CHAPTER 3

3   INITIAL LITERATURE REVIEW

3.1   INTRODUCTION

The purpose of this chapter is to present the literature reviewed pertaining to the performance management and management of virtual knowledge workers. The review revealed that a great deal of focus was placed on performance management as a human resource management process, and not so much on aiding the manager on a day-to-day basis. In managing virtual knowledge workers specifically, various practitioners' guides existed, while empirical research tended to be very contextual and related only to specific hypotheses that the researchers were testing. These did not necessarily relate to the performance of virtual knowledge workers on a broader level.

Thus, in keeping with a constructivist grounded theory approach, the review was used to assist with creating a framework for the research inquiry, particularly for the content of the interview guides and the online questionnaires. According to Mills *et al.*, 2006), as part of the constructivist grounded theory approach it is seen as acceptable to have some literature review inputs as a starting point to "stimulate thinking" (Mills *et al.,* 2006:4), and to use this basic framework for further analysis.

In summary, the literature review gives a historical perspective of performance management and performance appraisals, their objectives, the systems involved, and issues experienced. These paragraphs contain older references, as the aim was to trace some of the historical origins of this HR management function. This chapter also discusses performance and measurement of virtual knowledge workers, and how this differs from the more traditional approaches. Thereafter, the discussion covers the theories that are affected by this different way of work, including

socialisation, the psychological contract, self-efficacy, goal-setting and management control. The chapter concludes with a short review on how information systems are used in the context of managing virtual knowledge workers.
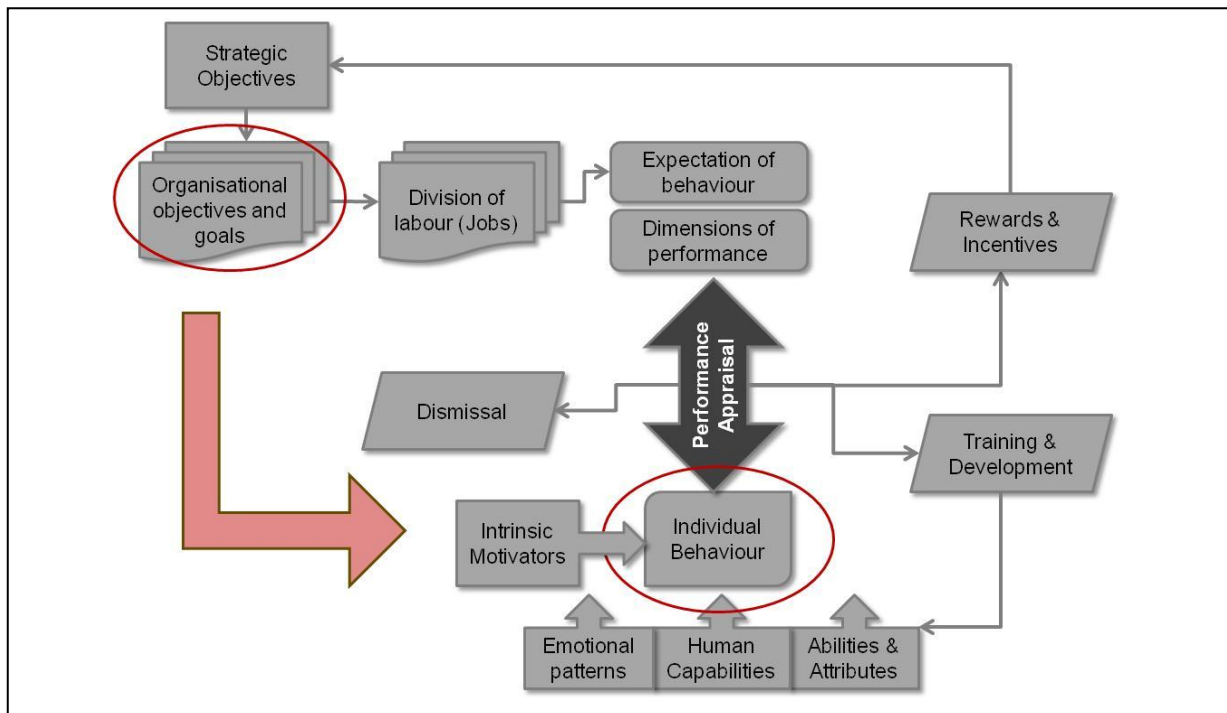
3.2   CONCEPTS OF PERFORMANCE MANAGEMENT

3.2.1   Traditional Approaches and Historic Overview

This section uses mainly practitioners' guides and books by subject matter experts such as Cascio, Latham and Wexley, and a Harvard Business School review to provide a broad overview of the concepts and approaches which have traditionally been used in performance management.

3.2.1.1 Objectives and uses of performance appraisals

Organisations can be seen as complex systems in which "a system is a collection of interrelated parts, unified by design, to attain one or more objectives" (Cascio, 1998:33). The strategic objectives of the organisation are broken down into smaller organisational objectives or goals. To achieve these goals, it is necessary to define multiple jobs, each with their own expected behaviour. The performance of individuals is evaluated against expected behaviour, and used to determine if the overall strategic objective is still being achieved through the combined effort of all individuals (Latham & Wexley, 1994:4; Miner, 1992:379). This is represented diagrammatically in Figure 3-1.

Figure 3-1: The context of performance appraisals

Source: Miner (1992:379) (Researcher's interpretation of written explanation)

According to Latham and Wexley (1994:5), the two most important objectives of the performance appraisal (more recently included as part of the performance management process) are motivation (counselling) and development (training for knowledge and skill) in order to improve productivity. In addition to these two objectives, performance appraisals are also used as inputs to various other human resource (HR) related processes, such as promotions, financial rewards, transfers, creating career development plans, finding strengths to build on and having written support for poor performance in terms of legal action or disciplinary inquiries. However, the measurement should always be aligned with organisational goals (Cascio, 1998:40; Harvard Business School, 2007:1).

In addition to the HR-related functions, Cleveland, Murphy and Williams, as well as Lawler, Mallinger and Cummings (in Latham & Wexley, 1994:8), state that the performance agreement is used to ensure that there is a mutual understanding of what needs to be delivered, and that there is no misunderstanding regarding the expected standards of performance or behaviour. This seems to be a physical representation of what is generally known as the psychological contract, which according to Rousseau and Tijoriwala (1998:681) is "an individual's belief in

reciprocal obligations arising out of the interpretation of promises", and therefore not necessarily a written or explicit agreement. The question relevant to this study is therefore whether the psychological contract is becoming more explicit in the context of virtual work. The reality of the appraisal process is that it has to be done, it will have consequences. It is also becoming increasingly difficult in the face of increasingly more complex organisations and environmental factors (Cascio, 1998:59).

3.2.1.2 Approaches to and types of performance appraisal

To measure performance or evaluate it in terms of expected behaviour, a job analysis must be done (Miner, 1992). Industrial engineers have tools for determining optimal work methods, facilities and working conditions, while HR specialists determine the behaviour that is needed to perform optimally in a given job (Latham & Wexley, 1994:59). Job analysis is often conducted via the critical incident technique (CIT) (most favoured), job elements, position-analysis questionnaire (PAQ), ability requirement scales, functional job analysis, task inventory, threshold trait analysis and task analysis (Latham & Wexley, 1994:61).

Once the job analysis has been completed, the approaches and criteria for measuring performance can be put in place. Trait scales are often used as they are easy to create, and can be applied across different organisational functions and levels. They include traits such as loyalty, dependability and decisiveness (Latham & Wexley, 1994:47). However, ratings are often subjective or invalid (Austin & Vollanova, 1992 in Latham & Wexley, 1994:50) and do not always stand up to scrutiny in a court of law (Latham & Wexley, 1994:50).

The next approach is related to one of the objectives of the performance appraisal, called motivation. Miner (1992:79) lists under motivational practices and their theories the topics of goal setting (including management by objectives or MBO), work redesign, organisational behaviour changes and reward systems. It is therefore not unusual for goal setting and management by objectives to be seen as integral evaluation items during performance appraisals. Although MBO was initiated in the 1970s, during the 1980s MBO was seen as the "preferred method of assessing an

employee's contribution to the organization's bottom line", according to Bretz and Milkovich in Latham and Wexley (1994:50). The big advantage of MBO is that it emphasises goal setting and feedback for a completed activity, which is measured in terms of time and quality instead of personality traits. These measures are normally more tangible, which lessens subjective judgement or evaluation regarding behaviour (Latham & Wexley, 1994:53). One criticism is that the individual does not always have control over cost, which could be influenced by team impact, environment impact or context impact (Latham & Wexley, 1994:51). Latham and Wexley (1994:170) promote the concept of goal setting, but outside of "cost only" goals. As goals give direction by focusing activity, they ensure that effort is expended on the correct activity. They also found that difficult goals are often pursued with greater persistence.

There are also behaviour-based approaches that rate the individual not on the trait, but on whether the behaviour can be observed or not, such as "working well with co-workers" (Grobler *et al.*, 2006:264). The behavioural indexes state explicitly what the individual must do to be productive (Latham & Wexley, 1994:57).

In the literature various different types of appraisal instruments can be found, as listed below.

- Forced-choice scales created by the US Army after World War II, first mentioned by Sisson in 1948 and expanded by Cozen in 1955 (in Latham & Wexley, 1994:77)
- Behaviourally Anchored Rating Scales (BARS), refined in the nursing profession in 1963 (Smith & Kendall, in Latham & Wexley, 1994:78)
- Behavioural Observation Scales (BOS), created by the American Pulpwood Association in 1968 (Latham & Wexley, 1994:78)
- Mixed standard scales (MSS), used to respond to behavioural items in terms of whether the employee is better than, equal to or worse than the behavioural item, described in 1972 by Ghiselli (in Latham & Wexley, 1994:98)

3.2.1.3 Issues with performance appraisals

There are, however, many problematic issues relating to performance appraisals, but as Latham and Wexley (1994:1) put it "performance appraisal systems are a lot like seatbelts." They may not be liked by all, but they are necessary. Thornton and Zorich (in Cascio, 1998:61) split the performance appraisal into two stages. The first is observation, which includes detection, recall and recognition of specific behavioural events, and the second is judgement, where information is evaluated, integrated and categorised. It is often in this second stage that managers are seen as unfair judges and subordinates feel uncomfortable in participating in the discussions, as they may feel that there is an unspoken "political" agenda. In addition, the judgements are often seen as biased or lacking objectivity, and this ultimately causes a breakdown in trust (Cascio, 1998:58; Culbert, 2008; Harvard Business School, 2007:2-3; Latham, Almost, Mann & Moore, 2005:80; Latham & Wexley, 1994:1). When managers are not objective enough, or when what is *not* said in the appraisal interview is actually more important than what is said, the review can be more damaging than energising (Harvard Business School, 2007:35; Williams, 2007:22).

In some cases it has been found that the appraisal instrument measurements were invalid because they were not linked to the organisational goals (Harvard Business School, 2007:35; Latham & Wexley, 1994:1). This could be as a result of the managers not having spent time on defining the goals in sufficient detail, or due to external factors. Deming (in Latham & Wexley, 1994:3) had a significant impact on the quality movement in Japan during the 1980s. He speculated that the system is often not taken into consideration when measuring outcomes. Cascio (1998) agrees that this could become a barrier, since the individual often does not have control over the total organisational system.

3.2.1.4 Some suggestions for change

In *Managing performance to maximise results* (Harvard Business School, 2007:19), the statement is made that "[m]ost effective performance appraisal systems…exhibit…(1) ongoing, two-way exchanges of feedback; regular coaching between manager and employee; (2) separation of conversations devoted to

professional development and compensation decisions; and (3) explicit links between performance goals and high-level company objectives".

As the first element, namely "ongoing, two-way exchanges", suggests, there is a recommendation for a more continuous approach, with review sessions that are held regularly, rather than only once or twice a year (Harvard Business School, 2007:37). Culbert (2008) refers to these as *preview* sessions, rather than *review* sessions. This can be achieved through a collaborative coaching approach, where the manager works in partnership with the employee, rather than playing the role of the judge (Carney, 2007:51; Williams, 2007:30). What is also important about the coaching approach is that the employee needs to take more accountability and responsibility in defining and driving different objectives (Allen, 2007:44; Gary, 2007: 73; McGregor, 1957:135). In Theory Y, McGregor (1957:127) proposes that "By arranging organizational conditions and methods of operation, management's task is to allow people to achieve their own goals by directing their own best effort s towards organizational objectives."

This was encapsulated in his now famous Theory Y, which is linked to the concept of internal control and self-direction (McGregor, 1957:134). Johnson (2007:97–103) also refers to the power of self-efficacy, in that employees must believe that they can achieve goals, and that a personal interest should be incorporated, which will bring a personal or intrinsic motivation, rather than an external motivation from company perspective only.

The second element of the Harvard Business School quote: "separation of conversations devoted to professional development and compensation decisions", contains a suggestion to unbundle the different functions of the review process, so that development, performance, remuneration and career planning are done as separate exercises. It is even suggested that discussions around poor performance be held only when necessary and in order to cover legal requirements (Harvard Business School, 2007:37). In this way, a clear distinction is made between achievers and poor performers, and issues can be addressed openly as they occur (Gary, 2007:73).

The third element of an effective performance appraisal, stated as "explicit links between performance goals and high-level company objectives", indicates that performance appraisals can be improved by ensuring that the measures are reliable and valid. For the measures to be valid, they need to be aligned with the objectives, which in turn need to be clear and link with the organisation's goals (Allen, 2007:44; Brinkendorf & Dressler, 1990:63; Carney, 2007:51; Johnson, 2007:97-103). To achieve this, Latham and Wexley (1994:66-69) suggest retesting measures at more regular intervals, ensuring that there is inter-observer reliability, that scales show internal consistency, and that there is content, predictive and construct validity. There have also been suggestions that not only the manager should be an appraiser, but that there should be a 360 degree review, which could include employees, peers and subordinates, as well as customers (Latham & Wexley, 1994:111; Grobler *et al*., 2006:279). A caveat for 360 degree reviews is that one needs to find qualified "judges" to assess people's performance according to the agreed goals, especially where the goals relate to less tangible outputs (Carney, 2007:54; Latham *et al*., 2005:80). Moreover, self-evaluation can work if used in conjunction with other evaluations as a type of triangulation (Miner, 1992:389).

Another way of linking the organisation's strategic goals to individual performance objectives is the Balanced Scorecard, which was developed by Norton and Kaplan (1992). The improvement over normal "goal-setting" was that the objectives were split over four "balanced" perspectives, rather than just focusing on costs, as with the Management by Objectives (MBO) approach. The four perspectives include a financial perspective; internal or process perspective; innovation and learning for value creation; and customer or shareholder perspective. Each objective is given a measurement, target and initiatives. Even though this approach is a definite improvement over the so-called non-balanced measures, it is still subject to interpretation and "judgement" by the manager. The balanced scorecard is still seen as something that is used in a bi-annual appraisal, and not necessarily on an ongoing basis.

3.2.2 Performance Management of Virtual Knowledge Workers

As stated in the introduction, and as confirmed by the literature review on traditional performance management, performance appraisals have many inherent drawbacks. These problems are now being amplified in the case of virtual knowledge workers, because the manager does not see them on a regular basis, and their contracting arrangements may differ. The question is whether research has been conducted on the management of performance of virtual knowledge workers, and the related linkages to the issues and improvements identified in the paragraphs above.

Even though many individuals have made statements to the contrary (Drucker, 1999:142; Davenport, 2005:45), according to Reddin (1988:33), "[i]t is a popular myth that the effectiveness of many knowledge workers cannot be measured". In a book published as early as the late 1980s, Reddin (1988:33) promotes the use of output-oriented performance management. He states that even the work of knowledge workers can be defined in output terms, such as how many times the advice of a knowledge worker has been accepted, or how many times this advice has actually led to an improvement in the current situation. Von Hoffman (2007:153) calls this the measuring of ideas. He adds that the individuals themselves should be asked what they think their job and contribution entail, and that this should not be only left to peer review. He also states that corporate culture can determine how well knowledge workers are accommodated, especially from a learning perspective (Von Hoffman, 2007:158).

Piccoli *et al.* (2004:372) did a study in which a total of 201 students were included in an experimental design to determine the impact of managerial controls on the effectiveness of virtual teams. The students were divided into work teams of three to four individuals each. Half of the teams were subjected to behavioural controls such as filing of regular reports, structuring work and other work control procedures, while the other teams had to regulate their own work (i.e. were defined as self-directed). Although they found that there was no significant difference in performance between self-directed and behaviour-controlled virtual teams, they did find that there was a higher individual satisfaction in self-directed teams. However, the most effective teams were self-directed teams where there were specific individuals who took on the

role of structuring and co-ordinating the team efforts. These "emergent leaders" facilitated communication and ensured that individual roles were understood. In general, the recommendation was that the application of behavioural control practices could be counter-productive or ineffective in virtual teams (Piccoli *et al.*, 2004:374)

This view is supported by the empirical study of Jackson *et al.* (2006), which focused on the fact that virtual knowledge workers are normally seen as self-driven, and proposed a self-monitoring, rather than a management control approach. This is based on the concept of an external panopticon or "all-seeing eye", which was introduced by Jeremy Bentham, and based on the original work of Foucault, to institute ongoing surveillance in prisons (Jackson *et al.*, 2006:221). This research by Jackson *et al.* is a detailed, single case study of a highly successful Scandinavian engineering company. The study was performed in the development planning division, which had 150 full-time and 200 part-time employees. The study looked at direct control, such as task allocation and quality control, indirect controls such as job descriptions, and then the creation of an inner panopticon, which can be used as inherent motivation of virtual knowledge workers. Data was collected through seminars, focus groups and interviews at management and knowledge worker level.

The case study found that professionalism does become a type of "inner panopticon", which drives the virtual knowledge worker to keep on working (i.e. stay on task), even though no visible external control is exercised (Jackson *et al.*, 2006:232). This links strongly to one improvement that has been suggested for traditional performance appraisals: the individual should be given more accountability, and the manager should just act as a sounding board or coach, without being seen as exerting direct control (Allen, 2007:44; Gary, 2007:73; McGregor, 1957:135). Jackson *et al.* (2006:241) also recommend further research linking the inner panopticon to technology as supporting tool. In addition, Piccoli *et al.* (2004) proposed research in a real-life situation as opposed to their experimental design including only students.

The more recent literature regarding the management of dispersed teams was only reviewed after data collection and analysis, and enfolded in chapter 6, to ensure that

the inductive process and not deductive process for the constructivist grounded theory was followed.

3.2.3 Other Research Related to Framework Questions

While searching for pre-existing items to include in the online questionnaires, some additional studies were found with links to virtual work and/or job performance in general. These were reviewed and the relevant questions contained there-in were used to extend the conceptual framework.

In a study reviewing factors contributing to virtual work adjustment, one of the findings was that the longer individuals had been working virtually, the more comfortable they would become with their independence (Raghuram *et al.*, 2001:392). The study by Raghuram *et al.* (2001) also found that setting of clear evaluation criteria improved the adjustment of virtual workers because it provided some independence to the virtual workers for managing their own performance according to the set criteria. In this regard, work independence also contributed positively to virtual work adjustment (Raghuram *et al.*, 2001:396). Trust was also found to be a significant factor relating to positive virtual work adjustment or telecommuter self-efficacy (Raghuram *et al.*, 2001:396; Raghuram *et al.*, 2003:196). In another study it was also found that when individuals trust their managers, they are more likely to follow the organisational directives (Taylor & Carroll in Raghuram *et al*, 2001: 287).

Further to this, Broschak *et al.* (2008) conducted a study to determine the relationship between work arrangements (specifically nonstandard work vs. standard work arrangements), work attitudes and job performance. Performance was defined on three levels: reaching of a monthly performance expectation set by their manager; their score on their last performance appraisal as a rating from 1 to 5; and regular engagement in extra-role behaviours at work (Broschak *et al.*, 2008:23). The researchers found that in most cases, the performance of the nonstandard workers, such as retention part-time workers and agency temporary workers, was better than the performance of their peers in full-time employment or standard work

arrangements, especially where the agency worker had the opportunity to transition into full-time employment. On the other hand, the commitment of standard workers who were given flexibility to work part time did not improve significantly.

As a control variable, the researchers controlled for dependence on others as well as for work independence, which was established respectively by determining how often individuals were interrupted by others, and how often they could work without the need to collaborate with others. They wanted to determine how much the type of work arrangement lent itself to extra-role behaviours (as one of the performance measures), rather than the inclination of the individual towards helping others. To capture these variables (i.e. "other's dependence" and "work independence") they used specific questions which had been created by Pearce and Gregersen (in Broschak *et al.*, 2008:38). It was decided to include these questions in the current study, because a higher degree of dependence could reduce the number of days that an individual could spend working remotely from managers and others.

A study completed by Christen, Iyer and Soberman (2006, 147), re-examining the relationships between job satisfaction, job performance (or outputs) and effort (input in work relationship) through agency theory, found a "significant positive effect of job performance on job satisfaction". Although the research was not conducted in a virtual situation, the questions interrogating job satisfaction were included in the current study.

In looking for additional parameters that could be used in questions relating to how performance is measured, the five performance objectives of cost, speed, quality, flexibility and dependability, as part of an operations management approach, were included (Pycraft, Singh, Phihlela, Slack, Chambers, Harland, Harrison & Johnston, 2000:63). These are listed in Table 3-1. An additional column has been added as interpretation of how these measures could be applied to knowledge workers.

Table 3-1:   External effects of the performance objectives

Performance Objective	Definition	Operations	Knowledge Worker Application
COST	High total productivity	Low price, high margin	Cost vs selling price of knowledge delivered
SPEED	Fast throughput	Short delivery lead time	Number of knowledge products delivered in certain time period (i.e. productivity)
QUALITY	Error-free processes	On-specification products/services	Delivered according to standard (What is the standard – peer review; externally set level; professional qualification?)
FLEXIBILITY	Ability to change	Frequent new products and services	Innovative solutions; problem-solving capability; novelty of the solution – recipe or novel solution
DEPENDABILITY	Reliable operation	Dependable delivery	Keep on delivering Others depend on the output – contribute to many knowledge products of others.

Source: Pycraft *et al.* (2000:63), last column interpretation for this study.

The questions contained in the above-mentioned studies that were deemed suitable to extend the framework of questions for the current study have been included in Table 3-3.

3.3   THEORIES AFFECTED BY NONSTANDARD WORK

Since the work contract and way of work for virtual knowledge workers is changing, it stands to reason that many long-standing theories about work and work motivation will be affected (Broschak *et al.*, 2008:3-4). This includes socialisation (Barley & Kunda, 2001:87; Broschak *et al.*, 2008:18-19), psychological contract (Rousseau & Tijoriwala, 1998:679), self-efficacy (Staples *et al.*, 1999:758-776), goal-setting (Locke & Latham, 2006; Locke *et al.*, 1988:23;) and management control (Jackson *et al.*, 2006:220).

Ashford *et al.* (2007:67) use the three "attachments", as defined by Pfeffer and Baron (in Ashford *et al.,* 2007:68), including geography ("Physical attachment"), control ("Administrative attachment") and length of contract ("Temporal attachment") to define a nonstandard worker. Nonstandard work can thus be deemed to be work where control of the individual is low, due to the fact that the individual no longer

works in the same geographical location as the manager or organisation, and the career of the individual is no longer guaranteed (i.e. any contract is not necessarily a long-term engagement with the organisation). An important distinction that is made is that the work will only be deemed to be nonstandard if the work was traditionally done in a standard way. For example, an artist would not be seen as a nonstandard worker, as they have always worked away from their direct managers (Pfeffer & Baron in Ashford *et al.*, 1977:74; Staples *et al.*, 1999:773). Types of work that are encompassed by the term of nonstandard work include contingent work, alternative employment, temporary work, independent contractors, telecommuting, market mediated and freelancers (Ashford *et al.*, 2007:66; Connelly & Gallagher, 2004:960).

Table 3-2 gives a summary, based on this literature review, of the impacts that the nonstandard worker paradigm has on various theories, and how the nonstandard paradigm differs from the standard worker paradigm in the context of organisational behaviour (OB).

Table 3-2:   Nonstandard *versus* standard workers

Dimension	Definition	Nonstandard Worker	Standard Worker	Theoretical mechanism	OB Theories affected
Temporal attachment	"Extent to which workers expect employment to last over the long term."	Responsible for own career	Lifelong career in company	Affects worker's expectations of the future; "To impress superiors for getting ahead".	Organizational citizenship; Citizenship behaviour; Impression Management; Performance Management
Administrative attachment	"Extent to which workers are under the organization's administrative control."	Lesser control	Full control	Affects whether workers classify themselves as organisational members (Perceived vs. actual group membership); To belong and identify; "Strong individual motive to fit in"	Social identity Theory; Self-categorisation theory; Organisational identification literature; Socialisation literature; Social Exchange

Table 3-2: Nonstandard versus standard workers (Continued)

Dimension	Definition	Nonstandard Worker	Standard Worker	Theoretical mechanism	OB Theories affected
Physical attachment	"Extent to which workers are physically proximate to the organization."	At home, coffee shop, branch office, client site; "Make meaning by drawing on their self-knowledge and culturally available meaning units"	On site; "...workers come to understand the meaning and value of their work... (through interaction with others)"	"Affects levels and quality of interaction"	Mental models link to paradigm and mindset
Temporal - Micro level	Type of hours	Variable hours; Flexible hours	Fixed hours; Fixed Start and end times	Affects whether workers are deemed to be "contract" or temporary workers - type of contract	Employment contracts
Psycholo-gical attachment	Identification with the company	Construct identity as professional and entrepreneu-rial.	Strongly identified	Internalisation of organisational values	Organisational culture; Culture literature; Psychological contract

Source: Ashford *et al.* (2006:69-74) (adapted)

3.4   INFORMATION SYSTEMS AND PERFORMANCE

Information systems that are used to gather and process employee information in organisations are called human resource information management systems (HRIMS) (Grobler *et al.*, 2006:39). These systems are used to store performance appraisal and skills development information of employees, in order to use it in developmental and promotional decisions. This information is, however, not of much use to the manager who needs to manage the performance of virtual knowledge workers on a day-by-day basis, since the information is not updated on a daily basis.

Knoll and Jarvenpaa (1998:2) conducted a study in which students who had not met each other before, and who were located across countries and universities, needed to produce a combined deliverable. The study found that virtual collaboration,

electronic socialisation and virtual communication skills, as well as the extent to which procedures, guidelines and rules were agreed between the team members, became important for the successful completion of the deliverables. When collaborating, teams needed to manage conflict effectively, agree on procedures and processes connected to deliverables, and synchronise their timing, especially where work needed to be performed across time zones. They also need to learn new electronic socialisation skills to ensure that group norms were set, participation was ensured and the sense of teamwork and interdependence, defined by the term "teamness", existed. This "teamness" is defined as a sense of teamwork and interdependence and relates to the cohesion and interdependence among team members which is created through the communication of feelings, sensory information, and roles and identities in written or verbal communication. On the communication side, team members needed to ensure that they communicated the intended meaning of their messages, a large portion of which could be influenced by language, culture and the type of technology used. The new netiquette conventions for online communication were especially important to consider during both electronic communication and socialisation. Team members needed to learn to cope with the new style of communication, in particular when some users exhibited less emotional restraint when communicating electronically.

Other IT systems such as email, collaboration tools, knowledge bases and even social networking tools are used to exchange information, collaborate on mutual deliverables, and determine work in progress (Palmer, 1998:77). The concepts of communication, collaboration and socialisation, among others, can also be used to categorise these IT technologies that managers and their teams use during remote interaction.

A study by Limburg and Jackson (2007:146) focused specifically on how workflow management systems (WFMS) can be utilised to manage remote teams which have to collaborate on deliverables while not working in the same location. Workflow management systems support business processes by keeping information relating to decisions flowing between potentially remote individuals (Limburg & Jackson, 2007:147). These authors have categorised these control approaches into behaviour, output, input, peer and self control. Behaviour control relates to individuals'

performing exactly to the agreed standard or procedure. Managers need to closely monitor individuals to ensure that they perform up to standard. In output control, the end results or outputs are measured according to targets that were set up-front, with the specification of expected results being important. Input control relates to ensuring that the right individuals are selected, that the individuals are trained, and that the goals of the business unit and individual are aligned with organisational goals (Limburg & Jackson, 2007:148). The impact of colleagues and other managers, or even the professionalism of the individual, is part of the concept of peer control, while self-control is directly related to the amount of autonomy and discretion an individual has in deciding on his or her actions (Limburg & Jackson, 2007:149). The study found that WFMS could be used for more than just collecting performance management data. WFMS were even effective in peer control and self control scenarios (Limburg & Jackson, 2007:165). Thus research suggests that the type of systems used at the different organisations should play an important part in managing the performance of virtual workers.

The current study will therefore review what information and communication systems were used to track and enable performance of individuals and teams.
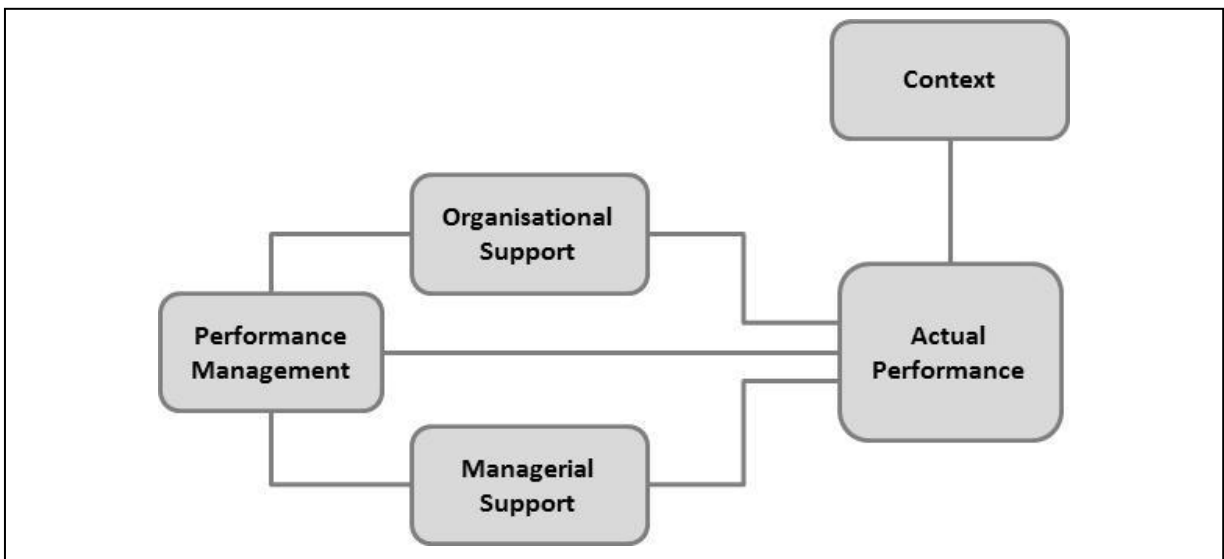

3.5 INITIAL FRAMEWORK AND QUESTIONNAIRES

3.5.1 <u>Framework</u>

Based on the review of performance management and virtual knowledge workers, a basic conceptual framework was created primarily for establishing and grouping the content of both the interviews and questionnaires. This framework is shown in Figure 3-2. The diagram indicates that certain relationships may exist between the components, which would ultimately affect the performance of the individual. The components are listed below and they are based on elements identified in the initial literature review:

- Performance Management: How is the performance of virtual knowledge workers managed?

- Organisational Support: How is management of performance of virtual knowledge workers supported by Human Resources and Information Technology on an organisational level?

- Managerial Support: What additional elements does the manager contribute towards managing the performance of virtual knowledge workers?

- Context: Are there any other contextual parameters that also influence the performance of virtual knowledge workers?

- Actual Performance of the virtual knowledge worker: This represents the outcome based on all the "inputs" received.

Figure 3-2:   Basic conceptual framework

3.5.2 Individual Questionnaire Components

The initial basic conceptual framework was used to create the sections or components for both the semi-structured interviews and the questionnaires. These components are shown in Figure 3-3. For the online questionnaires, the first component represented the demographics of the individual, such as contract status, age, and years employed. The aim of the second component was to gain an understanding of how performance is managed by the manager from the individuals' perspective. The third component focused on the manager's support. In other words, what does the manager do to influence performance? Organisational support was the fourth component. This started looking at organisational factors that could influence

the individual or team. Component five reviewed how the individuals perceive their own success, linking to the concept of self-efficacy. The last component reflected on any other external factors that could influence or moderate the actual performance. The final individual questionnaire is given in Appendix C – Online Questionnaires.

Figure 3-3: Questionnaire and semi-structured interview components
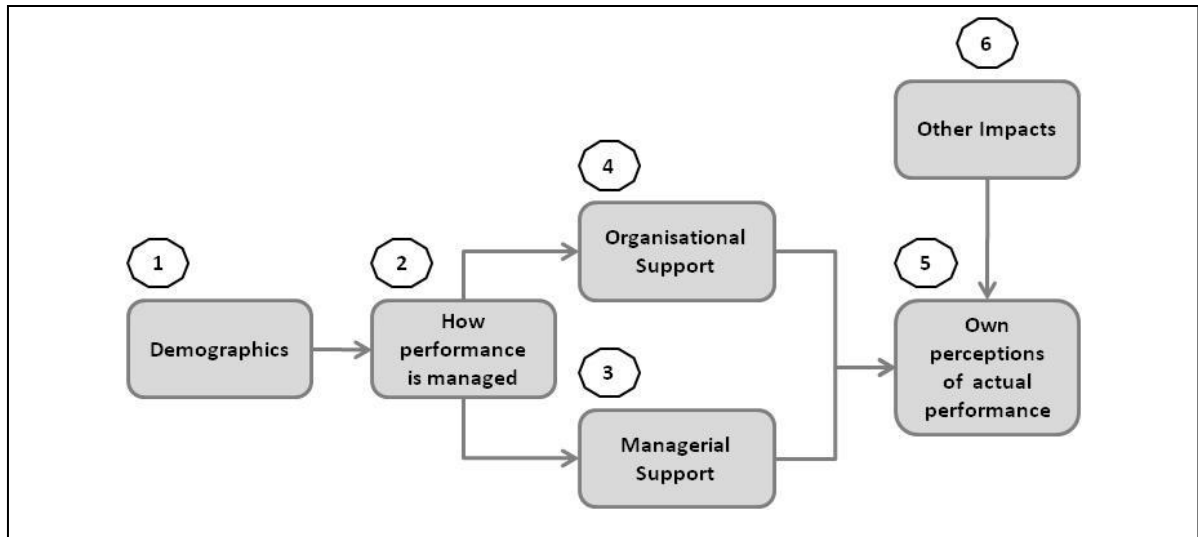

Table 3-3 contains those questions that were specifically obtained from the literature review, as included above. The first column gives the link to the research objective (RO); the second column gives the questionnaire component; the third column provides the source reference; the last column contains the questionnaire item.

Table 3-3: Questions with specific literature references

RO	Questionnaire Component	Reference	Question
C	(1) Demographics	Tenure - the longer working virtually, the more comfortable the individual will be with the independence. - (Raghuram *et al*, 2001:403)	How long have you been working as virtual knowledge worker (i.e. remote from manager)?
			Years
			Months

Table 3-3: Questions with specific literature references (Continued)

RO	Questionnaire Component	Reference	Question
RO1	(2) Management of Performance	*Original Hypothesis: (H2) "Clarity of evaluation criteria will be positively related to employee adjustment to virtual work". (Raghuram et al, 2001:386,403) (Questions of the study included.)* *Study Hypothesis: Clarity of evaluation criteria (given by the manager) will positively relate to virtual knowledge worker performance.*	*Please select the most appropriate answer for each statement. (Likert)*
			There are objective criteria whereby my performance can be measured.
			It is easy to measure and quantify my performance.
			The measures of my job performance are clear.
RO2b	(2) Management of Performance	Original Hypothesis (H3) "The more an employee's manager utilizes effective remote management and working practices, the higher the employee's remote work self-efficacy." (Staples *et al.*, 1999:758-776)	*Please select the most appropriate answer for each statement. (Likert)*
			My manager communicates goals and sets priorities with me.
			My manager assesses my performance based on the results I achieve rather than how I spend my time.
RO4	(8) Other Impacts	Job satisfaction, job performance, and effort: a re-examination using agency theory. (Christen *et al.*, 2006:148)	*Please select the most appropriate answer for each statement: (Likert)* I have a lot to say about how to do my job.
			How satisfied are you with the amount of control you have in your work?
RO1 / RO3a	(2) Management of Performance	Defining productivity e.g. number of products in certain duration; quality - products are of certain "standard"; complexity of the products (high/low); novelty of the products (new / recipe; amount of money that can be made with the outcome; independence required for the work. (Culbert,2008) Matrix (Davenport, 2005) Operations Manual Performance objectives (Pycraft *et al.*, 2000)	How is your performance measured? / How would you like your performance to be measured?
			Time spent working
			Number of products produced/delivered in given time
			Quality of work produced
			Level of customer satisfaction
			Management perceptions only
			Meeting financial targets
			Meeting objective criteria
			Progress on allocated tasks
			Novelty of solutions produced
			Complexity of solution produced
			Other

Table 3-3: Questions with specific literature references (Continued)

RO	Questionnaire Component	Reference	Question
RO2b	(5) Managerial Support	Original Hypothesis H3 "Interpersonal trust will be positively related to employee adjustment for virtual work / telecommuter self-efficacy" (Raghuram *et al.*, 2001:403; Raghuram *et al*, 2003:196)	*Please select the most appropriate answer for each statement regarding your manager. (Likert)*
			I trust my manager.
			My manager trusts me.
RO2b	(5) Managerial Support	Manager and freedom given (Luyt, 2007)	*Please select the most appropriate answer for each statement regarding your manager.(Likert)*
			My manager allows me to work flexible hours.
			My manager allows me to select my location of work.
RO2b	(5) Managerial Support	Inner Panopticon (Jackson *et al.*, 2006)	*Please select the most appropriate answer for each statement regarding your manager: (Likert)* The amount of control my manager exerts over my day-to-day activities is acceptable.
RO2b	(5) Managerial Support	Original Hypothesis (H3) "The more an employee's manager utilizes effective remote management and working practices, the higher the employee's remote work self-efficacy." (Staples *et al.*, 1999:758-776)	*Please select the most appropriate answer for each statement regarding your manager. (Likert)*
			I have been trained by my manager to work remotely.
			My manager uses available information technology tools effectively.]
			My manager supports my information technology needs with equipment, financial support, and training.
RO2b	(7) Own perceptions of success	Inner Panopticon (Jackson *et al.*, 2006)	*Please review the statements below and select the most appropriate answer: (Likert)* My manager does not have to monitor me in order for me to perform up to standard.
RO4	(7) Own perceptions of success	Other dependence on individual (Question by Pearce & Gregersen, in Broschak *et al.*, 2008:38)	*Please review the statements below and select the most appropriate answer. (Likert)*
			I am frequently interrupted by requests for information from others in my team.
			In my job, I am frequently called on to provide information and advice to others in my team.
			The way I perform my job has a significant impact on others in my team.

**Table 3-3: Questions with specific literature references (Continued)**

RO	Questionnaire Component	Reference	Question
RO1	(7) Own perceptions of success	Original Hypothesis: "Work independence will be positively related to employee adjustment to virtual work." (Raghuram *et al*, 2001:392,386) Questions used as created by Sims, Szilagyi & Keller 1976 (In Raghuram *et al*, 2001: 403) Study hypothesis: Work independence will negatively relate to the perceived amount of management control. (The more work independence the less management control is appreciated or needed.)	*Please review the statements below and select the most appropriate answer (Likert)*
			My performance does not depend on working with others
			To perform my best, I need to work independently.
RO4	(7) Own perceptions of success	Self-efficacy (Staples *et al.*, 1999:758-776)	*Please review the statements below and select the most appropriate answer: (Likert)* I believe that I can achieve the goals I set for myself.
RO4	(7) Own perceptions of success	Original Hypothesis (H8): "High levels of employee self-efficacy on remote work-enabling tasks will be related to employees' positive perceptions of their performance." (Staples *et al.*, 1999:758-776)	*Please review the statements below and select the most appropriate answer. (Likert)*
			I believe my own performance and deliverables are according to standard.
			I believe my manager thinks that my performance and deliverables are according to standard.
			I believe my colleagues and team members think that my performance and deliverables are according to standard.

3.5.3 Semi-structured Interviews

The semi-structured questions for the direct manager (line manager or project manager) of the individual team members were also divided into components similar to those used for the individuals. These are shown in Figure 3-4. The components include demographics, how performance was managed, organisational support, how individuals participated in ensuring performance (instead of "managerial support") and what the perceptions of the manager were of how well this management approach worked for the individual team members. The contextual parameters were

considered as part of other impacts. On the organisational level, similar semi-structured interviews were held with both an HR and an IT representative. The final instruments are given in Appendix B – Semi-Structured Questionnaires.

Figure 3-4: Semi-structured interview components
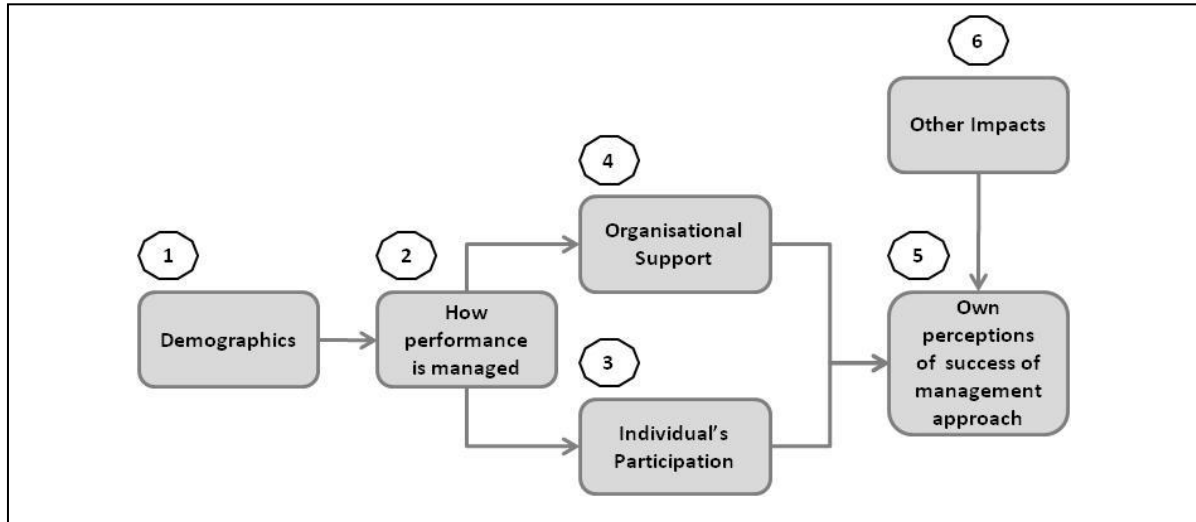
3.6 SUMMARY

At the time of completing the initial literature review, focus was placed on performance management in general. The literature review yielded some empirical studies and many practical guides and books relating to performance management objectives, approaches, issues and suggestions for change. The literature review on virtual work and telecommuting was more focused on the definition of the term "virtual work", since the typology of the virtual worker seemed to be an issue. The search also found the new term "nonstandard worker", which referred to work with low degree of physical attachment, as the latest in a string of terms used for more mobile workers.

In terms of literature regarding the management of performance of virtual workers specifically, the studies of Piccoli *et al.* (2004), Jackson *et al.* (2006) and Limburg and Jackson (2007) were quite relevant in that they looked at different control mechanisms and tools for virtual teams and virtual individuals. The need for additional research was, however, highlighted when it came to the sample groups. Piccoli *et al.* (2004) employed an experimental design using students, while Jackson

et al. (2006) included a single case study only. The current study therefore addressed the gap regarding the understanding of management of the performance of remote individuals by including a more extensive sample group from a real-life situation, and by considering a broader spectrum of parameters that could potentially impact on virtual performance.

The initial literature review did not include search terms relating to the management of geographically distributed teams (González-Navarro, Orengo, Zornoza, Ripoll & Peiró, 2010:1478; Malhotra, Majchrzak & Rosen, 2007:61; Matlala, 2011:73) and e-leadership (Avolio, Walumba & Weber, 2009; DasGupta, 2011) which has become more prominent in recent years. Such references have been enfolded in the data interpretation in Chapter 6. As stated by DasGupta (2011:30), "Finally, some newer technological innovations are in progress to support the e-leadership movement. There does not appear to be any serious disagreement amongst scholars on e-leadership; there are only working variations in research focus. There is agreement that this is a new field and that more research needs to be conducted."

In keeping with the principles of grounded theory research, the data collection and analysis was first completed before the additional literature review was enfolded in Chapter 6. From the literature, an initial conceptual framework was created, around which the semi-structured interview questions and the questions for the individual questionnaires were drawn up.

The execution of the study will now be discussed in Chapter 4.