



HR & Analytics

Mastering people, culture and performance through the use of advanced analytics



Human Resources
and Future of Work



People are the backbone of any organisation, and HR branches are often complex because of the issues they need to deal with. Analytics tools are often useful when dealing with people and forecasting future trends in HR.

This paper brings together the perspectives of three workforce analysts who use analytics as part of their HR toolkits to better deal with their current workforce and to predict future capabilities. The lessons from these perspectives can assist anyone who deals with people or large departments.

Key take outs

- Analytics tools can assist in dealing with people and HR branches
- Analytics can help to predict trends and the future of HR
- First it is important to understand the state of the current workforce
- At the Ministry of the Justice in the UK, they have employed a five-point strategic workforce planning tool to assess their current workforce and predict future trends
- At the NSW Public Service Commission, they are focussing on digital capabilities as they encompass so many other HR practices and trends
- At the Australian Taxation Office, they are looking at their past, present and future trends to enable better decision-making for their employees
- Moving forward, these tools, plans and trends will need to be further embraced by governments and employees



HR tools and analytics

People are the backbone of any organisation, particularly a large public sector organisation. Dealing with people from an employment perspective is often a complicated and burdensome task, and thus there are often large HR branches within most departments. But even the best HR experts need tools and technology to assist them and ensure that they are using the data at the disposal in the most efficient and effective ways.

This paper draws together the perspectives of three workforce analysts. Two are from Australia and one is from the UK, though all three use analytics as part of their toolkits to better deal with their current workforces, and to help them predict future trends and capabilities. Analytics within HR is becoming an indispensable part of the process, and the lessons from these perspectives can assist anyone who works with people or in large departments.

Why analytics is important

Strategic planning and looking after the employees of an organisation is at the heart of HR practices. Using analysis assists in better planning and better workforce engagement. **Dr Kate Harrington, the A/Assistant Commissioner for Performance and Analytics at the NSW Public Service Commission (PSC)**, says that in NSW in particular, “the future of the public sector is influenced by a number of things, and workforce analytics has the power to inform our decisions across all of these areas.” For instance, across the entire public sector in NSW, there are over 400,000 employees and as expected, “around half our expenditure goes on our employees.” With the nature of the employees and their work constantly changing, using analytics to inform and predict their movements can be enormously powerful.

Elaine Mahon, the Divisional Director for Workforce Experience and People Insight at the Ministry of Justice (MoJ) in the UK, also says that analytics are important. For them, it’s about using “people analytics to plan and to drive decision-making.” **Karl Strichow meanwhile, the Director of Workforce Analytics at the Australian Taxation Office (ATO)**, says that they also use analytics to “improve business decisions” and to better understand their data.

Understanding the workforce

Before any analytics can be applied, it is important to understand the workforce and the people that may be affected by the analytics. The PSC in NSW is responsible for all public servants across the state. As such, Dr Kate Harrington says the PSC is guided by the Premier’s Priorities (PP14) which call for “a world-class public service.” To get to this point, there are targets in place. The Premier has called for “50% of our senior leadership positions across the sector to be held by women.” Currently, 65% of employees are women, but very few are in leadership positions. Another target is “to increase the number of Aboriginal people in senior executive roles,” and to “ensure that 5.6% of government sector roles are held by somebody with a disability.” Currently this sits at 2.5%. The final and possibly most important target is to “build digital capability across the sector to improve user and customer satisfaction.”

Elaine Mahon says that the MoJ has “78,000 people across 34 agencies and public bodies” spread across the entire country. The largest branches are “Prisons and Probation Services, and Courts and Tribunal Services.” There are people from a “range of different professions” and although there are more female employees, many of the senior roles are taken up by males. “In terms of generations, about 55% of our employees are millennials.” Understanding all this is important, because it shows the “needs of the workforce and what forces might actually differ, especially in light of some of the challenges we have got ahead of us.”

Karl Strichow says that their focus is external rather than internal, so until COVID-19 came along and forced a large number of their “workforce of around 20,000” to work from home, understanding the makeup of their own staff was less important.



The changing landscape, and how analytics can assist

Ministry of Justice (UK)

Elaine Mahon says that since they know their employee profile, they also know that there are “emerging disparities” particularly in the areas of diversity, largely stemming from the constantly evolving “competition for jobs.” This is a concern for the MoJ and they are “considering how our employment models prevent any further widening of gaps.” Their specific focus is on gender and the ageing population. People are living longer and in the UK, it is predicted that “by 2050, the average age of an employee will be 45. It is currently 36” but there is a wide variance across the globe. In Nigeria for instance, “the average age of employees in 2050 will be 22.” It will also be important to factor in technology, as it is important “to understand the power that automation and augmentation can have in delivering our services, but particularly the impact that might have on the types of people that we are seeking, or that we may need to seek in the future.”

“For us as employers, all of this really demonstrates the fragmentation that might present itself in the workplace and how we really need to work to understand that better, and to work it into our plans.”

Elaine Mahon,

Divisional Director, Workforce Experience and People Insight,
Ministry of Justice (UK)



To get on top of all of these issues, the MoJ has developed a Strategic Workforce Planning model to “help us to analyse our current workforce and what the future workforce needs might be.” The model has five main sections:

1. Situation assessment

The first part of the model looks at the current composition of the workforce. “It looks at our baseline and more broadly, it’s interested in looking at progress against our existing plans and the delivery of our business as usual activity.” This means things like “current FTE, the cost of the current workforce, current makeup across our diversity characteristics, and importantly, our current productivity levels.” In terms of productivity, this also means the “drivers of productivity.” All of this has “impacts on the decisions that we might take about numbers, skills, locations and things we need in the future.”

To get to the baseline, they set up a reporting dashboard that can break down the headcount by FTE and location, and “can monitor any changes over time.” This includes attrition rates “so that we can truly understand where we might have some risks.” Moreover, “looking at things like age or an approach to retirement, that can give us an indication of the current spread, and also allows us to think about what the likely impacts might be in the future.”

2. Strategic direction

The second point is about strategic objectives and plans, and “how we understand what element of workforce optimisation or workforce planning is needed in order to be able to have the workforce to deliver those plans.”

3. Future workforce

The third and most important point is about “megatrends, employee expectations, the role of technology, external factors and trust.” This part of the model is about scenario forecasting to really understand the makeup of the future workforce. Really, this is about “predicting what our future supply might be.” For instance, if an employee tells a co-worker that they intend to leave, this “seems like it should be a pretty good predictor of turnover,” however, research suggests that intention to leave only results in actual leaving “about 12% of the time.” A better way to gauge the “potential makeup of the organisation including retention rates,” is called “survival analysis, which is an advanced statistical technique that is used to estimate the probability of an event occurring over time.”

It was first developed to predict survival rates in hospitals but is now used widely to predict turnover. “It can predict what type of behaviour we might be expecting, and it can be applied to any cohort in workforce planning,” so not just retention but also diversity or “what that makeup is likely to be if we don’t intervene and do something now.”

“Survival analysis gives us that foresight, that insight, to understand what we might need to act upon and how we can design and tailor our approach to ensure that all of the HR processes and all of the behaviour that we do indeed need in our future workforce, can be met by taking specific actions.”

Elaine Mahon,

*Divisional Director, Workforce Experience and People Insight,
Ministry of Justice (UK)*

This analysis is then fed into a model that “allows us to think up and plan out various scenarios to understand what alternate futures we could be working towards.” This kind of model can show what happens when some roles become automated and therefore “where we might have increased attrition levels.” It can also show where the gaps are between supply and demand, and it does so visually with graphs and trend plots. The impact of this tool is that “we can break it down and look at it by organisational unit, or by tender, because those are the things that we are wishing to be able to plan by.” It shows what happens when even the smallest attributes are changed.

4. Implementation planning

With the analytical tool in place, this point shows “what action we can take to close down the gap.” When the shortfall between the current and desired state is known, there are certain “action planning levers” that can be pulled to get to the desired state.

5. Measuring success

The final point is about monitoring delivery and “analysing the differences in the workforce, and the degree to which we met our workforce requirements and workforce productivity levels against the organisation’s goals.”



NSW Public Service Commission

Dr Kate Harrington says that an uplift in digital capability will allow the PSC to be more customer-centric. This is achieved through “six suites of digital capability:”

- Customer at the centre
- Collaboration and agility
- Data, decision and ethics
- Ideas to impact
- Enabling technology
- Digital leadership

Though building digital capability was only one identified priority, it is at the heart of the PSC’s planning and thinking.

“Digital leadership and capabilities are not just about technology, they are about thinking differently, acting differently and reacting differently. It’s a whole new mind-set associated with evolving the public sector to think and work in a new way. Our analytics teams have been working to identify where the uptake areas are, and how our teams can enable the uplift to occur.”

Dr Kate Harrington,
A/Assistant Commissioner,
Performance and Analytics,
 NSW Public Service Commission

In simple terms, enhancing digital capability is about focussing on “delivering services in ways that that people want to receive them, not around how government is structured.” This means using “human-centred design and an increase in the diversity of our workforce.”

The first thing to do therefore was to “look at what services the NSW government currently provides.” 2019 data shows “that we have a presence everywhere in the state” and also “in 20 countries around the world providing economic stimulus to NSW.” This is important to note “when we’re planning our workforce of the future” because “we need to plan for how we position remote working to provide services across all of the relevant areas.” The data also confirms that the population is ageing, and “increasingly, more of our population will be dependent rather than working,” so different services will need to be provided to different cohorts of people.

The delivery of digital services however, “depends very much on how much physical interaction is needed with people.” 2019 data shows that between 19% and 32% of community service roles require face-to-face delivery. “We’ve used this analysis to really help drive those strategic workforce planning decisions, and to see what roles can exist where, and who can deliver them from home.”

Another important factor is emerging technologies. Research from the last year suggests that of the 400,000 people employed in the NSW public service, “around the equivalent of 14,000 roles could be automated.” However, “that’s not necessarily 14,000 individuals. It might only be 10% of a person’s role” so it is likely to affect many thousands of employees.

“Automation is going to allow people to concentrate on the more human factors of their job, and actually those jobs will become incredibly more rewarding because people will get to do the things that only humans can do.”

Dr Kate Harrington,
*A/Assistant Commissioner,
Performance and Analytics,
NSW Public Service Commission*

As part of that, even before COVID-19, “there were changing expectations about what technology could do for the workforce, and they were already testing our emotional well-being and having an impact on our engagement and performance levels at work.” Despite the immense changes that the pandemic brought, including the necessity for everyone but frontline staff to work from home, pulse checks and regular surveys found that “people feel well supported by their managers and are by and large quite happy with the efforts that that officers have made to keep people safe.”

As a result of the pandemic, there will be “high rates of unemployment, recessionary pressures, as well as impacts on well-being, mental health and social disadvantage. But there are positives as well.” For instance, “the accelerated uptake of technologies is a huge positive for NSW. And there’s enhanced attitudes that the government is actually here to do good.”



Australian Taxation Office

Karl Strichow says that the role of analytics at the ATO is to “support leaders at all levels to improve business outcomes by making better HR decisions and planning. We do this by putting the tools in their hands, like dashboards and apps. We integrate and leverage HR data from over 20 source systems, and we deliver predictive and prescriptive analytics and business value by investing in data science capability.” This has always been the approach of Workforce Analytics at the ATO, but it has come in stages.

Past – Initially, in around 2011, many of the tasks were done using these dashboards or other tools. The workforce numbers were relatively small, but as the tasks and analysis tools grew, so did staff numbers. As an example, since “the unemployment rate is a great predictor for our natural attrition,” they worked with the Australian Bureau of Statistics “to produce a very good forecasting tool.” But that was known as a “top-down” approach. Recently though, with new tools, they began “bottom-up forecasting, which is really about individual separation prediction.” It’s not just about numbers; it’s also about looking at people and causes. The plan was to further expand these tools and apps, but then COVID-19 got in the way.

Present – The pandemic “accelerated everything. We always had plans for a more flexible workforce, for people to be able to work remotely. But suddenly we had to surge into it.”

“We’ve had to really mobilise our workforce. As one of the key agencies delivering the federal government stimulus packages, we really had to redeploy a massive amount of our workforce into two different priority work areas, and we also had to bring in extra contingent workforces to deal with the extra work from those activities.”

Karl Strichow,

*Director of Workforce Analytics,
Australian Taxation Office*

A big part of the work included modelling, and looking at “potential absence rates, and what the required number of staff for particular tasks might be.” Whilst all this was going on, “we also had to move into some non-traditional HR data sources.” For instance, when “working from home became more important, we needed to access and utilise data from home.” Before that though, analysis was used to “understand the footprint of staff, whether or not they were attending an office or working from home.” Prior to the pandemic, less than 10% of staff used the virtual desktop, which had been an option for a few years. Suddenly they had to move to “something like 70% or 80% being able to work from home.” The IT department made it happen, and due to some of the sensitive nature of their data, they had to have “remote desktop access, which meant computers working in the office, but the person is driving it from home.”

Partly precipitated by the pandemic, they have also “started to bring in some changes to the way we utilise or access our data and bring it together.” The main change was to get away from ETL – extract transform load. Essentially if there is a tank of data, ETL is about bringing one small bucket at a time to collect that data and then taking it to where it is needed. “We needed to move to running a pipe into that tank to get different data sources from it.” The purpose was to “get real-time access, tapping into lots of different data sets and bringing them in automatically.” Ultimately this allows them to speed up their processes and to see data analytics as it happens, “from monthly updates to more real-time updates.” This process highlights some risks, but it also shows the “boundaries of non-traditional data sets.”

This was only possible because from an “analytic side of things, this year it’s become much more about MVPs – minimal viable products.” In other words, even if a “product like an online web app might only be utilised for three months or so, it is delivered very quickly, like within a week. It might look raw, but it is basically delivering value for the organisation whilst we’re getting it up and getting it together.”



Future - Overall it is likely that there will be “continual blurring of lines between what is HR data and what is corporate data.” In many ways, it is actually good that data will be “integrated all the way through.” This will help people, especially those in senior positions, to see things more holistically. Moreover, the “demand for real-time data is basically infinite, so this will continue and will not slow down.”

“There will be a greater democratisation of data, so the information that we’re looking at, and the insights we get will be available not just for the executive levels, but for managers at all levels and for staff at all levels too, enabling them to make better decisions, in line with strategic decisions as well.”

Karl Strichow,
Director of Workforce Analytics,
Australian Taxation Office

The other thing that the ATO is moving to is a greater use of “sentiment analysis. This is where you can start to get to the unknown unknowns.” This analysis is particularly used in surveys. The ATO is currently conducting an “employee census for the entire Australian Public Service. It was delayed, but is currently running for all federal agencies.” Like most surveys, it has some questions with multiple choice options and some with free text space. For this kind of survey, there will likely be between 7,000 and 9,000 “free text responses to each of the two questions in the census. This is a fantastic source of information that otherwise would not be available to us, and it’s impossible for one person or even a team of people to read and really make sense of it all.” This is where sentiment analysis comes in. Essentially it is an app, the first iteration of which was released last year, and it is only improving. It “extracts sentences or the parts of sentences that best display what the main sentiment of the person was.” The intention now is to allow the employees who filled in the survey to get feedback about what the majority sentiment for a particular issue was. “It’s important to get analytics and insight from that. I think in the future we will be looking at how to assess engagement, motivation and other things as well.”

Moving forward

Dr Kate Harrington says that as a result of the pandemic, “there is a renewed trust in our public institutions. Government is being very helpful and responsive, and we’re actually a partner that people want to work with.” The upside of this is that workforce plans are coming together in collaboration with others, and analytics are being used to make changes.

“There are really important analytics for us in terms of planning what the workforce of the future is going to look like and how we respond in the in the short-term to the challenges we’re facing ... We have to think very carefully about how we plan our workforce of the future, embracing both technology and the human-centred service delivery that our citizens will expect.”

Dr Kate Harrington,
*A/Assistant Commissioner,
Performance and Analytics,
NSW Public Service Commission*

Karl Strichow says that the “future is looking bright and open.” It is likely that through various apps, services and real-time data extractions, there will be a “continuous source of intel” which will be very useful when making decisions.

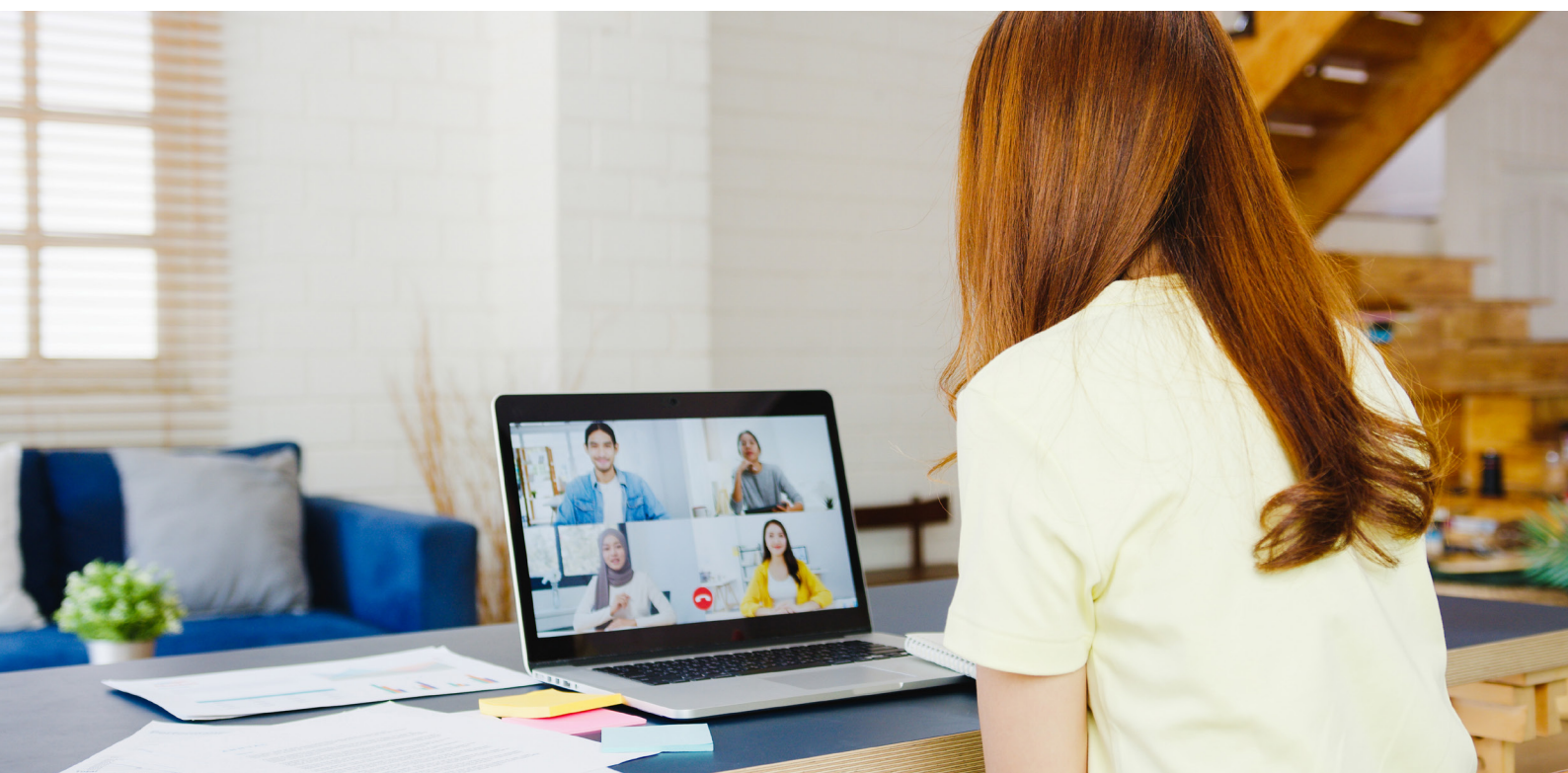
“HR decision-making over time will be scalable and will put the right tools into the hands of all decision-makers at all levels.”

Karl Strichow,
*Director of Workforce Analytics,
Australian Taxation Office*

Elaine Mahon says that with the appropriate strategic planning tools, they are able to see things they didn’t see before, and thus plan for the future of their workforce.

“We understand our baseline from the reporting and dashboards that we’ve been able to produce. The action planning levers are the way in which we are then able to acquire the actual workforce that we need, and that helps us to make decisions on whether we have the capability that we need, whether we build it internally, whether we’ve identified a cohort of people who we can prevent from leaving, and whether we can truly bind them to the organisation.”

Elaine Mahon,
*Divisional Director, Workforce Experience
and People Insight,
Ministry of Justice (UK)*



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The Public Sector Network’s Virtual Event: HR & Workforce Analytics, will give attendees a better understanding of the current HR and Workforce analytics landscape and help them optimise their current programs of work.

Featured Speakers



ELAINE MAHON

Divisional Director, Workforce Experience and People Insight, Ministry of Justice (UK)

International Keynote:

Using people analytics to inform decision making



DR KATE HARRINGTON

A/Assistant Commissioner, Performance and Analytics, NSW Public Service Commission

Government Keynote:

The future possibilities of HR and workforce analytics in the public sector



KARL STRICHOW

Director of Workforce Analytics, Australian Taxation Office

Government Case Study:

ATO’s Workforce Analytics journey

2020 Partners



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