Taking a Long Data View for Effective Workforce Analytics

By Julia Howes, Mercer Workforce Analytics and Planning

We are seeing a change in how organizations are valued and what is valuable to an organization. Consultants and academics have spoken for the last 15 years about the shift in importance from property and equipment alone, to a knowledge-based economy where the most important assets are the people in the organization. Two years ago, Klaus Schwab, the founder of the World Economic Forum, stated that the world is "moving from capitalism to talentism" and talked about how investments in human capital help determine the success of both societies and organizations.

With this shift in understanding that the workforce is an asset, not a liability, comes the need to manage that asset with the same rigor that we would with any other investment. Organizations can no longer afford to make fundamental changes to how they manage their workforce without a clear understanding of what the full effect of those changes will be. Even when changes appear logical and sensible, they must be justified with the same level of analytical depth that our business leaders demand in other areas.

Best-in-class organizations use workforce analytics and planning as an input into their talent strategy in order to make smart decisions about the right priorities for workforce policies and programs. For example, we worked with a client to help disprove assumptions the company had made based on intuition and, in doing so, saved it over US$50 million. The company was experiencing high turnover in a key revenue-generating role. The client assumed that increasing the salary was the best strategy to decrease turnover; however, data analysis showed that manager stability and internal movements would have a much bigger impact. By focusing on these strategies, the client reduced turnover by over 20 percent.

An HR function with the capability to translate data about its people and performance into insightful recommendations on how to best engage, mobilize, reward, assess, and develop the workforce will be positioning itself as a competitive advantage within its organization. As a result, it will secure its position as a critical player in the boardroom.

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Don't get stuck in the data trap!

"Big data" is a fairly vague but forceful term that shows up predictably in just about every article, column, or blog touching on the subject of capturing and analyzing the ever-rising tide of digital information. Big data in the context of workforce analytics is emerging as one of the hottest topics of 2014 and the interest in workforce analytics continues to be fueled by the volume of data becoming available and the intensity and sophistication with which it is now being used.

But is HR in danger of getting lost in the fog of big data?

At Mercer, we observe that, for many organizations, their big data journey in workforce analysis starts with data cleanup, a large-scale investment in technology, and trying to find automated predictive analytics. We believe that a different focus is needed.

Organizations can easily fall into the trap of measuring what they know they can measure; they are constrained by the data they know they can produce. Typically, the pattern that HR teams follow when they start using data is:

Collect data → Choose metrics → Report metrics → Analyze findings → Assess impact

In the beginning, analytics and reporting teams collect the data available – typically HR information system (HRIS) or payroll data. Then, they spend time cleaning up these data. Next, they select the metrics – usually based on a list of "best practice" key performance indicators – but these metrics are limited to the view of data in the HRIS. Based on these metrics, they design reports and dashboards to push out to the business. We frequently see organizations invest in teams whose main role is to create complex spreadsheets with pivot tables, based on a multi-tiered manipulation process, eventually creating hundreds of metrics and dozens of pages of analysis.

Not surprisingly, this process can take a substantial amount of time as reports are created and communications to the business are issued. Unfortunately, this investment is often wasted, as the process eventually unravels when leaders are left to analyze the metrics provided and somehow gain insight and impact from them. When reflecting on the impact big data analytics has had, few organizations are either able to show the impact or, if they can show impact, it is often driven by ad hoc parts of the organization rather than being an embedded, repeatable, and consistent process.

A Better Approach

Determine impact → Choose metrics → Collect data → Report metrics → Analyze findings

The key to a successful workforce analytics program is to instead start the process by focusing on the impact of the data you will collect and the analysis you will undertake. This can be identified by determining the critical workforce questions that you want your analysis to solve, without being constrained by the data available. Essentially, your workforce metrics and analytics are only as good as the questions and resulting data that generated them – otherwise, the metrics and analytics will only produce "data smog."

How do I determine the right questions?

To start, critical questions can be generated by interviewing your senior leaders to understand their perspective on the following:

• Which skills/talent groups can be developed internally?

• Which skills/talent groups should be "bought"

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externally?

• Which talent groups or categories will be critically important to achieving your strategic goals?

• What do you believe are the biggest people challenges created by the company's business strategy?

These questions will also help to ensure that the analysis is more focused and more valuable; for example, the first question above can identify a "talent risk" by highlighting a perceived weak pipeline or exposing a shortage of hot skills – either result may indicate growth concerns.

A second, complementary way of determining impact is to consider the focus of the current talent strategy. Is the organization investing in leadership development programs that develop high-potential talent; a pay review to help reduce employee turnover of a certain role; a wellness program to try to decrease stress and improve productivity; or an international mobility program to help retain key talent segments and develop future leaders? If so, what assumptions are being made about the impact of these programs and should this impact be tested through data analysis?

A third angle that can be employed to create a holistic approach to identifying critical questions is to use the initial findings of an internal labor market (ILM) map to pinpoint key workforce trends requiring further analysis. These maps are graphic, quantitative pictures that describe key dynamics related to the flow of people into, through, and out of an organization over time.

Each organization (and each part of an organization) has a unique ILM map. This diagram below shows a fictitious ILM map and explains how to interpret it.
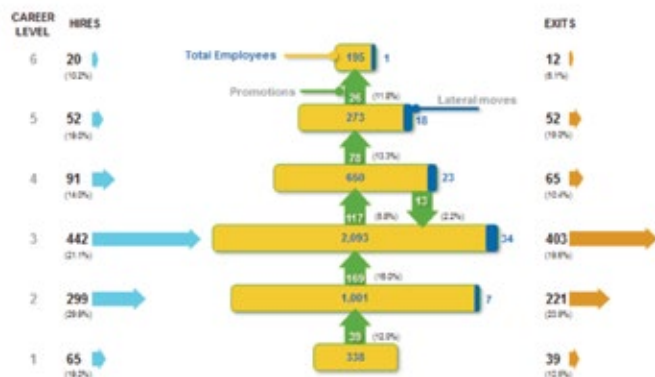
How to interpret the ILM map:

- Each row represents a different career level. Labeled here as 1 to 6, this is an organization-specific categorization of levels such as senior executive, manager, professional, paraprofessional, administrative, and support. Each career level clusters a number of jobs and titles and is frequently created by mapping grades or levels. Levels are not just markers of salary grades; they should represent major points of career advancements at which the level of responsibility, authority, scope of job, and pay change fundamentally.

- The horizontal bars in the center of the map represent head count. These bars show the relative proportion of employees at that level in the career hierarchy. Typically, an average head count metric (rather than a closing period head count metric) is used.

- The left column of arrows in the map indicates the number of workers hired externally at each career level.

- Upward pointing arrows indicate the number of people promoted to the next level up during the period.

- Downward pointing arrows indicate the rare instances of demotions.

- The right column of arrows indicates the number of workers leaving the organization from each level.

All calculations for an ILM map must be based on a consistent unit of time (such as a year) to be meaningful. An ILM map can be constructed for shorter or longer periods, depending on the organization's needs.

When considering the right questions, ensure that you think beyond the core data system and do not dismiss the possibility of combining multiple data sources. Many HR functions are feeling overwhelmed by the volume of data available to them and demonstrate an overreliance on their HRIS, but information can also be sourced from engagement surveys; exit surveys; talent management programs; industry benchmarks; and recruitment, compensation, benefits, wellness, learning and financial data. In most cases, combining one or two relevant fields of information from multiple systems will be more valuable and insightful than perfecting all of the data in one system.

This is not easy. However, organizations wishing to be successful at workforce analytics should spend at least as much time thinking through what data sources to use and how to combine them as they do on clean-up of the main data system.

How do I combine data sources in a meaningful way?

Big data analysis is a trend that will continue to be applied within HR; however, focusing on the technologies available to process the sheer mass of data is not necessarily the best approach when thinking about workforce analytics.

Big data is frequently understood in terms of volume, velocity and variety. However, not all of these concepts are naturally applicable to workforce data. Workforce data does not have as large a volume of data (especially compared to consumer or fraud data sources) and, at least at present, the velocity is a great deal slower – for example, a company may hire a thousand people over the course of a year, but a sales function may perform hundreds of thousands of customer transactions in one day.

Instead, long data techniques are more valuable to workforce analytics. The term "long data" was coined by the mathematician and network scientist Samuel Arbesman to describe "datasets that have massive historical sweep."[1] Long data builds a timeline of an employee's entire life cycle at an organization, so that, at any point in time, we can see the characteristics, profile, and experience of that employee. The benefits of this approach are that it allows organizations to identify and analyze data as part of an ongoing process, thus avoiding the risks associated with making purely reactive or point-in-time decisions. The applicability of this approach to HR functions is clear: when considering workforce issues, we are often more focused on trends and impacts that occur through time:

- Do we offer our employees a defined career path?

- What are the best experiences to help accelerate the development of our future leaders?

- Will a wellness program have long-term impacts on the productivity and retention of our workers?

- What recruitment sources produce our best-performing employees one, two, and three years after hire?

- Do we have a pay-for-performance culture?

The difference between big data and long data can be demonstrated by considering the concept of retention and pay of high-performing employees. The retention of high performers is a key issue for HR leaders; however, one aspect of this problem is how to identify who the high performers are.

John Smith — Employee EE001101

Feb 2009 — Employee Hired

Nov 2010 — Performance Review 1 (H), Compensation Adjustment

Nov 2011 — Performance Review 2 (H), Promotion, Compensation Adjustment

Nov 2012 — Performance Review 3 (M), Lateral Movement, Compensation Adjustment

Mar 2013 — Sustained High Performer

Hired — 2010 — 2011 — 2012 — February — March — Now

In the example, John Smith was hired in 2009 and was identified as a high performer in November 2010 and November 2011. In November 2011, John was also promoted. He then subsequently received a medium rating in his next performance review in November 2012. A point-in-time data approach would not identify John as a high performer when looking at any metrics run during 2012 and 2013 (such as the retention rate of high performers). However, generally, a medium performance rating in the year after promotion may be expected and, given a longer view, the organization may still want to categorize this individual as a high performer. By using a long-data approach, we can create an employee segment that looks at three or more performance ratings to determine whether an employee is considered a sustained high performer.

Area of Investigation	Snapshot Reporting Example	Long Data Example
Attract	Average Time to Fill	Performance Rate by Recruiting Assessment Score, 1-5 years after hire
Mobility	Number of Employees on International Assignment	Retention and Promotion Rate of Employees 1-3 Years after they return from international assignment.
Reward	Average Pay by Year	Average Pay Increase since hire of fast-tracked employees compared with employees hired at the same grade with similar tenure.
Assess	Average Performance Rating	Sustained Performance Rating
Develop	High Potential Staffing Rate	Cross LOB Staffing Rate / Average Number of Career Moves per Employee
Engage	Average Engagement Score	Year-on-Year Engagement Score Change

Analyzing data over time can, therefore, provide far more valuable insights than a static examination at a point-in-time. This has many applications in workforce analysis.

The most effective talent strategies are those coming out of a rigorous analysis of human capital issues and their causes. Human Resources' leaders understand this and the desire to use workforce analytics as an input into their talent strategy is growing.

However, just because there is a will, does not always mean there is a way, and while the momentum to get started exists, there is a danger that we will get lost in the noise of data, measurement, analytics, big data and predictive analysis. We believe it is essential that organizations have a clear view of where they are in the measurement continuum, and what workforce insights they need before they start collecting and measuring data.

Endnotes

1 Samuel Arbesman, "Stop Hyping Big Data and Start Paying Attention to 'Long Data,'" *Wired*, available at http://www.wired.com/opinion/2013/01/forget-big-data-think-long-data, accessed February 25, 2014.

About the Author

Julia Howes is a principal in Mercer's Talent business and is the product line leader for the Workforce Analytics and Planning practice. She manages the entire product line life cycle for workforce and analytics solutions, including researching market requirements and developing intellectual capital. She has previously worked at SuccessFactors (Infohrm) where she managed the North American Strategic Membership Services team and the EMEA Professional Services team. She has experience in workforce planning/analytics consulting engagements, technical implementations, and content/tool training. She can be reached at *Julia.howes@mercer.com*.