

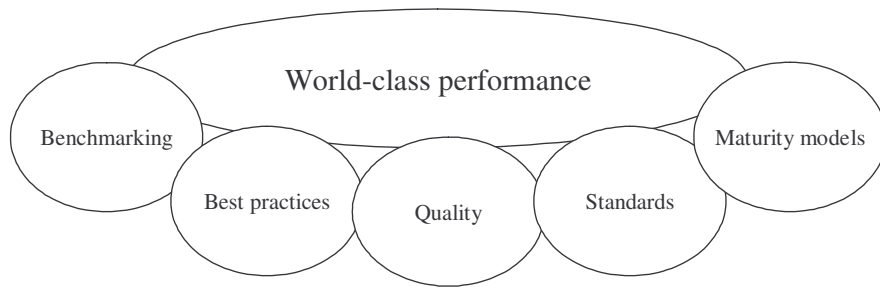
## **4 World-class performance**

### **4.1 Introduction**

This chapter will explore the meaning of ‘world-class performance’, offer a possible definition of how the term can be applied in practice and propose a means of measuring world-class performance that can be used to assess the effectiveness of the implementation of the use of stories and storytelling as practices for knowledge sharing as part of a knowledge management strategy. Establishing world-class performance in relation to knowledge management and stories and storytelling used in a knowledge management strategy represents the third major focus area of the non-empirical research which contributes to answering the main research problem.

The reason for this focus on world-class performance is to enable the execution of the empirical research as part of the overall research problem. The identification of the nature of world-class performance will facilitate the construction of a research instrument that will use world-class performance as a way of assessing and analysing the use of stories and storytelling. In other words, it is not just the incidence of use of stories and storytelling that is of interest but rather the extent to which the case study organisation and its knowledge management strategy and practices can be said to be world-class.

This chapter has been structured in such a way as to review a number of key concepts associated with the measurement and enhancement of organisational performance. There are six main sections to the chapter. In each of those sections, elements of a framework of world-class performance will be explored, including benchmarking, best practices, quality, standards and maturity models, starting with a discussion of world-class performance itself. These topics are represented in Figure 4.1.



**Figure 4.1 World-class performance framework**

The framework presented in Figure 4.1 is intended as a convenient way to draw together the various concepts associated with world-class performance. It is suggested that organisations aiming to achieve world-class performance should take into account the various elements of the framework and proactively decide not only which of the elements is applicable to their circumstances, but also the extent to which those elements represent an appropriate component of their overall world-class performance.

## **4.2 World-class performance**

As organisations of all types and sizes become ever more part of the global village, there is increasing pressure to match up to international competition and levels of performance. The last fifty years has seen an evolution from relatively closed economies and societies to a situation today, at the dawn of the 21<sup>st</sup> century, where ‘thinking global and acting local’ seems to be, for many, a new mantra for today and increasingly the future. In a sense one could argue that the globalisation movement which has gathered such pace in the past fifty or so years has given rise to the emergence of world-wide comparisons of performance, as opposed to the former, more localised, often more inwardly-focused, national basis of comparison.

In many fields, such as those measuring achievements in sport, the arts and entertainment, industry and commerce, the measure of good or best performance is now often described as ‘world-class’: world-class athletes take gold in the various competitions organised between the top competitors in a particular sporting code; competitors in disciplines such as cricket, rugby and soccer go head-to-head every four years for the honour of being acclaimed ‘World Champions’; each year sees the Academy of Motion Picture Arts and Sciences in the United States recognise world-class performance in the film industry.

#### **4.2.1 What is world-class performance?**

What is the business equivalent of world-class performance? There are certainly many different rankings produced of the highest performers as measured by a number of criteria (such as the Fortune Global 500), as well as the competitiveness report issued annually by the World Economic Forum, where competitiveness of nations (rather than enterprises) is the basis for comparison. This prompts the question: ‘What does it take to be world-class?’ If an organisation implements all the best practices it can lay its hand on, conforms to all the known standards in its field of operations and wins one or more performance or achievement awards, do these factors automatically render the organisation world-class? What happens if an organisation carries out benchmarking for selected elements of the business processes in which it is engaged, determines that its performance equals or exceeds those against whom the benchmarking exercise is performed? Can the organisation sit back, basking in the achievement of being world-class?

One of the obvious places to start in the discussion of world-class performance is to look at some dictionary definitions. The Collins English Dictionary (2000), for example, lists the term ‘world-class’ as, “an adjective, denoting someone with a skill or attribute that puts him or her in the highest class in the world example: a world-class swimmer.” The Merriam-Webster’s Collegiate Dictionary (2002) also lists world-class as an adjective, giving the date of first listing as 1950, and defining world-class as “being of the highest calibre in the world (e.g. a world-class polo player).”

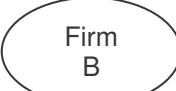




Although the term world-class is frequently used in a wide variety of fields, from sporting achievements to business performance comparisons, there is surprisingly little that has been written about the specifics of a definition of the term world-class as applied in a knowledge management strategy. A simple perspective might be to assume that any activity, process or aspect of an organisation's performance can be deemed (or claimed) to be world-class. This then prompts a number of questions that need to be answered:

- What are the criteria that will be used to measure world-class performance?
- Is world-class a state achievement at a point in time, or a journey of performance through time?
- If an organisation is to be world-class, to what element of its activities can or should the term be applied?
- How can the best-in-class performance be measured and by whom?

There are many established and widely used standards and models such as the International Organization for Standardization (usually known by its initials ISO), Investors In People and the European Foundation for Quality Management, although none of these ultimately define world-class performance (Faulkner, 2000). In an attempt to address the issue of a better definition, the world-class-service model 'Promoting Business Excellence' (PROBE) was launched in 1999, developed jointly by the London Business School and the UK-based Confederation of British Industry. PROBE enables organisations to, "quantify their competitive positioning, from 'could do better' to 'world-class' and their relative scores for practice and performance," (Faulkner, 2000:52). The International Service Study, which gave rise to PROBE, was conducted in 1997 and looked at 150 companies in the United Kingdom (UK) and a further 150 in the United States of America (USA), all of which were then compared using the model.

Voss *et al.* (1997), the authors of the PROBE model, looked at the issue of achieving world-class service in the context of global competitiveness. The objective of the study was to compare service practice and performance in the UK organisations

surveyed against a similar sample in the USA. The USA was chosen because, “its services are typically viewed as world leaders,” (Voss *et al.*, 1997:2). Using a model of service management the study gave rise to a benchmark comparing over 300 USA and UK organisations in the service business. The key findings of the survey included the positioning of organisations on a two-by-two matrix, relating service practice and service performance as illustrated in Figure 4.2.

Overall Performance	High	 Vulnerable	 Contenders	<div style="border: 2px solid black; padding: 5px;">             World-class         </div>
	Low	Could do better 	Promising 	
		Low	Overall practice	High

**Figure 4.2 Service performance and practice matrix**  
 (Source: Voss *et al.*, 1997)

In their study Voss *et al.* (1997:6) defined world-class organisations as, “those which had both leading management practices and performance equal to the world’s best.” To be classified as ‘world-class’, organisations needed to achieve a score of 80% or better in both aggregate practice and performance<sup>1</sup>. The study found the 13.2% of USA-based companies and only 5.3% of UK-based companies met these criteria.

The study also examined the extent to which firms in the USA either used or were preparing to use the Malcolm Baldrige National Quality Award (27.1%) or the International Organization for Standardization ISO 9000 assessment (13.4%). The authors found that there was a strong match between their survey findings of company

<sup>1</sup> In Figure 4.2 only Firm E meets the criteria of being world-class.

performance and that of the assessment as measured by the Baldrige criteria. The results achieved by Voss *et al.* (1997) gave rise to a series of offerings from the Confederation of British Industry (CBI) under the PROBE brand in the areas of service, manufacturing, human resources and environment (CBI, undated).

From a different perspective, Schonberger (cited in Waldron, 1999), suggested that the term “world-class manufacturing” came into popular use in the 1980s at a time when Japanese manufacturing was seen to be in the ascendancy. “World-class manufacturing has an overriding goal and an underlying mindset for achieving it. The overriding goal may be summarised by the motto of the Olympic Games: *citius, altius, fortius*... the world-class manufacturing equivalent is continual and rapid improvement,” (Waldron, 1999:8).

Waldron (1999:5) claimed that, “there is a growing list of more narrowly defined strategic initiatives that are commonly used to identify world-class manufacturers.” These, he said, are frequently referred to as ‘best practices’, but warned that their potency is “highly situational and implementation appears to be as important as the practice.” He also said, “identifying companies that truly deserve to be called world-class in manufacturing remains a daunting and imprecise task,” (Waldron 1999:16).

Waldron (1999:6) also offered examples of specific best practices in manufacturing, such as quality circles, the kanban system and total quality control, as examples of achieving world-class performance. In the same vein, Drucker, (cited in Waldron, 1999), quoted the example of the use made by Roger Smith of General Motors (GM) in the comparison of GM’s manufacturing with the best the Japanese had to offer. Compare this to the London-based CBI which defines world-class as “competing successfully with the best in the world, through performance sustained by superior practices in every area of the business,” (CBI, undated: online).

So, in summary, there have been studies on both sides of the Atlantic throughout the 1990s that used benchmarking as a key tool in helping organisations to measure the extent to which they were achieving world-class performance. These measures in both cases were based on the best practices found in organisations studied.

#### **4.2.2 World-class performance and knowledge management**

The field of knowledge management as it is known today is still relatively immature, given that its growth largely took place in the 1990s. It is remarkable, in a sense therefore, that in 2003, Teleos, in conjunction with the KNOW Network, announced the sixth in a series of annual awards for achievement in knowledge management on a global basis (Chase, 2003). These awards have been presented on the basis of achievement in North America, Europe and Japan as well as on a global basis, and seek to recognize outstanding achievements by Most Admired Knowledge Enterprises (MAKE). The criteria for the awards are:

- Creating a corporate knowledge-driven culture
- Developing knowledge workers through senior management leadership
- Delivering knowledge-based products/solutions
- Maximising enterprise intellectual capital
- Creating an environment for collaborative knowledge sharing
- Creating a learning organisation
- Delivering value based on customer knowledge
- Transforming enterprise knowledge into shareholder value (Chase, 2003).

These MAKE awards may be the closest there is currently available to measuring world-class performance in the knowledge management field. However, the drawback of using this awards process as a broader guide for organisations trying to become world-class is that there are relatively few companies that are nominated as finalists (in the 2003 awards, only 49 organisations on a global basis), and the awards process only measures against the criteria listed above and does not provide any form of diagnosis, action plan or road-map for improved performance in the future.

If the field of knowledge management is relatively immature compared to other branches of the study of management and organisation performance, then this is even more so the case with the use of stories and storytelling for knowledge sharing. As has been shown in the discussion around the use of stories and storytelling in Chapter 3,

there are only now emerging models for the use of stories and storytelling in support of knowledge sharing. There were no sources found in the research for this chapter to support the use of measures of world-class performance in the use of stories and storytelling for knowledge sharing.

This current study, by contrast, may offer some progress in this field, as the discussion of world-class performance focuses upon what useful elements there are available to organisations seeking to measure and improve their performance in this area.

### **4.2.3 World-class performance summary**

While conducting the non-empirical research for this project, it became clear that although the term ‘world-class’ is in general use, there is surprisingly little in the way of a formal definition which is widely agreed and documented in literature as to what the term ‘world-class’ really represents. Hence it was decided to develop the proposed framework for world-class performance which appears in this chapter in Figure 4.1. As already explained, the proposed framework has a number of components, each of which, it is recommended, is taken into account when assessing the extent to which an organisation or part thereof can be rated as world-class in its activities and performance. Although the PROBE model proposed by Voss *et al.* (1997) was found to be useful in addressing this subject, it was felt that a more complete view was required for the purposes of this research. Hence, the framework was developed and will now be explored in its component parts over the next several sections. Once the proposed framework has been fully explored it will be possible to apply the framework in assessing and analysing the performance of the case study organisation.

The next sections will explore the various elements portrayed in the world-class performance framework presented in Figure 4.1.



## 4.3 Best practices

### 4.3.1 Background to best practices

As organisations have faced increasing levels of competition during the rise of the era of globalisation, so they have sought to identify and implement ever-improving ways to do business, the so-called search for best practices. The popularity of the business re-engineering movement of the 1990s was largely built around the idea that organisations could learn from their own endeavours as well as from each other (Senge, 1990) and establish these best practices<sup>2</sup>.

How might organisations seeking to develop a best-practices based approach proceed? Gardner and Winder (1998) suggested the following:

- By identifying activities that have a positive impact on organisational performance.
- By selecting which of these to benchmark.
- By comparing performance to that of benchmarking partners.
- By adapting, revising and implementing practices to develop best practices.
- By incorporating best practices into organisational management systems.

In terms of what best practices represent, Chevron (O'Dell and Grayson, 2004) recognised four levels of best practices that could be found in best practices teams:

- Good idea -- unproven: not yet substantiated by data but makes sense intuitively.

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<sup>2</sup> Definitions of best practice include the following:

“Best/good practices: practices that have produced outstanding results in other situations, inside or outside of a particular organisation and which can be validated, codified and shared with others and recommended as models to follow” (CEN, 2004: online); “Best practice: best practices, processes and techniques are those that have produced outstanding results in another situation and that could be adapted for your situation. Like all knowledge, it is contextual. A best practice is what is best for you,” (Rumizen, 2002:285).

- Good practice -- methodology, procedure, or process that has been implemented and has improved business results for an organisation. This is substantiated by data collected at the location.
- Local best practice -- a good practice that has been determined to be the best approach for large parts of an organisation based on an analysis of process performance data.
- Industry best practice -- a practice that has been determined to be the best approach for large parts of an organisation. This is based on internal and external benchmarking, including the analysis of performance data (O'Dell and Grayson, 2004:621).

It is also possible to debate whether the term 'best practices' is even the appropriate one to use. It may be that the pursuit of best practices is the ultimate goal, but the practice which works best in the particular situation may be a more appropriate objective. In addition, it is impossible to know at any one point in time what a particular *best* practice is, so that a more cautious approach might be to define such practices as *better* practices (see section 4.3.2. for more discussion on this theme).

As early as 1977 the American Productivity and Quality Centre (APQC) was founded to assist organisations in identifying and implementing best practices. Since that time there have emerged a number of initiatives from both the private and public sector which seek to identify and distribute best practices in conjunction with the APQC (O'Dell and Grayson, 1998, 1999, 2004). The real growth of interest in best practices took place during the 1990s with one of the most comprehensive case studies of best practices implementation documented by Johnson (1997). He presented the story of Texas Instruments (TI) and their adoption of TI-BEST (Texas Instruments Business Excellence STandard). In essence, Johnson (1997) saw this as a four-step improvement process:

- Define business excellence for your business
- Assess your progress
- Identify improvement opportunities
- Establish and deploy an action plan.

In 1995, under the TI-BEST banner, the company launched a Best Practice Sharing (BPS) initiative. Johnson (1997) claimed the BPS initiative brought the, “first truly global effort at TI designed to break down the barriers of autonomous businesses and to create a single, powerful worldwide company fully utilising its collective knowledge,” (Johnson, 1997:54). This included:

- A best practice definition: ‘A best practice is a practice that is best for me.’
- The best practice sharing process: built on a supply/demand model, incorporating a knowledge base of best practices, with facilitators supporting the transfer process.
- A facilitator network: to enable the process and facilitate cultural change.
- A technology infrastructure: based on Lotus Notes™.
- ShareFair: first held in 1996, a one-day event to facilitate knowledge sharing and best practices transfer (Johnson, 1997).

Johnson (1997) cited evidence of TI’s commitment to the concept of best practices: there was a team of over 200 BPS facilitators and over 500 best practices were accessible from all business processes and regions around the world, drawn from the 60,000 TI employees and their experiences. Johnson (1997:53) related that the four services offered to TI employees by the Office of Best Practice were:

- A continual supply of best practices, from a variety of internal and external sources; these are in various forms including comprehensive narratives.
- Provision of tools and techniques for capturing and sharing best practices, including forums, presentations, documents, databases, email and newsletter articles.
- Communication of the latest techniques, trends and policies.
- Training of BPS facilitators to help them become more skilled in finding and documenting best practices.

Johnson (1997:54) continued by highlighting some of the benefits of the TI-BEST and TI-BPS initiatives:

- In 1995 TI Europe received the European Foundation for Quality Management (EFQM) European Quality Award and TI Singapore received the Singapore Quality Award
- 1996 saw the delivery of “free fab” capacity, avoiding the spending of an additional estimated \$1.5 billion on a new chip fabrication plant
- TI achieved top ranking in customer satisfaction in the semiconductor industry in 1995
- TI’s Defense Systems Group was recognised with a United States Navy Best Manufacturing Practices Award for their efforts in sharing best practices.

### **4.3.2 Challenges of best practices**

Are best practices not perhaps ‘better practices’? It can be argued that it is difficult to translate practices from one organisation to another due to uniqueness of circumstances, cultural barriers and a number of other factors.

O’Dell and Grayson (1998) quoted numerous examples of companies that have benefited from the transfer of internal best practices, such as at Texas Instruments, also highlighting some of the challenges to the transfer of best practices (including silo behaviour; a culture that promotes personal knowledge over knowledge sharing; a lack of contact and relationships; over-reliance on transmitting explicit rather than tacit knowledge; not allowing or rewarding people for taking the time to learn and share).

O’Dell and Grayson (1998) identified seven important lessons for firms about to embark on best practices transfer in terms of overcoming some of the challenges:

- Use benchmarking to create a sense of urgency or find a compelling reason to change
- Focus initial efforts on critical business issues that have high payoff and are aligned with organisational values and strategy

- Make sure every plane you allow to take off has a runway available for landing
- Don't let measurement get in the way
- Change the reward system to encourage sharing and transfer
- Use technology as a catalyst to support networks... but don't rely on it as a solution
- Leaders will need to consistently and constantly spread the message of sharing and leveraging knowledge for the greater good (O'Dell and Grayson, 1998:171).

The learning organisation is one that can analyse, reflect, learn and change based on experience (O'Dell and Grayson, 1998), but it has been discovered that best practices do not always transfer easily. The main reasons identified were (as mentioned in section 2.3.5):

- Ignorance: both on the giving and the receiving end
- Absorptive capacity: even where the practice was known about, there may be a lack of resources (time, money, people) or lack of detail to complete the transfer
- Lack of a relationship: trust and credibility being absent were significant barriers (O'Dell and Grayson, 1998:155).

Later, Szulanski and Winter (2002) presented an insight into what can go wrong with best practice replication and went on to suggest some principles to overcome the problem. They claimed that the significant big mistakes made by teams in trying to replicate best practices were:

- Placing too much trust in experts and documents
- When setting up the new process, there is the tendency for the manager to *turn into a cowboy*: he starts to tinker instead of implementing
- They overestimate what they know and their chances of success (Szulanski and Winter, 2002).

The authors specifically recommended copying the activity template as closely as possible, which they believed brings three advantages: there's a successful example to work to; there is a clear objective; there is a built-in tactical approach (Szulanski and Winter, 2002). The same authors also identified barriers to success to best practices replication (including uncooperative sources; lack of teamwork; internal competition; an overemphasis on innovation). In closing, the authors suggested that, "the poor track record of knowledge reuse...suggested that effective copying is not a trivial achievement but rather a challenging, admirable accomplishment," and that, "whole industries are trying to replicate best practices and manage organisational knowledge – but even so, the overwhelming majority of attempts to replicate excellence fail" (Szulanski and Winter, 2002:69).

In summary, there are several challenges associated with the achievement of best practices in organisations, with some clear recommendations from the authors mentioned here as to how to proceed towards successfully implementing best practices.

### **4.3.3 Best practices and knowledge management**

Many of the authors identified through the non-empirical research for Chapter 2 can lay claim to identifying and often advocating practices which apply to effective knowledge management (BSI, 2003a<sup>3</sup>; Collison and Parcell, 2001; Davenport, 1998; Davenport and Glaser, 2002; Davenport *et al.*, 1996; Davenport *et al.*, 1998; Earl, 2001; Elliott and O'Dell, 1999; Hansen *et al.*, 1999; Liebowitz and Chen, 2004; SAI, 2001; Skyrme, 2000; Sveiby, 1997; Szulanski, 1996; Von Krogh *et al.*, 2001; Wenger, 2000). Many of these practices have already been discussed in Chapter 2 (such as knowledge maps, community of practice) although there are others which are covered in the literature yet may not have received specific mention (such as corporate Yellow Pages, physical and virtual libraries, knowledge databases, knowledge audits, the knowledge infrastructure assessments). Some of the practices identified have been

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<sup>3</sup> Of all the sources consulted certainly the most comprehensive was the BSI (2003a) "*Managing culture and knowledge: guide to good practice.*" It is interesting to note that the title of this publication specifically stated only that it was a guide to *good* and not *best* practices.

integrated into various forms of knowledge assessment tools (such as in the case of Liebowitz and Chen, 2004; Skyrme; 2000).

In addition, in Chapter 2 there were identified (in Table 2.5) a number of commonly used knowledge management processes which themselves could be deemed to be 'best practices' (such as acquiring, codifying, creating, packaging, sharing and storing knowledge). The non-empirical study conducted for Chapter 3 indicated that a number of authors have identified practices which contribute towards successful implementation of stories and storytelling used for knowledge sharing (Armstrong, 1992; Boje, 1991 Boyce, 1996; Brown *et al.*, 2005; Denning, 2000, 2001, 2002, 2004a, 2004b; Hannabuss, 2000; Ibarra and Lineback, 2005; James and Minnis, 2004; Kaye and Jacobson, 1999; McLellan, 2002; Parkin, 2004; Ready, 2002; Reamy, 2002; Shaw *et al.*, 1998; Snowden, 1999a, 1999b, 2000a, 2000b, 2000c; Sole, 2002; Sole and Wilson, 2002; Swap *et al.* 2001). Examples of such practices include: story construction methods; story circles; story workshops; industrial theatre; use of multiple story media; specific models to support the use of stories and storytelling; storyteller coaching and learning histories.

However, as was the case above in exploring the concept of world-class as it applies to knowledge management, there are few if any well established and generally recognised best practices associated with the use of stories and storytelling as knowledge sharing practices. It is difficult, if not impossible, therefore, to approach this study as one where best practices previously established elsewhere can be applied directly to the case study research to be undertaken in this work. It also makes problematic the selection and implementation of best practices (with specific reference to the use of stories and storytelling as knowledge sharing practices) as a partial solution to efforts to achieve world-class performance.

#### **4.3.4 Best practices summary**

Where they exist, best practices can be used to help organisations to identify and adopt or adapt practices which have been found to work elsewhere. In the case of this study, the non-empirical research indicates that although a large number of practices

exist both in the conduct of knowledge management and the use of stories and storytelling as practices for knowledge sharing, there is far less defined in terms of best practices compared to some other fields (such as the experience of Texas Instruments). However, as indicated in the framework presented (in Figure 4.1) the concept of best practices should be used not in isolation but in conjunction with the other elements of the proposed world-class framework to better understand and improve organisation performance. In the next section benchmarking will be explored as a further element of the framework.

## **4.4 Benchmarking**

### **4.4.1 Background to benchmarking**

What is benchmarking? Benchmarking has been defined as, “a systematic process of learning from the best that originated in the quality movement. It focuses on learning to improve performance. It implies humility, a willingness to acknowledge that others are better and to learn from them,” (Rumizen, 2002:285). It has also been seen as, “the process of identifying, understanding, and adapting outstanding practices from others, in order to improve your own performance,” (O’Dell and Grayson, 2004:602). Within the overall definition of benchmarking there also exists the distinction between internal benchmarking and external benchmarking, where internal benchmarking is the process of identifying, sharing, and using the knowledge and practices that exist inside the own organisation, as opposed to external benchmarking, which looks to profit from an external comparison with other organisations (O’Dell and Grayson, 2004).

Another definition of benchmarking is: “an ongoing systematic process to search for and introduce international best practices into your own organisation, conducted in such a way that all parts of your organisation understand and achieve their full potential. The search may be of products, services or business practices and processes, of competitors or those organisations recognised as leaders or specific business processes that you have chosen,” (Gardner and Winder, 1998:201). Best Practices



LLC (2003:online) discussed their definition of benchmarking, which they described as, “the process of seeking out and studying the best internal practices that produce superior performance”, while Waldron (1999) offered another view that saw benchmarking as being both quantitative and qualitative in nature (where quantitative benchmarking involves the use of metrics, whereas qualitative benchmarking seeks to compare current manufacturing practices to the practices of leading manufacturers). De Jager (1999) also identified quantitative and qualitative benchmarking but added a number of other types of benchmarking: competitive, co-operative, collaborative and internal.

Szulanski and Winter (2002) presented a useful table of the different forms of benchmarking that exist:

<b>Parameter</b>	<b>Examples</b>		
Object of benchmarking	Products	Methods	Processes
Target of benchmarking	Costs	Quality	Customer satisfaction
Reference of comparisons	Intra-departmental competition	Constituencies and clients	Same agency or sub-unit

**Table 4.1 Forms of benchmarking**  
(Source: Szulanski and Winter, 2002)

Taking the classification offered in Table 4.1 it can be seen that benchmarking can be applied broadly as a business tool across all aspects of an organisation’s activities, suggesting that as benchmarking becomes more widespread and the basis for comparison grows, so the closer can the potential for world-class performance be said to exist. This also implies that benchmarking could be easily applied to knowledge management and to the use of stories and storytelling as knowledge sharing practices.

More than one commercial organisation has sprung up to serve the needs of those carrying out benchmarking. Examples include the International Council of Benchmarking Co-ordinators (ICOBC), which is a commercial organisation that has as its mission, “to identify ‘Best-In-Class’ business processes which, when

implemented, will lead member companies to exceptional performance as perceived by their customers,” (ICOBC, undated: online). Under the umbrella of this organisation can be found the Knowledge Management Benchmarking Association<sup>4</sup>.

#### 4.4.2 Challenges of benchmarking

Carrying out benchmarking presents a number of possible challenges. These include being able to identify where best practices can be found, against which the benchmarking can take place; ensuring that there is a realistic comparison being made between the organisations involved in the benchmarking effort; gaining access to organisations willing to take part in benchmarking activities, and gaining management commitment to benchmarking (APQC, 1997; Kouzmin, Loffler, Klages and Korac-Kakabadse, 1999; O’Dell and Grayson, 1998, 2004).

To help to overcome some of the challenges of internal benchmarking, O’Dell and Grayson (1998) recommended three actions required to improve the chances of success for internal transfer and benchmarking efforts:

- Internal transfer is a people-to-people process
- Learning and transfer is an interactive, ongoing, and dynamic process
- Specific skills and capabilities are needed as a foundation.

External benchmarking challenges received the attention of Kouzmin *et al.*, (1999:123) who found that there is a strong possibility that only “relative or local optimums are found as benchmarks.” This explains the need to have a continuous process: a constant search for evolving best practices. Kouzmin *et al.* (1999) then discussed some of the challenges associated with benchmarking, including:

- The difficulty of obtaining data about competitor organisations
- The type of benchmarking measures to be used
- The completeness of benchmarking data

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<sup>4</sup> For a European focus see [www.benchmarking.co.uk](http://www.benchmarking.co.uk) and [www.benchmarking-in-europe.com](http://www.benchmarking-in-europe.com) .

- The degree to which benchmarking examples are not durable over time (Kouzmin *et al.*, 1999).

Kouzmin *et al.* (1999) further debated some of the concerns surrounding benchmarking:

- Does benchmarking stimulate innovation? It may help to spread innovation but does it stimulate original solutions?
- Which is the best benchmarking instrument to use? Does this vary according to whether the organisation is from the public or private sector?
- Benchmarking aims to make organisations *lean and mean*. What if this activity removes *organisational slack* which may be necessary to promote innovation?

In summary, benchmarking may have its use for comparisons both inside and between organisations, but may be challenging to implement for a number of reasons as highlighted here.

#### **4.4.3 Benchmarking and knowledge management**

The APQC has made a series of studies into benchmarking, with one of these studies resulting in the development of a specific tool, the Knowledge Management Assessment Tool (KMAT), jointly developed by Arthur Andersen and the APQC (APQC, 1997; de Jager, 1999; O'Dell and Grayson, 1998).

In the first year that the KMAT was launched, 1995, seventy companies had completed the assessment, which involved indicating two dimensions for each of twenty-four emerging knowledge management practices: the importance of the practice and the performance of the practice. De Jager (1999:367) reported that the use of the KMAT was intended; “to help organisations make an initial high-level assessment of how well they manage knowledge,” as well as being a benchmarking tool that could be used to help knowledge centres achieve two objectives. The first of

these was to direct attention towards areas that need more attention and the second, to identify knowledge management practices in which they excel. The KMAT had in support a database containing data from 140 companies who had used the tool. De Jager (1999:368) claimed that the benefits to the knowledge worker of benchmarking “are that management can be shown the value of the knowledge management function in numerical terms.” Benchmarking can, “help to set realistic, quantifiable goals based on superior knowledge service practices...can result in a reduction of costs, improved customer service and increased system efficiencies,” (de Jager, 1999:369).

De Jager positioned the KMAT as a collaborative and qualitative benchmarking tool, with the focus on internal benchmarking as much as anything else. The reports available from the KMAT were of three types: external reports, which compare the organisation to the overall database or customized group; internal benchmarking, which compares an individual or other unit of measure with an internal peer group, and average benchmarking, which is a combination of internal and external comparisons. The KMAT was based on the way in which the four knowledge enablers built into the model: leadership, culture, technology and measurement, could be used to, “foster the development of organizational knowledge through the knowledge management process,” (de Jager, 1999:370).

The MAKE awards (see section 4.2.2) do include some degree of benchmarking that happens through the awards process (Chase, 2003), but this is somewhat subjective in terms of the voters in the awards process, rather than being driven by the nominee organisations themselves.

Once again, and perhaps unsurprisingly, the literature search conducted for this study does not reveal any other substantial evidence of benchmarking with regard to the use of stories and storytelling. Although a number of authors featured in the previous chapter report on the use of stories in organisations (and not even all of those with specific reference to stories for the purpose of knowledge sharing) there is no single instance mentioned where benchmarking activities have specifically been undertaken with reference to stories. This suggests an area for further research.

#### **4.4.4 Benchmarking summary**

Benchmarking, as an activity, seems to be well established, even widespread, and forms an additional practice that can be used by those organisations seeking to develop and sustain world-class performance. However, as with the issue of best practices, there appears to be emerging an incomplete explanation and indication of world-class performance in the field of knowledge management and related use of stories and storytelling as knowledge sharing practices.

The combination of best practices and benchmarking alone does not complete the picture. In the next section, therefore, the role of standards will be explored as a further element in the proposed framework of overall world-class performance.

### **4.5 Standards**

#### **4.5.1 Background to standards**

For many years there have been efforts to establish standards, at both a local and national level, for all sorts of fields. This standardisation is often seen in terms of practices and processes that have significant influence on the development and use of a wide range of both consumer and industrial products and services. These efforts have often resulted in a form of common practice (for example, such as which side of the road we travel on; the arrangement of pedals in a motor vehicle, or in which direction a tap is turned for water to flow) and although frequently these standards were established informally, where necessary and deemed desirable by the stakeholders, they have been formalised, even to the extent of legislation being passed (for such issues as health and safety).

As the world's economy continued to evolve there became greater pressure to establish international standardisation and there exist today many industry, national and international standards bodies. According to the leading international standards body (ISO, 2005) international standardisation began in 1906 when the International

Electrotechnical Commission was formed, but the ISO itself was a post-World War 2 initiative that officially began operations in February 1947. It is from this body that a definition of international standardisation can be found: “when the large majority of products or services in a particular business or industry sector conform to international standards, a state of industry-wide standardisation can be said to exist,” (ISO, 2005: online). The ISO itself, stated the case for standards, claiming they make, “an enormous contribution to most aspects of our lives – although very often, that contribution is invisible,” (ISO, 2005: online). How, then, are these standards developed? Through consensus agreements between national delegations, representing all the economic stakeholders concerned. According to the ISO (2005: online) “its members are the national standards bodies of 147 countries and it has issued over 14,000 standards... it has issued international standards for business, government and society.”

Some ISO standards are well known or easily recognised. For example, ISO 9000 has become an international reference for quality requirements in business-to-business dealings, while ISO 14000 is applicable in environmental management. The standing, therefore of the ISO is in little doubt. However, the ISO is not alone in providing an international platform for standards generation. The European Committee for Standardisation (better known by its French name, Comité Européen de Normalisation, CEN) (CEN, 2004) was founded in 1961 by the national standards bodies in the then European Economic Community and European Free Trade Association countries. The CEN now claims to, “contribute to the objectives of the European Union...with voluntary technical standards which promote trade, the safety of workers and consumers,” (CEN, 2004:online) amongst other concerns. However, the CEN only provides only a European rather than a global perspective to the whole standards movement.

Many of the major economies of the world have their own national standards bodies. Examples of these bodies are ANSI (American National Standards Institute); BSI (British Standards Institute); DIN (German National Standards); SAI (Standards Australia International); STANSA (Standards South Africa, previously known as SABS Standards, the Standards Division of the South African Bureau of Standards). The operational approach for these bodies is much the same anywhere in the world.

The national body is made up of a number of special interest groups or committees, each mandated to investigate the need for national standards in a particular field. These standards may be sourced from any one of three main points of origin:

- Standards originated from within the country
- Standards that originate within another country but for which an international standard does not exist
- An international standard that can be adopted or adapted to meet local needs.

In the research conducted for this chapter it has been established that only Australia, as a national entity, has progressed very far in the implementation of standards for knowledge management (SAI, 2003).

#### **4.5.2 Challenges of standards**

Standards may serve a useful, even vital purpose (in areas such as health and safety) where they exist. However, given the fairly lengthy process to generate and maintain standards, they tend to follow rather than lead current practice. Also, what is relevant and important to one national standards body may be less so in the case of the national standards bodies in other countries. It is not the purpose of this study to provide an in-depth evaluation of the role of standards and the possible challenges of developing and using standards per se; rather it is proposed that standards should be considered as a factor in the overall understanding of world-class performance in relation to knowledge management and stories, even if they present challenges in implementation (slow and expensive to develop). With this in mind the next section will look at standards with specific reference to knowledge management and the use of stories and storytelling as knowledge sharing practices.

#### **4.5.3 Standards and knowledge management**

To date, there has been a good deal of debate as to whether or not the field of knowledge management is in need of standards being established through the

traditional route of the national and international standards bodies<sup>5</sup>. This naturally prompts the question, “if not now, when?” This issue will be addressed further, in the discussion on national standards bodies and knowledge management standards.

The KMCI (undated:online) stated that, “some individuals and organisations around the world have begun work on knowledge management standards formulation. These include: the Global Knowledge Economics Council (GKEC), with ANSI accreditation in the United States, the British Standards Institution (BSI) in the UK, the Comité Européen de Normalisation (CEN) and the European Commissions' KnowledgeBoard Framework and Standards Special Interest Group on the Continent, and Standards Australia International (SAI).”

The KMCI (undated: online) also said, “each of them differs in the degree to which they advocate for standards. But to one degree or other, all have committed to the idea that valid standards for the discipline of Knowledge Management can be formulated from processes begun now, rather than at some time in the future or not at all.” This idea is challenged by the KMCI, which raises a series of issues:

- Issue One: Should standards be formulated for the discipline of Knowledge Management? Now? At some time in the future?
- Issue Two: Is the authority of ISO and ANSI, or more generally, any body external to the discipline of knowledge management itself, valid in relation to the promulgation of standards governing Knowledge Management including standards for Certification of qualifying persons?
- Issue Three: Are recent instances of corporate corruption in any way connected to Knowledge Management Certification Programs? Do they suggest that multiple, independent organisations are necessary for certification training?
- Issue Four: Do professional associations need to be accredited to offer Certification classes?

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<sup>5</sup> The ISO has not yet published standards in the field of knowledge management.



Skyrme (undated: online) also discussed the issue of standards for knowledge management. “The announcement by GKEC [Global Knowledge Economics Council]...of an international standards effort in knowledge management raises a fundamental question of why we need standards, plus many supplementary ones, of how should they be developed, validated and used.” Skyrme (undated: online) answered his own question, offering reasons for knowledge management standards as follows: compatibility and interchangeability; common understanding; efficiency; competitiveness; quality and safety, and enhancing levels of competence. Skyrme (undated: online) described all of these as laudable aims and gives the example of the battle for standards in the case of videotape formats (the well-known struggle between Sony Betamax and Panasonic and Philips-backed VHS format). Skyrme (undated: online) pointed out that, “the BSI was the world's first national standards body and evolved from the Engineering Standards Committee founded in 1901. Today, it has many business standards and is also involved in a recently launched pioneering e-business best practice and standards portal.” Despite this, the BSI has yet to issue any standards in the field of knowledge management. Some progress has been made, but in the nature of a best practice guide. The BSI guide, 'Knowledge Management: A Guide to Good Practice' (BSI, 2003a) addressed four issues: why organisations should care about knowledge management; how organisations should approach knowledge management; what benefits could be anticipated from investing in knowledge management, and how a deeper understanding of knowledge management could be achieved<sup>6</sup>.

Outside of Europe, a set of Australian interim standards for knowledge management have been published (SAI, 2003), a world first in this field. Meanwhile, in South Africa, STANSA, has initiated an SA-specific standards-forming initiative, but this remains in embryonic form. This perhaps provides further evidence of the relative immaturity of the whole knowledge management field, when compared with the standards issued by the national and international bodies in other fields.

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<sup>6</sup> The European KM Forum (2002:online) identified twenty issues when considering standardisation of knowledge management in Europe: Framework; Terminology; Privacy and policy; Business internetworking; Strategy; Organisation management; Issues for the standardisation process; Certification; Communities; Best practice; Processes; Domain models; Human and social issues; Training and education; Tools and technologies; Implementation methodology; Costs; Local versus global; Metrics and measurement; Restriction of standardisation.

As the use of stories can be viewed as a component of the bigger picture associated with the use of knowledge management practices in organisations, the absence of defined and published standards in the knowledge management field leads to the logical conclusion, supported by the results of this researcher, that recognised national or international standards for the use of stories and storytelling as practices for knowledge sharing do not yet exist.

#### **4.5.4 Standards summary**

Although the principle of establishing national and international standards is well established, in the case of knowledge management, standards cannot yet be used to measure the extent to which an organisation is world-class as such standards (with exception of the Australian national interim standards) do not yet exist.

Next, in the search for what it takes to be world-class, attention will be turned to the important issue of quality and the extent to which achieving and sustaining quality management can be used by organisations seeking to develop and sustain world-class performance, particularly in the field of knowledge management and with specific reference to stories and storytelling as knowledge sharing practices.

### **4.6 Quality management**

#### **4.6.1 Background to quality management**

Can an organisation claim to be world-class without proving its ability to adhere to the principles of effective quality management? It would seem a position difficult to support, given the focus that there has been on quality as a management and business issue of the past fifty years and more. With the growth in the pressures of globalisation and international trade since the 1970s and with expectations rising in terms of product and service quality, the focus on quality as a management issue rose exponentially. The number of books, articles and conferences held on the subject

mushroomed. It seemed that an organisation without a serious commitment to quality was unlikely to survive.

The concept of quality management has been around for some considerable time. In the USA, the American Society for Quality (ASQ) was formed in 1946, with about 1000 members from seventeen existing societies (originally named the American Society for Quality Control, with a name change in 1997 to ASQ). Amongst other achievements, the ASQ spearheaded the development of the Malcolm Baldrige National Quality Award in 1987 and jointly administered the award for first three years. In Japan, Deming is the name most associated with the origins of the quality movement. Deming became interested in the use of statistical analysis to achieve better quality control in industry in the 1930s, and in 1950 he was invited to Japan by Japanese business leaders to teach that nation's executives and engineers about the new methods (Crosby, 1979). Japan's Deming Prize (established 1951), given annually to major corporations who win a rigorous quality-control competition, is named for Deming. The Total Quality Management (TQM) approach advocated by Deming and his followers saw the rise of interest in terms such as quality control, quality assurance, quality inspection, quality circles, sampling methods, root cause analysis, Pareto charts and the like. Later, Crosby followed Deming, working both in Japan and in the USA. A particular contribution of Crosby (1979) was his quality management maturity definitions which were offered as a tool to help organisations understand their strengths and weaknesses and where attention should be given in an effort to enhance organisational performance as shown in Table 4.2.

Measurement Categories	Stage I: Uncertainty	Stage II: Awakening	Stage III: Enlightenment	Stage IV: Wisdom	Stage V: Certainty
<b>Management understanding and attitude</b>	No comprehension of quality as a management tool. Tend to blame quality department for "quality problems"	Recognising that quality management may be of value but not willing to provide money or time to make it happen.	While going through quality improvement program learn more about quality management; becoming supportive and helpful.	Participating. Understand absolutes of quality management. Recognise their personal role in continuing emphasis.	Consider quality management an essential part of company system.
<b>Quality organisation status</b>	Quality is hidden in manufacturing or engineering departments. Inspection probably not part of organisation. Emphasis on	A stronger quality leader is appointed but main emphasis is still on appraisal and moving the product. Still part of manufacturing or other.	Quality Department reports to top management, all appraisal is incorporated and manager has role in management of company.	Quality manager is an officer of company; effective status reporting and preventative action. Involved with consumer	Quality manager on board of directors. Prevention is main concern. Quality is a thought leader.

	appraisal and sorting.			affairs and special assignments.	
<b>Problem handling</b>	Problems are fought as they occur; no resolution; inadequate definition; lots of yelling and accusations	Teams are set up to attack major problems. Long-range solutions are not solicited.	Corrective action communication established. Problems are faced openly and resolved in an orderly way.	Problems are identified early in their development. All functions are open to suggestion and improvement.	Except in the most unusual cases, problems are prevented.
<b>Cost of quality as % of sales</b>	Reported: unknown Actual: 20%	Reported: 3% Actual: 18%	Reported: 8% Actual: 12%	Reported: 6.5% Actual: 8%	Reported: 2.5% Actual: 2.5%
<b>Quality improvement actions</b>	No organised activities. No understanding of such activities.	Trying obvious "motivational" short-range efforts.	Implementation of the 14-step program with thorough understanding and establishment of each step.	Continuing the 14-step program and starting Make Certain	Quality improvement is a normal and continued activity.
<b>Summation of company quality posture</b>	"We don't know why we have problems with quality"	"Is it absolutely necessary to always have problems with quality?"	"Through management commitment and quality improvement we are identifying and resolving our problems"	"Defect prevention is a routine part of our operation"	"We know why we do not have problems with quality"

**Table 4.2 Crosby's Quality Management Maturity Grid  
(Source: Better product design, undated)**

The purpose of comparison between the levels of the grid was to "get those moving who aren't moving," (Crosby, 1979:37) on the quality journey and not just measurement itself. Crosby's ideas will be revisited in section 4.7 on maturity models.

In Europe, the European Foundation for Quality Management (EFQM) was founded in 1988 by heads of fourteen major European companies with the endorsement of the European Commission. The EFQM was founded to assist and foster a TQM approach in every aspect of an organisation's activities, both internal and in relation to the value chain and community. The impetus to found the EFQM came from the need to develop a European equivalent to the USA-based Malcolm Baldrige National Quality Award and the Deming Prize in Japan, both of which addressed the growing quality movements in those countries in the 1980s and 1990s. In 1991 the EFQM launched its EFQM Excellence model, which assessed eight fundamental management concepts at three levels of maturity. This model has since been put to use by tens of thousands of companies around the world to help them to improve the performance of their organisations (EFQM, 1999). By 2003 the EFQM had grown to over 800 member organisations in 38 countries worldwide, from large corporates to small enterprises. Jacques Delors, European Commission President at the time of the foundation of the

EFQM stated “the battle for quality is one of the pre-requisites for the success of your companies and for our competitive success,” (EFQM, 1999:online).

Locally, the South African Excellence Foundation (SAEF) was established in August 1997. The SAEF’s main purpose is to manage and promote continuous improvement through the use of the South African Excellence Model (SAEM). The SAEF claimed that a suitable tool had to be found whereby South African organisations, large and small, could upgrade their business practices and find a meaningful way of benchmarking their performance against world standards. This requires the use of internationally recognised benchmark measures, which focus on sustained improvement, rather than short-term gains. The SAEM combines the best of the USA Baldrige National Quality Program and EFQM quality management model (which differ in emphasis rather than in content), and incorporates a local emphasis in accordance with South African national priorities (SAEF, undated).

#### **4.6.2 Challenges of quality management**

Unlike the situation with the other elements of the proposed world-class performance framework which have been evaluated so far in this chapter, there appear to be relatively few challenges associated with the implementation of quality management. This may be because the concept of quality has now become so well established and ingrained in the performance of organisations that quality management has become second nature to many individuals, teams and organisations. In addition, as international standards have been long established in the areas of quality, the challenges associated with implementing quality may now have moved away from the quality movement itself and are rather focused on the implementation of the standards which have been established around the subject of quality management.

#### **4.6.3 Quality management and knowledge management**

Knowledge management as a field should, in principle, lend itself to the application of quality management in much the same way as any other area of business or

management endeavour. That implies that there need be no special focus on quality in respect to knowledge management if the concept of quality management as an objective has already been accepted by the organisation as a whole. Even if that is the case, how might quality management in the knowledge management field be recognised? Although there are quality awards to be won in a number of the world's leading English-speaking countries and regions, such as the USA, Europe and Australia (Six Sigma, undated), none of these awards has a particular knowledge management focus. The closest equivalent to these more generic quality awards in the knowledge management field would be the MAKE awards (Chase, 2003) already discussed in section 4.2.2.

Just as the concept of quality can be associated with knowledge management in terms of the alignment with general management concerns with quality, so the use of stories and storytelling by association could become part of a wider knowledge management-related activities to achieve recognised levels of quality. However, there seems little if any attempt so far to define quality standards in the area of stories and storytelling used as a practice for knowledge sharing. This is perhaps a reflection of the relative lack of maturity in this field. As a consequence it is extremely difficult to make a case for assessing and analysing the performance of organisations in their use of stories where quality management is used as a measure of achievement, although the general principles of quality management could justifiably be applied.

#### **4.6.4 Quality management summary**

Quality management is an issue which is likely to remain firmly on the agenda of organisations large and small, but on its own may be a necessary but not sufficient reason to be deemed world-class. The non-empirical study conducted for this chapter did not identify quality management issues specifically associated with knowledge management or with the use of stories and storytelling as knowledge sharing practices, although organisations implementing quality programmes could reasonably be expected to apply the principles of quality management to all their activities, including those associated with knowledge management. Attention will now be turned

to the last element of the framework for world-class performance: the capability maturity model.

## **4.7 Capability Maturity Models**

### **4.7.1 Background to Capability Maturity Models**

The Capability Maturity Model (CMM<sup>®7</sup>) represents the final building block in terms of the proposed framework of world-class performance that has been used in this chapter. The growing interest in and use of the CMM approach in a number of fields over the last fifteen years suggests that the CMM concept should form part of an assessment of world-class performance.

What are capability maturity models?

“Capability [Maturity] Models describe both unique product development practices and the common management practices that any organisation must perform. These practices are organised into five levels, each level describing increasing control and management of the production environment, starting with ad-hoc performance and culminating in controlled, structured, continuous improvement. An evaluation of the organisation's practices against the model, called an assessment, determines the level, establishing where the organisation stands and which management practices the organisation should focus on to see the highest return on investment,” (SECAT, 1998:online).

The origin of the CMM can probably best be traced to the approach taken by Crosby (1979) in the way in which he built his 5-step quality management model (see section 4.6.1). The original concept for a process maturity framework, which evolved into the CMM, as it is now known, was developed at International Business Machines in the early 1980s (SEI, 2002). How and why did this happen? In the 1980s the USA Department of Defense was spending large sums, around \$30 billion per annum on software development and was looking for ways to improve development project success (SEI, 2002). In response to this need the Software Engineering Institute (SEI) at Carnegie-Mellon University in the USA was established (with support from the USA Department of Defense), through which was developed the Software Capability

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<sup>7</sup> CMM is an acknowledged as a registered trademark of the Software Engineering Institute. No further reference to the trademark will be made.



Maturity Model (SW-CMM) which was first released in August 1991. The SEI claimed that their research shows that software process improvement programs guided by the SW-CMM achieved an average return on investment of \$5.70 saved for every \$1 invested in process improvement (SEI, 2002), giving some justification for the faith shown by the USA government in the concept of maturity models as a tool for process and performance improvement.

The original SW-CMM model maturity levels can be represented by Table 4.3, using terminology taken from a standard issued by the ISO (ISO 15504) (Cusick, 1998). The table is useful in terms of understanding the way in which the CMM approach might be applied in a number of business areas, such as knowledge management<sup>8</sup>.

<b>Level title</b>	<b>Characterised by</b>	<b>Achieved when</b>	<b>Primary concept</b>
0: Not performed	Discipline is not being performed	N/A	Organisational starting point
1: Performed informally	Individual heroics	Essential elements performed	Learning the discipline
2: Planned and tracked	Work is planned and managed	Projects using defined process	Controlling local chaos
3: Well defined	Development of organisation standard processes	Projects use organisation standard processes	Sharing organisational learning
4: Quantitatively controlled	Definition of quantitative goals	Process metrics captured	Managing processes by data
5: Continuously improving	Quantitative strategic goals	Processes improved	Improvement based on data

**Table 4.3 CMM level definitions  
(Source: Cusick, 1998)**

SEI (2002) indicated that an initiative was launched by a number of stakeholders during 1997 to investigate the development of an integrated framework for maturity models. This resulted in the publication of the CMM-Integrated (CMM-I) product suite in 2002, where CMM-I is specifically aligned to ISO 15504 (SEI, 2002). Perhaps one of the most significant changes at the time that CMM-I was introduced

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<sup>8</sup> CMMs have appeared in other fields as diverse as Project Management (see for example the model of the Project Management Institute at [www.pmi.org](http://www.pmi.org)) and IT Governance (Information Systems Audit and Control Association at [www.isaca.org](http://www.isaca.org)) and in the area of IT service management (Niessink, Clerc and van Vliet, 2002).



was the provision of two representations of each CMM-I model: staged and continuous. “Each representation consists of process areas that contain a purpose statement, introductory text, specific goals, specific practices, generic goals and generic practices,” (SEI, 2002: online). Since the launch of the original SW-CMM there had been a good deal of debate as to whether the staged approach (where capability is measured for the organisation as a whole) or continuous approach (where capability is measured for each individual process element) makes best sense to a maturity framework. Garcia (undated) presents the evolving paradigms surrounding the various views on this debate, highlighting the fact that ISO 15504 (formerly known as SPICE, Software Process Improvement and Capability dEtermination), an international standard for software development, is based on the continuous improvement concept.

The essential difference between the two representations is the following (SEI, 2002):

- The staged representation prescribes the order of implementation for each process area according to maturity levels.
- The continuous representation offers a more flexible approach. A particular process area or set of process areas can be implemented in any sequence, with capability levels being defined by each process area or set of process areas. Process areas may thus be implemented at different rates.

See Table 4.4 for a comparison of the two representations.

<b>Continuous representation</b>	<b>Staged representation</b>
Process areas are organised by process area categories	Process areas are organised by maturity level
Improvement is measured using capability levels that reflect incremental implementation of a particular process area	Improvement is measured using maturity levels that reflect the concurrent implementation of multiple process areas
There are six capability levels, 0-5	There are five maturity levels, 1-5
There are an N+ number of practices because there are two types of specific practices: base and advanced	There are an N number of practices because there is only one type of specific practice. The concept of advanced practices is not used, but is addressed through other means
Capability levels are used to organise the	Common features are used to organise the

generic practices	generic practices
All generic practices are listed in each of the process areas	Only the generic practices that are applicable to that maturity level are listed in the process areas at that level
Generic practices exist for capability levels 1-5	Generic practices exist for maturity levels 2-5. A subset of generic practices used in the continuous representation are applied to each process area based on its maturity level
Overview text is written to describe the continuous representation	Overview text is written to describe the staged representation
An additional appendix describing equivalent staging is included, which allows a translation of a target profile into a maturity level	There is no equivalence concept that allows a translation of maturity levels into a target profile

**Table 4.4 Continuous and staged representation comparison  
(Source: SEI, 2002)**

It can be seen from Table 4.4 that there is greater flexibility available in terms of the application of the continuous representation approach. The SEI (2002) also offered a useful comparison between the two alternate representations as shown in Table 4.5 (showing only the appropriate comparison items relevant for this research project).

<b>Continuous representation</b>	<b>Staged representation</b>
Grants explicit freedom to select the order of improvement that best meets the organisation's business objectives and mitigates the organisation's areas of risk	Enables to have a predefined and proven improvement path
Reflects a newer approach that does not yet have the data to demonstrate its ties to return on investment	Builds on a relatively long history of use that includes case studies and data that demonstrate proven return on investment
Enables increased visibility into the capability achieved within each individual process area	Focuses on a set of process areas that provide an organisation with a specific capability that is characterised by each maturity level
Provides a capability level rating that is primarily used for improvement within an organisation and is rarely communicated externally	Provides a maturity level rating that is often used in internal management communication, statement external to the organisation, and during acquisitions as a means to qualify bidders

Allows improvements of different process areas to be performed at different rates of improvement	Summarises process improvement results in a simple form – a single maturity level number
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**Table 4.5 Selected continuous and staged representation comparative advantages (Source: SEI, 2002)**

How can an organisation be sure that the use of a maturity model approach is justified? Systems Engineering Capability Assessment and Training (SECAT) (SECAT, 1998) offered a checklist of five points to assist in identifying whether a CMM can help the organisation:

- Is your company successful in learning from past mistakes?
- Are you confident in your ability to deliver a product on time and within budget?
- Do you know if you're spending your limited improvement resources effectively?
- Are you successfully moving out on improvement efforts, having gotten quick agreement on which problems the company needs to fix first?
- Are you successfully deploying organisational standard processes, gaining quick acceptance from program personnel?

#### **4.7.2 Challenges of Capability Maturity Models**

As was the case with each of the other elements of the proposed world-class framework, there are some challenges associated with the implementation of the CMM approach.

Since the first CMM was introduced by the SEI in 1991 (Cusick, 1998) many organisations have sought to implement the maturity model approach in assessing how well they perform activities in a number of areas such as software development, systems engineering, IT support and project management (as discussed in section 4.7.1). The challenges associated with a successful implementation of CMM in any of

these application areas include the management commitment required to initiate a project to complete an initial assessment and then to undertake the remedial action required to change the performance of the organisation in order to achieve the desired level of performance (to improve the level of maturity as indicated by the model). This commitment is potentially very significant in terms of the financial and human resources required to complete even the initial assessment.

Paulzen and Perc (2002:4) had a criticism of the CMM in that it “only allows the evaluation of whole organisations, because each process is assigned to one maturity stage, and not assessed independently from the other processes.” They highlighted the fact that the ISO developed the ISO 15504 (which uses a continuous representation model as shown in Table 4.5) as a result of this limitation in CMM. It was in part as a response to this type of concern and to address the concerns of users of the CMM since the early 1990s that the SEI changed its approach in offering the continuous representation of the model in addition to the traditional staged representation (which was offered with the initial 1991 model). In part, the challenge of implementing the CMM was that certain of the process activities defined in the original model at levels three, four and five were in reality being performed by organisations whose overall assessment would only have positioned them at level 1 on the model (SEI, 2002). In essence, the approach adopted for the current iteration of CMM-I goes a long way to addressing these concerns.

One of the other challenges associated with the implementation of the maturity model approach is that there may not be clearly defined and agreed processes which can be assessed in a particular application area (particularly where that area is relatively immature, such as knowledge management and in particular the use of stories and storytelling to support knowledge sharing).

The next section will review the approaches discovered during the literature search of attempts to apply the CMM approach to the field of knowledge management in an attempt to overcome some of the challenges identified, whilst leveraging the full potential of the application of the CMM approach.

### 4.7.3 Capability Maturity Models and knowledge management

A number of maturity models for use in conjunction with knowledge management have been proposed or discussed (Collison, 2004; Ehms and Langen, 2002; Gallagher and Hazlett, 1999; Kazimi, Dasgupta, and Natarajan, 2002; Klimko, 2000; Kochikar, 2000; Kruger and Snyman, 2005; Paulzen and Perc, 2002). Each of these sources will be profiled in this section. However, none of these authors make any specific reference to the use of the Capability Maturity Model in relation to the role of stories and storytelling as knowledge sharing practices.

Gallagher and Hazlett (1999) presented their Knowledge Management Maturity Model (KM<sup>3</sup>) as a tool to evaluate current knowledge management capability and facilitate effective measurement of the impact of knowledge management strategies. They based their model on the three overlapping and interlocking concepts of knowledge infrastructure, culture and technology. They used the CMM approach of discrete levels of organisation performance tracking, but defined only four levels of maturity as opposed to the usual five levels in the CMM. Their four levels were: Aware, Managed, Enabled and Optimised (Gallagher and Hazlett, 1999).

Klimko (2000: online) discussed three maturity models in the context of knowledge management and stated that, the “obvious advantage of maturity models is their simplicity which makes them easy to understand and communicate.” The three maturity models Klimko focused on were: Microsoft’s IT Advisor (no longer available); the KPMG maturity model<sup>9</sup> (based on research conducted in the UK in 1998 and 2000); and Gallagher and Hazlett’s KM<sup>3</sup> model. Klimko presented his own ideas which were only partially developed into a maturity model, although he did define fifteen process areas at five levels of maturity.

The maturity model proposed by Kochikar (2000) was based on work carried out at Infosys Technologies, a leading Indian IT services supplier. The fundamental assumption of this model was that knowledge management consists of three main elements: people, process and technology. The five level maturity model proposed by

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<sup>9</sup> The source given by Klimko (2000) was untraceable. As none of the other authors consulted referred to this model there will be no further discussion of the KPMG model.

Kochikar (2000) has, for each level, a set of key result areas defined (a total of fifteen for the model). Although the model uses the same number of levels as a traditional CMM, the terminology used in the level descriptions in the Kochikar (2000) model is significantly different. In addition, the model offers only the traditional staged representation as opposed to the more recent developments in the move from staged to continuous models as discussed earlier in this chapter (section 4.7.1). A concern with this model must also be that there is no evidence of any empirical work to improve the model, nor does the model appear to have been subjected to any peer-review process.

Another commercial organisation, this time based in Germany (Siemens) is the source of the Knowledge Management Maturity Model (KMMM®). This was developed with the intention of “providing a reliable instrument for defining one’s current position and driving long-term corporate development,” (Ehms and Langen, 2002: online). The model is based on the principles of the CMM, with a recommended six-phase approach to the implementation of the KMMM. The model consists of eight key areas of knowledge management (based, according to Ehms and Langen, on the eight enablers of the EFQM Excellence Model which was referred to in section 4.6.1), namely

- Strategy/knowledge goals
- Environment, partnerships
- People, competencies
- Collaboration, culture
- Leadership, support
- Knowledge structures, knowledge forms
- Technology, infrastructure
- Processes, roles, organisation (Ehms and Langen, 2002: online).

This model was presented at an APQC conference in 2000 but since then has received little attention and it was not referred to by Kazimi *et al.* (2002) or by Kruger and Snyman (2005).

Paulzen and Perc (2002) in their study, identified ten different models for assessment of knowledge management, only one of which, from Ehms and Langen (2002), was defined as a maturity model using the five-level CMM approach which has been discussed in this chapter. Paulzen and Perc (2002) then proposed their own model, the Knowledge Process Quality Model. The structure of this model was based on four dimensions: maturity stage (based on CMM-I, but with some terminology differences); knowledge activity (six processes as defined in Table 2.1); management area (people, organisation and technology) and assessment structure (five assessment attributes at each maturity stage).

Kazimi *et al.* (2002) claimed that there are four objectives for current knowledge management maturity models: the maturity framework; maturity plateaus; maturity dimensions; maturity drivers. Without referring to any specific existing knowledge management maturity model they claim that these models need additional perspectives to be taken into account to develop a new knowledge management maturity model. The new perspectives that they propose are: knowledge needs and levels; knowledge creation currency; knowledge management and business segments, and finally, knowledge management and e-business. Kazimi *et al.* (2002) recommended the four objectives of existing models and their own four new perspectives are taken in combination to create a new maturity model which must be developed. However, the authors did not themselves make a proposal of what this new model should look like. Although the ideas Kazimi *et al.* (2002) have a certain attraction, they should also be treated with some caution, as the views are published on a commercial web site without any form of formal referencing system to the source of their proposals nor do they attribute the sources referenced in their document.

Collison (2004) presented a model based on his experiences at British Petroleum. This model also used the five level maturity approach of the CMM and had five assessment areas: knowledge management strategy; leadership behaviours; networking; learning before, during and after, and capturing knowledge. Text descriptions accompany each of the five focus areas at each of the five levels. There is no evidence that this model has been subjected to any practical application, nor formal publication other than being made available to members of the community of people who subscribe to Collison's web site.

Kruger and Snyman (2005) discussed the views of a number of authors including Gallagher and Hazlett (1999), Kazimi *et al.* (2002), Klimko (2000), and Kochikar (2000), in addition to proposing their own Strategic Knowledge Management Maturity Model, consisting of six phases: ICT as an enabler of knowledge management; deciding on knowledge management principles; the ability to formulate an organisation-wide knowledge policy; building knowledge strategy/strategies; formulation of knowledge management strategies, and ubiquitous knowledge. This model is based on the argument that, “knowledge management maturity should also encompass the ability to identify and relate knowledge management issues to organisational growth and profitability,” (Kruger and Snyman, 2005:online) and takes into account the joint management of ICT and knowledge management. There is a recommendation that once the organisation has reached the final phase that they should return to phase one of the maturity model to further enhance the performance of the organisation in the area of knowledge management.

In summary, there are several models of maturity in the field of knowledge management which have been proposed. Even though there has been some debate and disagreement over the relevance of the CMM approach, there is a remarkable degree of consistency in the principles associated with the various models. Perhaps the underlying issue with all these models is the lack of a clear agreement as to the nature of knowledge management and the various processes, performance areas and underlying infrastructure elements which need to be managed through the maturity model. None of these models specifically addresses the issue of the use of stories and storytelling as knowledge sharing practices.

#### **4.7.4 Capability Maturity Models summary**

The application of the CMM approach is clearly not limited to only one or two fields of management and the seemingly ever-growing list of areas (such as software and systems engineering, project management and knowledge management) indicates the possibility of applying the CMM in an ever increasing number of fields. There are



undoubtedly challenges associated with the implementation of the CMM approach, but it is interesting to note the degree of commonality between the quality management approach and the possibility of integrating best practices and benchmarking under the umbrella of CMM.

It is also interesting that over the last several years a number of attempts have been made to adopt and adapt the CMM approach to the field of knowledge management. This should not be surprising as an increasing number of organisations across the globe are looking for ways to increase their competitiveness and in the context of the proposed framework for world-class performance the CMM approach is more than justified as being an element of that framework.

#### **4.8 Summary**

This chapter opened with a discussion on the nature of world-class performance and proposed a framework which could be used by organisations to improve their understanding of the nature of world-class performance.

The five elements of the proposed framework were then each discussed in some detail, with an explanation as to the background, development, challenges and applicability to the field of knowledge management and (where possible) within that context to the issue of the use of stories as knowledge sharing practices.

In order to be able to address the research problem, it was recognised that a clear understanding would be required of the nature of knowledge management and of stories and storytelling, particularly within a knowledge management strategy. In addition to that, at the time that the research project was conceptualised, it was decided to frame the research in terms of world-class performance.

The literature search indicated that although a number of practices in the field of knowledge management have been identified and are in general use these were not adequately defined to be able to address the research problem in terms of the assessment of the use of stories and storytelling as knowledge sharing best practices.

Given the research problem and the methodology selected (a case study of one organisation) benchmarking alone would also not be the most appropriate practice to assist with the research problem. This is because it was not intended to use any form of external benchmarking and it may have proven problematic to base the research problem and methodology on internal benchmarking where the situation at the case study company could not be predicted in advance (internal benchmarking may not have been feasible).

It became clear from the literature study that although the issue of recognised standards is well established in the number of fields, that is not the case in knowledge management. Therefore, to establish an assessment and analysis based on knowledge management standards when no such standards exist (other than the interim standards in Australia) would again prove to be not feasible or at least problematic.

The close relationship between the quality management movement and the development of the CMM approach is an interesting one, particularly in the light of the work of Crosby (1979). However, a narrow focus on quality would not necessarily help to answer the main research problem. At the same time, the principle of using a Capability Maturity Model in assessing and analysing the use of stories and storytelling, as knowledge sharing practices within the knowledge management strategy at the case study organisation, had a number of attractions. Whilst the research methods were being developed, it became clear that the Capability Maturity Model approach would form part of the research instrument to be developed. When it was eventually introduced to the case study organisation, it was well received as being familiar. This was due to a version of the capability maturity model approach already being in use; something that was unknown to the researcher at the start of the project.

Having found the 'best-fit' between the research problem and the use of the CMM, it was still necessary to identify whether the continuous or staged representation would be more appropriate to use in the research methods. It was decided to follow the continuous representation approach (see Table 4.4) as this was expected to allow a more complete set of processes (associated with knowledge sharing and the use of

stories as knowledge sharing practices) to be assessed and analysed and recommendations made.

The next step, therefore, is to look in more detail at the specific research methodology to be used in the empirical research phase of the research project. This will be covered in the following chapter.