

The value and limitations of workforce planning

Introduction

I have a vision of engaged people connected with meaningful work. Effective workforce planning achieves that vision; it is achieved in a way that creates both sustainable growth and the best possible margins through improved productivity. It is because of this that I remain passionate about workforce planning and the difference it can make to organizations and society.

However, many exercises in workforce planning have either been unable to create this value or have resulted in unintended consequences. Indeed, common reasons for failures of traditional approaches to workforce planning (Sullivan, 2002a, 2002b) are still prevalent today.

This chapter will cover both the value of workforce planning and also the limitations of traditional approaches, which together prompt a change in direction for the practice to a more agile approach.

Value of workforce planning

Why plan?

In the early 20th century, French mining engineer and executive Henri Fayol distilled management into five key elements: planning, organizing, command, coordination and control (Fayol, 2013). *The Rise and Fall of Strategic*

Planning (Mintzberg, 1994) sets out four reasons for planning, which I will put into a workforce context:

‘ORGANIZATIONS MUST PLAN TO COORDINATE THEIR ACTIVITIES’

When new work lands, but there is an insufficient level of capability to service that work, the failure is usually attributed to a lack of effective planning. With increasing complexity and scale, coordination of effort becomes a critical task, which requires planning to ensure that neither value nor opportunities are wasted.

‘ORGANIZATIONS MUST PLAN TO ENSURE THAT THE FUTURE IS TAKEN INTO ACCOUNT’

‘We think about our future in order to anticipate our needs and reduce our risks’ (Ward, 2013). Being future-focused is critical for all businesses. Threats and opportunities all exist in the future: ‘this is a common failing of mankind, never to anticipate a storm when the sea is calm’ (Machiavelli, 1532). Consideration of the future can be done in line with the principles of the *three-point estimation* or *programme evaluation and review technique* (PERT): *planning* for the most likely scenario, *preparing* for the best-case scenario, and *pre-empting* the worst-case scenario (Department of the Navy, 1958). No employee generates value *before* the decision to hire them. It follows, therefore, that all workforce decisions would take place in relation to the future and can only benefit from planning.

‘ORGANIZATIONS MUST PLAN TO BE RATIONAL’

To quote directly from Mintzberg (1994), ‘formalized decision making is better than nonformalized decision making’. Nobel prize winner Daniel Kahneman (2011) had a different approach when he talked of fast, automatic thinking (system one) and slow, effortful thinking (system two). System one thinking is quick and automatic, driven by habit and emotion; system two thinking is more complex and rational. As system one thinking is based around normality and bias, it is suitable for dealing with simple decisions in the immediate space (eg which apple to pick from a bowl, where to step when walking). System two thinking exists for more complex decisions that require mental effort and several steps to come to a conclusion, ie planning. Therefore, this would certainly apply to anything in relation to the workforce; proper planning would prevent decisions being made on the basis of system one thinking.

‘ORGANIZATIONS MUST PLAN TO CONTROL’

The aim of control is to protect organizations from ‘careless, costly, or uninformed decisions or behaviours’ (Finkel, 2015). At a basic level, checklists operate as a visual control; surgeon and author Dr Atul Gawande has written extensively on the importance of checklists to effect immediate improvements in performance (Gawande, 2010). From checklists to improve patient safety in clinical areas (Pronovost *et al*, 2003) to a checklist to ensure a new starter is onboarded successfully, all controls require advance planning to understand the path to success. All degrees of planning maturity, from basic financial planning to strategic management, are geared around the ability to ‘exercise effective control over most factors affecting their businesses’ (Gluck *et al*, 1980).

Benefits of workforce planning

The workforce is typically the biggest cost within an organization; advisory firm Willis Towers Watson state it is typically 70 per cent of opex (operating expenses) within large organizations (Tandon, 2018). If organizations accept the premise of planning, the logic follows to make plans for the largest cost base: the workforce. Beyond this, we will examine some specific benefits of workforce planning:

GUIDING THE BUSINESS FORWARD

Workforce planning is critical to guiding businesses towards their objectives by connecting strategy to execution, as ‘a business strategy cannot be executed without the available skills and capability in the workforce’ (Stanford, 2013). Then Global Head of Resourcing for steel and mining giant ArcelorMittal, Ali Gilani, was quoted as saying that an effective strategic workforce plan delivered the following benefits:

- a plan which maintains focus on strategy;
- a year-by-year action plan that executes that strategy;
- avoidance of bad tactical decisions that could result in long-term problems;
- a degree of preparedness for unforeseen situations;
- a securing of core jobs and key skills (Brooks, 2012).

This aspect we will cover in greater detail throughout this book.

PROVIDING BUSINESS INSIGHT

A 2019 survey by professional services firm Capita cited that business leaders viewed HR and recruitment as the least effective area of their business at collecting, analysing and using data to drive business outcomes (Capita, 2019). A report from *Harvard Business Review* Analytic Services stated that whilst two-thirds of CEOs received basic metrics from their HR departments, just 24 per cent said they also received analytics that ‘connect their people metrics to business metrics’ (Harvard Business Review, 2017). The ability to connect the two hinges on workforce plans that link capability to successful business outcomes. This will be a recurring theme throughout this book and detailed specifically in Chapter 15.

LEADING HUMAN RESOURCES FUNCTIONS

Workforce planning is a key component of successful HR. In a *Forbes* article calling workforce planning ‘the War Room of HR’, human capital management thought leader Sylvia Vorhauser-Smith was clear:

As the cornerstone of strategic human resources, the workforce plan certifies that human capital and talent management strategies run parallel to the business goals. As workforce plans hinge on effective forecasting, analysis and preparation, the failure to craft and implement an effective one will almost certainly deliver an adverse impact to a company’s ability to acquire, inspire and retain talent (Vorhauser-Smith, 2015).

If implemented correctly, workforce planning drives the activity of human resources functions; this will be covered in greater detail within Part Six.

BECOMING RESILIENT AND ANTIFRAGILE

Events such as the global financial crisis and the Covid-19 pandemic have demonstrated the fragility of organizations, economies and nations; with the increased acceptance of a VUCA world, organizations are increasingly sensing their fragility and looking towards building resilience. This approach is based on the misconception that resilience is the opposite of fragile. In fact, resilience is simply a point on the continuum between being fragile and antifragile: ‘Resilient resists shocks and stays the same; the anti-fragile gets better’ (Taleb, 2013). The approaches we take throughout this book are geared towards building resilience and antifragility and solidified in Parts Six and Seven of this book.

OVERCOMING PREVAILING TRENDS

Notwithstanding the challenges of a VUCA world, organizations are facing a number of prevailing trends that workforce planning can mitigate and overcome:

In the past 20 or 30 years, where perhaps the pace of change wasn't quite what it is now, maybe we could kind of get away with [a lack of workforce planning]. But the reality, and the reason why I think strategic workforce planning has become so critical, is because it is very evident that we're in a very fast-changing world. It isn't just about technology. Technology [is] going to impact in the coming years, at a faster rate, the kinds of jobs and [capabilities] that we need... in ways that we have not seen in the past... We've also got... social and demographic change [and] skills shortages... You cannot build a business strategy without an understanding of the nature of your [changing] workforce (Peter Cheese, CEO of the Chartered Institute for Personnel and Development, 2020).

MULTI-GENERATIONAL WORKFORCE

Some organizations are trying to manage a generational gap of over 50 years between their oldest and youngest workers. As life expectancy increases, so will the length of working lives; the 2020s will see the first occasion of five different generations in the workplace at the same time:

- traditionalists/the silent generation (born 1927 to 1945);
- baby boomers (born 1946 to 1964);
- generation X (born 1965 to 1980);
- generation Y/millennials (born 1981 to 1996);
- generation Z (born 1997 to 2012).

Though the differences between the generations are often overstated, workforce plans can draw the greatest value from behavioural tendencies and capability mixes within those generations, alongside management of the health and well-being implications of older workers in particular. This trend will continue as the end of the decade will see the traditionalists leave the workforce as a new generation, likely *Generation Alpha*, begin their working lives. This subject will be covered in Chapter 8 of this book.

DIVERSITY AND INCLUSION

In addition to increasing diversity of age within the workforce, organizations are continuing to experience increasing diversity across the spectrum

of workforce characteristics discussed in Chapter 1. Organizations, many prompted by legislated reporting requirements, are making proactive steps towards increasing diversity. This strategic choice of a new, different, *right shape* requires workforce planning to be successful. Moreover, increasing diversity necessitates greater inclusion of difference, which in turn requires planning of the interventions to build an inclusive culture and behaviours.

AUTOMATION

In *The Future of Jobs Report 2018*, the World Economic Forum estimates that 75 million current workers will be displaced from their roles due to the rise in automation, yet 133 million new roles may emerge at the same time. Founder and Executive Chairman, Klaus Schwab, said, ‘to prevent an undesirable lose–lose scenario – technological change accompanied by talent shortages, mass unemployment and growing inequality – it is critical that businesses take an active role in supporting their existing workforces through reskilling and upskilling’ (WEF, 2018). With a 2019 survey indicating that almost half of organizations rely on ‘instinct and gut feel’ when assessing current workforce skills and future skills requirements (Capita, 2019), workforce planning has a critical part to play in data-led analysis and execution and will be covered in greater detail in Part Six of this book.

THE SKILLS GAP

PwC’s *22nd Annual Global CEO Survey* called out the skills gap as a continuing pain point for organizations. Over half of CEOs said they were ‘not able to innovate effectively’ and that ‘people costs are rising more than expected’. Just 4 per cent of CEOs said there was no impact from the availability of key skills on their own organization’s growth and profitability (PwC, 2019). A study by the Society for Human Resource Management showed that 83 per cent of HR professionals had had difficulty recruiting suitable candidates within the previous year and over half said the skills shortage had worsened over the past two years (SHRM, 2019). With organizations desperate to both retain their own talent and bring in new talent, workforce planning provides visibility of the drivers of both and an approach to create the desired workforce. This will be covered in further detail in Part Six of this book.

THE PRODUCTIVITY CHALLENGE

The Bank of England’s Chief Economist, Andy Haldane, said ‘the slowdown of productivity growth has clearly been a global phenomenon... From 1950

to 1970, median productivity growth averaged 1.9 per cent per year. Since 1980, it has averaged 0.3 per cent per year' (Haldane, 2017). This view is reinforced by the OECD: 'Since 2010, annual growth in labour productivity [in OECD countries] has slowed to 0.9 per cent, about half the rate recorded in the pre-crisis period.' It also notes that organizations in some countries (eg US, UK and Canada) have tended towards increased headcount, rather than capital investment, to increase growth since the financial crisis (OECD, 2019). This means that, rather than investing in technology and development, organizations have simply recruited increasing numbers of workers in order to grow. The need to pivot back to a more sustainable approach to investment is highlighted by survey findings that 77 per cent of CEOs expected to use operational efficiencies to drive revenue growth (PwC, 2019). Understanding the components of workforce productivity and improving upon that is a key component of workforce planning and will be covered in Chapter 8 and Part Six of this book.

CHANGING THE WORLD

In 2015 the United Nations created 17 goals for sustainable development, available from www.un.org/sustainabledevelopment/ (archived at <https://perma.cc/FWJ2-AXAW>).

Effective workforce planning is at the heart of the eighth goal, to 'promote sustained, inclusive and sustainable economic growth, full productive employment and decent work for all'. Economic growth and work are the catalysts for many of the 16 other development goals. With decent work comes 'gender equality' and 'reduced inequalities for all'; it achieves 'no poverty' and 'zero hunger', which are critical to delivering 'good health and well-being'. Workforce planning supports 'industry, innovation and infrastructure', which leads to 'responsible consumption and production' and 'quality education'. The pathway to changing the world sits within a complex ecosystem, but workforce planning is able to make a significant impact on the UN's goals for 2030.

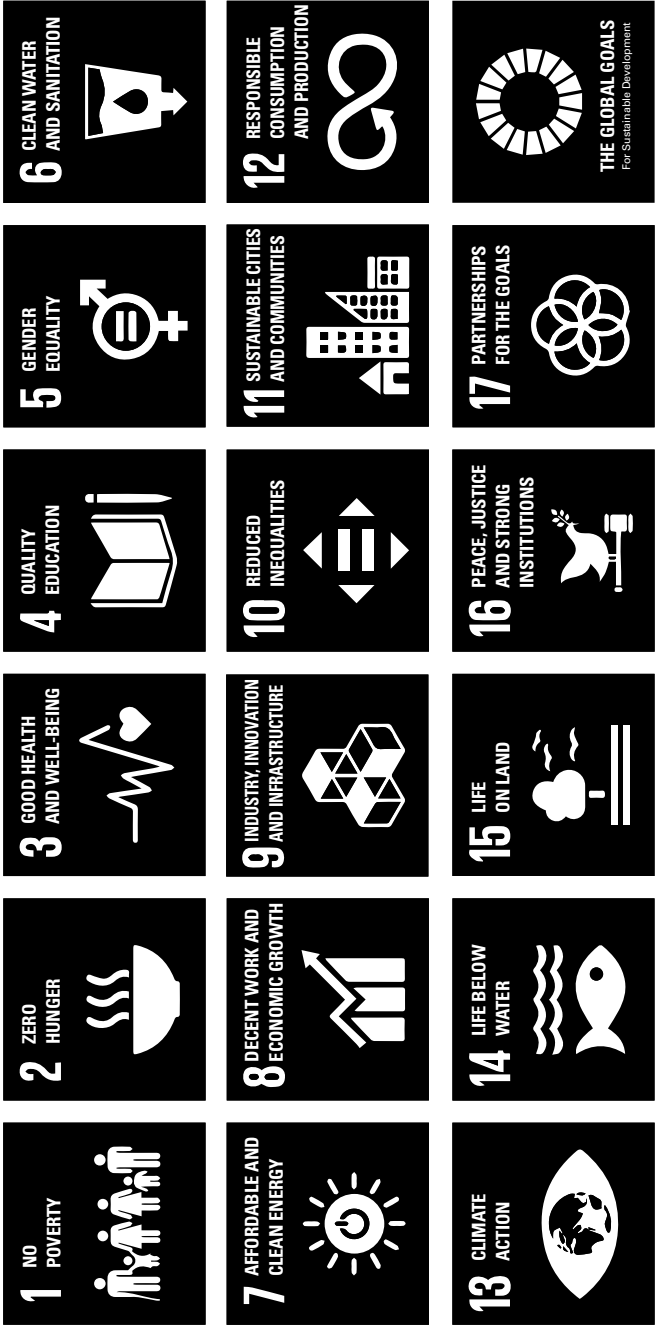
Limitations of workforce planning

The benefits that workforce planning can bring to organizations and their people can fall short due to the limitations of traditional approaches. The overarching limitation of the traditional approach to workforce planning is

FIGURE 3.1 The Global Goals for Sustainable Development

THE GLOBAL GOALS

For Sustainable Development



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that the three horizons have, unfortunately, led to silo approaches to the subject.

Horizon one – resource planning

The main limitation of resource planning is that it tends to focus on efficiency (doing things right) rather than effectiveness (doing the right things). Capacity models, based on the current operation and mapped against demand forecasts, are often not attuned to the organizational strategy, changes in workforce trends or issues impacting the wider enterprise.

CASE STUDY

UK Government

In April 2017 an apprenticeship levy came into effect in the UK, which was payable by all employers with an annual wage bill of over £3 million. The levy was payable to a digital account at a rate of 0.5 per cent of the total wage bill and earned a 10 per cent contribution from the government. This fund can be used by the employer to fund apprenticeship training; any funds that remain unspent after 24 months are immediately reclaimed by the government. It was projected to impact 1.3 per cent of employers and raise £2.675 billion for employee apprenticeships in its first year of operation (Department for Education, 2016).

Since April 2019, when funds have started to expire, tens of millions have been lost each month. Kemi Badenoch MP, Parliamentary Under-Secretary of the Department for Education, admitted that in two months alone (July and August 2019) a total of £96 million expired in employers' digital accounts (Hansard, 2019).

One impacting factor is the requirement for those on the schemes to spend 20 per cent of their time in off-the-job training (NAO, 2019). This requirement has dissuaded many responsible for resource planning from the use of apprenticeships as uneconomical within their planning models at a meso level, despite the impact of lost levy finances at a macro level.

Horizon two – operational workforce planning

In isolation, operational workforce planning tends to be the approach that is most fraught. Planning in this horizon not only tends to be conducted

outside HR, but it is also sufficiently removed from the workforce that it fails to connect with the reality of workers and their work.

BUDGETING APPROACH

The method of workforce budgeting itself can result in damaging implications for the organization. The three most common approaches to budgeting are zero-based, incremental and activity-based. Zero-based, or zero-sum budgeting is a bottom-up approach that assumes a department starts with no budget and must therefore justify each individual item of expense. This bakes in the same risk: the prioritization of efficiency over effectiveness. Where a resource planning model has not been used, it is common for zero-based budgets to take place as a one-off exercise in cost reduction. As a result, the skill of zero-based budgeting tends to be lacking (as it is not regularly practised) and the outputs are weak by comparison. Incremental budgeting, the practice of starting with the previous budget and adding or subtracting a percentage, is the quickest and most common form of budget. It does, however, perpetuate the status quo and the existing inefficient or ineffective practices. In addition, it is the least attuned to the market as it ignores specific changes in cost drivers. The opposite of the zero-based approach, activity-based budgeting is a top-down method that starts with the objective to be achieved and then works through the inputs required to achieve that objective. This approach tends to be the most effective; however, it can ignore non-financial and longer-term objectives that we will cover in the next section.

IMPROPER FINANCIAL LENS

As operational workforce planning is often a finance-led exercise, the result is structured based on how the finance department operates rather than the way that work is done. Budgets are apportioned based on profit or cost centres and decisions are often made on that basis, rather than with a view to business objectives. In many organizations, changes to the overhead costs for shared capabilities tend to be offset against cost centres as a percentage of their own budgets. That means that a department that benefits heavily from a shared postal function, and another that does not, would each have to absorb a 1 per cent budgetary reduction as a result of an increase in the cost of the postal function. Equally damaging, wider budgetary pressures tend to be apportioned on a similar basis; a department generating £10 million in revenue and one generating £500,000 in revenue may each have to reduce costs by 5 per cent, placing far more revenue at risk in the first

department. The greatest damage results from typical methods of reducing costs. *Salami slicing* or *penny shaving*, the application of small incremental cuts in cost can cause significant damage to longer-term growth through the gradual erosion of quality and service levels.

DAMAGING BEHAVIOURS

As mentioned above, the main limitation of operational workforce planning is that it tends to be focused primarily on financial inputs and outcomes, rather than the totality of what an organization seeks to achieve. It is common for longer-term growth to suffer as a result of declines in quality and service as a result of trying to achieve annual budgets. Conscious of these pressures, budget holders may attempt to gain some budgetary slack either by overstating the budgetary requirements or understating revenue estimates. At the end of the year, it is equally common for departments to authorize the spend of this budgetary slack in an ineffective way in order to avoid losing the funds and this potentially impacts the budget for the following year.

POOR INVESTMENT CHOICES

David Brussin had experience of running three businesses before he co-founded Monetate, the e-commerce software provider, in 2008. As the executive chairman, having taken the company from start-up to passing a milestone in 2019 of \$2 billion in influenced revenue, he is clear that annual planning is 'broken and suboptimal' (Brussin, 2015). In his experience, planning on a purely annual basis discourages investment in anything beyond the next financial year. Unless it will deliver a return in the coming year, it is overlooked: 'If you're all about hitting a number, you won't make choices that might distract from that goal, or that won't immediately help you achieve it'.

DEBILITATING RIGIDITY

As one of the key outputs from operational workforce planning is a budget, it is, by definition, a method of restriction: the purpose of a workforce budget is to prevent over-hiring. This can lead to two problems: shifting risk and unresponsiveness. The rigidity of a budget can result in under-hiring in the early part of the year in order to create budgetary slack. Having insufficient workers will directly impact operational delivery and the achievement of both in-year and future-year objectives, shifting the risk to a later point in time. In addition, the limitations of the budget can lead an

organization to become unresponsive and ignore shifts in the market that can result in both unintended costs and lost opportunities.

Horizon three – strategic workforce planning

THE FIVE DS

The key limitation of traditional strategic workforce planning rests in the way the craft has been deployed and the standard models used to do so. Practitioners of strategic workforce planning operated as consultants, either independently or as part of larger firms, and were a key contributor to the post-2010 growth. Using approaches similar to that detailed in Chapter 1, many statements of work were undertaken to create a strategic workforce plan for organizations, which typically followed a pathway called the *five Ds*: digest, deliver, depart, disrupt and disregard. At first, an engagement commences between the consultant and their client, the organization, and the consultant *digests* the business strategy, objectives and workforce data. The consultant creates a strategic workforce plan and *delivers* it to the client. On submission of the strategic workforce plan, the engagement ends and the consultant *departs*. The organization is subsequently *disrupted*, typically in one of two forms: internal and external. Internal disruptions are typically where operational changes are dependencies of the strategic workforce plan, but these transformations are late, different or cancelled. These tend to be due to underestimations on budgets, underappreciation of the need for the capability to deliver both transformation and daily business operations, or a culture that fails to realize the benefits of a change. External disruptions are the ones most apparent in the wider market and could be in the form of market shocks (eg recession), legal (eg regulatory changes) or competitive forces (eg downloads and streaming in the music industry). As a result of disruption, the strategic workforce plan is deemed no longer fit for purpose and is *disregarded*. The organization has the choice of re-engaging with the consultant, attempting to come up with a new plan, or simply doing without a plan and chalking it up to experience.

STRATEGIC DISCONNECT

A very common issue, which we will cover in more detail in Chapters 5, 13 and 15, is that the plan often fails to account for a fundamental disconnect between the strategy (either business or workforce strategy) and the *way* that work is done. Strategies are often highly fragmented: not only can a strategy document become dated by new thinking, but there tend to be a

multiplicity of strategies, objectives and priorities at the macro and meso levels of the organization. Not only are there conflicting narratives, but the approaches themselves often do not appreciate the complexity of business operations. This results in strategic workforce plans that, even without disruption, can never be realized.

TECHNOLOGICAL OVERRELIANCE

In a clear step away from the *five Ds* approach, consultancies are leveraging varying degrees of workforce analytics as a vehicle for strategic workforce planning. Either as part of an enterprise resource planning (ERP) platform, or as a standalone tool, these technology solutions have become exceedingly popular with the allure of democratizing workforce planning. Whilst a number of analytics tools masquerading as strategic workforce planning solutions are little more than multi-year incremental budgets, the better tools can provide game-changing insights. The limitation, as Ross Sparkman, then Head of Strategic Workforce Planning at Facebook, writes, ‘While workforce analytics is an important aspect of [strategic workforce planning]... there is much more to it than just the analytics’ (Sparkman, 2018). Simply put, workforce planning requires more than being competent in the use of an analytics tool.

Summary

The benefits that workforce planning can bring to organizations and their people are clear; indeed ‘workforce planning is taking on new urgency as the complexion of the workforce changes and different skill sets emerge, evolve and expire’ (Johnson, 2019). The tragedy is that these benefits can be eroded and the impact can fall short due to the limitations of traditional approaches. Silos have grown within each of the three horizons: on the one hand, resource planners can be planning against an existing way of working and be unaware of a strategic cliff-edge; on the other hand, strategic workforce planners can be ignorant of the current operational challenges that will prevent longer-term success.

The agile approach we will cover in the next chapter moves away from this silo thinking and, as McKinsey & Company did with growth, demonstrates how to plan and execute across all three horizons at once (Baghai *et al*, 1999).

References

- Baghai, M, Coley, S and White, D (1999) *The Alchemy of Growth*, Perseus Publishing, New York
- Brooks, S (2012) The emerging discipline of strategic workforce planning [Blog] *HR Zone*, 9 February, www.hrzone.com/talent/development/blog-the-emerging-discipline-of-strategic-workforce-planning (archived at <https://perma.cc/VLW6-9C9G>)
- Brussin D (2015) Annual planning is killing your growth – try this plan instead [Blog] *First Round Review*, 29 January, www.firstround.com/review/Annual-Planning-is-Killing-Your-Growth-Try-This-Instead/ (archived at <https://perma.cc/D9FE-62TN>)
- Capita (2019) How data and insight can deliver the skills needed in a hybrid workforce, 21 June, <https://content.capitapeoplesolutions.co.uk/whitepapers/insight-edge-talent-acquisition> (archived at <https://perma.cc/ZP45-ES4B>)
- Cheese, P (2020) In-person interview, 8 January
- Department for Education (2016) Information on apprenticeship levy, August, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/545145/Apprenticeships_-_expected_levy_and_total_spend_-_Aug_2016.pdf (archived at <https://perma.cc/AZW6-WARJ>)
- Department of the Navy (1958) *Program Evaluation Research Task: Summary report phase 1 (July)*, apps.dtic.mil/dtic/tr/fulltext/u2/735902.pdf
- Fayol, H (2013) *General and Industrial Management*, Martino Fine Books, Eastford
- Finkel, D (2015) The 3 types of business controls [Blog], *Inc.com*, www.inc.com/david-finkel/the-3-types-of-business-controls.html (archived at <https://perma.cc/H2NQ-5UEL>)
- Gawande, A (2010) *The Checklist Manifesto*, Profile Books, London
- Gluck, F W, Kaufman, S P and Walleck, A S (1980) Strategic management for competitive advantage, *Harvard Business Review* (July), hbr.org/1980/07/strategic-management-for-competitive-advantage (archived at <https://perma.cc/3ECA-CEE7>)
- Haldane, A (2017) *Productivity Puzzles* [speech], 20 March, www.bankofengland.co.uk/-/media/boe/files/speech/2017/productivity-puzzles.pdf (archived at <https://perma.cc/N69Y-PKKP>)
- Hansard (2019) Apprentices: Taxation: Written question – 284461, 5 September, www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2019-09-02/284461/ (archived at <https://perma.cc/4NAQ-Z23T>)
- Harvard Business Review (2017) *How CEOs and CHROs can Connect People to Business Strategy*, Harvard Business School Publishing, <https://hbr.org/resources/>

- pdfs/comm/visier/HowCEOsandCHROsCanConnect.pdf (archived at <https://perma.cc/HF5H-UFRK>)
- Johnson, L (2019) Gartner top 3 priorities for HR leaders in 2019, *HR & Digital Trends*, 15 January, www.hrdigitaltrends.com/story/14124/gartner-top-3-priorities-hr-leaders-2019 (archived at <https://perma.cc/4FHC-9U7D>)
- Kahneman, D (2011) *Thinking, Fast and Slow*, Allen Lane, London
- Machiavelli, N (1532) *The Prince*, 1995 reprint, Penguin, London
- MacLean, P D (1990) *The Triune Brain in Evolution: Role in paleocerebral functions*, Plenum, New York
- Mintzberg, H (1994) *The Rise and Fall of Strategic Planning*, The Free Press, New York
- NAO (National Audit Office) (2019) The Apprenticeships Programme, 28 February, www.nao.org.uk/wp-content/uploads/2019/03/The-apprenticeships-programme.pdf (archived at <https://perma.cc/N8PD-7JVH>)
- OECD (Organisation for Economic Co-operation and Development) (2019) Compendium of productivity indicators, https://www.oecd-ilibrary.org/industry-and-services/oecd-compendium-of-productivity-indicators-2019_b2774f97-en (archived at <https://perma.cc/629X-HZ33>)
- Pronovost, P, Berenholtz, S, Dorman, T, Lipsett, P A, Simmonds, T and Haraden, C (2003) Improving communication in the ICU using daily goals, *Journal of Critical Care*, 18 (2), pp 71–75, www.sciencedirect.com/science/article/abs/pii/S088394410370001X (archived at <https://perma.cc/MPX9-ZMWW>)
- PwC (2019) *22nd Annual Global CEO Survey*, www.pwc.com/gx/en/ceo-survey/2019/report/pwc-22nd-annual-global-ceo-survey.pdf (archived at <https://perma.cc/YP2B-CEUA>)
- SHRM (Society for Human Resource Management) (2019) *The Global Skills Shortage: Bridging the talent gap with education, training and sourcing*, www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM%20Skills%20Gap%202019.pdf (archived at <https://perma.cc/8SC4-YAZE>)
- Sparkman, R (2018) *Strategic Workforce Planning: Developing optimized talent strategies for future growth*, Kogan Page, London
- Stanford, N (2013) in D L Ward and R Tripp (eds) *Positioned: Strategic workforce planning the gets the right person in the right job*, AMACOM, New York
- Sullivan, J (2002a) Before you try it, understand why workforce planning fails [Blog] 12 August, *ERE*, www.ere.net/before-you-try-it-understand-why-workforce-planning-fails (archived at <https://perma.cc/R2PQ-3UFG>)
- Sullivan, J (2002b) Why workforce planning fails, part 2 [Blog] 19 August, *ERE*, www.ere.net/why-workforce-planning-fails-part-2 (archived at <https://perma.cc/32YW-8EFV>)
- Taleb, N N (2013) *Antifragile*, Penguin, London

- Tandon, N (2018) Total cost of workforce: The new magic word for CFOs, *CFO Connect*, February, cfo-connect.com/2018/april2018/insight2.php (archived at <https://perma.cc/45SP-W456>)
- United Nations (2019) *The Sustainable Development Goals Report*, unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf (archived at <https://perma.cc/3BGU-LSGC>)
- Vorhauser-Smith, S (2015) Workforce planning: The war room of HR, *Forbes*, 25 May, www.forbes.com/sites/sylviavorhausersmith/2015/05/25/workforce-planning-the-war-room-of-hr (archived at <https://perma.cc/HKN8-GV3R>)
- Ward, D L (2013) How long has this been going on? in D L Ward, D L and R Tripp (eds) *Positioned: Strategic workforce planning the gets the right person in the right job*, AMACOM, New York
- WEF (World Economic Forum) (2018) *The Future of Jobs Report 2018*, http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018 (archived at <https://perma.cc/QYE4-RFHZ>)