People Analytics—
A Point of View

Prepared by: Eddie Short

January 2016

AON
Empower Results®

Background

The world is (in theory) being transformed by the FANGs (Facebook, Amazon, Netflix, Google), and other so-called technology unicorns such as Airbnb and Uber. It's not just taxi drivers struggling to compete, but so-called 'masters of the universe,' like hedge fund and bond dealers, are shutting up shop because they can't compete with the algorithmic (i.e., computer systems) traders. Taking that to heart, big data and predictive analytics are seen by many as the answer to key business and HR problems, but is that not at odds with Abraham Lincoln and business guru Peter Drucker, who said that "The best way to predict the future is to create it."

There is no paradox here, but what is clear is that while people are central to the competitive advantage of a business, the roles of people in business are being constantly transformed. It's no longer just blue-collar roles that are being automated - many white collar/professional roles are as well.

Leaders need more analytics to help them cope with these changes and to create, rather being replaced by, the future. But when we look at what has been happening in most organizations, it's clear that CXOs are not getting insight on people-related business issues from HR:

- 15 percent of leaders have changed a business decision in the past year, based on HR analytics.

- 17 percent of business leaders believe HR analytics focus on the right business questions.

- Only 18 percent of them trust talent data and insights from HR.

For example, linking pay to performance has been a mantra of leaders and HR for decades, yet it's clear that executive compensation has dramatically outpaced business performance over the past 10 to 20 years.

It's therefore time to rethink how to combine talent, rewards and performance data, and to help clients to truly link future business performance to people performance. That said, to build true predictive and prescriptive insight, having analytics tools and data scientists is not enough. Today, CXOs want predictive (what could I do?) and prescriptive (what should I do?) analytics, but HR analytics are often reports/dashboards and merely descriptive (i.e., what happened?).

People analytics deliver analytics that matter to the business, not just HR:

- People analytics connects business performance to people performance. To do this, at Aon, we leverage data and analytics technology, as well as significant amounts of proprietary and public people-related data, combined with rules (algorithms) developed with deep business insight, to optimize business outcomes and solve business problems.

Introduction

There has been significant hype around predictive analytics, so before going further its important to say that predictive analytics are usually part of, but not always the answer. Rather, there are at least four categories of analytics that will be part of the solution:

1. **Descriptive:** What is happening now based on incoming data. To mine the analytics, you typically use a dashboard and/or email reports.

2. **Diagnostic:** A look at past performance to determine what happened and why. The result of the analysis is often an analytic dashboard.

Descriptive and diagnostic analytics have been central to the performance management and reporting systems of organizations for many years. Their role is summarized by Carl Sagan's quote, "You have to know the past to understand the present." To know our present position in a market and/or economy, we look at all of the available data and use our own insight or that of third parties to benchmark our performance and, hopefully, our pay.

3. **Predictive:** An analysis of likely scenarios of what might happen and the deliverables are usually a predictive forecast. Predictive forecasts have often been associated with the weather and government statistics/economics, and as a result often have had a poor reputation. In reality, actuaries have been successfully using these techniques for decades to underpin profitable insurance services.

4. **Prescriptive:** This type of analysis reveals what actions should be taken. This is often the most valuable kind of analysis and usually results in rules and recommendations for next steps. So-called 'next best action' analytics have become common in the fast-moving worlds of marketing and sales/trading.

Predictive and prescriptive analytics can be extremely useful to help executives to create the future. Of course, in the massively connected mobile, social, and digital world in which we live, it is not possible to avoid having the future you are creating impacted and/or derailed by the futures that billions of others are simultaneously creating around you.

In the realm of analytics, HR has been playing catch-up with Finance, who have been the masters of management information, and as a result, more effective adopters of analytics. If we take as a truism that the use of predictive analytics means that we are dealing in probabilities and not certainties, HR has a real opportunity to return to being a peer rather than junior partner to Finance as advisor to the CEO and Board. All analysis from Finance is based on a projection of certainty, and that will be steadily undermined, when today and in future we are dealing with change and probabilities.

What's now critical for HR is to invest in analytics that matter to the business, not measuring HR activities, such as the return on investment (ROI) of Learning &Development (L&D) spending. Business leaders care less about the ROI from L&D programs; they want analytics and insights that helps them run the company better: "**Help me hire better people, get them productive faster after their arrival, increase their productivity in dealing with our customers, hence accelerating and maximizing revenue.**"
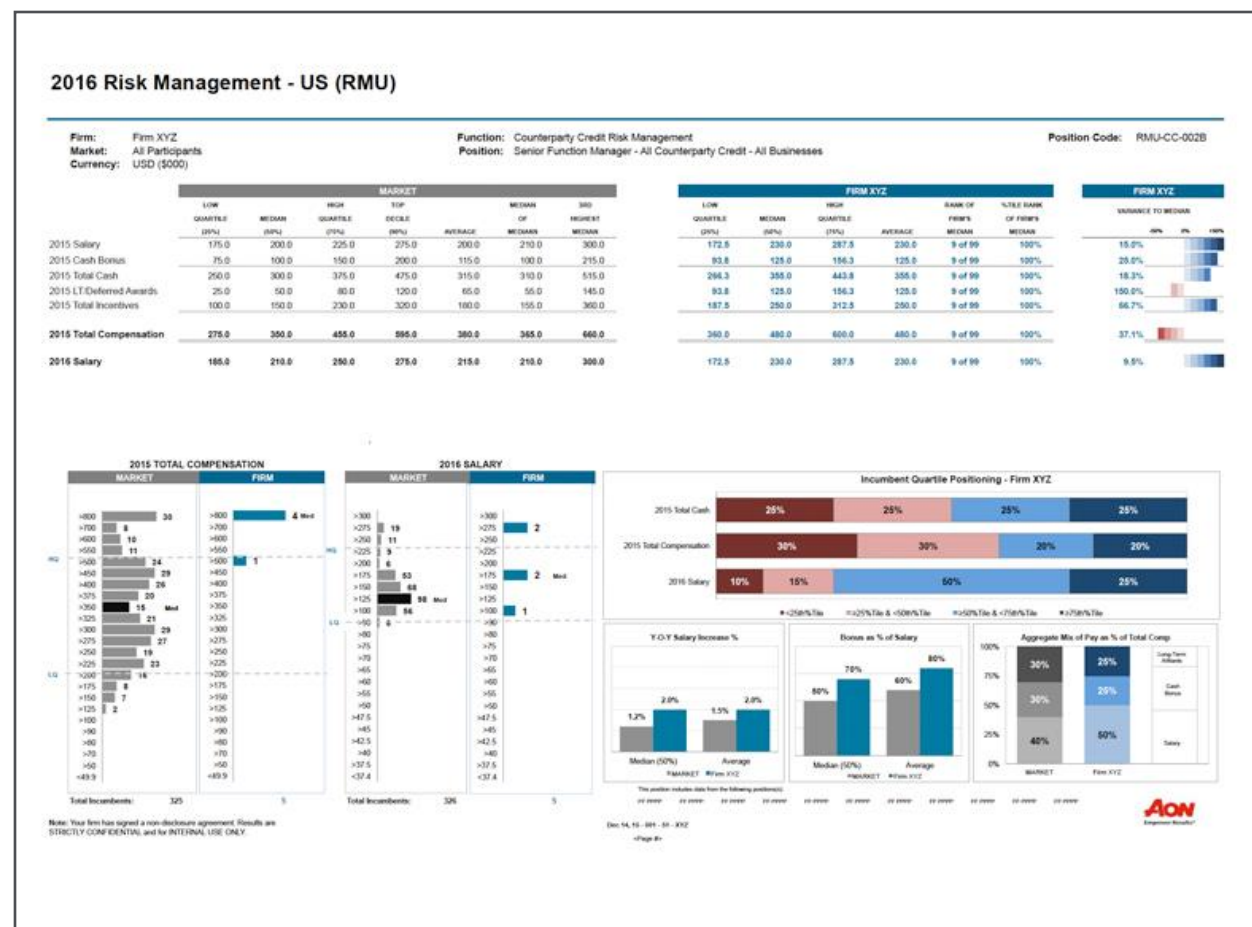
A typical descriptive dashboard is shown here. It gives insights on current and prior year compensation, with some insights relating to variations and changes year on year. This dashboard serves a purpose for the people for whom it was created (compensation managers), but has limited value for other stakeholders.

What CEOs and other CXOs need now is much more insight on what they could and should do, and that they cannot and must not accept a single path.

Instead, top executives want choices and to be in control. The successful HR business partner will be the one that gives them a combination of options or scenarios that combines the best of historical analysis, with forward-looking views of their potential to create growth, manage risk and reduce cost. That is the essence of what we have called People Analytics.

Aon Hewitt's assessment of three million candidates annually has given us the experience and analytical models to help organizations to directly connect assessment to business performance.

Case Study: For a leading global retail organization, Aon Hewitt conducted validation research with more than 1,000 incumbents at each job level to further refine and shorten the assessment to only those dimensions critical for success on the job.

High-scoring managerial-level candidates are:

- Almost twice as likely to
  - Be highly effective at developing their staff
  - Have high potential

  Stores led by high-scoring managerial teams have:
  - $180,000 greater annual revenue
  - 9 percent lower annual turnover

At Aon we are uniquely equipped with vast sources of proprietary data covering business performance, business risk, health and benefits, as well as talent and rewards data. While technology continues to disrupt business models, it's still people who must action, leverage and drive the changes from these new technologies. Combining all of this proprietary data, and aggregating and correlating with the vast sources of public data that the Internet makes available to us, we are able to create truly valuable analytics that give CXOs insights into how their most important asset - people - can materially impact the top and bottom line of the business over the next one-, three-, and five-year horizons.

Why People Analytics? Delivering Long-Term Value

Services businesses (and public sector) increasingly dominate the economies of most modern economies. The bulk of these organizations not only have people as their biggest source of competitive advantage (or disadvantage for that matter), they also represent the biggest source of costs. That said, even capital-intensive and highly automated businesses such as oil and gas, as well as automotive, still employ large numbers of people and rely on them in large part for competitive advantage.

The challenge for any people-related (traditionally HR) initiative has always been to provide the quantitative metrics that matter, apart from cost. While it's easy for a finance analyst to produce a business case that shows compound savings from reducing headcount or an investment case that shows the costs with hiring new people, attributing value directly to activities of those people has been traditionally difficult.

Producing analytics is not necessarily difficult; instead quantifying the value of the analytics produced, both in the short term and/or long term, in a format that the various stakeholders will accept, is in fact the key challenge. The most valuable predictive analytics for an Investment Banker may be to forecast changes in stock or bond prices five minutes (or even five seconds) ahead of the market. For the typical CEO or Senior Executive, the horizon is usually much longer, and many of them can be strongly influenced by annualized movements in share price, not least as that typically impacts upwards of 50 percent of their annual compensation!

People Analytics is all about connecting the value of your people (capital) to the strategic goals and business plan of the business. Largely, the accountability for this and the related decisions does not sit with HR, but rather with line-of-business executives such as the CFO, COO, or CMO.

Descriptive/Diagnostic analytics are by definition fact-based, while predictive/prescriptive analytics deal in the future, and hence probabilities. But this is the world that leaders operate in. To aid the quantification, we have empirical examples and analysis that shows that we can connect ultimately very large financial opportunities to, for example, quality of people and management.

- **Optimizing Revenue Growth Through Talent—**Organizations with leaders with a strong reputation for cultivating talent (and measuring performance) vs. competitors to increase operating income by 120 percent over five years.

Percent Improvement in CAGR Operating Income Over 5 Years
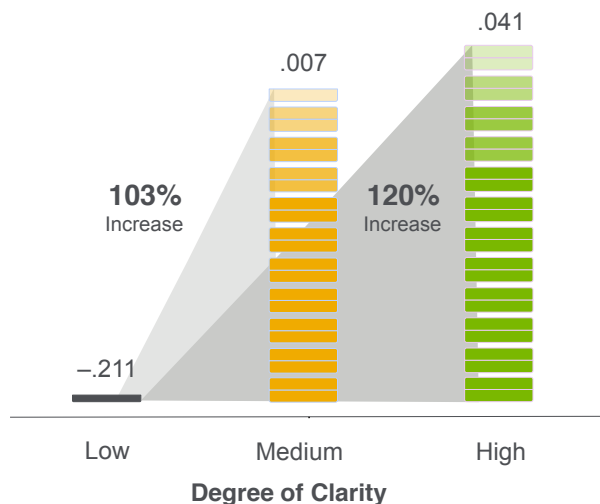

According to this research, firms that deploy the below practices with clarity experience a 120 percent increase to their CAGR for operating income compared to organizations that are not clear in these efforts:

- Put value on leaders who cultivate talent
- Hold leaders accountable for the strength of their talent pipeline
- Use multiple sources of data to inform strategic leadership decisions
- Use specific metrics to evaluate overall effectiveness of their leadership system

Organizations that have some degree of clarity outperform those that don't by 103 percent.

- **Optimizing EBIT Through Talent—** Organizations who integrate their competency models with identification, recruiting, promotion and assessment practices vs. competitors increase EBIT by 148 percent over five years vs. competitors.

Impact on Profitability
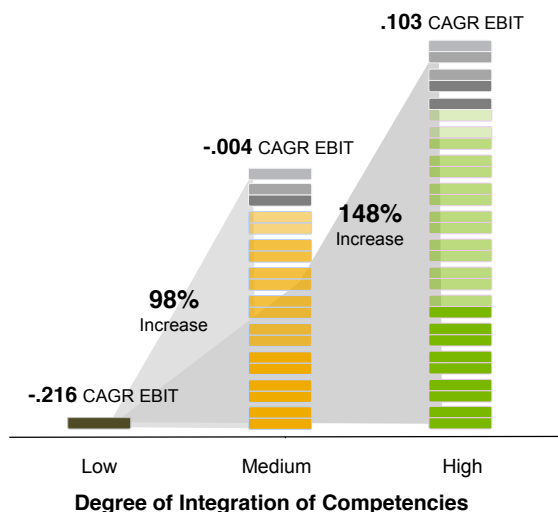
Analysis of the statistical significance of specific practices and their effect on financial performance showed that:

- Organizations who express a high degree of integration of their competency models with identification, recruiting, promotion, and assessment practices had 148 percent increase in EBIT, compared to those with a low degree of integration (on average, reporting -21 percent EBIT over a five-year period).

- Organizations who are on the journey and have some degree of integration outperform those that don't by 98 percent.

Source: Aon Hewitt Top Companies for Leaders, 2015

We can go a long way on this journey leveraging the proprietary data at our disposal. However, in the modern, always-on, connected and digital world, other sources of data are valuable. Macro-economic, micro-economic and demographic data is published by government and other agencies organizations around the world. Financial and market data is also readily available, although not always on a free-of-cost basis. As an example, when seeking to correlate the findings above from Aon Hewitt's Top Companies for Leaders research, we can source data from reputable sources, in this case Reputation Dividend.
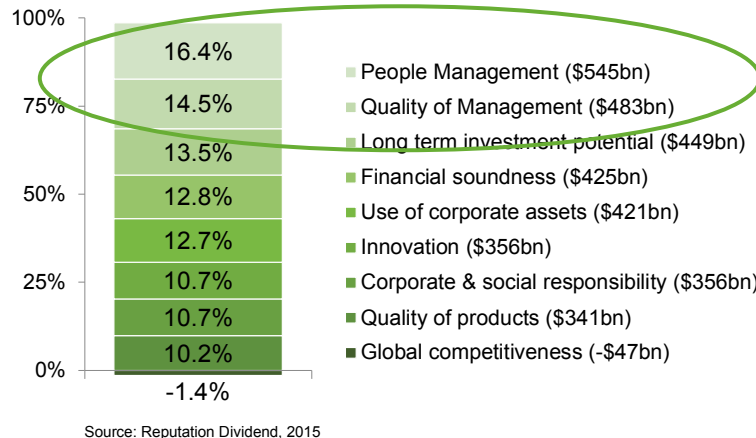
According to Reputation Dividend's 2015 report, who have been analyzing companies in the S&P 500 and FTSE 350 for the past 10 years, corporate reputations are contributing $3,329bn of shareholder value across the S&P 500, which represents 17 percent of the total market capitalization.

Percentage	Component
16.4%	People Management ($545bn)
14.5%	Quality of Management ($483bn)
13.5%	Long term investment potential ($449bn)
12.8%	Financial soundness ($425bn)
12.7%	Use of corporate assets ($421bn)
10.7%	Innovation ($356bn)
10.7%	Corporate & social responsibility ($356bn)
10.2%	Quality of products ($341bn)
-1.4%	Global competitiveness (-$47bn)

Source: Reputation Dividend, 2015

Their analysis identifies 10 major components of this 'Reputation Value' shown here. The most valuable component was **perceptions of people management,** with investors recognizing that a company's ability to win is increasingly dependent on its ability to attract the talent it needs to operate. The second most valuable component is **perceptions of management quality**. Individually, these factors account for $545bn and $483bn, respectively, of shareholder value across the index.

Addressing this trillion dollars of value is the focus of People Analytics.

Developing Hypothesis for People Analytics

The days when a consultant could proverbially 'ask their client for a watch, to tell them the time,' are long behind us. Senior executives are looking for consultants and business advisors to come to them with strong point of view and opinions about their business, in particular relating to key challenges and the opportunities to address those. Leaders find even more value in advisors that can take a business problem that you know the business has and show (predictively) what the potential opportunity for the business in solutions. 'Seeing is believing' is critical for selling People Analytics.

As we can't clearly know all of the issues that a client has or solve them before meeting them, we start with developing hypotheses, which our data shows could be relevant to the client's business. When one has the almost infinite data and computing power of Google, it's possible to imagine solving hitherto unknown problems for clients just by throwing the problem at technology. In reality, we must have data and an analytical model, often referred to as an algorithm. However, in order to develop insight that is relevant to a client-specific problem, we must have a good understanding of both their industry, e.g., banking and their function, e.g., finance. We can express this as a formula:

$$\text{Value of Insight} = \text{Data} * \text{Analytics} * (\text{Business Experience})^2$$

Sourcing the data and ensuring it's in a form from which we can generate valuable analytics is often the bulk of the data and analytics' work. However, the hardest challenge and the primary source of value is framing the problem, i.e., confirming requirements and questions with the business.

Next, develop one or more hypotheses about the business that is relevant to both industry and functionally specific. From this platform its then possible to , and leverage data and develop analytics to test, validate and as necessary update those hypotheses..

Specific Industry Entry Points: Wealth Management

Faster decision: change behavior

e.g. market insights available to clients before competitors with predictive impacts
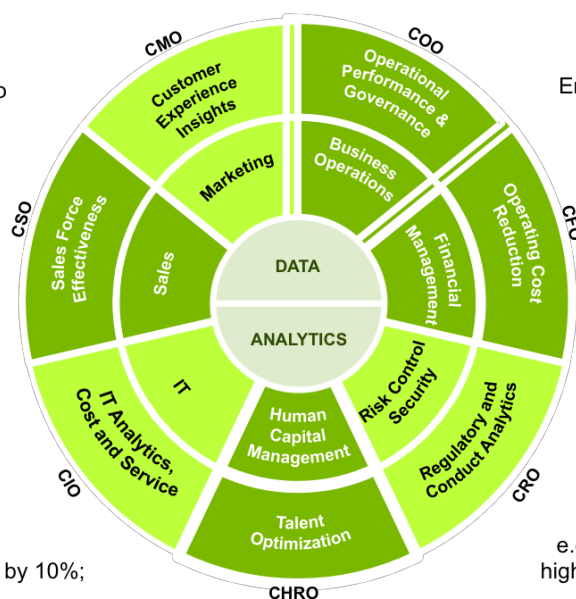
Optimize workforce

e.g. improve Financial Advisor Engagement and Retention by 5%

Better client portfolio decisions

e.g. increase Client profitability by 10%; improve NPS by 20%

Intelligent culture:

e.g. Closing the gap from lowest to highest performing Financial Advisor

The key driver for success of wealth managers are their financial advisors!

The hypotheses should be expressed as a series of SMART objectives that are relevant to the client's business and their function. An example shown here is a set of some key issues for key executives in a major wealth/private banking organization.

While initially developed at a point in time, they will become living hypotheses that are evolved until they no longer have any use for the business. As such, one does not develop the enabling analytics on a one-time basis; instead, the analytics should be revisited regularly (daily, weekly, monthly, quarterly) depending on the nature of the problem and the analytically-enabled advisory solutions that end up being put in place to deliver the associated value.

What Data and Analytics Hypotheses?

To develop useful hypotheses, we must combine knowledge about the business, the competitive environment and the marketplace in order to consider questions that would be valuable to the business as a whole, and specifically those things that can be influenced and impacted in a measureable way by people. From that perspective, the power of Aon, is the fact that we have very significant sources of talent, rewards and performance data about many clients and their peers, with which to develop and test the hypotheses. Where we lack a complete set of proprietary data, we can leverage other sources, including public data and create models to bridge the gaps. On the basis that people are the most powerful asset (and liability) of most major organizations, the initial starting point is the data Aon has compiled over many years through Top Companies for Leaders (TCfL). TCfL data shows that those companies that do employ leading human capital management practices have two long-term, people-driven, top-line business outcomes:

- **Optimizing Revenue Growth**—Best practice companies increase operating income by 120 percent over five years—organizations with leaders with a strong reputation for cultivating talent (and measuring performance) vs. competitors

- **Optimizing EBIT**—Best practice companies increase EBIT by 148 percent (over five years)—organizations who integrate their competency models with identification, recruiting, promotion, and assessment practices vs. competitors

These two opportunity areas that are validated by diagnostic analytics of the data can then be turned into hypotheses, and using a predictive analytical model we can forecast likely revenue and EBIT for the company in five years, if it employs human capital management best practices.

These initial two hypotheses are in themselves very powerful, but in practice, very high-level and generally of interest to the CEO and the Board. In practice, CFOs, COOs and CHROs are more likely to be interested in more practical and down-to-earth business areas, and these will always be specific to the client. It is important to have a portfolio of SMART hypotheses tailored for the client and/or industry problem. Examples include:

- *Sales Force Effectiveness*—Organic sales growth can be solved for with five basic inputs (industry growth, CCOS, sales turnover, NPS/customer satisfaction and quality of leadership/talent).

- **Revenue Growth**—Increase NPS (and hence revenue) by up to five percent through improved Sales Employee Engagement scores (Aon Hewitt Analysis of U.S. Health Providers).

- **Sales Growth**—Increase organic retail sales growth by 30-50 percent employing Sales Managers with higher leadership skills, while reducing employee turnover (Global Restaurants—1000 Leaders via Aon Hewitt ADEPT).

- **Optimizing the Sales Force with Revenue Growth and Profitability**—Managing sales force turnover to between 5-15 percent correlates will optimize sales growth year on year. (Too low equates to sterile sales force; too high erodes confidence and client retention.)

- **Optimizing Growth**—To maximize growth vs. competitors, utilize variable incentive plans that are 500 basis points more aggressive than the competition (top quartile vs. fourth quartile).

- **Attracting and Developing Top Talent**—For emerging markets (with lowest quartile cost of labor), to maximize sales growth, pay ahead of the market as sales earnings will rise 50 percent faster than all other occupations over the next 5-10 years.

The reality is that analytics, in themselves, have intrinsic but limited value. It's what you can do with them that makes them valuable, i.e., are they actionable, and having the people/capabilities to make them actionable and then action them.

Practical Delivery of People Analytics

Analytics only become valuable with the application of deep business insight, to ensure we are solving problems that are relevant. An example brought to life here, in the context of an organization looking to optimize its sales force population, shows how a traditional descriptive/diagnostic dashboard can be extended with a number of controls that will allow predictive/prescriptive scenarios to be added to help contextualize and give the leader some specific options and suggestions for their potential way forward.
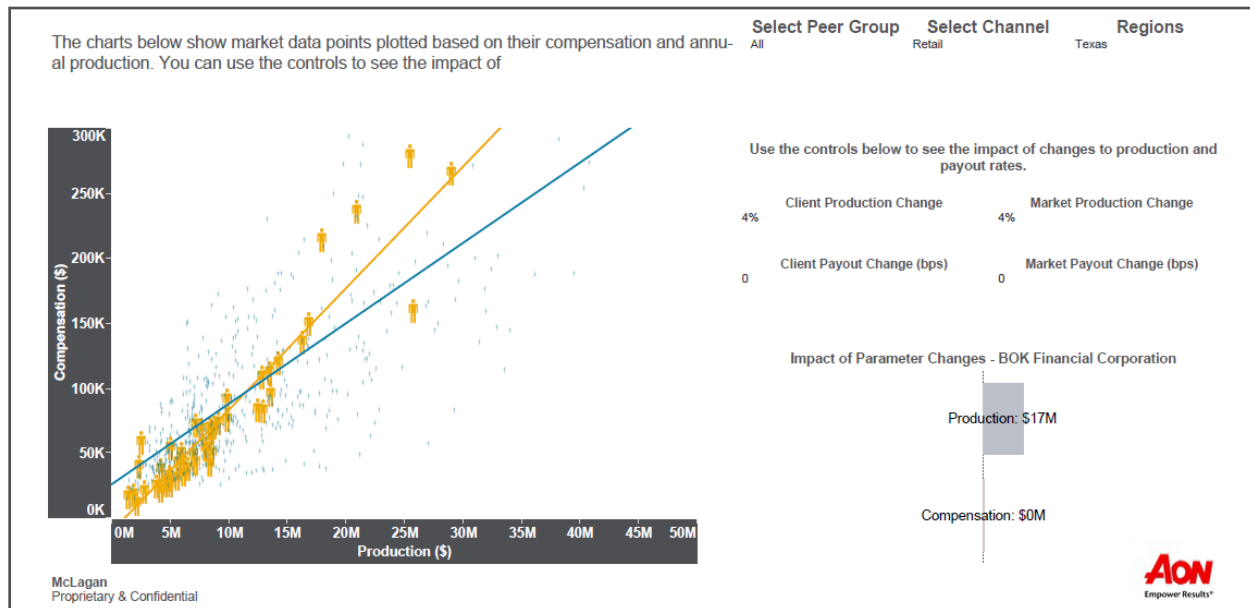
In order to apply the insight, clients typically need business experts (and/or consultants) who can help the business deploy and change as appropriate.

- **Business Consultants—Identify and Implement Value:** Articulate the key business questions that will drive value for this client (performance, rewards, talent and industry). Deploy appropriate **consulting techniques** for integration of recommendations, including change management.

- **Data Scientists—Generate Value:** Create predictive algorithms and analytical models that can deliver valuable new client insight. Typically, develop hypotheses in partnerships with business consultants.

- **Data Engineers (IT)—Protect Value:** Collect, manage, clean and store data (proprietary and public).

- **Story Tellers—Prove Value:** Present the data in different ways visually to tell the right story for the specific audience.

- **Deliver Value:** Utilize strong project/program management and client relationship management—on time, on budget and above client expectations.
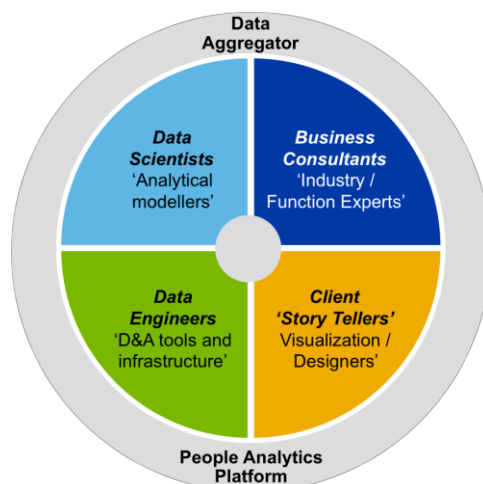
While much has been written about the "magic" of data scientists, the same core data and analytical skill sets have been present with economists, actuaries and statisticians for decades. While previously viewed as back-office roles, these groups are vital to develop the critical forward-looking insight organisations need. They need to communicate more closely with the business, but equally, business analysts need to learn to communicate with them.

Three other issues have changed in the way we execute:

1. **The new skillset here is the story teller**: people who can present the data in new and different ways, using common data and analytics to present the story in a way that's understandable by all different stakeholders in the business, whether they be finance, HR, or sales. Ultimately, this is where we can make the analytics actionable for the whole organization and not just for a single part of it.

2. **Application of big data techniques**: we may not be using as much data as Google or Facebook, BUT there is a lot to be learned and leveraged from the tools and techniques they apply. While data quality remains important, it's no longer essential to have perfectly clean data to develop valuable insight. Also, in the past we had to bring all data together into a single enterprise data warehouse. Now we can much more rapidly connect and aggregate data sets, then pull relevant data and manipulate it 'in memory' to speed calculation.

3. **Delivering game-changing value requires all of the above skills** to be combined into a virtual center of excellence and leverage a hypothesis-driven approach to rapidly develop and deliver insight to the organization.

Aon is investing heavily in data and analytics and building the complimentary business consulting and storytelling capabilities within our global Talent, Rewards & Performance practice.

In this new digital world, where change is constant, data and analytics becomes a living journey. This means building an ongoing relationship with the leaders of the organization, where predictive analytics, which are regularly refreshed, become their radar for change in the business. This work is typically delivered in three phases.

1. **Case for Change:** The base hypotheses and some preliminary analytical forecasts are developed to inform the overall business case.

2. **Design the Change:** The hypotheses and analytics are refined as we design the program, and look for where the most appropriate business/consulting interventions will take place.

3. **Deliver results:** The analytics are continually refined and revisited throughout the change. At periods throughout the journey, appropriate consulting interventions (Assessment, Engagement, Rewards, Leadership, and Performance) support business leaders in changing the business and consequently delivering the results.

Aon Hewitt is using data to develop powerful analytics to support Field Force and Sales Force effectiveness for clients in Financial Services & General Industry.

Case Study: Financial Services firm.

- A leading U.S. brokerage firm had enjoyed strong profitability performance but weaker growth, and in the face of market declines needed to identify further opportunities to reduce costs.

Solution
- Aon Hewitt identified field management costs that were $100 million higher than peers. We analysed the client's field management organization model, processes, staffing, and pay levels to identify variances from best practices and created a new field management structure that would close the cost-efficiency gap to competitors. Our analytics identified each position that needed to be moved, consolidated, and replaced, and we recommended new pay structures for each position.

Results
- Working together we were able to create a detailed implementation plan to realize the cost savings within two months. The new organization structure not only was significantly more cost effective, but also resulted in a more strategic market management to enable better growth and better career paths for top-performing management to improve retention of top talent.

1 Build the case	**2** Design the Change	**3** Deliver results

Activities

Build the case
- Develop predictive models leveraging growth & efficiency factors we've developed
  - Financial performance
  - Reward strategy/costs
  - Engagement/assessment
  - Operations/marketing costs
- Talent/predictive human capital strategy/analytics
  - Predict people performance drivers
  - Potential to accelerate results
  - Client satisfaction drivers
  - Benchmark vs. competitors
  - Role of managers/leaders

6 – 8 weeks

Design the Change
- Review various scenarios and make choices around impact drivers
  - Productivity, performance, client satisfaction, retention, development of staff
  - Optimize in line with overall cost & efficiency journey
- Design solutions to address
  - Key retention risk/HiPOs
  - Leadership development
  - Targeted development of sales/marketing to drive higher client satisfaction
- Identify a pilot group to design and validate key program changes
- Build an implementation roadmap

3 months

Deliver results
- Business case reviews (quarterly)
  - Benchmark results and refine predictive models to tune the ongoing journey
  - Monitor impact on pilot group, assess results and extend across the organization
- Redesigned selection and development processes
  - Staff
  - Managers
  - Leaders
- Deliver leadership development
  - Targeted development
  - Coaching

12 - 36 months

While the focus will be on the forward-looking analytics, we will continue to use descriptive/diagnostic analytics to track progress and monitor how efficient and effective our predictive models are.

Data Scientists 'Analytical modellers'

Business Consultants 'Industry / Function Experts'

Data Engineers 'D&A tools and infrastructure'

Client 'Story Tellers' Visualization / Designers'
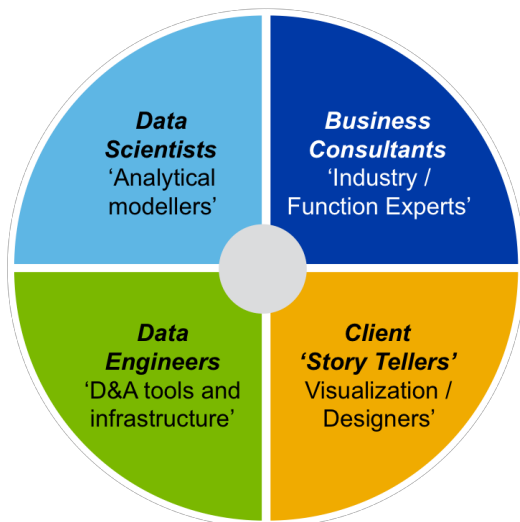
Last, and perhaps least, is technology.

Looking at the four skill sets, while IT is involved in extracting data from Enterprise Resource Planning (ERP) or other systems, Excel has been in the tool of choice in the other three boxes. Data scientists have been using statistical and analytical modeling solutions such as SAS and SPSS for 30+ years, while the majority of financial modeling continues to be conducted on Microsoft Excel, itself more than 30 years old.

The world of big data has disrupted the price point and dramatically changed the capabilities of tools available to support the delivery of analytics. Business consultants and story tellers are increasingly using advanced visualization tools such as Tableau and QlikView, and these along with Microsoft's own developments have dramatically changed people's expectations on how data can be communicated.

Data scientists are increasingly using big data tools such as Python or more focused analytical programming tools such as R. For hybrids, who wish to connect more simply between the modern visualization tools, there are Alteryx and Microsoft's Azure ML (machine learning). Organizations will be under pressure to use tools from their ERP/HR vendors, such as SAP or Workday. The tools you use should be consistent and most appropriate to realize the journey we have outlined through this paper.

Summary and Conclusions

While organizations are being transformed, people remain central to the competitive advantage of most businesses. What is key is that the roles of people in business are being constantly transformed; it's no longer solely blue-collar roles that are being automated, but professional and management roles as well.

People analytics connects business performance to people performance. To do this, organizations must leverage data and analytics technology and significant amounts of proprietary and public people-related data, combined with rules (algorithms) developed with deep business insight, to optimize business outcomes and solve business problems.

The focus of new data and analytics is predictably focused on the future, but as we noted at the outset, the best way to predict the future is to create it. Therefore, these new analytics should be seen as ways to arm executives with the mechanisms to take better control of their destiny in a business world that is constantly changing around them.

People analytics leverage small and big data, as well predictive and prescriptive models, but continue to utilize traditional historical descriptive and diagnostic analytics. These vehicles will continually be required to complement the insight produced on a forward-looking basis, and also explicitly refine those predictive models in future. It's not all about data scientists; rather, a combined a portfolio of skills, development of a hypothesis-driven approach that combines the data with analytical models, integrated with deep business insight and human capital advisory capabilities to identify, validate, and continually test the opportunities.

Ultimately, while Finance has dominated management information (and analytics) for the past 40 years as the trusted advisors of the board with the numbers on past and current business performance, people analytics represents a major opportunity for HR leaders and business executives to take a road centered on the greatest asset that most organizations have - their people - and start to shape the value add they will create for the next 5-10 years using predictive and prescriptive analytics to help the organization navigate towards achieving those opportunities and realizing the associated benefits.

With our unique depth of talent, rewards and performance data as well as human capital advisory skills, Aon is uniquely equipped to help business and HR leaders of the organization to develop and leverage people analytics to directly connect the performance of your people to the future performance of your business!

Contact Information

Eddie Short
Senior Partner Data & Analytics
Aon Hewitt
Talent, Rewards & Performance
+44 (0)20 7086 5075
eddie.short@aonhewitt.com

About Aon Hewitt

Aon Hewitt empowers organizations and individuals to secure a better future through innovative talent, retirement, and health solutions. We advise, design, and execute a wide range of solutions that enable clients to cultivate talent to drive organizational and personal performance and growth, navigate retirement risk while providing new levels of financial security, and redefine health solutions for greater choice, affordability, and wellness. Aon Hewitt is the global leader in human resource solutions, with over 35,000 professionals in 90 countries serving more than 20,000 clients worldwide across 100+ solutions. For more information on Aon Hewitt, please visit aonhewitt.com.