in future, and secondly the importance of the line managers' management meeting as a key structure when dealing with institutional performance.

It is also assumed, although there is no single performance report, that all the structures indicated in bold print, with the exception of the line managers' management meetings, do at present receive performance reports of some sort reflecting on various institutional and other matters.

Based on the results and reflection this entity should not pose any risk for the implementation of an institutional performance measurement system. A score of 1.8 is assigned to this entity.

Recommendation 3:

- That the university decides on what organisational structures should be included in the evaluation process. It is recommended that only the structures in bold print be included.

5.7 Evaluation process and information flow

The results of the findings for this entity should be read in conjunction with the results of the previous entity. Whilst the previous entity alludes to the importance of the institutional structures, this entity provides the perceived flow of a performance report through these structures. It specifically highlights the issue of “the age of performance data” as contained in a performance report. Again, the ideal would have been to determine potential risk by comparing the current practice (age of performance data when serving before the various structures) with the results as indicated. Due to the unavailability of an integrated performance report this was not possible. The results were as follows:

Institutional structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)	Required age of data (weeks) - Average
Line managers' management meetings	52	91.23%	4.45
Institutional Management (IM)	44	77.19%	5.21
Council	40	70.18%	6.23
Senate	39	68.42%	5.66
Subcommittees of Council	31	54.39%	5.12
SRC	27	47.37%	6
Institutional Forum	25	43.86%	5.83
Convocation	14	24.56%	6.14
Other	3	5.26%	4

Key issues to note are the following:

1. The average required age of performance data when serving before institutional structures should range between 4.45 and 6.23 weeks. This implies that managers (represented in the various structures) within the university will be satisfied if on average the data that serves before them is between 4 and 6 weeks old.
2. The average required age of performance data also indicates that a performance report should serve before all the institutional structures within a time period of approximately 2 weeks.

These two issues pose serious risks, especially when this “ideal” process as indicated is mirrored against the current practice of how meeting dates for these structures are organised. The risks are as follows:

1. The average required age of performance data when serving before the institutional structures is much lower if compared with the present meeting

dates of these structures within the university. **[Note: At another university where this model was applied the required age of performance data was indicated as 2 to 5.5 weeks whilst the current practice at the university indicated this period as ranging from 3.3 to 10.5 weeks.]**

The implication therefore is one where the current meeting dates of the institutional structures seem to be oblivious to a desired institutional evaluation process as indicated. If such a process is continued the reality value embedded in the performance data becomes meaningless.

2. It is highly unlikely that it will be possible for the university to discuss an institutional performance report in a matter of two weeks via all the most important structures (those in bold print).

Based on the responses and reflection there is definite risk involved with regard to this entity and a score of 3.5 is assigned to this entity. This risk is also enlarged by that fact that in entity 1 (organisational culture) the issue that attracted the highest score (2.56) was that the university does not spend sufficient time on the discussion and analysis of performance results. The design of an ideal evaluation process, including the structures and meeting arrangements, will also have to take this into consideration.

Recommendation 4:

- That the institutional structures to form part of the evaluation process are sequentially linked as follows: First the line managers' management meetings, then the institutional management, then Senate, then subcommittees of Council and lastly Council.
- That the university decides on whether the design of an evaluation process will focus on the needs expressed in terms of performance results, the desired chronological order between structures and the required age of performance data. The major issue here will be whether meeting dates of institutional structures will be determined based on the needs as expressed or whether the evaluation process will have to fit into standard meeting arrangements – the latter which will seriously compromise the reality value embedded in performance data.
- That the required age of performance data for first-line managers' meetings be set at 2 weeks (not +/- 4 weeks as required). This will allow for a more reasonable total performance period of around 4 weeks and not the 2 weeks as indicated.

5.8 Performance management system

The issues assessed as part of this entity were the linkage of the performance measurement system with the performance management system and whether the indicators in the performance measurement system should be used for reward purposes. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
The information contained in the institutional performance measurement system (if trustworthy) should be used to manage individual performance.	2	17	34	2	1	1.70
The information contained in the institutional performance management system (if trustworthy) should be used for reward purposes.	4	13	33	6	0	1.73
Total average						1.71

The results provide the university with a strong mandate to ensure that the performance measurement system is well integrated with the performance management system. The results also provide a strong mandate for using the content of the performance measurement system for reward purposes. It basically confirms the notion of “If there is measurement, but no reward, why measure?”

Although the entity does not seem to carry any risk for the implementation of an institutional performance measurement system there is still embedded risk in the clause “if trustworthy”. Trustworthiness can be greatly enhanced if the content of the system is perceived as legitimate; hence the role of the information architecture, if defined correctly, is again emphasised. As already indicated the key role of information architecture is to legitimise the system.

Recommendation 5:

- If the issue of having information architecture has not been addressed adequately, it should be reconsidered in view of doing so.

5.9 Strategic planning process

The issues assessed as part of this entity were the compilation of performance measures (indicators) as part of the strategic planning process, the maturity of the strategic planning process to support a performance measurement system, the coverage of the strategic agenda in terms of performance indicators, and whether target-setting is perceived as a joint managerial effort. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Establishing performance targets for the university is a joint managerial effort.	0	16	32	8	1	1.89
	Always = 1	Mostly = 2	Frequently = 3	Seldom = 4	Never = 5	Average
How often did you use performance measures to measure your areas of management responsibility?	10	11	25	9	0	2.60
	Yourself = 1	Your staff = 2	Used outside expertise = 3			Average
Who compiled the majority of the performance measures for your areas of management responsibility?	30	13	9	0	0	1.60
	>70% = 1	51%-70% = 2	30%-50% = 3	<30% = 4		Average
What percentage of the total area of your management responsibility did the performance measures cover?	21	13	10	10	0	2.17
Is there a linkage between the strategic planning process and performance measurement?						1

How well covered are the strategic performance indicators in the strategic planning process?						1
Total average						1.71

The university's strategic planning process does not seem to pose any risk implications when seeking to implement an institutional performance measurement system. An important issue stemming from the results is that target-setting is perceived as a joint managerial effort. This is good feedback, as it should be one of the major outcomes of any strategic planning process, irrespective of what shape the process took on.

The use of performance indicators also seems to be well established at the university and individuals seem to be skilled in the use of indicators. These practices then seem to flow into the strategic planning process.

The following results indicate an acceptable level of knowledge around institutional indicators and an acceptable level of individual involvement around the issue of compiling performance indicators that reflect on institutional performance. These results support the above key findings relating to the strategic planning process.

	<= 20% = 4	21%-50% = 3	51%- 75% = 2	>75% = 1	Average
How many of the present institutional performance targets do you know?	13	16	16	10	2.58
	Never = 3	Occasionally = 2	Frequently = 1		Average
Indicate your involvement (last 24 months) in compiling performance measures that reflect on institutional performance	16	24	16		2.00

5.10 Policies and procedures

In the questionnaire it was asked whether managers believe that there are policies and procedures that may impact on the implementation of an institutional performance measurement system. The results were as follows:

Are you aware of any policies and/or procedures that may impact on the implementation of an institutional performance measurement system? Please name them	No. of responses	Studied further	Average weighting
A = Performance management policy	2	Y	1
B = Quality assurance policies	2	N	
C = Reward policies	1	Y	1
D = Student recruitment procedures	1	N	
E = Political transformation	1	N	
F = Language policy	1	N	
Total average			1

In terms of assessing potential risk only policies A and C were further scrutinised in terms of whether they might have an impact on the implementation of an institutional performance measurement system. However, the study of these policies did not indicate any risk-related issues. It is also assumed that all policies that might have risk implications have been indicated, hence a total score of 1 is assigned to this entity, meaning that low risk is associated with this entity.

5.11 Other” measurement processes

The main issue assessed as part of this entity was the perception of managers with regard to the development of a single integrated system for performance measurement and reflection upon this within the context of the existence of “other” measurement processes. In terms of providing a mandate for an integrated single system the results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
The performance measures reflecting upon institutional performance should be integrated into a single system.	5	5	38	9	0	1.89

However, the real risk embedded in this entity is when a mandate is provided that a single system should be created but there seems to be a number of stand-alone systems/processes that might contain key operational data applicable to performance measurement of some sort. If there are a number of these “other processes and/or systems” present in the operating environment it might create serious problems, as various issues for different audiences are presented via different reports, whilst there is a reasonable overlap in report content. With regard to this issue the university does not seem to have any risks, hence a score of 1.5 is assigned to this issue. The assessment of the overall IT/IS status of the university also partially supports this reflection.

5.12 Resources

The issue assessed as part of this entity was the sufficiency of resources and organisational skills. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
There are sufficient resources available to implement an institutional performance measurement system.						
Money	13	2	17	18	7	2.07
Time	6	1	19	23	7	2.43
People	7	2	22	21	4	2.23
There are sufficient organisational skills available to implement a performance measurement system.	9	2	27	16	2	2.00
Total average						2.18

This entity does contain a certain element of risk when seeking to implement an institutional performance measurement system, specifically around the issues of the availability of people to implement and the time available to implement. The associated risk of this entity is also increased when compared with entity 2 (management’s commitment and support) where it was indicated that system implementation should be a matter of urgency and should also be amongst the top 8 priorities of the university.

In an attempt to gather further inputs from managers regarding resources, it was indicated (4 responses) that the enhancement of managerial skill and competence should be a focus area if a system is implemented.

Recommendation 6:

- That the university makes sufficient resources available (specifically people and time) when engaging with the implementation of an institutional performance measurement system. Buying in such resources might be an option, but based on the results there seems to be a belief that the university has sufficient internal skills.

5.13 Performance measurement readiness of the university

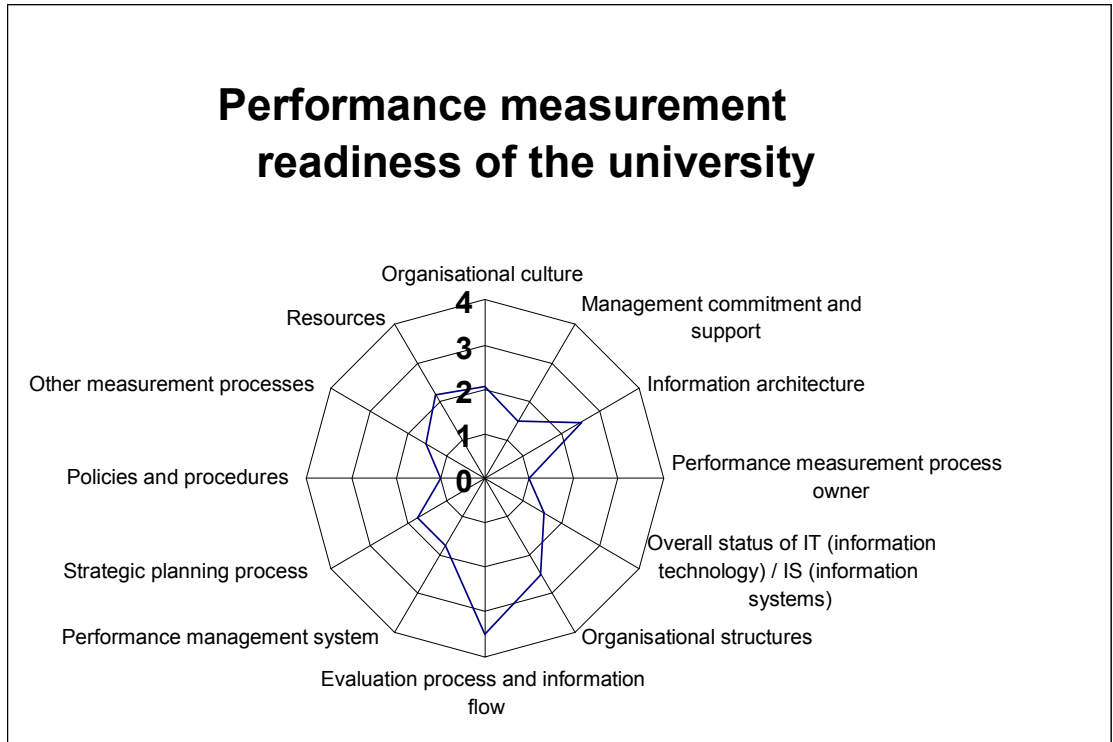
The scores per entity indicate the strength of the relationship that each entity could have with a performance measurement system. These strengths or weaknesses in return reflect upon potential risk areas that could impact on the functioning of the university’s institutional performance measurement system, once implemented. However, knowing about the risks prior to implementation can assist the university in enhancing the success of the implementation of such a system.

The performance measurement readiness of the university is summarised by reflecting on the entities in terms of the strength of the relationship that they each could have with a performance measurement system (descending order):

Evaluation process and information flow	3.5
Information architecture	3
Resources	2.18
Organisational culture	2.05
Organisational structure	1.8
Performance management system	1.71
Strategic planning process	1.71
“Other” measurement processes	1.5
IT/IS	1.5
Management commitment and support	1.48

Performance measurement process owner	1
Policies and procedures	1

The following spider diagram also provides a visual reflection on the performance measurement readiness of the university.



As a final step in reflecting upon the performance measurement readiness of the university, managers were also asked to indicate which 5 of the 12 entities they perceive might have the most effect on the implementation of an institutional performance measurement system at the university. Their subsequent combined rating is indicated below, with the scores of these entities also linked to this rating. From this table it is clear that apart from the entities and issues already listed in the findings, the most critical issue for the university to address will be that of the evaluation process and information flow. The other entities having the most effect all have a low score, representing a potentially strong relationship with a performance measurement system.

	Rating score	Most important	Strength of the relationship with an institutional performance measurement system
Management commitment and support	1.88	1	1.48
Performance management system	1.3	2	1.71
Organisational culture	1.26	3	2.05
Strategic planning process	1.14	4	1.71
Policies and procedures	1.14	4	1
Evaluation process and information flow	1.07	5	3.5

Some key issues that were also indicated as important if the university should seek to implement an institutional performance measurement system are to be transparent, to involve people in the process and to ensure constant communication.

6. Conclusion

Throughout the application of the model at the university there was a continuous sense that a culture of measurement is part of the overall culture of the university. The outcomes as generated by the model seem to support this awareness. In general the performance measurement readiness of the university is good, with only limited risk as indicated and applicable to the relevant issues and/or entities. As far these 12 entities and the detailed issues per entity are concerned, the university should have a conducive operating environment that should positively support an institutional performance measurement system.

I trust that the university has found this exercise worthwhile and that the outcomes will be used to assist with the implementation of an institutional performance measurement system.

APPENDIX I

**Report on the performance measurement readiness of University
U**

THE PERFORMANCE MEASUREMENT READINESS OF UNIVERSITY U

Compiled by E. de Wet

Acknowledgements

I wish to thank the managers who made it possible for me to conduct this study within the university, those who granted permission and those who participated. I am extremely grateful to you all.

A special word of thanks goes to Mr. Willem Malherbe who assisted with so many arrangements. Thank you for your friendship.

Lastly, to everyone who set aside time for interviews, who shared knowledge and provided inputs – you have been most kind, friendly and helpful. You do your university proud.
do your university proud.

.....
E. de Wet – July 2007

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1. Introduction

The implementation of a performance management system is a strategic priority of the university. In this regard the university has been busy with the implementation of a performance management system to assist with the process of managing individual performance. However, the success of any performance management system is highly dependent on whether the system contains sound performance measures (indicators) that can reflect upon performance. The inclusion of institutional performance measurement within a broad system of performance management will be of value in better informing management as to the progress made towards achieving goals as set out in the strategic plan of the university. Literature indicates, however, that the implementation of performance measurement systems, especially scorecard-oriented systems, has a high rate of failure. These perceived benefits of institutional performance measurement and the associated risk raised by literature prompted the university to participate in a study to assess the **readiness** of the **institution** for **organisational performance measurement**.

Therefore, the key outcome of this study is to provide the university, based on its current institutional realities, with an overview as to the university's performance measurement readiness.

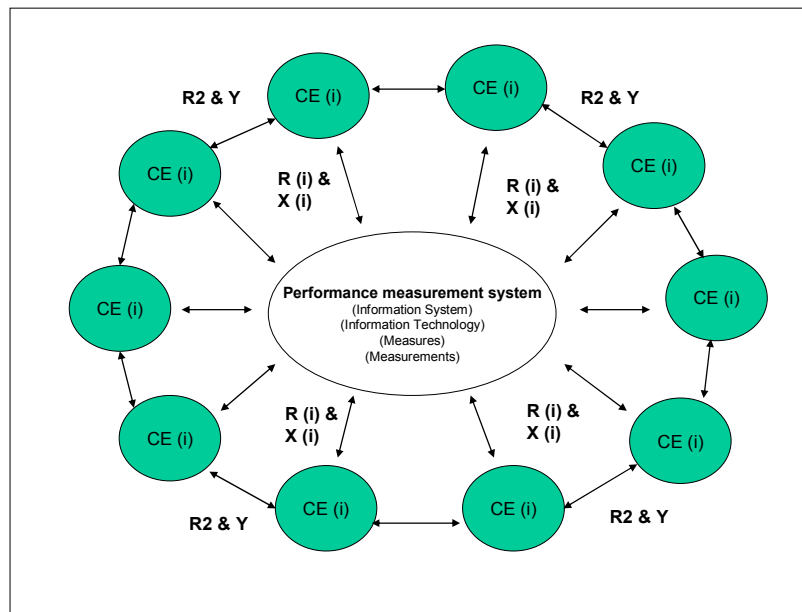
2. The model applied at the university

The model (Figure 1) that was used to create the required organisational learning experience was developed as part of a Doctorate in Business Administration (DBA) programme. The purpose of the model is to create awareness that 1) a performance measurement system does not operate in isolation but rather within a broader organisational environment and 2) this environment also impacts upon the functioning of a performance measurement system. For the sake of this study the model focused on 12 entities within the university's operating environment. These 12 entities were organisational culture, information architecture, overall information technology/information systems (IT/IS) perspective, management commitment and support, evaluation process and information flow through this process, organisational structures, performance measurement process owner, performance management system, strategic planning process, policies and procedures, "other" measurement processes, and resources.

The model uses systems theory as its theoretical foundation and as an overall outcome it attempts to determine the strength of the relationship between a performance measurement system and each of these 12 pre-identified entities. It is assumed that when managers of the University Understand the perceived reality of the university pertaining to each entity and know whether the relationship with a performance measurement

system is strong or weak, it can improve the university's success rate when seeking to implement an institutional performance measurement system.

Figure 1. A conceptual description of the context wherein a performance measurement system operates



The key definitions applicable to this description are the following:

- The performance measurement system entity is collectively defined by the information system (databases and specific systems software), the information technology (desktop software, PC standards and LAN/WAN infrastructure) and the measures and measurements (targets, actuals, performance indicators and benchmarks). These can also be described as the components of the performance measurement system.
- $CE(i)$ – The key contextual entities that describe the context within which a performance measurement system operates ($i = 1 - n$).
- $R(i)$ – The specific individual one-on-one relationship between each contextual entity and a performance measurement system where each $R(i)$, ($i = 1 - n$) may be defined by a number of issues ($1 - x$).
- $R2$ – The relationship between the various contextual entities.
- $X(i)$ – The inherent strength of the relationship between each CE and a performance measurement system ($i = 1 - n$).
- Y – The inherent strength of the relationship between each CE and other CEs.

Mathematically the desired outcome of the model can be defined as follows:

For $i = 1 - n$, for each $CE(i)$, determine $X(i)$ where

$$X = \frac{\sum \text{Strength of } R(i) (1 - x)}{x}$$

3. Methodology

In determining the organisational reality of the university pertaining to each of the 12 entities the various issues per entity were assessed using the following research instruments.

Organisational entity	No of issues assessed per entity	Research instrument		
		Questionnaire	Interviews	Study of records
Organisational culture	6	x		
Information architecture	3	x	x	x
Information technology/ information systems	4		x	
Management commitment and support	2	x		
Evaluation process and information flow	1	x		x
Organisational structure	1	x		x
Performance measurement process owner	3		x	
Performance management system	2	x	x	
Strategic planning process	6	x		x
Policies and procedures	2	x		x
"Other" measurement processes	2	X	x	
Resources	4	X		

The most prominent of the research instruments was the questionnaire and in this regard the various response rates were as follows:

	Main campus			Campus Q			Total university		
	O	R	% R	O	R	% R	O	R	% R
Academic staff	11	8	72.7%				11	8	72.7%
Support services staff	22	16	72.7%	1	1	100.0%	23	17	73.9%
Total	33	24	72.7%	1	1	0.0%	34	25	73.5%

O – Number of questionnaires sent out

R – Number of questionnaires returned

%R – Response rate per category

4. Presentation of findings

The findings are presented by reflecting upon each entity individually. For each entity a brief focus is provided as to what issues, relating to the specific entity, were assessed. For each of these issues a score of between 1 and 4 is assigned. The average score for the whole entity is then calculated by averaging the scores of the individual issues. In this calculation each issue has an equal weighting.

The scale that is used to assign scores to both issues and/or entities should be interpreted as follows:

Score for entity and/or issue	Interpretation
1-2.1	Low risk, positively supporting the implementation of an institutional performance measurement system
>2.1, < 2,75	Potentially problematic, should be considered for possible management intervention before the system is implemented
≥2.75, ≤ 4	High risk, should require management intervention before the system is implemented

5. Key findings

5.1 Organisational culture

The issues assessed as part of this entity were the “public” discussion of performance measures, the university’s readiness to deal with the reality of its performance results, whether there a notion to blame and shame, whether the focus is on improvement rather than control and whether the university spent sufficient time internally on the discussion and analysis of performance results. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Institutional performance measurement at the university should primarily be a management quality improvement tool rather than a control mechanism.	0	17	6	1	1	1.44
Institutional performance should be discussed publicly throughout the university.	1	15	9	0	0	1.32
The university is ready to deal with the facts (positive/negative) resulting from an institutional performance measurement system.	3	0	8	10	3	2.42
Managers are publicly blamed (inside the university) for perceived poor individual performance.	2	4	12	7	0	1.96
Institutional performance should be discussed publicly throughout the university even if it may reflect negatively on individual performance.	0	5	13	5	1	2.08
Within the university sufficient time is spent on the discussion and analysis of institutional performance results.	1	0	5	11	8	3.00
Total average						2.04

Based on the criteria used the organisational culture of the university does not seem to pose any serious risks in seeking to implement an institutional performance measurement system. However, the two areas that might require some further elaboration and discussion within the university are the perceptions that 1) the university is not ready to deal with the facts regarding its performance and 2) insufficient time is spent on the discussion and analysis of performance results.

The key risks associated with each of these two issues are as follows: 1) If there is no readiness to deal with the facts as portrayed by a measurement system, the process of rationalising may supersede action. 2) If there is insufficient time spent on the analysis and discussion of performance results the total investment and effort to implement a system might be compromised.

Recommendation 1:

- The university should unpack the perception that insufficient time is spent on institutional performance results and also determine what will be perceived as sufficient time.
- Where relevant the university should identify the institutional practices that should be changed to enhance the organisational culture. The results merely indicate perceptions – hence they potentially identify symptoms embedded in the culture rather than the causes.

5.2 Management commitment and support

The issue assessed as part of this entity was managers' perceived desire/need for and commitment to a future system. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Implementation of an institutional performance measurement system should be a matter of urgency.	0	11	11	3	0	1.68
Implementation of an institutional performance measurement system should be among the top priorities of the university.	0	7	14	3	1	1.92
Total average						1.80

These results provide a clear mandate for the implementation of an institutional performance measurement system. There is definitely an urgent need for a system and sufficient support for the implementation thereof.

This entity should not pose any risk towards the implementation of an institutional performance measurement system.

5.3 Information architecture

The issues assessed as part of this entity were the existence of formal documentation defining the university's information architecture, common definitions of data and whether definite rules exist whereby data is generated (a single source, by whom). The results were as follows:

	Average
Does the university have a common information architecture?	3
Does a data dictionary exist where key data elements are defined?	3
Do the rules of how data is generated exist?	3
Total average	3

It is highly likely that the university will experience risk with regard to the entity **information architecture**. A search for formal documentation within the university regarding the above three issues indicated that information on these issues does not formally exist in the public domain where it is available to all staff, specifically managers. However, in the interviews with key people that support these processes it was indicated that some of these issues do exist but predominantly so in “technical terms” and as derived from the various system definitions, e.g. HEMIS and the ORACLE-based systems at the university. This is problematic, as the ideal situation would be to have clear definitions and rules that are well documented, user-friendly and available to all. In crosschecking this issue via the questionnaire (see data below) there also seems to be a clear indication that definitions regarding performance indicators are not commonly understood, even if they do exist somewhere within the university.

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Managers have a common understanding of the definitions of institutional performance indicators.	2	1	6	11	3	2.52
Total average						2.52

Recommendation 2:

- That the university develops an information architecture (at least with clear data definitions, a single source of data origin, person/group(s) accountable for making it available). These definitions will be needed to

legitimise the content of any future performance measurement system. If not, the risk remains that the “talks in the boardrooms” can be about the data all the time (its accuracy and reliability) instead of being focused on the performance reality value embedded in the data.

- Such a document should be readily available to all managers and should be used to continuously reinforce the issue of common understanding.

5.4 Performance measurement process owner

The issues assessed as part of this entity were whether the university has a performance manager who will manage the measurement system, whether this role is an existing role or whether it should be a new role, and where this position is/or should be located in the organisational structure. The results were as follows:

	Average
Does the university have a performance manager who will manage the performance measurement system?	1
Total average	1

The university should not experience any risk with regard to a performance measurement process owner. It is perceived that the university does have a process owner in place in the form of the Registrar: Strategic Planning who reports to the DVC: Academic Planning. However, although this might suffice in the beginning there should be awareness that the implementation of an institutional performance measurement system might require additional resources, but not necessarily in this component of the organisational structure.

5.5 Overall status of IT (information technology) / IS (information systems)

The issues assessed as part of this entity were whether the present institutional IT/IS status of the university will be able to deliver on future performance measurement expectations and whether it will be possible to integrate diverse data sets into a single database that can be mined effectively. The results were as follows:

	Average
Will the operational database architecture and structures enable or hinder the implementation of a performance measurement system?	1.5
Will the operational systems architecture enable or hinder the implementation of a performance measurement system?	1.5
Will the operational information technology architecture enable or hinder the implementation of a performance measurement system?	1.8
Is it possible to integrate the diverse data sets into a single database that can be mined effectively?	1.5
Total average	1.58

The university's IT and IS will definitely support the implementation of an institutional performance measurement system. The university's database architecture is stable. Diversity and fragmentation are not problematic, as all mission-critical data resides on an ORACLE database architecture. Other applications running on the Microsoft SQL server and Linux's MY SQL will not affect this scenario. The database technology is also not fragmented across the campuses, but is rather centralised at a single point.

The university's systems architecture can be defined as a single integrated systems architecture with little diversity. This is as a result of the implementation of PeopleSoft.

As far as the technology architecture is concerned, the university is busy implementing enterprise architecture. This implies a high level of stability and standardisation across all the various layers of technology. This approach includes 100 Mb LANs (high speed) to the desktop and having a replacement policy to ensure up-to-date end-user desktop technology.

However, please note that there are still small pockets/areas within the university that are as yet not in line with the majority picture as portrayed. If such pockets are implicated by the implementation of a performance measurement system, it will create problems.

The university should not experience problems when seeking to integrate diverse data sets into single database(s) to be mined effectively.

5.6 Organisational structures

The key issue of assessment was to ascertain what institutional structures should receive an institutional performance report. The results were as follows:

Institutional Structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)
Senate	20	80.00%
EXCO (“UBD”)	20	80.00%
Faculty management committees	20	80.00%
EM (“UB”)	19	76.00%
Line managers’ management meetings	19	76.00%
Council	18	72.00%
Subcommittees of Council	17	68.00%
Institutional Forum	14	56.00%
CSRC	12	48.00%
Other	2	8.00%

An ideal reflection on whether this entity holds potential risk for the university would be to compare current practice with the results. As the university does not have a single performance report as yet it was not possible to identify any current practices as far as structure is concerned. However, the results do indicate two issues of note: Firstly a definite view as to what structures should be involved the evaluation process in future, and secondly the importance of line managers’ management meetings and faculty management committees as key structures when dealing with institutional performance.

It is also assumed, although there is no single performance report, that all the structures indicated in bold print, with the exception of the line managers’ management meetings and faculty management committees, do at present receive regular performance reports of some sort reflecting on various institutional matters.

Based on the results and reflection this entity should not pose any risk towards the implementation of an institutional performance measurement system. A score of 1.8 is assigned to this entity.

Recommendation 3:

- That the university decides on what organisational structures should be included in the evaluation process. It is recommended that only the structures in bold print be included.

5.7 Evaluation process and information flow

The results of the findings for this entity should be read in conjunction with the results of the previous entity. Whilst the previous entity alludes to the importance of the institutional structures, this entity provides the perceived flow of a performance report through these structures. It specifically highlights the issue of “the age of performance data” as contained in a performance report. Again, the ideal would have been to determine potential risk by comparing the current practice (age of performance data when serving before the various structures) with the results as indicated. Due to the unavailability of an integrated performance report this was not possible. The results were as follows:

Institutional Structures	Should receive reports (Responses = Yes)	Should receive reports (% = Yes)	Required age of data (weeks) - Average	Required age of data (weeks) - Median
Senate	20	80.00%	7.85	8.00
EXCO (“UBD”)	20	80.00%	6.10	6.50
Faculty management committees	20	80.00%	5.90	4.00
EM (“UB”)	19	76.00%	6.05	5.00
Line managers’ management meetings	19	76.00%	5.42	4.00
Council	18	72.00%	7.44	7.50
Subcommittees of Council	17	68.00%	8.06	12.00
Institutional Forum	14	56.00%	8.50	12.00
CSRC	12	48.00%	7.50	7.00
Other	2	8.00%	12.00	12.00

Key issues to note are the following:

- a. The average required age of performance data when serving before institutional structures (those in bold print) should range between 5.42 and 8.06 weeks. When the median is used this range varies between 4 and 12 weeks. This implies that managers (represented in the various structures) within the university will be satisfied if on average the data that serves before them is between 4 and 12 weeks old. **Note:** The 12 weeks (median for subcommittees of Council) should probably be

discarded in terms of meaningfulness. A range of 5 to 8 weeks is probably a more accurate reflection.

2. The average required age of performance data also indicates that a performance report should serve before all the institutional structures within a time period of +/-3 weeks.

These two issues pose serious risks, especially when this “ideal” process as indicated is mirrored against the current practice of how meeting dates for these structures are organised. The risks are as follows:

1. The average required age of performance data (5 to 8 weeks) is much lower if compared with the present meeting dates of these structures within the university. [**Note:** *At another university where this model was applied the required age of performance data was indicated as 2 to 5.5 weeks whilst the current practice at the university indicated this period as ranging from 3.3 to 10.5 weeks.*]

The implication therefore is one where the current meeting dates of the institutional structures as implicated seem to be oblivious to a desired institutional evaluation process as indicated. If such a process is continued the reality value embedded in the performance data becomes meaningless.

2. It is highly unlikely that it will be possible for the university to discuss an institutional performance report in a matter of three weeks via all the most important structures (those in bold print)

Based on the responses and reflection there is definite risk involved regarding this entity and a score of 3.5 is assigned to this entity. This risk is also enlarged by that fact that in entity 1 (organisational culture) the issue that attracted the highest score (3) was that the university does not spend sufficient time on the discussion and analysis of performance results. The design of an ideal evaluation process, including the structures and meeting arrangements, will also have to take this into consideration.

Recommendation 4:

- That the institutional structures to form part of the evaluation process are sequentially linked as follows: First the line managers’ management meetings and faculty management committees, then EM, then EXCO, then Senate, then subcommittees of Council and lastly Council.
- That the university decides on whether the design of an evaluation process will be focused on the needs expressed in terms of performance results, the desired chronological order between structures and the required age of performance data. The major issue here will be

whether meeting dates of institutional structures will be determined based on the needs as expressed or whether the evaluation process will have to fit into standard meeting arrangements – the latter which will seriously compromise the reality value embedded in performance data.

- That the required age of performance data for first-line managers' meetings and faculty management committees be set at 2 weeks (not +/- 4 weeks as required). This will allow for a more reasonable total performance period of around 5 weeks and not the 3 weeks as indicated.

5.8 Performance management system

The issues assessed as part of this entity were the linkage of the performance measurement system with the performance management system and whether the indicators in the performance measurement system should be used for reward purposes. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
The relevant information contained in the institutional performance measurement system (if trustworthy) should be used to manage individual performance.	1	4	19	1	0	1.80
The information contained in an institutional performance measurement system (if trustworthy) should be used for monetary reward purposes.	2	6	11	6	0	1.84
Total average						1.82

The results provide the university with a strong mandate to ensure that the performance measurement system is well integrated with the performance management system. The results also provide a strong mandate for using the content of the performance measurement system for reward purposes. The respondents "requested" strong integration between the performance management system and the performance measurement system. It basically confirms the notion of "If there is measurement, but no reward, why measure?"

Although the entity does not seem to carry any risk towards the implementation of an institutional performance measurement system there is still embedded risk in the clause "if trustworthy". Trustworthiness can be

greatly enhanced if the content of a performance measurement system is perceived as legitimate, hence the role of the information architecture is again emphasised. As already indicated the key role of information architecture is to legitimise the system.

Recommendation 5:

- If the issue of having information architecture has not been addressed adequately it should be reconsidered in view of doing so.

5.9 Strategic planning process

The issues assessed as part of this entity were the compilation of performance measures (indicators) as part of the strategic planning process, the maturity of the strategic planning process to support a performance measurement system, the coverage of the strategic agenda in terms of performance indicators, and whether target-setting is perceived as a joint managerial effort. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
Establishing performance targets as set out in the strategic priorities and challenges of the university's strategic plan is a joint managerial effort.	0	7	15	1	1	1.83
	Always = 1	Mostly = 2	Frequently = 3	Seldom = 4	Never = 5	Average
How often did you use performance indicators to measure your areas of management responsibility?	3	3	8	10	0	2.92
	Yourself = 1	Line manager = 2	Your staff = 3	University planning unit = 4	Used outside expertise = 5	Average

Who compiled the majority of the performance indicators for your areas of management responsibility?	10	9	0	0	0	1.47
	>70% = 1	51%-70% = 2	30%-50% = 3	<30% = 4		Average
What percentage of the total area of your management responsibility did the performance indicators cover?	5	6	7	4	0	2.45
Is there a linkage between the strategic planning process and performance measurement?						2.5
How well covered are the strategic performance indicators in the strategic planning process?						3
Total average						2.41

The university's strategic planning process does pose some risk implications when seeking to implement an institutional performance measurement system, specifically around the use of performance indicators at individual and collective strategic level. Individuals indicated that indicators are not really used to measure performance and this pattern also manifests in the university's strategic plan. The majority of measures in the strategic plan focus on completing actions within certain time periods and are not output oriented, hence the scores as assigned (2.5 & 3).

An important issue stemming from the results is that target-setting is perceived as a joint managerial effort. This is good feedback, as it should be one of the major outcomes of any strategic planning process, irrespective of what shape the process took on.

A score of 2.41 does pose risk in that it prompts the unpacking of the notion of what is meant by performance indicators and how this should be incorporated within the planning processes of the university. Although not all things are measurable implementing a performance measurement system without clearly measurable performance outcomes might not add value to the university's aspirations.

Recommendation 6:

- That the university discusses the concept of “measurableness” and the form this should ideally take on within the planning processes of the university. This outcome should then assist in determining the shape of a performance measurement system.

5.10 Policies and procedures

In the questionnaire it was asked whether managers believe that there are policies and procedures that may impact on the implementation of an institutional performance measurement system. The results were as follows:

	No. of responses	Studied further	Average weighting
Are you aware of any policies and/or procedures that may impact on the implementation of an institutional performance measurement system? Please name them			
A = Performance management policy	2	Y	1
B = Quality assurance policies	1	Y	1
C = Planning policies	1	Y	1
D = Employment equity policy	1	N	
E = Provincial agreement	1	N	
Total average			1

In terms of assessing potential risk only policies A to C were further scrutinised in terms of whether they might have an impact on the implementation of an institutional performance measurement system. However, the study of these policies did not indicate any risk-related issues. It is also assumed that all policies that might have risk implications have been indicated, hence a total score of 1 is assigned to this entity; meaning low risk associated with this entity.

5.11 Other" measurement processes

The main issue assessed as part of this entity was the perception of managers around the development of a single integrated system for performance measurement and a reflection upon this within the context of the existence of "other" measurement processes. In terms of providing a mandate for an integrated single system the results were as follows:

Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average

All performance indicators reflecting upon institutional performance should be integrated into a single system.	3	4	11	6	1	1.92
Total average						1.92

The results provide a clear mandate for a single integrated measurement system. In terms of risk it was important to further assess the operating environment as to the number of “other” stand-alone systems/processes that might contain key operational data applicable to institutional performance measurement. If there are a number of these “other processes and/or systems” present in the operating environment it might create serious problems, as various issues for different audiences are presented via different reports, whilst there is usually a reasonable overlap in report content. However, with regard to the latter, the university does not seem to be experiencing such a situation, hence a score of 1.8 is assigned to this issue. The assessment of the overall IT/IS status of the university also partially supports this reflection.

5.12 Resources

The issue assessed as part of this entity was the sufficiency of resources and organisational skills. The results were as follows:

	Can't answer = 0	Strongly agree = 1	Agree = 2	Disagree = 3	Strongly disagree = 4	Average
There are sufficient resources available to implement an institutional performance measurement system.						
Money	5	3	6	6	5	2.12
Time	2	2	6	6	9	2.72
People	3	4	2	6	10	2.64
There are sufficient organisational skills available to implement a performance measurement system.	3	3	10	6	3	2.12
Total average						2.40

This entity does contain a certain element of risk when seeking to implement an institutional performance measurement system, specifically around the issue of the availability of people and the availability of time. The associated risk of this entity is enlarged when compared with entity 2 (management’s commitment and support) where it was indicated that system implementation should be a matter of urgency and should also be

amongst the top priorities of the university. There is also a perception that the university might not have sufficient internal skills to assist with the implementation of a system.

In an attempt to gather further inputs from managers regarding resources, it was indicated that training should be a key focus area if a system is implemented.

Recommendation 7:

- That the university's makes sufficient resources available (specifically people and time) when engaging in the implementation of an institutional performance measurement system. Buying in such resources might be an option, as there seems to be a perception that the university does not have sufficient internal skills.

6. Performance measurement readiness of the university

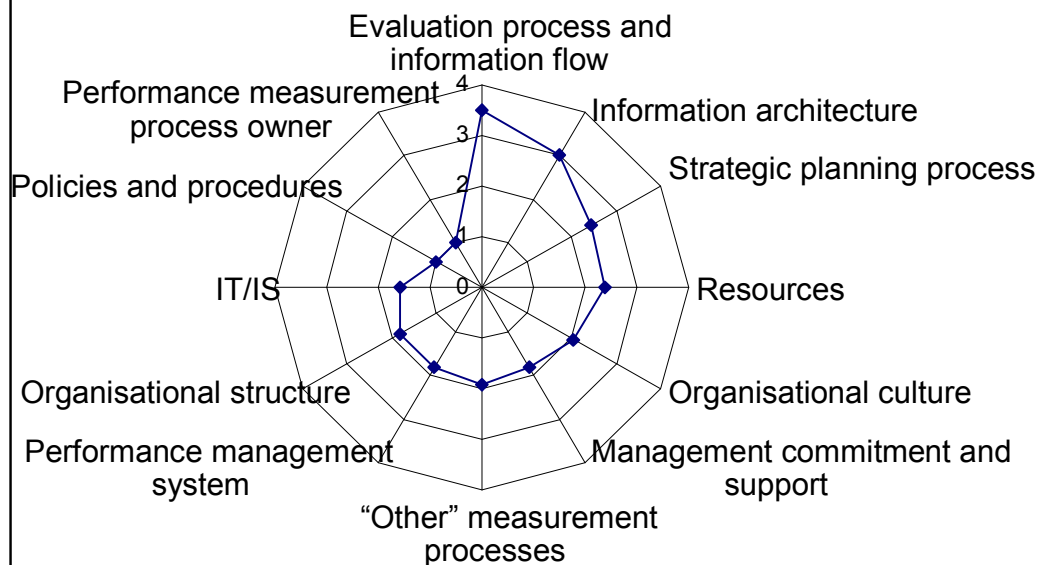
Based on the current university organisational realities, the score per entity indicates the strength of the relationship that each entity will have with a performance measurement system. These scores in return reflect upon potential risk areas that could impact on the functioning of the university's institutional performance measurement system once implemented. However, knowing about these risks prior to implementation can assist the university in enhancing the success of the implementation of such a system.

The performance measurement readiness of the university is summarised by reflecting on the entities in terms of the strength of the relationship that they have with a performance measurement system (descending order):

Evaluation process and information flow	3.5
Information architecture	3
Strategic planning process	2.41
Resources	2.4
Organisational culture	2.04
“Other” measurement processes	1.92
Performance management system	1.82
Organisational structure	1.8
Management commitment and support	1.8
IT/IS	1.58
Policies and procedures	1
Performance measurement process owner	1

The following spider diagram also provides a visual reflection on the performance measurement readiness of the university.

Performance measurement readiness of the university



From the table and diagram it is clear that the systemic organisational entities that should require some form of management consideration and intervention are:

- Evaluation process and information flow
- Information architecture
- Strategic planning process
- Resources
- Organisational culture, with specific reference to the issues of not being ready to deal with performance results and not spending sufficient time on the discussion of performance results

As a final step in reflecting upon the performance measurement readiness of the university, managers were also asked to indicate which 5 of the 12 entities they perceive might have the most effect on the implementation of an institutional performance measurement system at the university. Their subsequent combined rating is indicated below, with the performance readiness score of each entity linked to this rating. From this table it is apparent that the most critical issues for the university to address might be

the evaluation process and information flow, and the strategic planning process.

	Average score	Having the most effect	Strength of the relationship with an institutional performance measurement system
Management commitment and support	2.64	1	1.8
Organisational culture	2.08	2	2.04
Performance management system	1.32	3	1.82
Performance measurement process owner	1.08	4	1
Strategic planning process	1.08	4	2.41
Evaluation process and information flow	0.84	5	3.5

7. Conclusion

When seeking to implement change initiatives it is the role of managers to create an organisational environment that accepts change, and managers must create or seek favourable conditions for it. This study has indicated the university's organisational reality (based on the definitions of the model) when seeking to implement an institutional performance measurement system. In this instance those conditions not conducive to change are few, but can pose serious risk if not addressed adequately.

I trust that the university has found this exercise worthwhile and that the outcomes will be used to assist with the implementation of an institutional performance measurement system and/or for the improvement of performance measurement practices.