

## CHAPTER 10

# Competency and Individual Performance: Modelling the World of Work

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## INTRODUCTION

The Editors' Introduction outlined a comprehensive framework for investigating organizational effectiveness, and highlighted the fact that organizational performance accrues from the performance of individuals. It also presented the outline of a model of competency, and distinguished between competency, competency potential, competency requirements and outcomes. The present chapter builds on this, using empirical research and existing psychological taxonomies in order to develop a comprehensive framework for conceptualizing competency and performance in the work place. The emphasis is on developing a means of organizing the knowledge we have about people and their performance within organizations.

One goal of psychological science is to provide theories and tools to assess, predict and shape performance. While there is a long history of research in the behavioural sciences relating to performance at work, an overarching conceptual model is still somewhat lacking. Herriot and Anderson (1997) suggest that the traditional paradigm of personnel psychology is somewhat struggling to accommodate a number of developments in the international business environment and their effects on human resources management. They call for a wider theoretical framework for personnel psychology. Furnham (1995) has also lamented the paucity of literature at the interface between personality and occupational psychology, while presenting a broad research model for examining the relationship between personality and work.

To develop a model of performance at work, it is necessary to clarify the differences between behaviours, performances and outcomes. It is also important to consider the ways in which person and organizational variables interact to produce each of these. Individual effectiveness is as complex a construct as organizational effectiveness. Individuals display different modes of behaviour with different stakeholders, and stakeholders judge individual effectiveness using multiple criteria. Judgements of individual effectiveness, however, tend to be about extended sequences of behaviours rather than about discrete behavioural episodes. When we talk about “performance at work” we tend to imply a continuous process, an extended sequence of behaviours that have coherence for the actor and those acted upon. While behaviours can be described in isolation, performances can be thought of as choreographed sequences of behaviours that have a function and purpose.

Performance can be judged against performance criteria, while behaviours can only be described. Performances can generally be regarded or judged in terms of observable activities or the outcomes they are directed towards achieving: the actor or others perceive performances as more or less effective as a function of how successful they are in achieving their intended outcomes.

In this chapter we will endeavour to outline a model of performance at work that integrates academic theories and occupational assessment practices into a unifying framework that can be applied to competency-based human resources management. The chapter is divided into three parts.

1. The first part extends the exploration of competencies initiated in the Introduction and relates competency to the requirements made upon people for performance in the work place on the one hand, and to underlying psychological characteristics (competency potential) on the other.
2. The second part describes the need for an overarching ‘World of Work’ (WoW) performance model, which maps out a structure for working life behaviour, the psychological variables that underlie such behaviour, and the situational (organizational and social) contexts within which such behaviour occurs. This section describes the structural components of a model and develops taxonomies for four key segments of working life.
3. The final part of the chapter outlines how these concepts of behaviour, competency and performance relate to human resources management.

## **PART 1: COMPETENCY AT WORK**

### **Competency-based Assessment**

The competency approach to selection and assessment is one based on identifying, defining and measuring individual differences in terms of specific work-related constructs that are relevant to successful job performance. Over the last 25 years this approach has gained rapidly in popularity, due partly to the way in which the concepts and language used have currency within the world of human resources management.

The profiling of jobs in terms of competency requirements has increasingly replaced more traditional task-based job analysis, most noticeably in countries outside the United States. Competency profiling differs from job analysis in that the focus of the former is on the desirable and essential behaviours required to perform a job, while the latter focuses on the tasks, roles and responsibilities associated with a job. These are complementary ways of looking at the same thing, with the competency analysis providing a person specification and the job analysis a job description. The main advantage of the competency modelling approach has been its success in building the models that lay the foundations for organization-wide integrated human resources applications.

The problem with competency as a construct is that there is considerable confusion and disagreement about what competencies are and how they should be measured (Shippmann et al., 2000). Competency-based assessment has also suffered in the past from being used and developed by a wide range of practitioners many of whom had not had a psychologist's background of training in scientific method and measurement. However, Shippmann et al. (2000) note that there is evidence of increasing rigour in the competency approach and that it is now emerging as a complementary approach to job analysis.

### **What is Competency?**

In the Editors' Introduction competencies were defined as "sets of behaviours that are instrumental in the delivery of desired results or outcomes". This behavioural view of competency needs to be contrasted with the earlier trait-based approach of Boyatzis (1982) in his seminal book *The Competent Manager*: "A job competency is an underlying characteristic of a person which results in an effective and/or superior performance of a job . . . it may be a trait, motive, skill, aspect of one's self image or social role, or body of knowledge that he or she uses". Boyatzis' original definition is clear in identifying competency as an underlying characteristic (rather than a collection of behaviours), but is less clear on the relationship between competencies as constructs and psychological constructs such as motives, traits, skills and so on.

Warr and Connor (1992) noted in their discussion of approaches to job competence that Boyatzis' model of personal competencies is quite close to traditional person characteristics assessment models, while more recent competency oriented interventions place higher emphasis on establishing and describing the requirements of the job situation. Boam and Sparrow (1992) also take a trait-oriented view on competencies, while also recognizing the need to cater for role and career stream, or occupational, competencies.

Woodruffe (1992) states that "Competencies are indeed the same as aspects of personality such as traits and motives, but those terms are so poorly understood and agreed that to say that competencies are, for example, traits risks competencies inheriting the confusion that surrounds traits." He then goes on to move away from the trait-based definition and present one more in line with that of the present authors: "A competency is the set of behaviour patterns that the incumbent needs to bring to a position in order to perform its tasks and functions

with competence." Woodruffe suggests excluding components of work performance such as technical skills, knowledge and abilities from the competencies definition.

It follows from the definition of competency presented here that competencies should be specified in "action" terms. That is, while "leadership" is not a competency, "providing leadership" is. Thus we need to be careful not to define competencies as things which people possess ("He has lots of leadership") but as behaviours that people exhibit ("He provides lots of leadership"). This clarification requires us to reconsider some of the constructs that are often considered to be "competencies" (e.g. energetic, persuasive), and classify them as antecedents or determinants of competency rather than competencies *per se*.

## Behavioural Repertoires

In terms of the definition presented here and in the Editors' Introduction, competency relates to behavioural repertoires: the range and variety of behaviours we can perform, and outcomes we can achieve. A competency is not the behaviour or performance itself but the repertoire of capabilities, activities, processes and responses available that enable a range of work demands to be met more effectively by some people than by others. Such repertoires may be defined by reference to their relevance to the World of Work (or some other such context).

The analogy of a musician's repertoire is helpful in capturing this notion. A musician delivers performances that cover a range of styles and content, which may be judged as more or less good by listeners. These performances fall within the musician's repertoire and are a consequence of his or her competency as a musician. This competency is not the same thing as the performances, but it is what enables the performances to occur. The behaviours that the musician has to be skilled and adept at are also not the same thing as the performance. The performance is the choreographed stream of behaviours that will be judged overall as either "good" or "bad", "effective" or "ineffective", "successful" or "unsuccessful".

We can develop this analogy further by considering the differences between the person who has learnt by rote one piano piece and the person who has developed competence as a jazz musician and is able to extemporize around any melody or chord sequence. Both show relevant desired behaviours (i.e. competency as musicians), but the nature of these is very different. Using a single performance as evidence of competency might fail to differentiate between such people. The nature of the musician's competency lies not just in the individual performances, but also in his or her ability to generalize and to transfer knowledge and skills from one job task or role to another.

## The Relationship Between Competencies and Other Psychological Constructs

A competency, then, is a construct that represents a constellation of the characteristics of the person that result in effective performance in his or her job.

The various uni-dimensional psychological characteristics that underpin competencies can be considered as components of these constellations. The constellations or clusters of characteristics that make up competencies may be extensive in the case of broad competencies or limited in the case of more specific ones. The main factor that distinguishes a competency from other weighted composites of psychological constructs is the fact that *a competency is defined in relation to its significance for performance at work*, rather than its content in purely psychological terms. It differs from constructs such as abilities or personality traits, which are uni-dimensional and defined as characteristics of the person, that “exist” and can be measured in isolation from a work context.

## Models of Job Competency

Most of the work on defining models of job performance has focused on the managerial area. There are some exceptions, such as Hunt’s (1996) work on entry level jobs in the service industries, and analyses of the competencies required for jobs in the military (e.g. the work of Campbell et al., 1990, on Project A). In relation to managerial competencies, Tett et al. (2000) reference 12 different models from the academic literature dating back to Flanagan (1951). They also note that while there is considerable overlap in terms of content between these various models, there are also marked differences in detail, description, definition, emphasis and level of aggregation. In addition to these are a range of generic practitioner models developed for use in occupational psychology consulting. These include such generic models as Lominger’s Career Architect; PDI’s PROFILOR; SHL’s executive, manager, customer service and blue collar models; and various others.

The practice-based models tend to be more fully developed than the academic ones and contain a lot more detail in terms of instrumentation, behavioural anchors, associated development action points, and data on correlations with dispositional measures. The academic models, on the other hand, tend to focus on trying to identify a small number of general dimensions that can provide a comprehensive yet parsimonious account of the domain.

What is needed are approaches that combine the parsimony and structure of the academic models with the usability and practicality of those developed in the field.

## Componential Models of Job Competency

The merging of the academic and practice-based approaches to competency models can be found in the hierarchical approach to model building. General high-level constructs can provide the basis for accounting for major portions of variance in performance, while more detailed dimensions are required for everyday use by practitioners. Even more finely grained constructs may be required for the detailed competency profiling of jobs.

Tett et al. (2000) developed a taxonomy of 53 competencies clustered under nine general areas. These 53 competencies were derived from the results of

subject matter experts sorting 147 behavioural elements. The nine general areas were: traditional functions; task orientation; dependability; open-mindedness; emotional control; communication; developing self and others; occupational acumen; and concerns.

Borman and Brush (1993) propose a structure of 187 behaviours mapping on to 18 main dimensions, which in turn map to four very broad dimensions: leadership and supervision; interpersonal relations and communication; technical behaviours and mechanics of management; and useful behaviours and skills (such as job dedication). This structure has been supported by subsequent meta-analysis research (Conway, 1999).

A further example of this approach is seen in the job competency framework developed by Bartram et al. (2000). This also adopts a three-tier structure. This structure represents a “deep structure” that underlies the development of competency models, which are defined as specific “surface structures”. Just as different utterances in spoken language can map on to a common underlying proposition, so differently described competencies within models can map on to a common underlying construct.

The bottom tier of the structure consists of a set of 110 component competencies. The deep structure defines the relationships between these components, their mapping on to a set of 20 competency dimensions (the middle tier) and their loadings on eight broad “competency factors” (the top tier).

#### *The Bottom Tier: Component Competencies*

The 110 component competencies were derived from extensive content analyses of both academic and practice-based competency models. This analysis covers managerial and non-managerial positions. As a consequence, the content of the components covers a wider domain than that addressed by Tett et al. in their work on managerial competencies.

The component competencies can be considered to be competencies broken down to the point where no competency is subsumed by any other competency. As such, the components represent the “building blocks” for creating specific sets of competencies. They are not necessarily uni-dimensional. In terms of level of aggregation, they lie between the behaviours described by Borman and Brush (1993) and Tett et al. (2000) and the 53 components identified by Tett et al. (2000).

The component building blocks are defined in relation to five levels of complexity by behavioural indicators and other information. These levels provide the basis for generating competency sets corresponding to different job layers within an organization (from manual worker to senior manager and director level).

#### *The Middle Tier: Competency Dimensions*

The 20 middle-level dimensions were derived from analyses of generic and client-specific competency models. They represent the competencies that have been frequently identified in job analyses and used for assessment and development centres over the last two decades. Figure 10.1 lists the 20 competency

<b>8 Competency Factors</b>	<b>20 Competency Dimensions</b>
<b>1 LEADING &amp; DECIDING</b> <i>Need for Power &amp; Control</i>	1.1 Deciding & Initiating Action
	1.2 Providing Leadership & Supervision
<b>2 SUPPORTING &amp; CO-OPERATING</b> <i>Agreeableness</i>	2.1 Team Working & Supporting
	2.2 Serving Customers & Clients
<b>3 INTERACTING &amp; PRESENTING</b> <i>Extraversion</i>	3.1 Relating & Networking
	3.2 Persuading & Influencing
	3.3 Communicating & Presenting
<b>4 ANALYSING &amp; INTERPRETING</b> <i>'g'</i>	4.1 Writing & Reporting
	4.2 Applying Expertise & Technology
	4.3 Problem Solving
<b>5 CREATING &amp; CONCEPTUALISING</b> <i>Openness</i>	5.1 Learning & Researching
	5.2 Creating & Innovating
	5.3 Forming Strategies & Concepts
<b>6 ORGANISING &amp; EXECUTING</b> <i>Conscientiousness</i>	6.1 Planning & Organising
	6.2 Delivering Quality
	6.3 Complying & Persevering
<b>7 ADAPTING &amp; COPING</b> <i>Emotional Stability</i>	7.1 Adapting & Responding to Change
	7.2 Coping with Pressures & Setbacks
<b>8 ENTERPRISING &amp; PERFORMING</b> <i>Need for Achievement</i>	8.1 Achieving Results & Developing Career
	8.2 Enterprising & Commercial Thinking

**Figure 10.1** Relationships between the top and middle tiers of the job competency framework deep structure. The underlying dispositional traits most strongly associated with each of the “Big Eight” factors are shown in italics. © SHL Group plc

dimensions and shows how they relate to the top tier “Big Eight” competency factors (see below).

*The Top Tier: Competency Factors—The “Big Eight”*

Various analyses of competency data support the view that variance in competency measures can be accounted for by eight broad factors (one of which incorporates aspects of specialist knowledge and skills). These eight factors appear to reflect the psychological constructs that underlie competencies. Specifically the trait markers for the eight factors can be identified as:

- “g” or general reasoning ability
- the “Big Five” personality factors
- two factors relating to need for achievement and need for power or control.

This “Big Eight” structure has been replicated in a number of different data sets including analysis of the ratings of 54 competencies in the OPQ32 UK national standardization sample data (SHL, 1999), analysis of data from a large set of job applicant data collected over the Internet in the USA (*n* = 26 000), and from analyses of data obtained from two generic 360-degree competency inventories. In addition to providing the highest level tier of the deep structure, this factorial structure also provides us with a valuable mechanism for mapping measures of disposition or attainment on to competencies. More recently, the first tranche of data from a longitudinal study being carried out with the SHL–UMIST Research Centre has provided further confirmation of the eight factor structure.

This analysis used data from the NEO (Costa & McCrae, 1992), OPQ32 (SHL, 1999), the Motivation Questionnaire (SHL, 1992), measures of Values, measures of reasoning ability and ratings on the 20 competency dimensions and eight competency factors described in Figure 10.1.

It is worth reflecting on the extent to which these eight factors cover the main areas of individual differences that have been studied by psychologists over the past century. The general intellective factor, “g”, was first “discovered” by Spearman (1904) and is one of the most visible products of psychology. While arguing about many areas of detail, most professionals would agree that differences in overall levels of performance at work are related to differences in intellectual ability (Ree & Earles, 1991; Ree et al., 1994; Carretta and Ree, 2000). Hunter and Hunter (1984) demonstrated that intellectual ability is the single most effective and generalizable predictor of performance.

The “Five-Factor Model” (e.g. Norman, 1963; Barrick and Mount 1991; Digman, 1990; Matthews, 1997) of personality traits provides the psychological basis for five corresponding constructs in the above job competency model. Extroversion underpins “Interacting and Presenting”, Emotional Stability forms the basis for “Adapting and Coping”, Conscientiousness underlies “Organizing and Executing”, Openness to Experience largely determines “Creating and Conceptualizing”, Agreeableness underpins “Supporting and Co-operating”.

Achievement has, according to Cassidy and Lynn (1989), six components: work ethic, pursuit of excellence, status aspiration, competitiveness, acquisitiveness, and mastery. While some of these are part of the Conscientiousness FFM construct, their sum gives rise to a quite distinct, more dynamic and energetic behaviour pattern. This is captured within the “Enterprising and Performing” competency construct.

Decisiveness and ascendancy are often included in the “Extroversion” construct, but can be more directly related to Need for Power or Control, or the motivation to manage (Miner & Smith, 1982). The Leading and Deciding construct covers this ground.

The eight competency factors provide a parsimonious account of the 12 Supra-Competencies identified by Dulewicz (1989). “Managing staff” and “Assertiveness and decisiveness” combine into Leading and Deciding, “Persuasiveness” and “Oral communication” are accounted for by Interacting and Presenting. Enterprising and Performing covers the ground of “Energy and Initiative”, “Achievement motivation” and “Business sense”. “Strategic perspective”, “Analysis and judgement”, “Planning and organizing”, “Interpersonal Sensitivity”, and “Adaptability and resilience” map fairly obviously on to the remaining factors.

## **The Relationship Between Competence and Competency**

The job competency model outlined above is not a model of competence. It is unfortunate that two very similar words have been used to describe two different constructs. We make a very clear distinction between these within the present model. Competence is about mastery in relation to specified goals or

outcomes. The measurement of competence at work involves the assessment of performance in the workplace against some pre-defined set of occupational or work-related standards. These standards define the performance criteria associated with competence in the workplace. Statements of or about competence are, therefore, statements about an individual's standard of achievement in relation to some defined set of work standards or requirements.

Competence, in relation to occupational standards-based qualifications, has been defined as "the ability to apply knowledge, understanding and skills in performing to the standards required in employment. This includes solving problems and meeting changing demands" (Beaumont, 1996). This reflects the common notion that competence is about the application of knowledge and skills, judged in relation to some standard or set of performance standards.

Competence, therefore, relates to performance or outcomes, and involves the description of tasks, functions or objectives. Competencies, on the other hand, relate to the behaviours underpinning successful performance; what it is people do in order to meet their objectives; how they go about achieving the required outcomes; what enables their competent performance.

Standards of competence tend to be specified in terms of performance criteria that relate to outcomes. Methods of assessing competence may include workplace assessments, simulations and other techniques. The performance standards required tend to be set by a recognized authority or body responsible for awarding or accrediting occupational qualifications (e.g. the QCA accredits standards set by National Training Organizations in England; professional bodies define standards of competence for professional practice; and so on).

In essence, then:

- Competencies are "behavioural repertoires", while competence is a "state" of attainment.
- Competence is about achievement and is always backward-looking. A statement of competence is a statement about where a person is now, not where they might be in the future.
- Competencies can be used in a backward-looking (e.g. 360-degree feedback), concurrent (e.g. assessment centre) or forward-looking way (i.e. competency potential) to predict what they should be able to achieve.
- People demonstrate competence by applying their competencies in a goal-directed manner within a work setting.

Any framework that claims to deal with competence needs to provide a basis for the specification of statements of competence. It is important to understand, however, that a job competency model like the one being outlined here will not itself contain a specification of knowledge and skills. Competencies relate to *how* knowledge and skills are used in performance, and about *how* knowledge and skills are applied in the context of some particular set of job requirements.

Specifications of knowledge and skills do, however, form part of the definition of job and occupation competence (that is, the standards of performance that a person needs to achieve in work) and relate to domains within the WoW model described below.

## A Taxonomy for Knowledge and Skills

While much is known about the acquisition of knowledge and skills from the training literature, frameworks for the description of knowledge and skills are less well developed. A considerable amount of research, however, has been carried out in the context of work on occupational standards (i.e. formal specifications of what constitutes competence in the workplace), on the problems of knowledge identification, specification and assessment (Mitchell & Bartram, 1994). Based on this work, the following four-dimensional taxonomy is suggested as a tool for conceptualizing occupational expertise.

The first dimension distinguishes between four broad types of expertise that are required in an occupation: what people need to “know, understand and be able to do”.

- “*Knowing what*”: *Data, facts and information*—using facts about things and processes; e.g. fact sheets, data.
- “*Knowing why*”: *Theories, principles, models*—understanding the rationale, the reasons why. This is particularly important in problem solving and in professional practice where one’s choice of methods and interpretation of information may be driven by the theoretical perspective that has been adopted.
- “*Knowing how*”: *Methods, techniques, procedures*—applying techniques and procedures; e.g. how to analyse data, how to conduct an interview etc.
- “*Knowing when*”: *Experience, exposure, practice*—recognizing problems, timing of intervention, co-ordinating conflicting information and making timely judgements

Knowing “what” and “why” are reflected in the knowledge segment of the attainment domain, knowing “how” is reflected in the skills segment, and knowing “when” in the experience segment. The qualifications segment contains statements of competence, which represent the formal recognition of attainments that generally embody mixtures of all four “types of knowing”. Academic qualifications tend to focus more on what and why, while practice qualification focus more on how and when.

The second dimension concerns the extent, scope or coverage of expertise. As for the three-tier job competency model described above, this can also be defined in a hierarchical manner. For defining expertise, however, it is useful to consider five levels.

- *Field expertise* can be defined as expertise that affects many aspects of competent performance across jobs within a wide employment sector (e.g. manufacturing, science, the arts and media, social and health care, commerce, administration).
- *Occupational expertise* is expertise that affects many aspects of competent performance across jobs within a specific occupation. It is also sometimes referred to as “over-arching” knowledge and skill, as it provides the conceptual structuring that ties together the various elements of competence in an occupation.
- *Functional or specialist expertise* is that which is of relevance to the performance of one function within an occupation (e.g. managing a psychological care service).

- *Task expertise* is that which is of relevance to one task, or category of tasks within a job.
- *Element expertise* relates to that needed for some discrete component or element of a task.

The third dimension considers the openness or accessibility of expertise and understanding. It may be:

- *Knowledge and skills that are open and public*. These are readily available, or skills, experiences or qualifications that anyone can acquire (e.g. having a driving licence, being able to use the Internet).
- *Knowledge and skills that are occupation-specific* and generally known only to those qualified individuals within an occupation or profession. This covers what we often refer to as “trade secrets” or “tricks of the trade”. Professions (e.g. law and medicine) often encourage the creation of mystique around their occupation-specific areas of knowledge and skill in order to maximize other people’s perception of their value as professionals.
- *Knowledge and skills that are organization-specific* and generally known only to those within the organization. This includes shared, rather than personal, knowledge of the organization’s formal and informal structures and processes, working practices and commercial information relating to products and services.
- *Knowledge that is personal*, relating to an individual’s particular job and his or her history of work experience. This includes personal local knowledge acquired through organizational socialization processes, tacit job knowledge (Wagner & Sternberg, 1985), and one’s own particular way of knowing how to get things done in one’s organization or work group.

The fourth dimension focuses on the distinction between *required* and *pre-requisite* expertise. Pre-requisite, or “enabling” expertise, is what a person needs to bring to a new situation. It includes the attainments (qualifications, experience, knowledge and skills) one assumes a trainee to have at the start of a training course, for example. This distinction is very important as competency potential includes not only dispositional attributes but also those aspects of a person’s attainments that are pre-requisites for the development of competency in any new situation.

In assessing people for new positions it is important to distinguish between what one expects people to bring with them in terms of existing occupational expertise (their attainments), and what one expects them to be able to learn and develop once appointed (their potential).

## Summary

Job competency models are developing towards more sophisticated structures based on empirical data. The work of Tett et al. (2000), Borman and Brush (1993) and Bartram et al. (2000) all support the need for hierarchical models, with a small number of broad factors at the top and large numbers of components or elements at the bottom.

Job competencies have been conceptualized in terms of behavioural repertoires that enable (or constrain) the range and quality of a person's work. On the one hand, an individual may operate according to a set of relatively inflexible rehearsed responses (e.g. an ability to operate machinery according to a set procedure). On the other hand, the person may have developed a more flexible set of meta-skills and plans (e.g. an understanding of the principles underlying the operation of various machines or systems, which will enable the person to fix problems and transfer skills to new situations and applications).

Competency can be considered to develop through the interactions between person characteristics (i.e. these determinants and their antecedents) on the one hand, and organizational characteristics ("system factors") on the other. These system factors may act to enhance or impose constraints and demands on opportunities for the demonstration and development of competency.

- Competency is defined in working life terms rather than dispositional or attainment terms.
- Competency is defined, operationally, by the performance repertoires or outcome states to which it refers.
- Competency definitions should be in action or outcome-oriented terms, while competence is defined in terms of attainments.

The bases of competency are uni-dimensional disposition and attainment attributes. A competency construct is, then, a multi-dimensional attribute complex that links dispositions and attainments to performance. The dispositional traits constitute what Campbell et al. (1993) refer to as "antecedents" in their model of work performance, while the attainments relate to what they call "determinants".

## **PART 2: MODELLING THE WORLD OF WORK**

### **Broad Job Performance Models**

Surprisingly little attention has been paid to the task of bringing together various models of job competency, and job performance under an overarching structure that ties together the influences of individual and organizational variables on performance and effectiveness.

Campbell (1990) and Campbell et al. (1993) developed a model of job performance that differentiates eight major dimensions: job-specific task proficiency, non-job-specific task proficiency, written and oral communication task proficiency, demonstrating effort, maintaining personal discipline, facilitating peer and team performance, supervision/leadership, and management/administration. In this model, task-specific proficiency relates to core tasks and skills required to perform one's job. These tend to be reflected in those job competencies judged as "essential" for job incumbents. Non-job-specific task proficiency, on the other hand, represents a whole range of other factors—desirable and incidental competencies.

This division between task and non-task performance is reflected in the tendency for working-life performance to be dichotomized into task and contextual performance (Borman & Motowildo, 1993). Contextual aspects of work performance are also referred to as Organizational Citizenship Behaviour (OCB: Smith et al., 1983).

A slightly different emphasis is noted by Van Dyne et al. (1995) who describe "extra-role" behaviours that contribute to organizational effectiveness. These would include: helping other workers, promoting the organization in public, developing oneself etc. Many of these competencies are actually contained within the job competency model described earlier. However, they may not be stressed as important by the organization when specifying the competencies required for a specific position. While it may be convenient to distinguish between task and non-task aspects of proficiency, it can also be misleading in that it may tend to de-emphasize the importance of the latter in determining overall individual effectiveness in performance at work (Conway, 1999).

Going beyond the notion of OCB-type competencies, Woodruffe (1992) and Boam and Sparrow (1992) call for additional types of competency to account for career stream, role and "core" competency. The latter is meant to reflect how business is carried out in a particular industrial sector, and leads to culture-based competencies that reflect the kind of behaviours, attitudes and values that are required in order to be successful.

Using a process of lexical analysis, Viswesvaran (1993, cited in Viswesvaran & Ones, 2000) identified ten dimensions as accounting for 486 job performance measure descriptions. These dimensions were overall job performance, job performance or productivity, effort, job knowledge, interpersonal competence, administrative competence, quality, communication competence, leadership, and compliance with rules. These dimensions provide a useful set of criteria for characterizing the various ways in which individuals can be judged to be "effective" at work.

The World of Work (WoW) structure proposed below endeavours to provide a framework within which this broad notion of individual effectiveness can be described and analysed.

## Mapping the World of Work

Before describing the proposed structure, it will be useful to consider how the World of Work itself is structured. Pearlman (1980) discusses various approaches to modelling job families. A taxonomy is needed that will both reflect meaningful and practical clusters of occupations at the surface level and reflect what we know about empirical clustering of job-related dispositional and attainment variables at a deeper level. As such, this sort of taxonomy would provide the basis for making occupation–function relationship predictions, and provides a segmentation of job families that can be used to benchmark vacancies in an organization.

Holland (1959, 1985) developed over many years an elaborate theory of vocational choice. Central to this is a comprehensive model of person–environment

match revolving around six vocational types (Realistic, Investigative, Artistic, Social, Enterprising, Conventional). The theory has attracted a high amount of academic attention with a lot of empirical support for the central typology (e.g. Spokane, 1985; Tranberg et al., 1993; Arnold et al., 1995). Others have argued for fewer than six types or dimensions:

- Prediger and Vansickle (1992) proposed two dimensions (data–ideas and people–things).
- Gottfredson (1986) differentiated four functional work areas (physical, bureaucratic, social and artistic).
- Ackerman and Heggstad (1997) provided evidence for four “trait complexes” (science–maths, clerical–conventional, social, and intellectual–cultural) that overlap but do not match Gottfredson’s.

Arnold et al. (1995) predict that the Hexagon will remain prominent in career theory and practice. For many practitioner applications a more detailed breakdown is required, as seen from early applications of the model to the Strong–Campbell Interest Inventory to more recent applications in the Career Pathfinder interest inventory (SHL, 2000).

As the Holland occupation taxonomy can be mapped onto all these other approaches reviewed here, and as it has a high degree of use in practice, it is adopted here as the basis for differentiating occupation- and function-specific capabilities in the competency at work model.

## The World of Work Model

The World of Work (WoW) model (Kurz, 1999a) has been developed over the last ten years in an effort to bring together and integrate research and application streams of occupational assessment. It attempts to provide a structured collection of taxonomies and concepts that outline an overarching, rationally derived framework for describing behaviour, competency and performance at work.

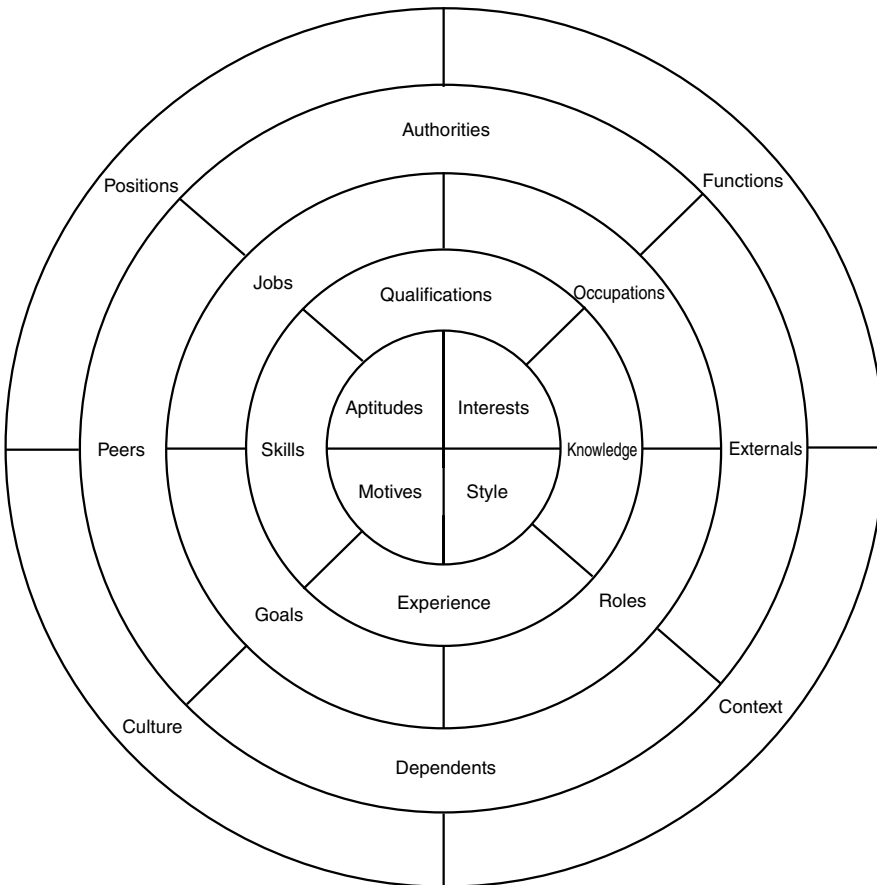
Robertson and Kinder (1993) provided a starting point for the WoW model by demonstrating through meta-analysis of 20 validation studies that both personality and aptitude scales have sizeable point-to-point correlations with relevant managerial performance dimensions. Kurz (1999b) developed expert system equations to predict competency dimensions from personality and aptitude scales, and found consistent validation evidence across nine studies. Gotoh (1999) successfully cross-validated these prediction equations with a Japanese sample. Kurz (2000) provides further evidence of consistent relationships between aptitudes and job competencies. Kurz and Morley (1996) and Kurz and Morris (1997) reported construct valid linkages between aptitudes and interest in job families.

## Structure of the Model

Boyatzis (1982, p. 35) represented person characteristics, separated into a traits and motives sphere at the very centre of a radial map, followed by a social

roles and self-image sphere and finally a skills sphere underlying behaviour. The environment is represented in his model by a cultural and organizational environment sphere at the outside, followed by a functional and situational demands sphere. He argues rightly that each of the components which relate to performance have some impact on each other.

The present model caters for broadly the same characteristics of people and environments, but offers a more finely grained structure as well as a topographical mapping that places related elements near each other. In the WoW model the radial map consists of five domains with four segments each (see Figure 10.2). Person–Environment models (Mischel & Shoda, 1995) lend themselves to a visual representation in circular form. Person characteristics are typically shown on the inside, environment characteristics on the outside with behaviour actions placed in between. In Figure 10.2, the two domains of person variables, “Disposition” and “Attainment”, represent person characteristics and are a development of such well-established taxonomies as the seven-point plan



**Figure 10.2** World of Work (WoW) model featuring five radial domains, from Disposition at the centre, through Attainment, Working Life, and Social relations to the Organization at the periphery. © SHL Group plc

(Rodger, 1952). Two domains of environment variables, "Organization" and "Social Relations", represent organization characteristics. The fifth domain, "Working Life", is located at the interface of people and organization characteristics.

The structure will be described in terms of the five domains shown in Figure 10.2. Following this, four working-life taxonomies are developed.

### The Disposition Domain

Dispositions are conceptualized in the model as underlying personal characteristics that are shaped slowly through developmental experiences, and lead a person to respond in typical ways. The disposition domain covers both ability and personality.

1. *Aptitudes* cover reasoning and learning abilities.
2. *Interests* cover patterns of preference related to vocational choices. The WoW model builds on the well-researched and widely applied work of Holland (1985) on "vocational types".
3. *Motives* cover underlying "needs" and "values", those aspects of disposition that energize and sustain behaviour at work. The theories in this field are rather diverse and lack a unifying framework. In its current form, however, the WoW model utilizes four clusters of motives (Energy and Dynamism, Synergy, Intrinsic, Extrinsic). These have been factor analytically derived from the 18 dimensions of the SHL Motivation Questionnaire (SHL, 1992).
4. *Style* covers typical cross-situational behavioural consistencies, or "personality". This segment covers the domain of the Five-Factor Model (FFM: see above).

### The Attainment Domain

Attainments represent a person's achievements, thus reflecting the biography or working-life history of the person. The Attainment segments cover "Qualifications", "Skills", "Knowledge" and "Experience". These are key areas of interest for employers especially when assessing the suitability of work-experienced applicants for jobs, or when analysing training needs.

1. *Experience*. Surprisingly little has been written about work experience in the occupational psychology literature in spite of its relevance in organizational settings, especially selection. However, recently Tesluk and Jacobs (1998) have proposed a comprehensive model of the work experience construct that may stimulate more research in this area. In the WoW model experience is an important domain segment in its own right that covers the history of job-relevant experiences accumulated by an individual.
2. *Qualifications* include educational qualifications and job-relevant ones, e.g. professional licences and organization-specific training. Work-related (as opposed to academic) qualifications certify that competence has been

achieved at a particular point in time. Qualifications have high practical importance, as they are often requirements for individuals to perform in certain occupations.

3. *Knowledge* (as discussed above).
4. *Skills* (as discussed above).

## The Organization Domain

This domain covers the organizational variables that may impact on people's performance at work. In terms of measurement, it is the domain that relates to job or position analysis and organizational profiling. (Visser et al. (1997) provide an overview of recent developments in this field.) Instruments, such as the Position Analysis Questionnaire (McCormick et al., 1977) and the Work Profiling System (SHL, 1995), assess task and context characteristics through structured questionnaires and can translate these into both human attribute and competency-based specifications. In the WoW model:

1. *Positions* represents the set of task behaviours a person has to carry out to do his or her job.
2. *Culture* refers to the prevailing belief systems in an organization that impact on job objectives and the evaluation of people's performance.
3. *Functions* refers to the duties and roles the organization expects the job incumbent to perform (e.g. manage production resources, develop people etc.).
4. *Context* refers to a range of situational characteristics of a position. These may be in terms of job level, location, division, community etc. As a category it also serves to represent external variables that may impact on the behaviour of organizations and their employees such as mergers, economic situation, society changes etc.

## The Social Relations Domain

Organizational socialisation research primarily concerns the transition of newcomers into an organization, and has evolved as a discipline largely independent of other topics, such as selection (Anderson & Ostroff, 1997). In the WoW model a wider "Social Relations" domain is invoked to represent social structures and ongoing interaction processes in the workplace. They have a profound influence on an individual's behaviour, which in turn influences the behaviour of other people in the organization as well as outside.

The model defines four categories of social relationship in the workplace. These are defined in terms of power, control and responsibility relationships. In the workplace, individuals will each have relationships with:

1. *Authorities*: those in superior positions (e.g. line managers) who set directions and goal for them.
2. *Dependents*: those who they manage (either direct reports or those for whom they are the resource manager)

3. *Peers*: colleagues within the organization with whom one has an equal power-control position.
4. *Externals*: relevant people outside the organization (e.g. clients or suppliers) with whom they have to interact in order to carry out their job.

Figure 10.2 visually differentiates vertical relationships (above or below in the hierarchy) and lateral relationships (inside or outside the organization). Social relations are important for predicting and explaining people's behaviour, and even more so for explaining differences in (perceptions of) performance. Research into 360-degree feedback (Warr & Bourne, 1999) found that correlations between line-manager and self-assessments of performance rarely exceeded 0.35, even with highly reliable measurement tools. This result suggests that it may be illusive to search for an objective "true" measure of performance at work, as an individual's performance may legitimately be judged differently from the differing organizational perspectives of his or her manager, subordinates, colleagues or customers.

### The Working Life Domain

The framework for examining organizational effectiveness outlined in the Editors' Introduction highlighted the pivotal role of the individual. The working-life domain provides a framework within which to describe, explain, predict and modify performance-related behaviours, outcomes, choices and states. It is located at the interface of "inside" (person) and "outside" (situational) variables, and is segmented into four categories.

1. *Job* variables relate to an individual's working life in relation to job requirements, and are concerned with observable job-related behaviours.
2. *Occupation* variables cover career choice and classification in terms of occupations and professions. This links closely with the organization domain definition of requirements in terms of function. That is, organizations select or train people to carry out particular profession- or occupation-specific functions that require the application of certain specialist knowledge and skills.
3. *Role* variables relate to more dynamic processes and states as reflected in dyadic, individual-team or wider individual-group relations. Such role expectations are shaped by the prevailing social relational context.
4. *Goal* variables relate primarily to emotional-affective states; for example, an individual's job satisfaction in relation to performance outcomes, or levels of stress induced by conflicts between personal values and the prevailing organizational culture. Adaptation, within the WoW model, is seen as closely related to goal-seeking, with the process of matching organizational and individual goals as being a key aspect of performance management.

These four categories provide a basis for conceptualizing working life issues, and for linking psychological characteristics of people with organizational and other contextual variables. The central working life domain is intended

to provide a basis for conceptualizing important aspects of working life in a non-evaluative, descriptive way. To this end the four segments described are elaborated in the following ways.

- The “Job” segment caters for “general”, directly observable activities and closely related aspects of working life. The corresponding job competency taxonomy is intended to be as far as possible generally applicable, and to this end is modelled largely on well-established intelligence, motivation and personality theory.
- The “Occupation” segment is designed to capture career choices and other aspects of vocational life largely based on Vocational Type theory. This also provides the starting point for capturing general job function expertise. Central to this segment is a taxonomy of vocational types and job families.
- The “Goal” segment aims to account for tangible goals and results or outcome criteria that are valued by a variety of stakeholders. The corresponding taxonomy is therefore largely based on motivational need theory.
- The “Role” segment represents socio-dynamic processes at work. Capitalizing on social group, dynamic and transactional theories a broad taxonomy of process interactions is adopted.

The following sub-sections outline some central links between the working life constructs and underlying disposition characteristics. Taxonomies are also outlined, for each of these four segments, that build on a range of well-established psychological theories.

#### *The Job Competency Taxonomy*

The three-tier job competency model outlined earlier provides a useful taxonomy for the job segment, as it captures the bulk of job tasks, components and behaviours. The “Big Eight” structure (Bartram et al., 2000) provides the basis for relating directly observable activities performed at the workplace to underlying psychological attributes. Furthermore, the three-tier competency framework provides the necessary building blocks for describing work behaviour. It also provides the basis for making predictions about performance from measures of competency potential. These predictions are developed from the data available about the relationships between measures of disposition and attainments at the competency factor, dimension and component levels.

#### *Occupation Competencies and the Occupation Taxonomy*

As noted above, the six vocational types identified by Holland (1985) provide a good starting point for delineating a model of occupation competency. In career guidance there is a need to assess an individual’s suitability for various careers, and provide well-reasoned advice. Assessments of the individual and his or her circumstances needs to be related to highly structured, reliable and valid information about people and careers. A suitable occupation taxonomy can provide a representation of job families and occupations in the real world, and helps to keep track of and plan career changes.

From an organizational angle it can be observed that most organizations already use some administrative categories to classify different kind of jobs by occupational function (e.g. IT, sales, engineering, personnel, marketing, production). Especially employment related agencies and departments deal with a multitude of jobs across such categories on a daily basis. For placement and succession planning purposes psychologically meaningful occupation categories promise greater versatility and robustness in the match of people and vacancies.

Occupation competency concerns the effective application of occupational expertise and modes of behaviour. Each occupational field has its own sets of rules and requirements that regulate who is allowed to do what kind of work and how people should behave. These requirements apply universally to all individuals who want to work within that occupation. In most professions (e.g. medicine, accountancy and law) some of these expectations are defined in terms of qualification procedures and others in terms of codes of practice that are enforced through disciplinary procedures. In other occupations, while the qualification requirements for entry to the occupation may be explicit, other aspects of desired behaviour may be more implicit than explicit.

To identify what kinds of competency are required for people to perform well in different occupations requires research into types of people, and types of jobs. A model of occupation competencies should provide comprehensive coverage of occupations in the world of work, and spell out how each construct in the model relates to disposition and attainment complexes.

### *Goal Competencies and the Goals Taxonomy*

The central focus for the "Goals" taxonomy is the categorization of aims, targets, goals, and corresponding business and personal results in terms of what people value. The motives segment in the disposition domain in the WoW model is central to this issue, but so far lacks an overarching consensus model.

- The Motivation Questionnaire (SHL, 1992) covers Energy and Dynamism, Synergy, Intrinsic and Extrinsic needs that are measured by eliciting to what extent certain work situations would be motivating or de-motivating; i.e. what situational outcomes people value.
- Schein (1990) covers similar ground through his set of eight Career Anchors. They represent deep underlying long-term needs that an individual wants to satisfy: Managerial competence; Technical/Functional competence; Autonomy/Independence; Security/Stability; Entrepreneurial creativity; Service/Dedication to a cause; Pure challenge; Life style integration. These represent a mix of abilities, motives, needs and values, and are clearly linked to what kind of outcomes (Promotion, Reward, Responsibility) are valued.

These two models can be combined with the four criteria of organizational effectiveness described in the Editors' Introduction to provide a goal taxonomy that helps to conceptualize business results and other outcome variables.

1. *Economic goals* relate to extrinsic Stability and Reward needs. Stability corresponds broadly to the career anchor of the same name, as well as status

- and security needs identified in various motivational theories. Reward relates to career progression and material reward motives, and the Managerial Competence career anchor.
2. *Technology goals* form the basis for distinguishing intrinsic Mastery and Autonomy needs. Mastery incorporates needs for personal growth, interest and stimulation, and corresponds to the Technical/Functional competence career anchor. Autonomy satisfies the need for independence and flexibility, and relates to the career anchor of the same name.
  3. *Commercial goals* form the basis of energy- and dynamism-related Productivity and Commerce constructs. Productivity covers goal-accomplishment and output delivery in response to day-to-day business operation, and is linked to “Pure Challenge” in the Schein model. Commerce covers commercial and client orientation, and thus relates to the Entrepreneurial creativity career anchor.
  4. *Social goals* relate to Society and Harmony synergy needs. Individuals with a Service/Dedication to a cause career anchor tend to have strong personal principles, and a need for affiliation and helping people. Harmony corresponds somewhat to the Life style career anchor, but also incorporates need for recognition and open communications at the workplace.

Goal-setting theory (Locke, 1968) suggests that the goals of employees help to explain their motivation and job performance. Locke views motivation as goal-directed behaviour, and argues that goals that are clear and challenging will result in higher levels of employee motivation and performance than ambiguous and easy goals. Goal competency constructs can aid the process of defining and communicating goals, and assessing output results against the desired goals.

Goal competency relates to the capability for setting goals, managing and directing one’s motivation and structuring behaviour and development activities towards goals. The goal-directed behaviours people exhibit in their working life need to be differentiated in relation to their underlying values and needs. As discussed earlier, these can be viewed in terms of the relationship of needs to four main areas for goal setting: economic, technological, commercial and social.

#### *Role Competencies and the Roles Taxonomy*

The behaviour and effectiveness of groups is not just simply a matter of adding up or averaging individual characteristics, but depends on psychodynamic processes. Power relationships, lengths of service in a group, clarity of goals etc. all interact in ways that have to be modelled at the intra-group level, and manifest themselves in certain outcome “states” of the relationships.

- Belbin (1981) developed a model consisting of eight team types (Co-ordinator, Shaper, Plant, Monitor–Evaluator, Resource investigator, Completer, Team worker, Implementer), and demonstrated that the actual composition of the group influences group effectiveness. The model rapidly became very popular, and also received considerable academic attention.

- Bass (1985) presented a transactional model of leadership styles (Directive, Delegative participative, Consultative and Negotiative) and sub-ordinate styles (Receptive, Self-reliant, Collaborative, Informative and Reciprocating sub-ordinate) that helps to clarify dynamic processes.
- Guest (1997) reviewed transactional, transformational and other situational models in the leadership area.

Any of these can provide avenues for exploring processes and outcomes in group situations. Similarly models of peer relationships (e.g. buying/selling; influencing/listening) can also provide useful angles for uncovering process dynamics.

Role competency is central in the analysis team interactions, and where organizations are interested in group activity that aims to increase productivity, coherence and identity, or reduce conflict, stress and strain. Key to this is the accurate assessment of team processes, as well as perceptions of their effectiveness. (Brannick et al. (1997) provide a detailed account of recent developments in the assessment and measurement of team performance.)

Team processes can be related to individual behaviours and characteristics, and to a department's and organization's goals. Dulewicz (1995, p. 82) defined a team role as "a pattern of behaviour characteristics of the way in which one team member interacts with another so as to facilitate the progress of the team as a whole". He also showed how Belbin's dimensions relate to boss ratings of competency, and dispositional personality dimensions.

Role competency captures the kind of behavioural repertoires required for the range of social roles an individual assumes at work—in both formal and informal groups. An individual needs to act and respond differently when communicating with his or her boss, peer, sub-ordinates or clients. Indeed picking the right kind of role scripts is probably central to how effective others judge one's work performance to be. Actual behaviours may at face value not appear effective in meeting some explicit organizational goal. However, the same behaviour sequence may meet exactly the role requirements of the situation as viewed by significant others in the immediate workplace. People have multiple roles and a range of behavioural repertoires available associated with those roles. Their ability to adapt their workplace behaviour to role expectations while still seeking to fulfil longer-term goals is a key issue in determining effectiveness.

### **Interactions Between the Five Domains of the WoW Model**

Ways of categorizing working life performance are intended to capture and represent what actually happens at the workplace. They should cater for short-term behaviour–outcome sequences (e.g. a customer dialogue), as well as long-term sequences (e.g. career path of an individual). Some aspects of working life could serve as positive or negative indicators of effectiveness, and thus underscore "good" or "poor" performance. The segments of the five domains of the WoW model are of course highly interrelated, and interact dynamically.

Dispositions lead individuals to behave in particular ways, mediated by attainments, and moderated by the situation. The consequences of working life

manifest themselves in certain outcomes. These in turn build up the portfolio of attainments, and in the long term also influence dispositions. Attainments therefore mediate the relationship between dispositions and working life.

Organization characteristics drive individuals to show certain behaviours (e.g. talk to a customers, analyse data) and outcomes (e.g. make a product, sell  $x$  amount of insurance policies). The situational requirements and possibilities may be represented quite differently in the minds of the individual, authority, subordinate, peer and client social relations. The relationship of organization characteristics with individual behaviours and outcomes is thus mediated by the perceptions and opinions of the relationships within the social relations domain. In turn an individual's behaviour and outcome may affect the organization's characteristics, as moderated by the observer's own attitudes and expectations. Social relations thus mediate the relationship between organization and working life.

### **PART 3: COMPETENCY IN HUMAN RESOURCES MANAGEMENT**

The main operational aspects of HRM include recruitment, selection, development, career guidance and performance management, while the more strategic aspects include succession planning, compensation and organizational development. See Schuler and Jackson (1999) for a recent account of the latest developments in strategic HRM.

Competency models should be relevant for all these applications across a whole organization. In practice, competency models tend to have been constructed to meet only the needs of a specific aspect of HRM in a certain part of an organization. Linked to this, many of the models are of an *ad hoc* nature and vary widely in terms of quality and usability (Fletcher et al., 1998).

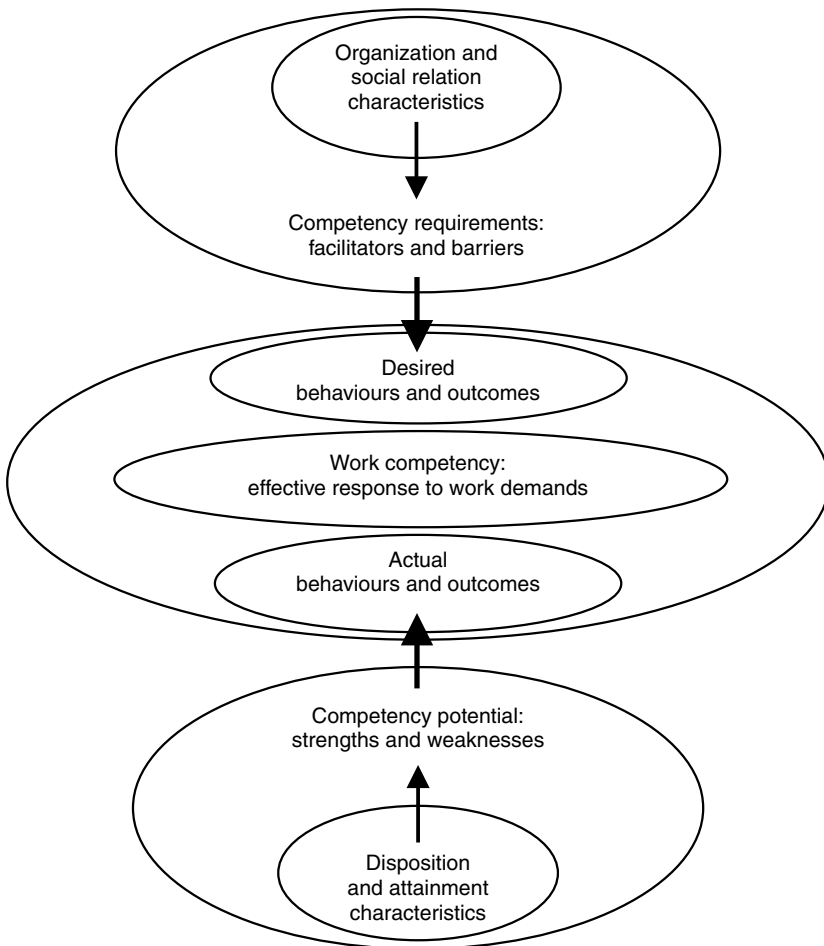
In the light of the definition of competencies presented in the Editors' Introduction, the development of the notion of job competency presented in the first part of this chapter and the elaboration of the other aspects of competency (occupation, role and goal) defined in the WoW model, the broad view of competency can now be defined as "the effective response to work demands". This is achieved by the integration of job, occupation, goal and role competency.

1. *Job competency* is a "set of general behaviours, rooted in underlying dispositions, that are instrumental in the delivery of desired results or outcomes".
2. *Occupation competency* is a "set of function-specific behaviours that are closely linked to underlying attainments, and are pre-requisites for responding effectively to work demands and delivered products and services".
3. *Goal competency* is "the initiation, continuation and successful completion of goal-directed behaviours in response to organization demands".
4. *Role competency* is "a set of social setting-specific transaction process behaviours that are instrumental in the delivery of results and outcomes that satisfy the demands made by social relationships within that setting".

As noted in the Introduction, “competency potential” encompasses the individual attributes that are necessary for someone to produce the desired behaviours and outcomes. Disposition and attainment characteristics give rise to competency potential. Individual differences in person characteristics determine competency potential strengths and weaknesses. These in turn are likely to manifest themselves in superior and inferior effectiveness respectively.

“Competency requirements” encompass the situational factors that determine what kind of behaviours and outcomes are desirable. Organization and social relation characteristics give rise to competency requirements. Environmental differences in organization and social relation characteristics lead to differences in competency requirements that manifest themselves in facilitators and barriers.

Figure 10.3 provides an elaboration of the competency model outlined in the Introduction. Competency potential and competency requirements jointly



**Figure 10.3** The central role of work competency in linking person and environment characteristics to effectiveness. Work competency is understood here to include job, occupation, role and goal competency types

determine behaviours that lead to certain outcomes. The competency construct (of effective response to work demands) explains how desirable behaviours are channelled through goal-directed performances to achieve the goals and outcomes set by the organization. Competency is, therefore, a construct at the interface of people and organization characteristics. To properly assess competency, it is necessary to clearly specify what is meant by an effective response to work demands. Desirable behaviours and desired outcomes have to be specified to serve as benchmarks against which actual behaviours and outcomes can be assessed. "Behaviour–outcome" sequences as such, and even more so the perceptions of effectiveness, feed back to the person and organization domains, and gradually change their characteristics.

## CONCLUSION AND OUTLOOK

In this chapter we have argued the need for an overarching model to pull together the various micro-models and taxonomies relating to performance at work. We have presented a model of "Competency at work" that attempts to link the world of psychological assessment and effectiveness at work through the WoW framework. This in turn offers a broader perspective on competency-based approaches to human resources management (HRM) by providing a common "surface" language for both worlds, with firm links to "deep" underlying psychological constructs. In contrast, many of the competency models that have emerged over the last 20 years take either a purely behavioural or a purely dispositional position. What is more, the measurement instruments associated with them have often not been exposed to psychometric evaluation.

The framework for examining organizational effectiveness outlined in the Editors' Introduction highlighted the pivotal role of the individual. The competency at work framework developed here aims to aid the description, explanation, prediction and modification of individual performance and effectiveness. It should also facilitate the aggregation of data and information from the individual to the team, department and organizational level, and vice versa.

For the researcher, structures like the WoW model enable the development of point-to-point prediction equations that link psychometric dispositional measures to related competency dimensions. Such linkages can serve as *a priori* predictions for validation and research purposes (e.g. meta-analysis), and should be supported in empirical studies. In practice, such relationships will be modelled, tested and refined in a cyclical manner. Warr (1999) has provided a valuable advance to methodology in this area by developing a method for assessing the conceptual concordance between dispositional and competency constructs. This will aid theory-based modelling of predictor–criterion relations.

Various domains and their segments have been outlined, together with their top-level constructs. It should be recognized that each of these can be unpacked and expanded in a hierarchical manner. Some taxonomies have been suggested, such as: the Holland model for occupations; the Bartram et al. (2000) model for job competencies; the FFM model (Costa & McCrae, 1992) for personality measures; and so on. Given limits of space in the present chapter, only some of

this detail has been presented here. Further detailed elaborations of the domains and segments of the model are suggested in Kurz (2000).

The model has been developed primarily by integrating current theories and practices through heuristic and empirical modelling. While certain linkages between elements of the model have been already confirmed empirically, a lot of work remains to specify the vast majority of the relations in more detail, and validate those predictions.

## ACKNOWLEDGEMENT

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