

CHAPTER 5

WORKFORCE PLANNING, ANALYTICS AND AI

THE OBJECTIVES OF THIS CHAPTER ARE TO:

- 1 Discuss the contribution and feasibility of workforce planning
- 2 Explore the scope of workforce planning
- 3 Explain an integrated workforce planning framework
- 4 Investigate the contribution of workforce analytics and AI (artificial intelligence)



Strategic workforce planning has experienced a resurgence of interest in our era of rapid and discontinuous change, and it can help organisations tackle the challenge of competing for skills and talents and keeping workforce costs under control. Planning can assist sustainable performance by providing better information on which to base short- and long-term decisions about people in our volatile and fast-changing economy.

The resurgence of interest in planning is often connected to the disruption caused by the recession that started in 2008 and the need to upskill organisations. Workforce planning may specifically be prompted by revisions in service delivery, the need for increased efficiency/productivity and financial restraint, consolidation of operations in a single location, expansion, changing customer demand. Most recently changing technology and skills requirements and changing context (especially the potential impact of different types of Brexit in the UK) have prompted the need to plan for different future scenarios. Yet workforce planning paradoxically, is often unappreciated and underused. CIPD (2018b) suggest that, although many human resources practitioners recognise the importance of workforce planning in principle, there remains a knowing-doing gap.

Sparkman (2018) acknowledges that workforce planning can be challenging in a fast-changing and ambiguous environment. He argues that if planning is done properly it does not rob organisations of flexibility, and suggests that the key is to use multiple scenarios in the process of planning, and to make the planning process continual and ongoing.

Workforce planning and intelligence can help avoid knee-jerk reactions and falls in service standards, by considering a range of possibilities before events/the environment forces the organisation to act, and as Sparkman suggests it represents a culture shift towards becoming a future facing organisation.

WINDOW ON PRACTICE



Failing to plan in Ryanair

In mid-September 2017 Ryanair cancelled huge numbers of flights due to lack of pilots. Faragher (2017) reports that the lack of pilots was, simply, that Ryanair had failed to plan for pilots' holidays. They offered bonuses to pilots to change their leave, but this made little difference and many pilots moved to other airlines. It was a public relations disaster and share prices slumped. The crisis occurred as Ryanair adopted a new holiday year, and they failed to consider the impact that this would have on pilot availability. Had they considered this in advance, they could have made plans to organise pilot cover.

Source: Faragher, J. (2017) 'How to solve workforce planning – before you become the next Ryanair', *People Management*, 23 October.

The contribution and feasibility of workforce planning

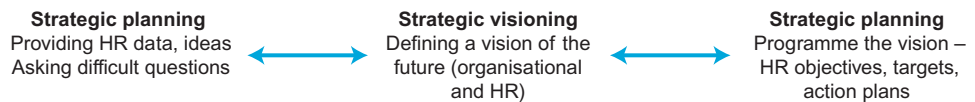
A useful starting point is to consider the different contributions that strategy and planning make to the organisation. A common view has been that they are virtually one and the same – hence the term ‘strategic planning’. Mintzberg (1994: 108) distinguished between *strategic thinking*, which is about synthesis, intuition and creativity to produce a not too precisely articulated vision of direction, and *strategic planning*, which is about collecting the relevant information to stimulate the visioning process and also programming the vision into what needs to be done to get there. It is helpful to look at workforce planning in the same way, and this is demonstrated in Figure 5.1. In more detail he suggests:

- **Planning as strategic programming:** planning cannot generate strategies, but it can make them operational by clarifying them, working out the consequences of them, and identifying what must be done to achieve each strategy.
- **Planning as tools to communicate and control:** planning can ensure coordination and encourage everyone to pull in the same direction; planners can assist in finding successful experimental strategies which may be operating in just a small part of the organisation.
- **Planners as analysts:** planners need to analyse hard data, both external and internal, which managers can then use in the strategy development process.
- **Planners as catalysts:** that is, raising difficult questions and challenging the conventional wisdom which may stimulate managers into thinking in more creative ways.

Planning is a basic building block of a more strategic approach, and there are four specific ways in which HR planning is critical to strategy, as it can identify:

- *capability gaps* – lack of sufficient skills, people or knowledge in the business which will prevent the strategy being implemented successfully (particularly relevant as fast-changing technology requires different sets of skills);
- *capability surpluses* – providing scope for efficiencies and new opportunities to capitalise on the skills, people and knowledge, currently underused (we explore this skills underuse in more detail in Chapter 17), in order to influence strategy;
- *poor workforce utilisation* – suggesting inappropriate HR practices that need to be altered;
- *talent pool development* – to ensure a ready internal supply of employees capable of promotion, and especially a leadership pipeline.

Figure 5.1 IHR strategic visioning and strategic planning
Source: After Mintzberg (1994).



These four aspects are crucial to sustaining competitive advantage through making the most of human resources, reflecting the resource-based view we explained in the previous chapter.

Our environment of rapid and discontinuous change makes any planning difficult, and workforce planning is especially difficult as people have free will, unlike other resources, such as finance or technology. Both short- and longer-term planning are important and yet quarterly business reporting, as is common in the UK, encourages businesses to focus only on short-term planning. By contrast some other countries, like Japan, have a longer-term horizon for assessing business performance, reflecting cultural differences which we discussed more fully in Chapter 3.

WINDOW ON PRACTICE



The value of longer-term planning at National Grid (utility company in the UK)

National Grid's strategy focuses on a ten-year timeframe and is refreshed annually. A close watch is kept on core areas of the business and on job families which are critical to business success. Where likely future skills gaps are identified, plans can be put in place to address these before they become an issue.

Source: People Management (2014) 'Make workforce planning work', May, p. 36.

The example of National Grid highlights the timeframe that may be required to train and develop people to the level required for some roles.

The contribution and implementation of workforce planning is enhanced if:

- plans are viewed as flexible and used as a live on-going process, rather than being seen as an end point;
- plans are made for a range of different potential scenarios;
- stakeholders, including all levels of manager and employee, are involved in the process through, for example, surveys, focus groups and line manager representatives on the HR planning team;
- planning is owned and driven by senior managers rather than HR specialists, who are facilitators;
- plans are linked to business and HR strategy;
- plans are user friendly and not overly complex;
- it is recognised that, while a comprehensive plan may be ideal, sometimes it may only be feasible to plan on an issue-by-issue basis, or by different workforce specialisms or segments (see Sparkman 2018 or Lavelle, 2007 for good examples of segmentation).

The CIPD guide to workforce planning (2018a) provides some very useful advice on implementation.



WINDOW ON PRACTICE

Workforce planning and the NHS in the UK

Workforce planning is considered to be a top priority for the NHS (National Health Service) as an appropriate and competent workforce is required to provide successful service delivery and quality, and to this end a rapid review of workforce planning was commissioned to identify the nature of workforce planning; to provide examples of best practice; and to identify the current effectiveness of UK health sector workforce planning. The work was carried out by the Institute for Employment Research at Warwick University.

The review team found that:

- workforce planning is not a homogeneous activity and can be carried out at different levels, for example organisational or national;
- traditional healthcare workforce planning has focused on supply and demand for specific occupations – in other words, it is segmented;
- this approach can result in professional silos and an integrated approach, covering all staff groups simultaneously is essential to address skill mix and substitution issues;
- data availability and lack of resources to build sophisticated models restrict planning activity;
- planning for internal labour markets, that is the movement between posts within the organisation, is also important;
- it is important to plan for demographic factors both in terms of healthcare need and in terms of workforce supply;
- given the importance of quality in a healthcare setting, productivity improvement can be expressed as higher quality from the same inputs (i.e. workforce);
- there is a general lack of published work on good practices in workforce planning, and no examples of fully integrated workforce planning models were found;
- workforce planning requires accurate data, modelling, continuous and iterative planning, specialist skills, scenario building and stakeholder involvement' (p. 117);
- workforce planning is essential for the NHS as a long lead time is required for training; wage adjustments are influenced by market forces; patient needs must be met; and taxpayers' money should not be wasted by training too many staff.

Source: Curson, J., Dell, M., Wilson, R., Bosworth, D. and Baldauf, B. (2010) 'Who does workforce planning well? Workforce rapid review team summary', *International Journal of Health Care Quality Assurance*, Vol. 23, No. 1, pp. 110–19.

In spite of the above, the NHS was accused of poor workforce planning in 2015 and David Cameron (UK Prime Minister) stated that the NHS could be better at this. This comment was in the context of insufficient UK nurses causing reliance on overseas nurses, which was extremely costly in recruitment terms. Earlier in the year the exorbitant cost of using agency nurses to cover for insufficient permanent staff was exposed, and a cap was put on this cost. How did the NHS find itself in this situation of insufficient nurse supply? A major factor is the *Francis Report* (2013) which was an inquiry following serious nursing failures at North Staffordshire Hospital. A key recommendation of this report was a need





for improved staffing levels of nurses on any shift. A staffing level of one nurse to eight patients was recommended, but not made mandatory. Hospitals responded by trying to recruit more nurses and from April 2014 NHS trusts had to publish employee numbers for every ward to assess whether the levels are sufficient and safe. None of this was anticipated so there were insufficient numbers of nurses in the training system (which takes four years). It was estimated that 21,000 more nurses were required than had been anticipated three years before (Cunningham 2015) and even covering this shortfall has been argued as insufficient as retirements were not adequately taken into account (Ham 2015). Better rostering systems have been proposed as a way of improving ward staffing levels, and Birmingham Hospital has had some success with this.

Source: Information taken from interviews on the BBC *Today* programme, Radio 4, on 31 May, 2 June, 28 July and 15 August 2015.

More recently some progress has been made on the retention of nurses through a mix of better induction, more flexibility, introducing models of career development and planning, improving well-being and involving line managers (NHS Employers 2018a). There are certainly many examples of good practice. For example, University College London Hospitals NHS Foundation Trust (NHS Employers 2018b) held focus groups with existing staff and held exit interviews with leavers, and they found that one of the key reasons for staff leaving was lack of awareness of career opportunities in the wider organisation. In addition, nurses found the processes for formal recruitment and selection to other posts very off-putting. A nurse retention strategy was developed to improve job satisfaction, morale and career development initiatives. They introduced a fast track internal transfer system to other jobs and offered a careers clinic for those who were interested in internal moves. This was piloted with some groups of staff and improvements were found in retention compared with the previous year.

In another example Guy's and St Thomas' NHS Foundation Trust (NHS Employers 2018c) introduced a range of measures in 2017: career coaching; stay discussions; flexible working; simplified transfer processes; new staff engagement post-offer before starting work; leavers discussions and keeping in touch; and financial assistance with accommodation. Staff turnover reduced from 12.6% in 2016–7 to 12.2% in 2017–8. Also, preventable leavers reduced from 40% to 34% over the same period.

Sources: NHS Employers (2018a) *Factors affecting nurse supply. An update on progress.* www.nhsemployers.org/case-studies NHS Employers (2018b) *Internal Transfer scheme to improve nurse retention*, www.nhsemployers.org/case-studies NHS Employers (2018c) *New initiatives to support staff retention.* www.nhsemployers.org/case-studies

However, these initiatives appear very localised and as we write a study has just been published (Ball *et al.* 2019) which demonstrates a lack of significant improvement in nurse numbers. In this study of acute Trusts, Ball and colleagues found that overall nurse vacancy rates were 10% of desired staffing levels and in some Trusts 20%. They also found that while nurse numbers overall had increased, so has the number of admissions, so staffing





ratios have not improved. There was a much greater improvement in the number of support staff (such as healthcare assistants) but this has created a dilution in skill levels. Ball reports that safe staffing levels have not always been achieved and one in four wards were routinely running with high-risk level staffing.

Source: Ball, J., Barker, H., Burton, C., Crouch, R., Griffith, P., Jones, J., Lawless, J. and Rycroft Malone, J. (2019) *Implementation, Impact and Costs of Policies for Safe Staffing in Acute NHS Trusts*, Southampton: University of Southampton.

The scope of workforce planning

Originally workforce planning was concerned with balancing the projected demand for and supply of labour, in order to have the right number of the right employees in the right place at the right time. The demand for people is influenced by corporate strategies and objectives, the environment and the way that staff are utilised within the business. The supply of people is projected from current employees (via calculations about expected leavers, retirements, promotions, etc.) and from the potential availability of required employees and skills in the relevant labour market. Anticipated demand and supply are then reconciled by considering a range of options, and plans to achieve a feasible balance are designed.

Increasingly organisations now plan, not just for hard numbers, but for the *softer* issues of employee behaviour and organisational culture; organisation design and the make-up of individual jobs; and formal and informal systems. These aspects are all critical in terms of programming and achieving the vision or the strategic choice. Undoubtedly different organisations will place different emphases on each of these factors, and may well plan each separately or plan some and not others. Organisations will also plan over different timeframes, but it is valuable to develop both short- and long-term plans.

The framework we shall use in this chapter attempts to bring *all* aspects of workforce planning together, incorporating the more traditional approach, but going beyond this to include behaviour, culture, systems and so on. Our framework identifies ‘where we want to be’, translated from responses to the strategic vision; ‘where we are now’; and ‘what we need to do to make the transition’ – all operating within the organisation’s constantly changing environment. The framework is shown in diagrammatic form in Figure 5.2.

We shall now look in more depth at each of these four areas. The steps are presented in a logical sequence. In practice, however, they may run in parallel and/or in an informal fashion, and each area may well be revisited a number of times. CIPD (2018a) suggest that it is useful to see workforce planning as a mindset, with constant thinking through, and analysis of, the issues.

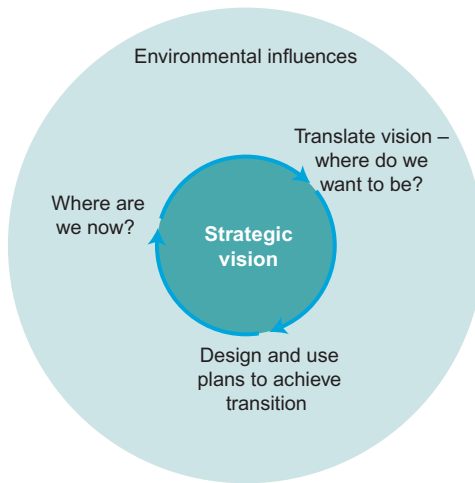


Figure 5.2
Integrated work-
force planning
framework

Analysing the environment

Sometimes called scanning the environment. In this chapter we refer to the environment broadly as the context of the organisation, and this is clearly critical in the impact that it has on both organisational and HR strategy. Much strategy is based on a response to the environment – for example, what our customers now want or what competitors are now offering – or in anticipation of what customers will want or what they can be persuaded to want. Another very current example of environmental change in the UK is Brexit. The type of Brexit that is settled upon will create different challenges in the environment and organisations will have to respond to these.

In HR terms we need to identify, for example, how difficult or easy it will be to find employees with scarce skills and what these employees will expect from an employer so that we can attract them, and keep them. In addition, deciding on the location of employees is becoming increasingly important. We shall be concerned with legislation which will limit or widen the conditions of employment that we offer, with what competitors are offering and with what training schemes are available, locally, nationally and internationally, depending on the nature of the organisation.

In summary we need to collect data on social trends; demographics; political legislative and regulatory changes; industrial and technological changes; and current/new competitors. We need to assess the impact these will have on our ability to recruit, develop and keep the required employees with appropriate knowledge, skills, attitudes and behaviours. Planners need to identify the challenges that the changes pose, and work out how to meet these in order that the organisation can achieve its declared strategies and goals.

WINDOW ON PRACTICE



Analysing the environment at Queensland University of Technology Library in Australia

Stokker and Hallam (2009) identify change as the main driver for the Library's engagement with workforce planning. They believed environmental scanning was a key part of the process to explore trends impacting on libraries, the context, and trends within libraries. The scanning was carried out over twelve months and involved reading relevant documents and inviting guest specialist speakers to address library staff. All library staff were involved in the scanning process and five key areas were investigated, each led by a member of the senior library team:

- Higher education sector/government policy
- Teaching and learning
- Client service
- Research
- Information resources and scholarly information.

Several trends emerged that would impact on the faculty liaison service, such as the university's desire to gain a higher research profile by increasing the number of researchers and research students. This led to the development of three workforce planning strategies for the faculty liaison service: methods to allow librarians to specialise in research support or academic skills support; a review of the job classification scheme allowing librarians to progress further in recognition of their specialist work; and the design of a development programme to allow liaison librarians to acquire new skills and knowledge.

In addition to staff involvement in environmental scanning they were also represented in the workforce planning party and planning strategies were built using consultation. These methods were used to encourage staff ownership and engagement.

Source: Stokker, J. and Hallam, G. (2009) 'The right person, in the right job, with the right skills at the right time: A workforce-planning model that goes beyond metrics', *Library Management*, Vol. 15, No. 89, pp. 561–71.



ACTIVITY 5.1

Consider the external environment, for any organisation in which you are involved, for three to five years ahead. Individually, or as a group, identify all the important environmental influences and select the six most important ones. Identify the challenges these present to the organisation in achieving its goals and how the organisation could respond. Write a summary (one side of A4) of what you think your organisation's priorities should be in the people area over the next three to five years.

Forecasting future HR needs

It is vital to check all assumptions before forecasting, as Paul Sparrow (CIPD, 2018a) suggests:

We tend to extrapolate forecasts from recent trends. In times of uncertainty things become more chaotic (p. 17)

Organisation, behaviour and culture

There is little specific literature on the methods used to translate the strategic objectives of the organisation and environmental influences into qualitative or soft HR goals. In general terms, they can be summed up as the use of managerial judgement. Brainstorming, combined with the use of structured checklists or matrices, can encourage a more thorough analysis. Three simple techniques are an HR implications checklist (see Table 5.1), a strategic brainstorming exercise (Figure 5.3). The use of *scenarios* may also be helpful (see e.g. Boxall and Purcell 2016) and such contingency planning can be used to prepare HR responses to alternative futures. As Mayo (CIPD 2018a) suggests, scenarios can be used to avoid surprises, as they help us get a feel for the implications of changes that we are currently not sure of.

Table 5.1 The beginnings of an HR implications checklist

Corporate goal	HR implications	Methods of achieving this
	New tasks? For whom? What competencies needed? (knowledge, skills, attitudes, behaviours) Relative importance of team/individual behaviour Deleted tasks? How will managers need to manage?	

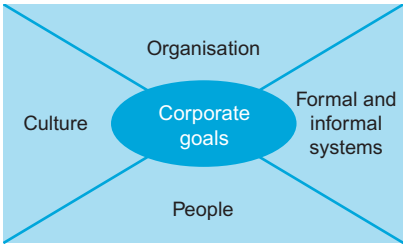


Figure 5.3

Strategic brain-
storming exercise

Managers write a corporate goal in the centre and brainstorm changes that need to take place in each of the four areas, one area at a time

Employee numbers and skills (demand forecasting)

There is far more literature in the more traditional area of forecasting employee number demand based on the organisation's strategic objectives. Both objective and subjective approaches can be employed. Objective methods include statistical and work-study approaches.

Statistical models generally relate employee number demand to specific organisational circumstances and activities. Models can take account of determining factors, such as production, sales, passenger miles, level of service, and other relevant factors such as employee utilisation, resulting from the introduction of new technology, or alternative organisational forms, such as high-performance teams.

The work-study method is based on a thorough analysis of the tasks to be done and the time each takes. From this the person-hours needed per unit of output can be calculated, and standards are developed for the numbers and levels of employees required. These are most useful in production work, but need to be checked regularly to make sure they are still appropriate. Work study is usually classified as an objective measure; however, it is often accepted that since the development of standards and the grouping of tasks is partly dependent on human judgement, it could be considered as a subjective method.

WINDOW ON PRACTICE



The postman's lot

Measuring workload has changed at Royal Mail. Roy Mayall, who has been a postman for many years, explains in his short book how volume of mail was previously measured by the weight of the grey boxes in which mail is delivered to the sorting offices. More recently he says it is done by averages, and it was agreed in consultation with the union that the average figure of letters in a box was estimated at 208. Subsequently Mayall (2009) reports that this estimate was changed to 150, and when a colleague did a one-man experiment counting the letters over a two-week period he found the average to be 267. Mayall recognises that this figure is neither representative nor scientific but the story does show how apparently objective figures can be subjective.

Source: Mayall, R. (2009) *Dear Granny Smith: A Letter from your Postman*. London: Short Books.

The most common subjective method of demand forecasting is managerial judgement and this can also include the judgements of other operational and technical staff and lower level managers. It relies on managers' estimates of workforce demand based on past experience. When this method is used it is difficult to cope with changes that are very different from past experiences.

The way that human resources are utilised will change the number of employees required and the necessary skills needed, and changes in utilisation are often prompted by the need to save money, improve productivity or address difficulties in recruiting. There are many ways to change how employees are used, and these are shown in Table 5.2. Some methods are interrelated or overlap and would therefore be used in combination.

Table 5.2 A range of methods to change employee utilisation

- Introducing new materials or equipment, particularly new technology
- Introducing changes in work organisation, such as:
 - quality circles
 - job rotation
 - job enlargement
 - job enrichment
 - participation
 - autonomous work groups
 - outsourcing
 - high-performance teams
 - changes in rostering
 - empowerment
- Organisation development
- Introducing changes in organisation structure, such as:
 - centralisation/decentralisation
 - new departmental boundaries
 - relocation of parts of the organisation
 - flexible project, matrix and network structures
- Introducing productivity schemes, bonus schemes or other incentive schemes
- Encouraging greater staff flexibility, multiskilling and work interchangeability
- Altering times and periods of work
- Introducing flexible working hours
- Training and appraisal of staff
- Developing managers and use of performance management

WINDOW ON PRACTICE



Changes in utilisation: keeping the workforce on-side

A Network Rail employee told one of the authors how much he enjoyed his job as a Signals Engineer. A year later Network Rail changed the utilisation of engineers, so that they did not specialise in one aspect of engineering, but trained up to cover all areas of engineering tasks. Presumably this multiskilling was thought to be a more efficient use of each engineer's time. The engineer in question became very demoralised and said he couldn't wait for retirement. He was 35! The question to ponder is the extent to which this demoralisation impacted on his productivity and the quality of his work.

Analysing the current situation and projecting forward

Organisation, behaviour and culture

Possibilities here include the use of questionnaires to staff, interviews with staff and managerial judgement. Focus groups are a useful technique where, preferably, the chief executive meets with, say, twenty representative staff from each department to discuss their views of the strengths and weaknesses of the organisation, and what can be done to

improve. Other methods, using technology, can provide a pathway for employees to give, sometimes anonymous, feedback to the organisation.

WINDOW ON PRACTICE



There is a perception that current organisational scandals and PR disasters have re-energised interest in employee voices. Simms (2018) reports on gated enterprise social networks. These can allow employees to share their views in a safe environment, and have the advantage that quieter staff members can have their say, as well as those from distant locations.

Source: Simms, J. (2018) 'Is anybody actually listening?' *People Management*, February, pp. 40–43.

All these approaches can be used to provide information on, for example:

- Employee engagement.
- Motivation of employees.
- Job satisfaction.
- Organisational culture.
- The way that people are managed.
- Attitude to minority groups and equality of opportunity.
- Commitment to the organisation and reasons for this.
- Clarity of business objectives.
- Goal-focused and other behaviour.
- Organisational issues and problems.
- What can be done to improve.
- Organisational strengths to build on.

WINDOW ON PRACTICE



Jennifer Hadley is the Chief Executive of Dynamo Castings, a long-established organisation which had experienced rapid growth and healthy profits until the past five years. Around 800 staff were employed mostly in production, but significant numbers were also employed in marketing/sales and research/development. Poor performance over the last three years was largely the result of the competition who were able to deliver a quality product more quickly and at a competitive price. Dynamo retained the edge in developing new designs, but this consumed a high level of resources and was a lengthy process from research to eventual production. Most employees had been with the company for a



large part of their working lives and the culture was still appropriate to the times of high profit where life had been fairly easy and laid back. Messages about difficult times, belt tightening and higher productivity with fewer people had been filtered down to employees, who did not change their behaviour but did feel threatened.

It was with some trepidation that Jennifer decided to meet personally with a cross-section of each department to talk through company and departmental issues. The first meeting was with research/development. As expected, the meeting began with a flood of concerns about job security. No promises could be given. However, the mid-point of the meeting was quite fruitful, and the following points, among others, became clear:

- Development time could be reduced from two years to one if some production staff were involved in the development process from the very beginning.
- Many development staff felt their career prospects were very limited and a number expressed the wish to be able to move into marketing. They felt this would also be an advantage when new products were marketed.
- Staff felt fairly paid and would be prepared to forgo salary rises for a year or two if this would mean job security; they liked working for Dynamo and did not want to move.
- Staff were aware of the difficult position the company was in but they really did not know what to do to make it any better.
- Development staff wanted to know why Dynamo did not collaborate with Castem Ltd on areas of mutual interest (Jennifer did not know the answer to this one).

The meeting gave Jennifer not only a better understanding of what employees felt, but also some good ideas to explore. Departmental staff knew their problems had not been wiped away, but did feel that Jennifer had at least taken the trouble to listen to them.

Turnover figures, absence data, performance data, recruitment and promotion trends and characteristics of employees may also shed some light on these issues.

Data relating to current formal and informal systems, together with data on the structure of the organisation, also need to be collected, and the effectiveness, efficiency and other implications of these need to be carefully considered. Most data will be collected from within the organisation, but data may also be collected from significant others, such as customers, who may be part of the environment.

Current and projected employee numbers and skills (employee supply)

Current employee supply can be analysed in both individual and overall statistical terms. To gain an overview of current supply the following factors may be analysed either singly or in combination, and designed to be relevant to the organisation: number of employees classified by function, department, occupation, job title, competencies, skills, qualifications, training, age, length of service, performance assessment results. This snapshot of the current workforce is essential when organisations face a sudden and/or major change, as it will allow them to respond more effectively.

Forecasting employee supply is concerned with predicting how the internal supply of employees will change, primarily how many will leave. Current levels of employee turnover are projected into the future to see what would happen if the same trends continued. Analyses can be segmented, for example by age group or job type or location. In countries where there is a legal pension age, this aspect of staff turnover can be predicted reasonably accurately. The impact of changing circumstances would also need to be taken into account when projecting turnover forward; for example, when job remits are substantially changed employee turnover often increases. Behavioural aspects are also important, such as investigating the reasons why employees leave. In larger and especially multinational organisations promotion and employee transfer trends may be analysed. Special attention is usually paid to the organisation's talent, however defined, and we discuss talent planning later (see Chapter 19).

Some sample statistics for projecting employee supply are included in the skills section.



ACTIVITY 5.2

- 1 Why do employees leave organisations?
- 2 What are the determinants of promotion in your organisation? Are they made explicit? Do staff understand what the determinants are?
- 3 What would be your criteria for promotion in your organisation?

Reconciliation, decisions and plans

We have already said that, in reality, there is a process of continuous feedback between the different stages of workforce planning activities, as they are all dynamic and interdependent. Key factors to take into account during reconciliation and deciding on action plans are the acceptability of the plans to both senior managers and other employees, the priority of each plan, key players who will need to be influenced and the factors that will encourage or be a barrier to successful implementation.

If the supply forecast is less than the demand forecast, the possibilities are to:

- alter the demand forecast by considering changes in the utilisation of employees (such as training, productivity deals, refocusing the performance management system, job redesign, organisational restructuring, multiskilling, high-performance teams and work intensification) by using different employees with higher skills, employing staff with insufficient skills and training them immediately, or outsourcing the work;
- alter the supply forecast through increasing retention by making the organisation a more attractive place to work (say, improving career and promotion prospects, providing more development opportunities, delaying retirement, increasing engagement, increasing rewards); recruitment campaigns demonstrating an improved 'employer brand', widening the supply pool to potential employees from other countries (depending on immigration rules), or using agency staff;

- change the company objectives, as lack of human resources will prevent them from being achieved in any case. Realistic objectives need to be based on the resources that are, and are forecast to be, available either internally or externally.

When the demand forecast is less than the internal supply forecast in some areas, the possibilities are to:

- consider and calculate the costs of overemployment over various timespans;
- consider the methods and cost of keeping staff but temporarily reducing their drain on company finances (e.g. by unpaid sabbaticals, reduced working hours), or not replacing staff who leave;
- consider changes in utilisation: work out the feasibility and costs of retraining, redeployment and so on;
- consider whether it is possible for the company objectives to be changed. Could the company diversify, move into new markets, etc.?
- if necessary, prepare a process for downsizing. Further information on strategic and operational planning for downsizing can be found in Torrington *et al.* (2009).

Once all alternatives have been considered and feasible solutions decided, specific action plans can be designed covering all appropriate areas of HRM activity, as demonstrated by the examples above. Any changes would of course need to be accompanied by communications plans and employee relations plans.

WINDOW ON PRACTICE



Alternatives to downsizing

The most recent recession created a challenge in how to emerge in a healthy and strong position, unlike in the previous recession where unplanned and unthought-through downsizing meant that there was insufficient talent in many organisations to take advantage of the upturn. Evidence suggests that organisations have taken a more planful approach this time.

For example, the law firm Norton Rose asked some of its graduate trainees who have been offered places but not yet started work if they would be prepared to defer their appointment until business picks up again. They were offered £10,000 if they accepted this option and used their time constructively such as doing voluntary work or learning a language. They also used a redundancy avoidance plan in order to retain key workers by asking them to voluntarily change their terms and conditions for a year giving Norton Rose the chance to agree unpaid sabbaticals and reduced working hours (Phillips 2009).

KPMG asked employees to voluntarily work a four-day week, if required, or take a sabbatical at 30 per cent pay for between four and twelve weeks. It was proposed that these temporary changes to employment contracts last 18 months, that the maximum salary loss in any year be limited to 20 per cent and full benefits be paid throughout. (*People Management* 2009)





Sources: Phillips, L. (2009) " 'Slash graduate recruitment at your peril': firms advised to plan for the future", *People Management*, p. 8, 9 April; *People Management* (2009) 'KPMG asks staff to accept temporary flexible contracts if the need arises', *People Management*, Vol. 15, No. 3, p. 8, 29 January.

The way that planned changes are communicated to employees is critical. Plans need to include not only methods for informing employees about what managers expect of them, but also methods to enable employees to express their concerns and needs for successful implementation. Communications plans will also be important in generating greater employee commitment.

It is important that the plans are monitored to see if they are being achieved and if they are producing the expected results, pick up any unanticipated consequences and respond to changing circumstances.

Workforce analytics and AI (artificial intelligence)

Definitions and level of use of workforce analytics

Workforce analytics has been defined in different ways over the years, as ideas have changed and expertise has been developed in this area. A useful definition of workforce analytics is provided by Marler and Boudreau (2017):

A HR practice enabled by information technology that uses descriptive, visual and statistical analyses of data related to HR processes, human capital, organisational performance, and external economic benchmarks to establish business impact and enable data-driven decision making. (p. 15)

They suggest that the link to organisational strategy and performance, and the use of data integrated from different sources is a critical feature of workforce analytics and that other data is better labelled metrics. Both however focus on evidence-based data driven decision making about the workforce. In this chapter we will include both metrics and analytics, as the definition above can be seen as the ideal form and many organisations have yet to reach this level of sophistication.

Another definition we need to clarify is the term 'workforce'. Alternatives used are 'people', 'HR', and 'talent' analytics. Khan (2019) argues that 'HR' analytics should be used to refer to analytics reflecting the work of the HR department, and that people analytics excludes the contribution of robots, chatbots and the like and therefore workforce analytics is most inclusive. We follow this definition and reject the term talent analytics as there are so many definitions of 'talent' as we discuss in Chapter 19.

While workforce analytics is a very hot topic with HR professionals and features very clearly in the new CIPD profession map, the level of use is not impressive. A CIPD survey of 3,500 plus business professionals (including HR) in 2018 (Jeffrey 2019) found that only 39% had access to people data (the term used in the survey) for decision-making

purposes and just over half of these were actively using people analytics to address business issues. Just 35% of those not in HR felt their HR team were experts in people data. CIPD (2018c) found that the confidence of HR professionals in the analytics area was low. In a review of academic literature on workforce analytics Marler and Boudreau found only small number of papers compared with those on other HR topics, and although there has been a surge of interest since 2010 the numbers of papers remains low.

CIPD (2018d) suggest a useful process for introducing workforce analytics and Hirsch and colleagues (2015) found that important issues to address are getting HR staff with the right skills, demonstrating credibility, having an ongoing dialogue with managers who will be customers and validating the data with them. They derived this from their experience of introducing predictive analytics (sophisticated analytics which we will look at later in this section) at Johnson Controls. Jeffrey (2019) underlines the importance of only measuring what matters to avoid data overload, and that analytics need to be supplemented with qualitative data.

Definition of AI

AI is a broad-spectrum term which covers machines which display intelligent behaviour. You may be thinking of robots or chatbots, which do have a potential role in self-service HR and development, but at present probably the most successful subset of AI is machine learning, according to Christian Steinruecken (*People Management* 2017). This involves the construction of self-learning algorithms, and we will explain later in this chapter how these can be used in advanced data analytics in the HR field.

Practical uses of workforce metrics and analytics

The most basic way in which analytics can be used to support the organisation, focuses on ensuring high-quality information to support business decisions. The emphasis is on *'what do we need to know about the workforce to run the company more effectively, and how can we turn that knowledge into action?'* (Lesser 2010). To this end analytics can provide an in-depth picture of the current workforce and an expansion of the data that might be collected to assess current and future workforce supply and behaviour. So, for example, at a basic level, accidents, absence rates and so on may be measured in addition to turnover, and workforce profiles can be developed, for example against age, gender, skills and performance. With greater sophistication the measurement of attitudes and satisfaction can inform the development of people policies and potential antecedents to these can be tested, such as flexible working, coaching and mentoring to highlight and communicate the importance and effectiveness of these actions. In this process we are looking for a relationship or correlation between, say, engagement and a new mentoring programme. If we indeed find that engagement has increased in the very departments where the mentoring programme has been used more fully (as assessed by using the relevant statistical procedures, which are found in the skills section) we have some evidence that the mentoring programme *may* have improved engagement. We cannot say that the mentoring programme has caused improved engagement but the relationship does suggest that further investigation is worthwhile, perhaps seeking soft data to corroborate our suspicions.

Thus analytics needs interpretation from HR professionals who have a real and close understanding of the business, to develop insights. Such data can highlight the organisation's workforce challenges and enables the HR function to take a more proactive role in addressing them, for example the challenge of high absence levels in some departments,

compared with others, or the characteristics of higher-performing managers. Analytics can be a means of identifying the most productive and/or the speediest/or most cost-effective recruitment channels, or whether new skills would be best delivered over a shorter or longer timeframe. Given this depth of information, better decisions can be made to address these challenges. So in this first approach to analytics the emphasis is on improving the effectiveness of the organisation's human capital and the processes by which it is managed, and having more facts to support longer-term business decisions, and decisions made in crises.



ACTIVITY 5.3

Thinking of an organisation you know well, address the following questions, including justifications:

- 1 What people measures are routinely collected?
- 2 Why are these collected?
- 3 To what extent are the reasons widely understood?
- 4 How are the measures used?
- 5 What changes would you recommend and why?

Building on this, analytics can be used in a more obviously *strategic and integrated* way. Through the use of a strategic framework or model the organisation can identify what drives the performance of employees in relation to the organisation's strategy. These drivers can then be expressed as a range of measures with indicators, and targets can be set at about the levels that need to be achieved. These targets are often cascaded down to employee level, and form the base for the 'hard' metrics approach to performance management as opposed to the softer 'good management' approach to HRM which we discuss later (see Chapter 11).

There are a variety of models that can be used and considerable attention has been given to the use of scorecards, such as the balanced scorecard (Kaplan and Norton 1992) and, later, the HR scorecard (Becker *et al.* 2001), in linking people, strategy and performance. Such scorecards utilise a range of HR measures which are viewed as critical to the achievement of the business strategy. Kaplan and Norton widened the perspective on the measurement of business performance by measuring more than financial performance. Their premise is that other factors which lead to financial performance need to be measured to give a more rounded view of how well the organisation is performing. This means that measures of business performance are based on measures of strategy implementation in a range of areas. Kaplan and Norton identify three other areas for measurement in addition to financial measures: customer measures; internal business process measures; and learning and growth measures. Figure 5.4 provides an example of Norton and Kaplan's approach.

In each of these areas critical elements need to be identified and then measures devised to identify current levels and to measure progress. Some organisations implementing this scorecard have developed the learning and growth area to include a wider range of HR measures. The next Window on practice shows the Civil Aviation Authority's (CAA) tailor-made balanced scorecard approach.

Figure 5.4

Kaplan and Norton's approach using the 'learning and growth' quadrant of the balanced scorecard
Source: Adapted from Kaplan and Norton (1992).

'To achieve our vision/mission/strategic goals, how will we be able to sustain our ability to change and improve?'

What are the critical success factors?	What are the critical measurements?

WINDOW ON PRACTICE



Civil Aviation Authority's (CAA) approach to human capital measurement (HCM)

As 60% of the CAA's costs are people costs, the CAA began an HCM process hoping that this would allow it to quantify the value of its staff and explore the relationship between staff performance and business outcomes. The CAA also anticipated that it would help in quantifying its objectives of continuous improvement, improved efficiency and cost-effectiveness. The CAA developed a balanced scorecard approach to measuring human capital based on what constituted the 'bottom line', being a not-for-profit organisation. This bottom line comprised:

- External customer perception of CAA's performance
- Achievement of objectives
- Assessment of staff expertise.

In order to measure the value of their people, policies and practices, the CAA asked itself what it wanted to know about each of these in relation to the defined 'bottom line'. Having decided the questions, the CAA then worked out where that information might be found and how it could be measured. The questions and measures are shown in Figure 5.5.

In terms of the success of policies and practices examples of questions asked include

"Are staff engaged?" and
"Are we retaining key employees?", and
measures include "engagement index" and
"quality of leavers"

In terms of the value created by people examples are

"Are we developing our staff effectively?" and
"Are our 'customers' satisfied by our performance?", and
measures include "training evaluation" and
"external customer survey"

Figure 5.5

How the CAA defined measures to answer its human capital questions
Source: Robinson, D. (2009) 'Human capital measurement: An approach that works', *Strategic HR Review*, Vol. 8, No. 6, pp. 5-11, Figure 1.



The CAA then ordered its measures in a four-level hierarchy and worked up the hierarchy starting with the basic measures at the base:

Level 4: Performance measures: link between input/output data and measures of CAA strategic performance.

Level 3: Outcome measures: for example, absence rates and costs, engagement data.

Level 2: Operational data: for example, number of training days.

Level 1: Workforce data: for example, headcount, demographics, equal opportunities data.

The fourth level, not surprisingly, was the hardest to define and measure, so the CAA are looking at correlations between input measures such as absence, turnover, training and length of service and outputs such as employee engagement.

Source: Summarised from Robinson, D. (2009) 'Human capital measurement: An approach that works', *Strategic HR Review*, Vol. 8, No. 6, pp. 5–11.

Analytics of whatever type are often presented in the form of dashboards and use sophisticated software (see e.g. Asselman 2012). While the value of analytics may be acknowledged, many organisations face barriers in implementation.

Another avenue in which analytics can be more sophisticated is the integration of huge volumes of data which are unstructured and are continuous rather than static, with data being combined from different sources (sometimes referred to as 'big data'). This can enable a vast array of different analyses, *augmented by AI*. Below we give a taste of some of the uses of predictive analytics in HR, and we go into more detail in the relevant chapters of the book.

Supermarkets have been using *predictive algorithms* for some time, sending us offers on the products they think we are likely to buy based on analysis of previous buying behaviour. Netflix even had a prize for the best scientific method of optimising the company's movie recommendations to its customers. In the HR arena we could use them to predict which employee to hire or promote, which employees might leave and so on, all based on historical patterns in the organisation of the characteristics and history of leavers and events building up to resignations.

WINDOW ON PRACTICE



Predicting employee behaviour

Preya Dewani, Head of People Strategy and Programmes at O2, the mobile phone company, refers to the 'employee performance life cycle' to predict when a drop in effectiveness might occur. She overlays data about length of service, age, engagement and performance to identify when intervention strategies could be implemented prior to a dip in effectiveness occurring.





At Oracle, Andy Campbell, Human Capital Management Director, notes how turn-over can be predicted by using information from performance reviews and colleagues to identify dissatisfaction before someone leaves. Intervention strategies can then be targeted at the most disillusioned and most valued staff.

Source: Churchard, C. (2013) 'We love data', *People Management*, September, pp. 20–24.

Network analytics (sometimes called relational analytics, is generating a lot of interest where email exchanges (without the content), calendars, meetings are analysed to see which employees have greater networks and influence. This can be used as a way to find 'hidden stars' (see for example Jeffrey, 2019). Reward packages can be individually designed which are predicted to better meet the needs of valuable employees. Visual data, say from interviews, can analyse facial expressions. Algorithms for rostering can incorporate individual preferences. The argument is that decisions can be made on the basis of data and are less subjective than decisions made by managers. However it has also been argued that AI will perpetuate and exaggerate human biases, but in so doing may make it easier to confront them (see for example Jeffrey 2017).

Surveillance and tracking

Davenport (2014) suggests that it is sensor data which will most impact on the human resources function. These data are gathered from badges worn by employees, watches, mobile phones and so on (with permission), providing location and activity data, which can then be combined with other data. The use of video cameras can contribute to these data.

In a recent TUC survey (Collinson 2018) more than half the employee respondents felt that their boss was monitoring their actions in some way. Monitoring of course has been happening for many years as in 'clocking in' but, as Burt (2018) suggests, technology has made this potentially much more invasive. Critically such surveillance must be done with the knowledge and agreement of the employee, and a clear reason provided, for example ensuring health and safety compliance in a warehouse, for example. However, many employees may not feel that they are in a strong enough position to say 'no'. Improving productivity will often be an implicit reason, if not explicit for such surveillance. Whilst valuable data can of course be produced the damage to the psychological contract needs to be taken into account. Not feeling trusted can be demotivating as Burt suggests.

WINDOW ON PRACTICE



Using sensors

The Bank of America were concerned about employee churn at some call centres, and called in consultants Sociometric Solutions. Employees agreed to wear a badge with sensors that collected information about individual location, tone of voice, volume and





communication method. Analysis of this information suggested that employees needed more social time at work, and were encouraged to take their breaks with their friends. This solution was credited with reducing the turnover from 40% to 12%.

Source: Work (2014) 'How data analytics is revolutionising banking and hunting', *Work*, Winter, pp. 34–45.



SUMMARY PROPOSITIONS

- 5.1.** Even in a context of rapid and discontinuous change, workforce planning still has a valuable contribution to make, but as HR planning deals with people, planners need to plan for what is acceptable as well as what is feasible.
- 5.2.** The scope of workforce planning covers not only numbers of people and skills, but also structure, culture, systems and behaviour.
- 5.3.** An integrated framework which attempts to cover all aspects of workforce planning involves:
 - analysing the external environment and business strategy;
 - analysing where we want to be (forecasting HR requirements);
 - analysing where we are we now (defining the current HR position and projecting this forward).
- 5.4.** Workforce planning is a continuous process rather than a one-off activity, and it is important to plan for a range of different scenarios
- 5.5.** Analytics can assist in providing a clear picture of the current situation and can be used to monitor progress towards the desired state which will underpin the organisation's ability to achieve its goals.
- 5.6.** More recently analytics is augmented by AI and makes it possible to analyse workforce data in that it is unstructured, continuous, voluminous and combines data from different sources. It opens up new possibilities for improving HR and workforce effectiveness.



GENERAL DISCUSSION TOPICS

- 1.** Discuss the proposition that traditional (numbers) workforce planning is only of interest to organisations in periods of growth when unemployment levels are low.
- 2.** 'It is worthwhile planning even if you have no strategy.' For what reasons might you agree or disagree with this statement?



THEORY INTO PRACTICE

G4S and the London 2012 Olympics (August)

G4S, an international security firm, gained the contract to provide security at all Olympic locations. G4S contracted Wave, recruitment marketing specialists, to run the recruitment campaign. It was projected in 2010 that 2,000 security staff would be required, but by late 2011 this had risen to 10,400. Wave appeared to run a very thorough recruitment campaign (see e.g. CIPD 2012) and in May 2012 it appeared that everything was on track for the increased number of guards. However, suddenly in mid-July G4S admitted that it could not fulfil the whole contract and 3,500 soldiers were drafted in to cover the shortfall. Nick Buckles of G4S, interviewed on BBC Radio 4, appeared to lack information about the detail of the recruitment/training/vetting processes, could not explain what had gone wrong and was unable even to confirm that all potential employees spoke fluent English.

G4S found there was a dropout of acceptable candidates when they realised the realities of the job, but even more importantly there was a shortage of licensed security guards and the company recognised that it would have to recruit inexperienced staff and train them in order to meet the new target. Such candidates had to provide a lot of data about themselves and be vetted and screened, then trained for four days in order to acquire the necessary skills, and then meet the criteria for a Security Industry Licence before they could begin their employment. The sheer scale of this task defeated the organisation, and it accepted that it had underestimated the challenge.

Questions

- 1 In what ways might contingency planning have helped G4S?
- 2 The chief executive of G4S only found out that it could not fulfil the contract in mid-July, which was very close to the start of the games. How might communication have been improved within G4S, and between G4S and Wave, and how might this have helped the planning process?
- 3 In a similar situation, if you were tasked with recruiting 8,000 similarly inexperienced staff, with less than a year to do this, how would you plan to ensure that all potential employees were vetted, screened, trained, licensed so they were qualified to begin work on time, and that the dropout rate was minimised?

Sources: Brockett, J. (2012) 'Olympian task', *People Management*, August, p. 9; Gabb, A. (2012) 'Safety in numbers', *PM Guide to Recruitment Marketing*, pp. 14–17; and general news media.

FURTHER READING

Eubanks, B. (2018) *Artificial Intelligence for HR*. London: Kogan Page.

A very useful text which provides some good definitions in chapters 2 and 3, and covers examples of AI use in recruitment, retention, engagement, learning and development and talent management. It will certainly help HR professionals leverage the potential of AI to improve efficiency and develop a productive and talented workforce. Keeping the emphasis on 'human', Eubanks reflects on the challenges AI brings and tackled AI bias, and the skills required from HR professionals.

Shrivastava, S., Nagdev, K. and Rajesh, I. (2018) Redefining HR using people analytics: the case of Google', *Human Resource Management International Digest*, Vol. 26, Issue 2, pp. 3–6.

A brief but fascinating insight into the different ways in which Google is using analytics.

Burt, E. (2018) 'Are they sitting comfortably', *People Management*, October, pp. 34–37.

A good analysis of the benefits and ethical problems in using webcams, motion detectors and microchips in the monitoring of employees.

Jeffrey, R. (2017) '... shouldn't you know who they are?', *People Management*, August 25–31.

Jeffrey covers a wide range of AI use including chatbots, coachbots and predictive algorithms. Some very good examples and an analysis of the challenges in AI use.

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