

BUILDING DATA DRIVEN CULTURE THROUGH APPLYING PREDICTIVE PEOPLE ANALYTICS

Moving from Descriptive to Predictive HR Analytics



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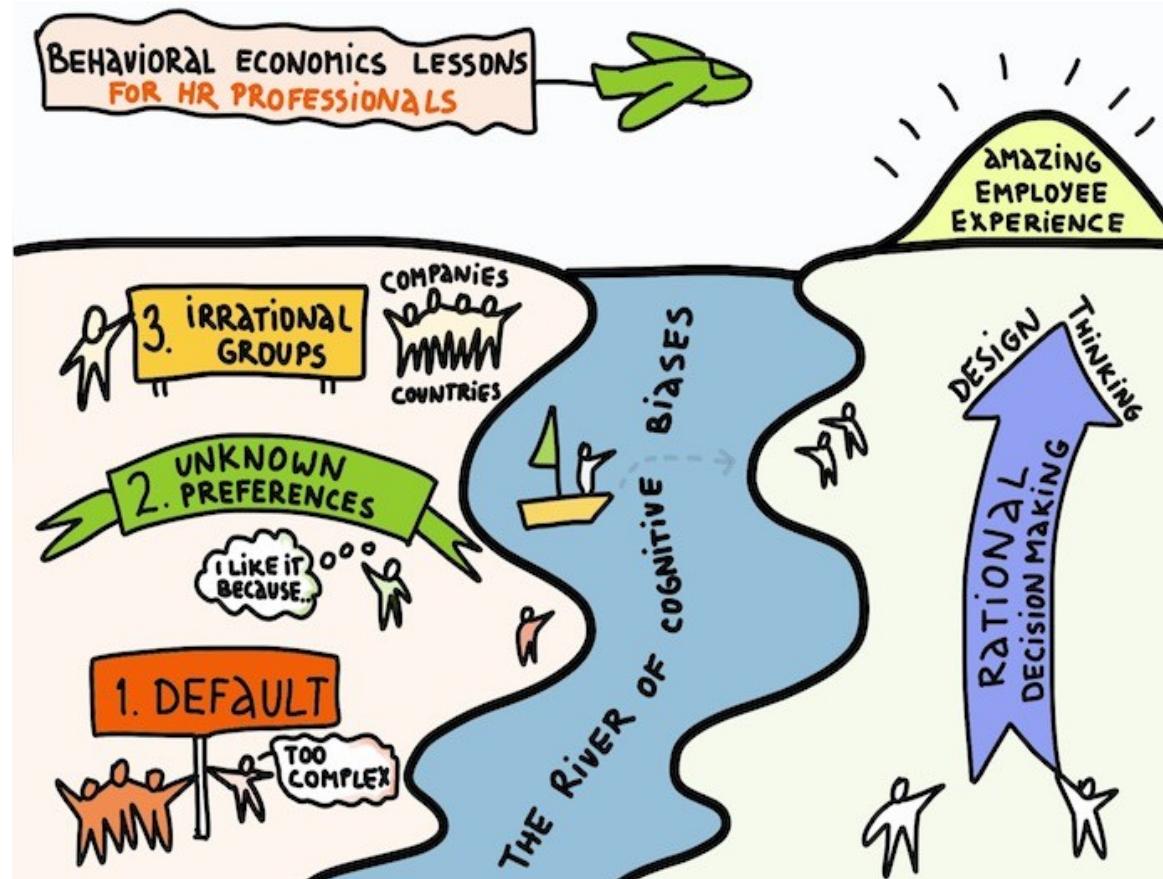
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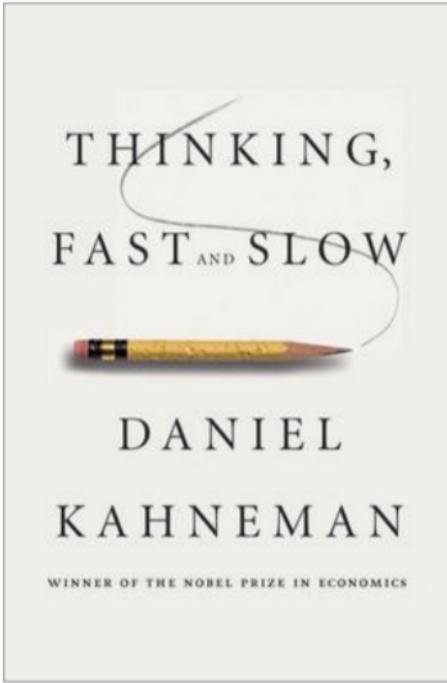
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HR Modernization: Leveraging Technology Advancement to Embrace Future of Work
Tentrem Hotel, Yogyakarta, Indonesia
12 September 2017

Challenges for HR Data Driven : People Analytics



Challenges for HR Data Driven : People Analytics



We prefer “gut feelings” to make people decisions

Challenges for HR Data Driven : People Analytics

Mind-Set is the Key



[HiPPO: Highest Paid Person's Opinion]

HIPPO-driven → Data-driven



Against HiPPO

Background

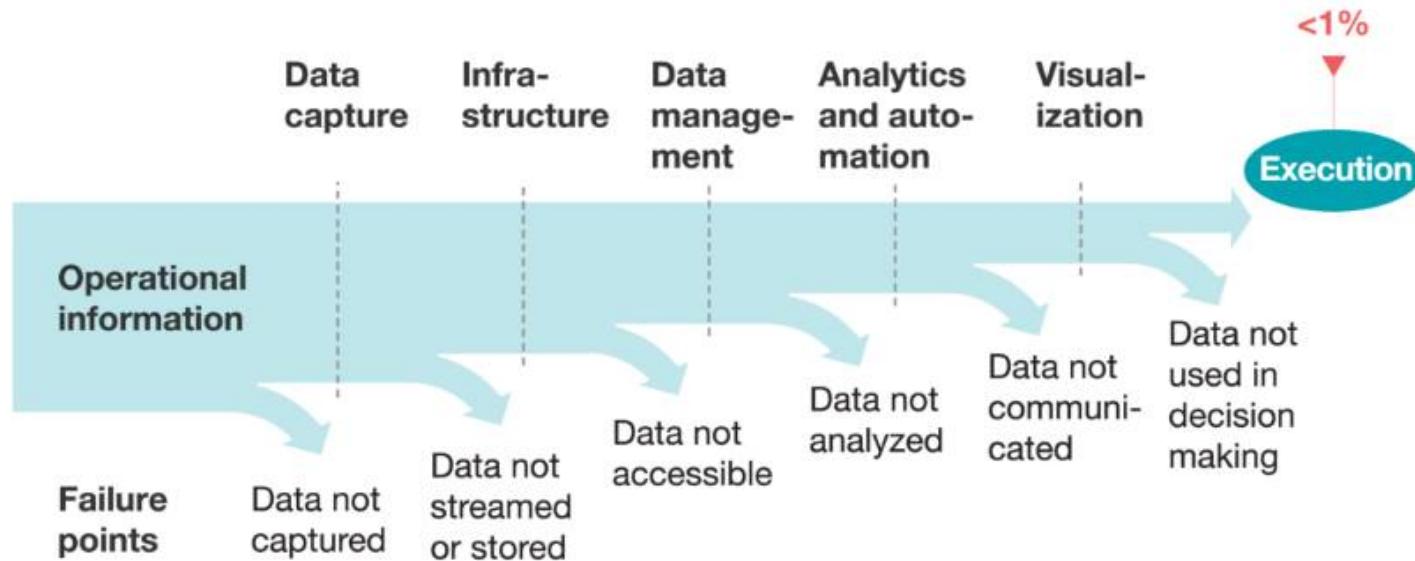
Organizations that have very impressive HRIS implementations with great dashboards and reporting capabilities. However, almost all of them struggle to understand how predictive HR analytics could augment their existing HRIS capabilities.



Data Rich, Information Poor

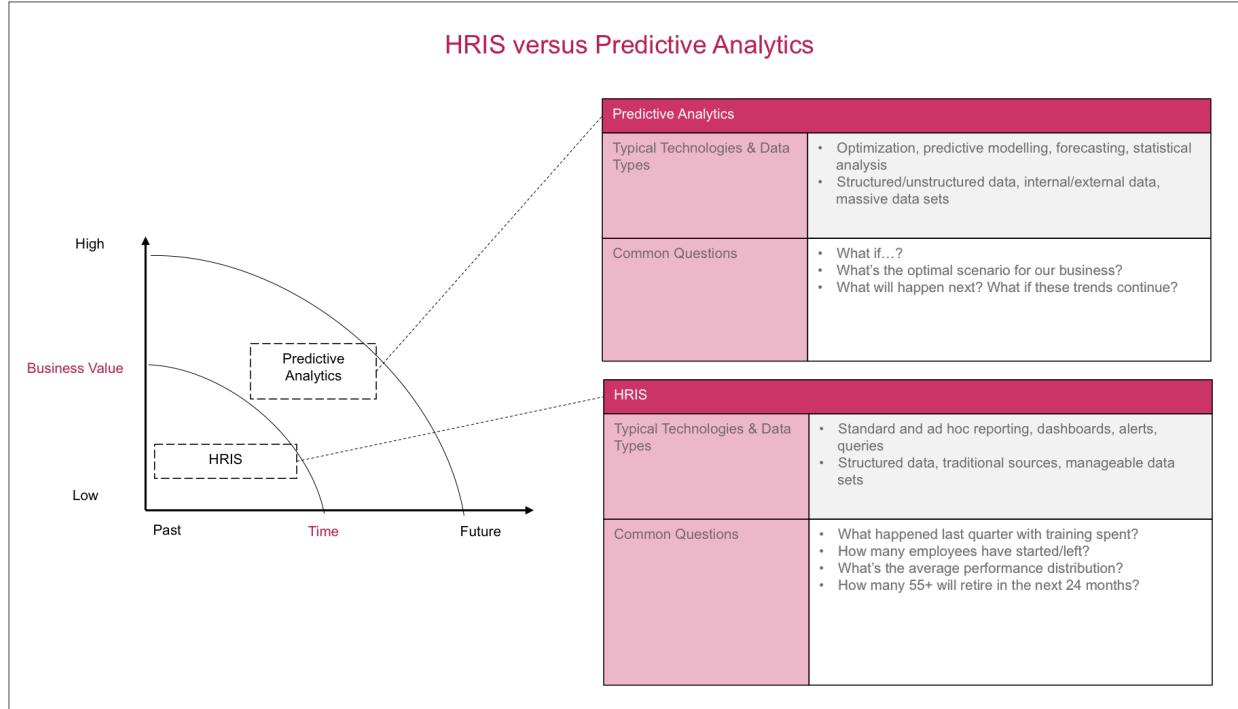


<1% using data for Execution



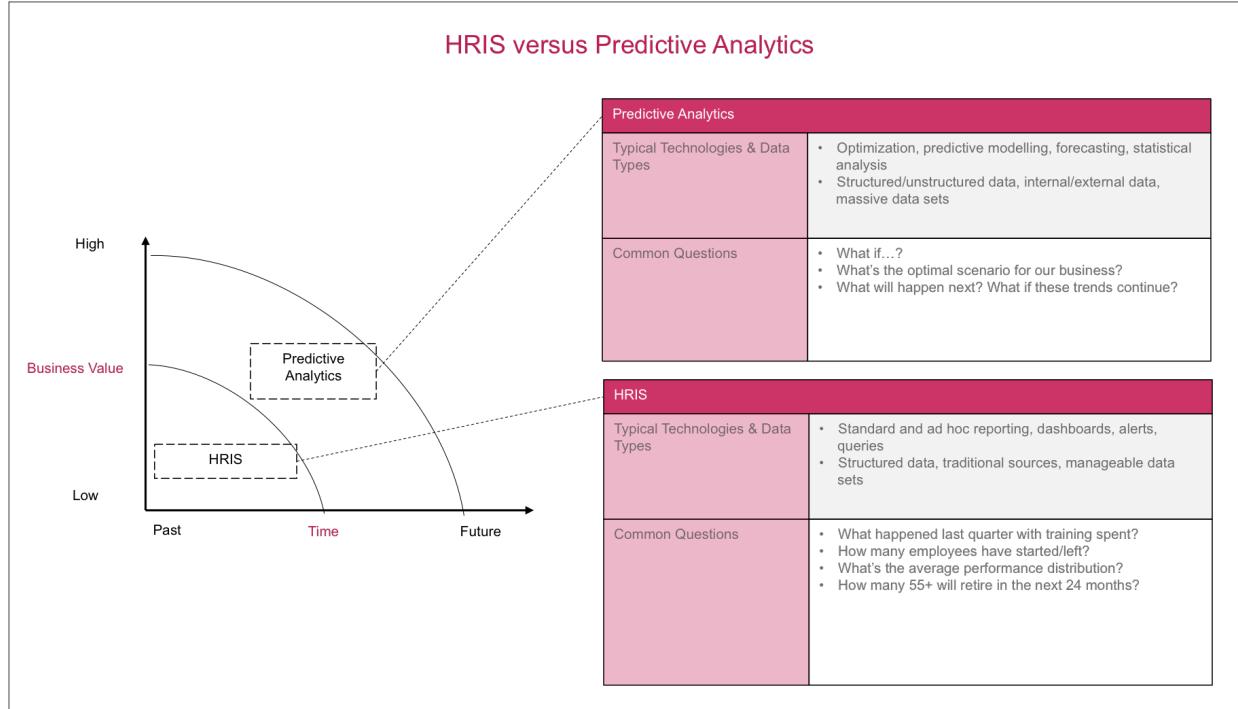
McKinsey&Company

HRIS (Descriptive Analytics) versus Predictive HR Analytics



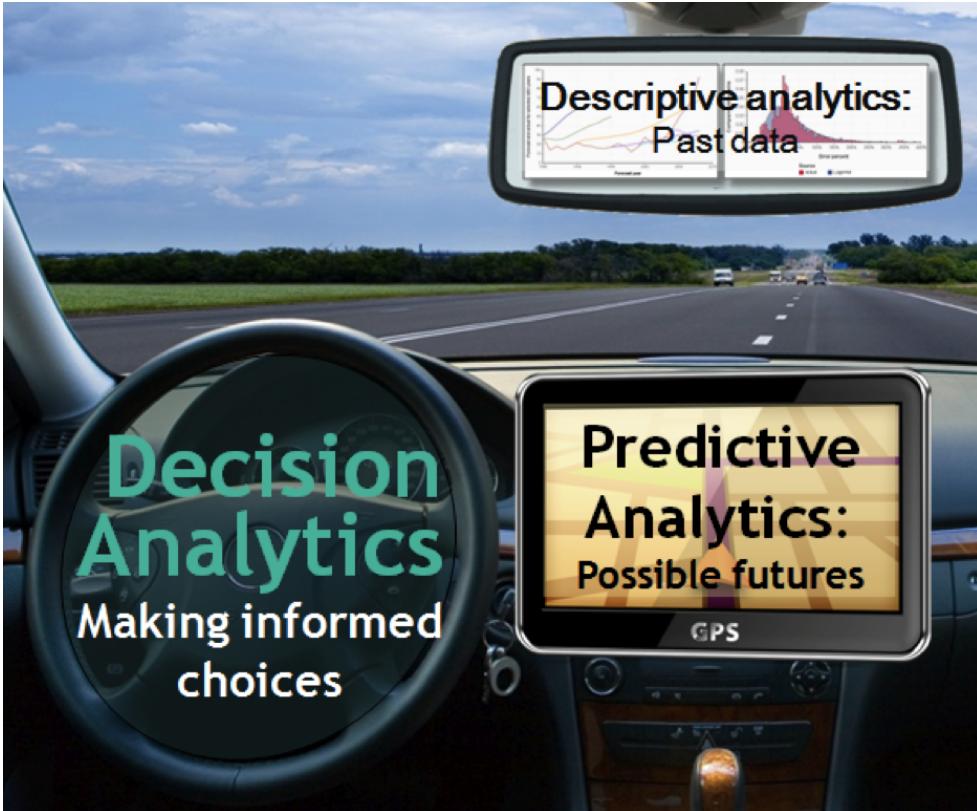
HRIS is the world of descriptive analytics: retrospective analysis that provides a rearview mirror view on the business—reporting on what happened and what is currently happening.

HRIS (Descriptive Analytics) versus Predictive HR Analytics



Predictive HR analytics is forward-looking analysis: providing future-looking insights on the business—predicting what is likely to happen (usually associated with a probability) and why it's likely to happen.

HRIS (Descriptive Analytics) versus Predictive HR Analytics



Past Data Vs
Possible Futures

Successful organizations in the future?

- Challenge existing frameworks, assumptions and ways of working
- Use an evidence-based approach to decision making
- Evolve their strategy and business models
- Have a broad “work” strategy and plan
- Will use insights from behavioral science
- Adopt better management & organization structures

HR Need to be involved in all of these



THE QUANTIFIED WORKPLACE Technology vs TRUST?

THE QUANTIFIED WORKPLACE
People Analytics

Moving from HRIS to Predictive HR Analytics

Descriptive	Predictive
Demographic answers <ul style="list-style-type: none">• How long's Mia been with us?• What's Mia's annual salary, average incentive in past 5 years?• Where does Mia live? What's her commute distance to the office?	Predictive answers <ul style="list-style-type: none">• How long will Mia stay with us?• What other criteria will have an impact on Mia's retention?• What's the value potential on business impact Mia has over the next 2 years?
Performance answers <ul style="list-style-type: none">• What hours did Mia work last week?• How many days was Mia absent last year?• What job promotions did Mia get the past 3 years?• Is Mia performing better versus last year?• What's the trend of Mia's merit rating in the past 3 years?	Recommendations <ul style="list-style-type: none">• Which is the appropriate salary Mia most likely motivate to stay with us the next years?• What are the best incentives to get Mia stay with us?• Which training should we offer to Mia to make her perform even better?
Hindsight: rearview, reporting, dashboard, metrics, ratio's, slicing-and-dicing, tracking, monitoring,...	Foresight: future-looking, likelihood, probability, hidden patterns, mathematical models, statistical forecasting,...

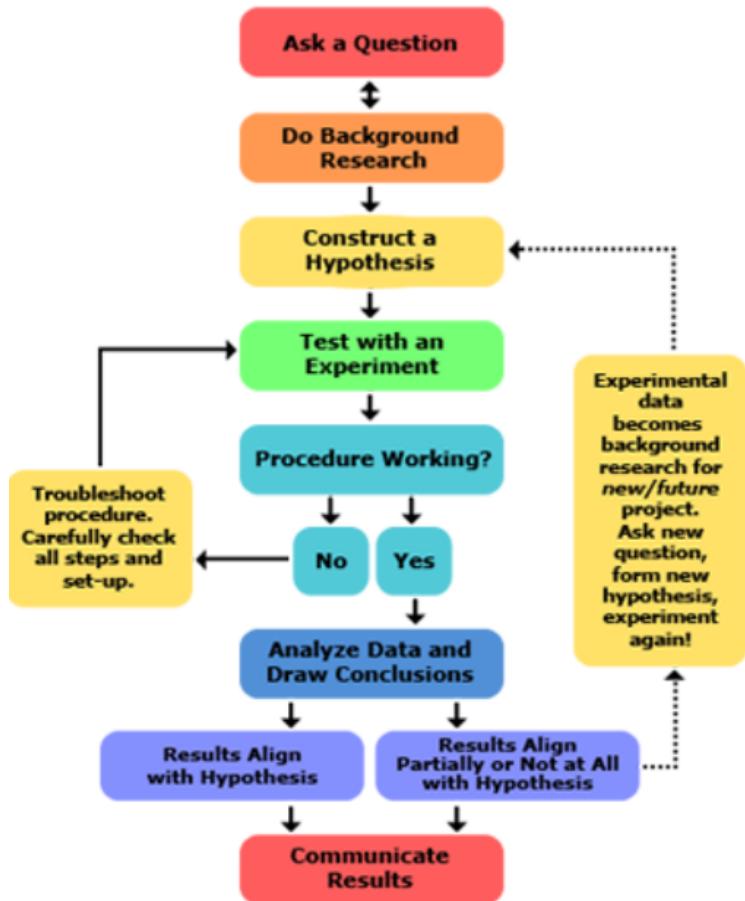
Moving from HRIS to Predictive HR Analytics

HRIS (descriptive)	Predictive HR Analytics
<ul style="list-style-type: none">• Who are our high performing call center agents?• How many training hours did we invest in our call center agents?• What selection scores do our best call center agents have?	<ul style="list-style-type: none">• Which call center agents are most likely to become high performers?• Which training programs are most likely to improve 'time to performance' or average handling time of call center agents?• Which hiring criteria are most likely to lead to strong retention?
<ul style="list-style-type: none">• How many sales representatives did leave us last year?• What's the total cost of the sales coaching program from last year?	<ul style="list-style-type: none">• Which sales reps are most likely to leave?• Which coaching programs are most likely to reduce sales rep attrition?
<ul style="list-style-type: none">• What's the total machine downtime due to work accidents in our manufacturing plant?• Which machine operators got certified in all security training programs?• What are the engagement scores of the machine operators?	<ul style="list-style-type: none">• Which security training programs are most likely to reduce work accidents?• Which impact does employee engagement have on total accident cost?

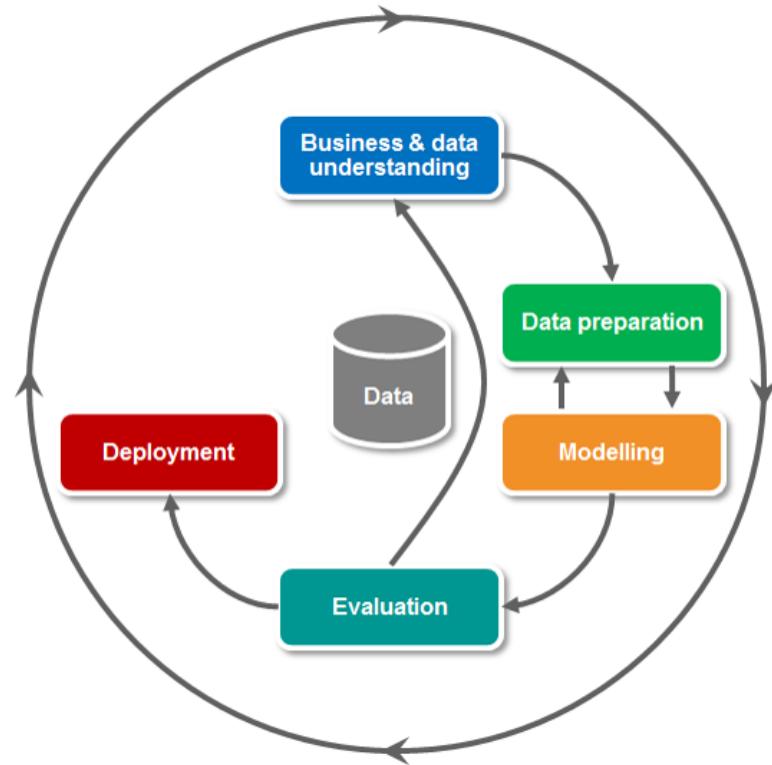
CONCLUSION

No matter what, you still need HRIS to know what really happened in the past, but you also need predictive HR analytics to optimize your resources as you look to make decisions and take actions for the future. The biggest challenge for HR professionals however is to build the capability and expertise to move from a descriptive, retrospective approach (as in most HR departments) to a future-looking, predictable approach. By describing the core differences, we hope that HR can start making progress in the critical analytical space with the objective to improve their decision making quality.

Scientific Method



Data Science Method

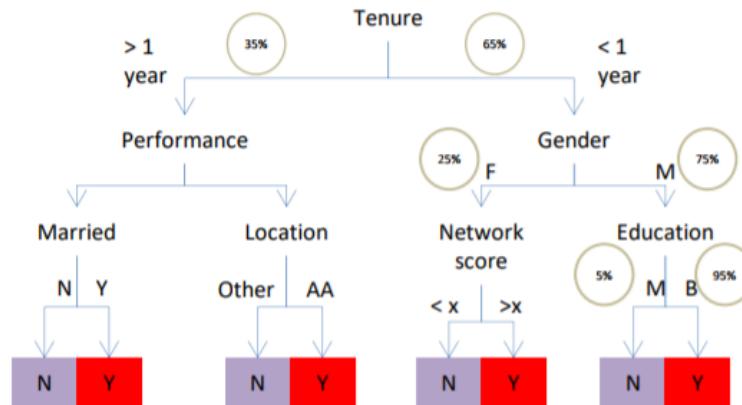


What causes attrition of high performing employees?

People Analytics

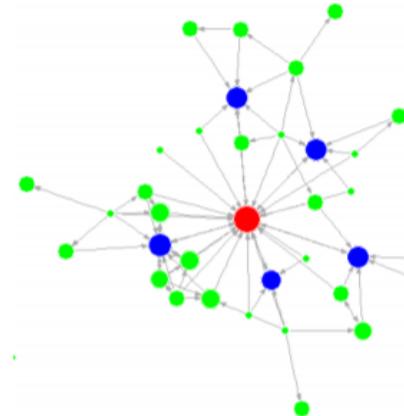
Machine Learning Algorithms

- Decision Trees
- Random Forests
- Logistic Regression

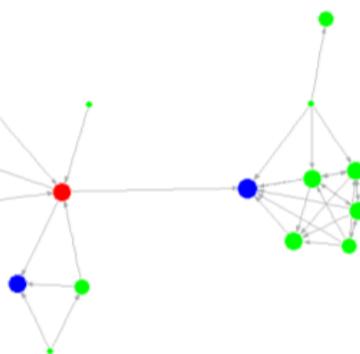


Organization Network Analysis

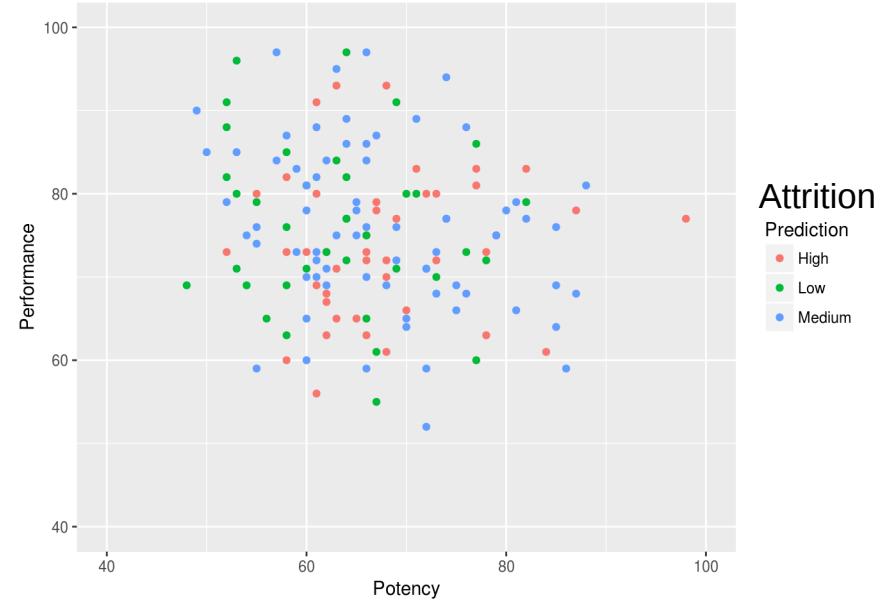
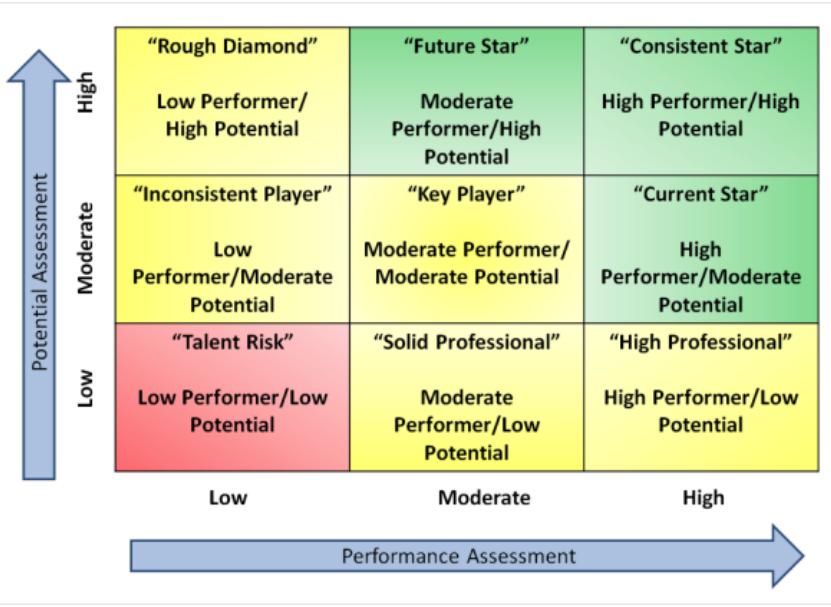
High performing team



Low performing team

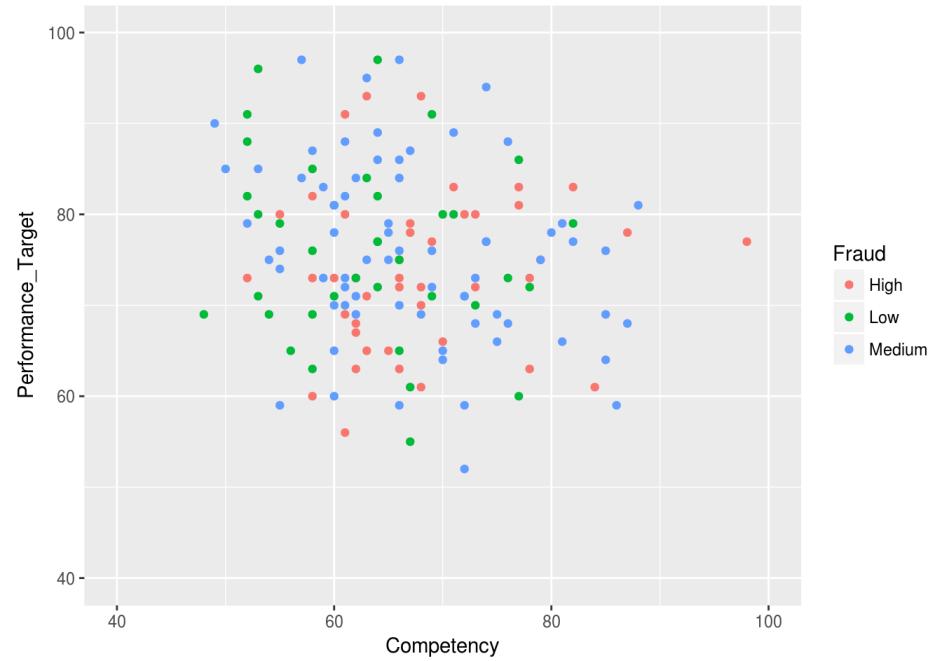
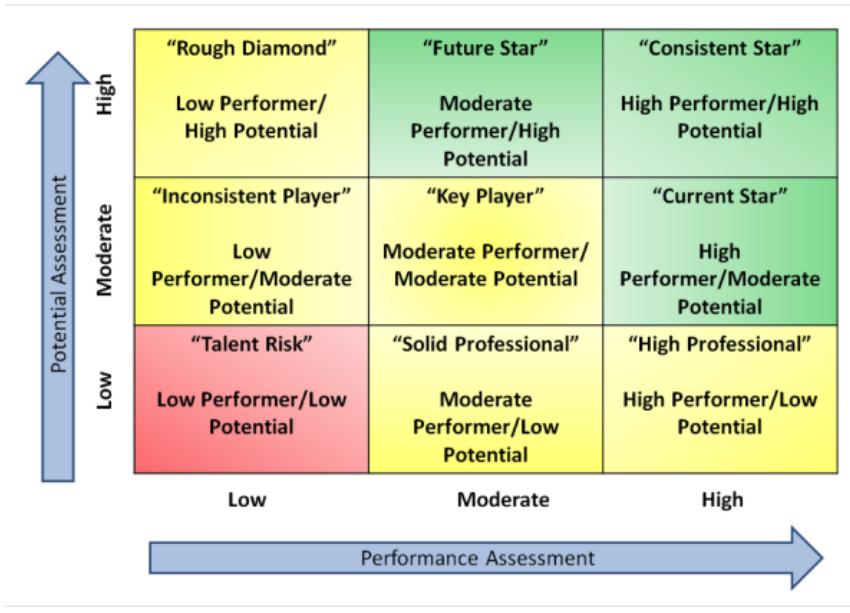


Reinventing Talent Management with Predictive Analytics



Source : <https://www.linkedin.com/pulse/reinventing-talent-management-predictive-analytics-heru-wiryanto>

Reinventing Talent Management with Predictive Analytics



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The screenshot shows the 'Personalise the Internet' feature of the Apply Magic Sauce website. At the top, there are three icons: two people, two gears, and a building. Below them, a dashed box contains the text 'Apply Magic Sauce' and 'Personalise the Internet'. A large green button says 'Predict My Profile'. To the right, a browser window displays the website at <http://applymagicsauce.com>. The page shows two charts: one for Education (Art 19%, Psychology 11%, Journalism 9%, Business 8%, Engineering 8%, Biology 8%, IT 7%, History 7%, Nursing 7%) and one for Relationship Status (IN A RELATIONSHIP: 30%, In a relationship 30%, Married 20%, Single 50%).

Apply Magic Sauce

Personalise the Internet

A personalisation engine that accurately predicts psychological traits from digital footprints of human behaviour

See how others see you

Predict My Profile

Education

Field	Percentage
Art	19%
Psychology	11%
Journalism	9%
Business	8%
Engineering	8%
Biology	8%
IT	7%
History	7%
Nursing	7%

Relationship Status

IN A RELATIONSHIP: 30%

Status	Percentage
In a relationship	30%
Married	20%
Single	50%

Digital Footprint

<https://applymagicsauce.com/demo.html>

Facebook and Twitter Prediction

This tool predicts your psycho-demographic profile from digital footprints of your behaviour. It reveals how you might be perceived by others online and provides detailed insights on your personality, intelligence, life satisfaction and more.

Predictions are based on opt-in psychological ground truth from over 6 million volunteers, and our data has been used in over 45 peer-reviewed scientific articles.

Connect your Facebook and Twitter profiles using the log in buttons below to discover what your data says about you. Your use of this demo is anonymous, we will never post on your wall and the results of your prediction will not be stored. We hope you enjoy it!



Open Text Prediction

If you don't have a Facebook or Twitter account, you can also input some text in the box below to predict the psycho-demographic profile of its author. There is no minimum word count, but at least 200 words is preferable. Please also tag the source of the text you are submitting.

This tool uses opt-in psychological data from 69,000 volunteers (on 100- and 336-item personality tests) and 14 million status updates. The current model contains over 53,000 predictive words and phrases.

Text*

Digital Footprint

<https://applymagicsauce.com/demo.html>

Analytics – four stages of maturity

Moving **beyond descriptive statistics to predictions**

Understand data to **gain insights** on our people.

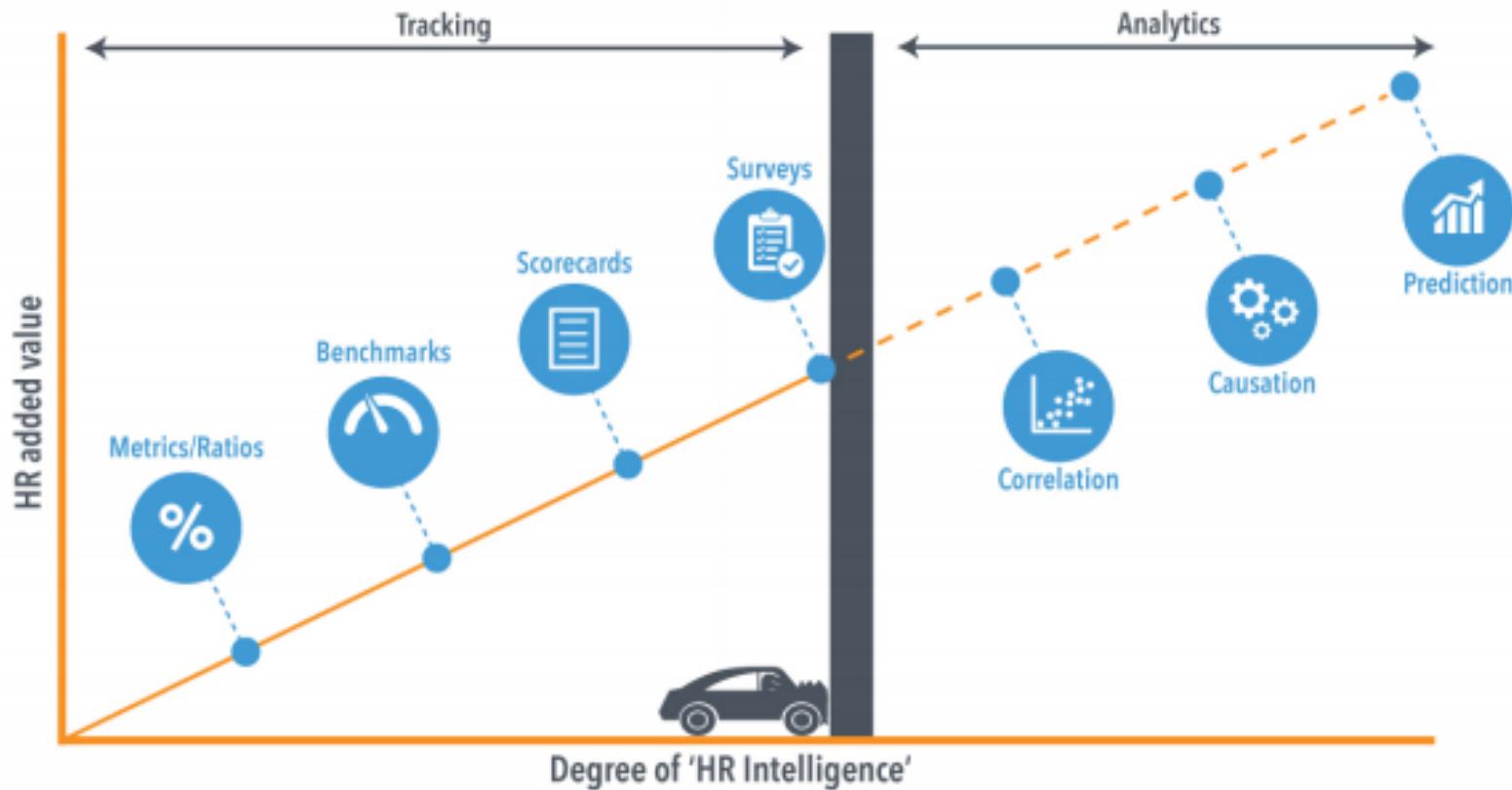
Insights support **better decisions** about our people.

Most HR departments range from maturity level 1 to 3.

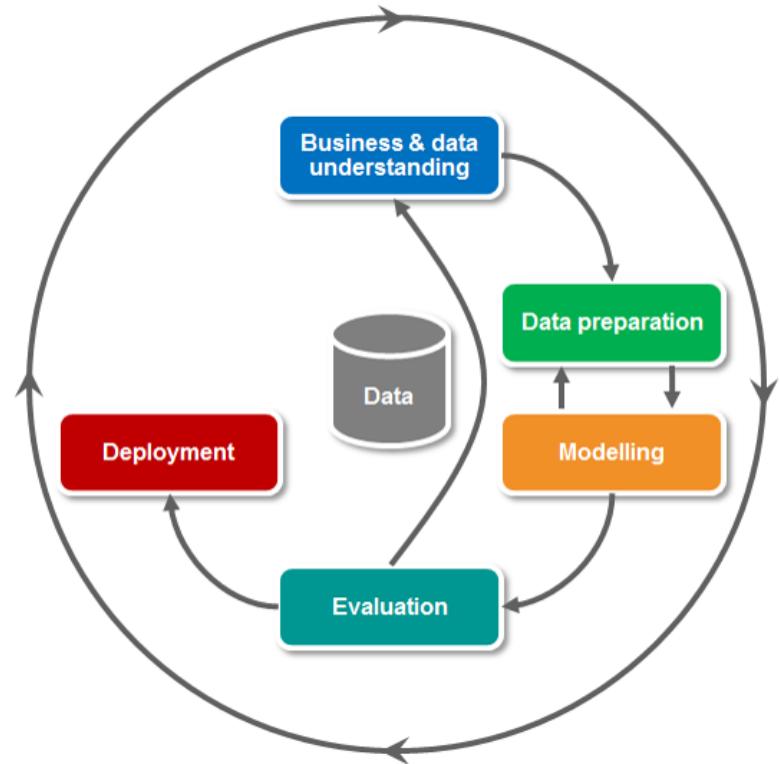
Get good results with descriptive statistics. Predictive analytics offers outstanding results and **new ways HR can deliver business value**.



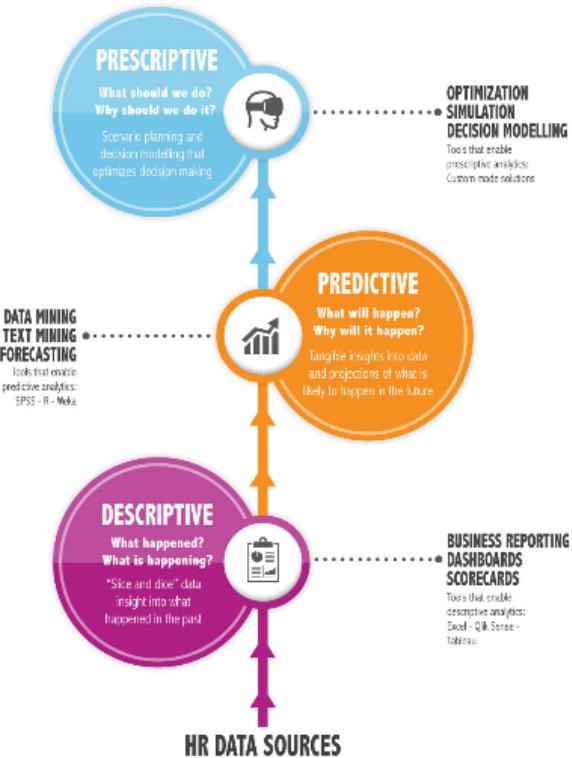
HR is hitting the wall of Boudreau



The People Analytics Cycle



Business Analytics



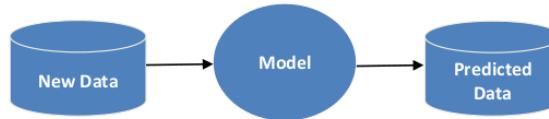
What is predictive analytics?

Predictive analytics enables data-driven **predictions about the future**. Uses techniques from **statistics, data mining, machine learning** and **artificial intelligence** to analyse **current and historical facts** to make **predictions about future**.

Phase 1: Learning



Phase 2: Prediction



Introduction to Machine Learning, Twitter, Rahul Jain, 2014.

Five Reasons Fails	Solution
The Project too ambitious	Create short term wins, are the simplest and quickest kind of analysis, requiring the least amount of data but adding the best value to the company. It's important to demonstrate its value in early on in the project by presenting these short-term wins.
Lack relevance of Business	Only focusing on a top business priority will people analytics provide tangible value. A good rule of thumb is to focus on one of the top 3 business priorities of the CEO
Bad or Poor Quality of Data	Focus on smaller projects with short term wins as they require less data cleaning. Note data cleaning is very time consuming.
Compliance was not factored in the from of beginning	The people analytics projects has to be tailored based on both the internal company policies and the external, trans national regulations.
No Translation to actionable insights	The quick wins are crucial, because they force the project team to define a specific questions whose answer doesn't require huge amounts of data(cleaning), yet also boosts the team's morale and visibility within the same organizations

Five reasons People Analytics Fail: Possible Solutions

Challenges	Possible Solutions
We prefer “gut feeling” to make people-based decisions	Find the middle group
Against Hippo	Build new mindset of data driven
HR doesn’t need big data, it needs big questions	Cast your net widely, coach HR on hypothesis testing
We need the right tools to do the job	Keep sharing requirements with technology vendors
No confidence in the underlying frameworks	Collaborate with academia and peers in other organizations
Focus on Productivity	All paths lead to productivity
Structural issues with HR Operating Models	Use best available evidence to work out which practices work best

Challenges People Analytics : Possible Solutions

- Start reading, researching and staying on top of developments in this area.
- Take claim to HR analytics as part of the HR domain.
- See your ‘hands on’ use of the technology to do this as both an extension of who you are as an HR professional and as a tool for increasing your competitiveness.
- Be smart in your use (or not) of prepackaged vendor analytics software solutions.
- Increase your knowledge of statistics and statistical analysis.
- Possibly change your paradigm of HR.

Things To Do

Workforce/ HR/ People analytics are still in their early stages of use and terminology in HR. Even with that being the case, what is at the heart of the use and terminology for this is ‘data driven’ decision making. ‘Data driven’ goes beyond simply producing metrics. It is:

- Being able to take a HR issue or question, understand what data exists around and available for that decision, understand what statistical analyses or summaries are useful to answer that question, presenting that data as part of the decision and decision making process
- Understanding for our existing metrics, why we produce them in the first place and what questions they were intended to answer.
- Being able to take overall metrics, measures, and data and be able to slice and dice understand underlying relationships.
- Making a decision as HR professionals to be ‘data driven’. As I mentioned earlier in this article, the ability to generate datasets of HR data and availability of applying statistical tools has been around for at least 35 years. The technologies have changed and have become more robust, and the amount and scope of data has increased over that period of time. The tools and data needed to do this are not necessarily an obstacle.
- Google is indeed doing some tremendously exciting things in their People practices. They have taken the bold move to increase dramatically their ability to be ‘data driven’ in their HR practices. And they will likely continue to see payoffs for their decisions.

We guess the key question is- **how will Workforce, HR, People Analytics impact you and your organization?**

Final Thoughts