

HR ANYLATICS & AI

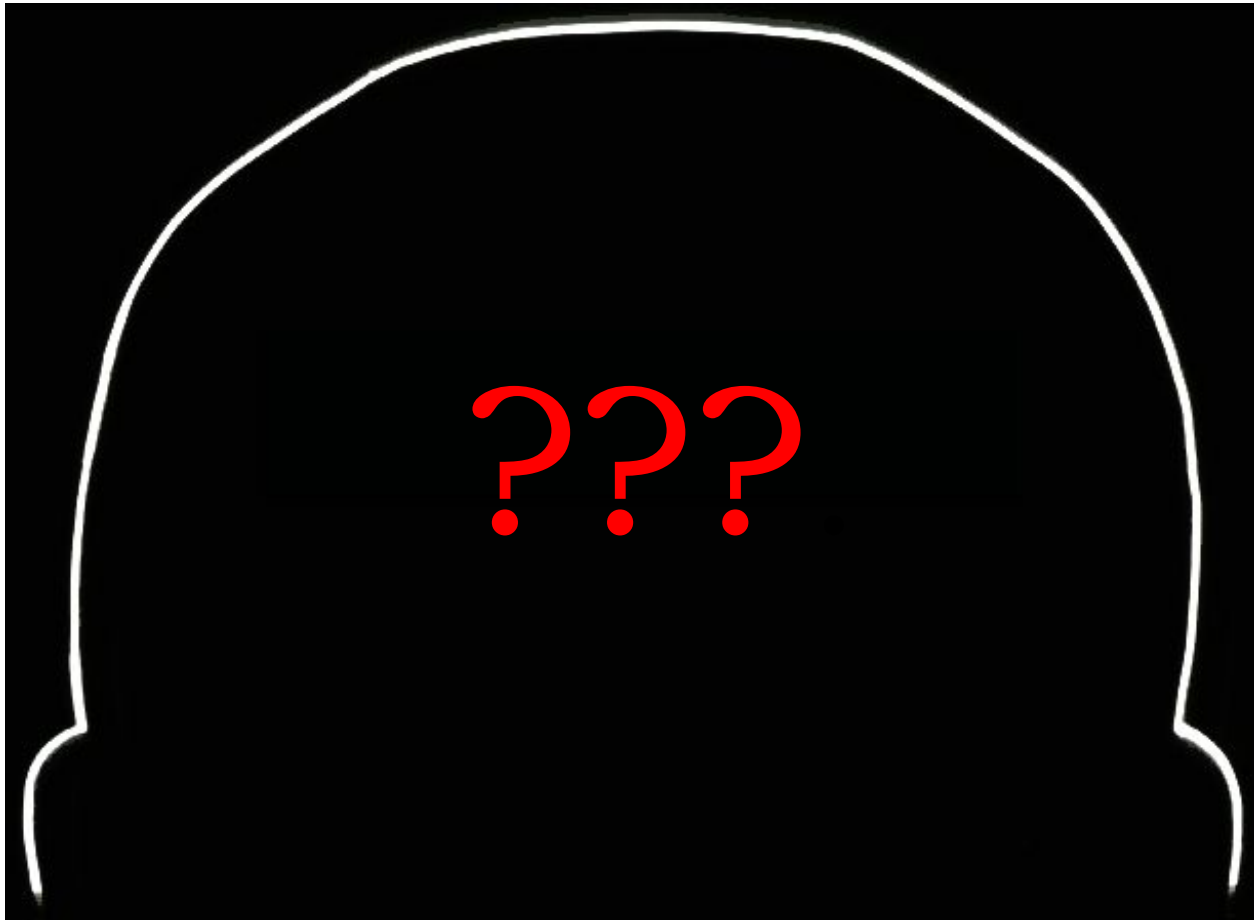
By Deepak Bharara



LEVERAGING PEOPLE FOR TOMORROW...

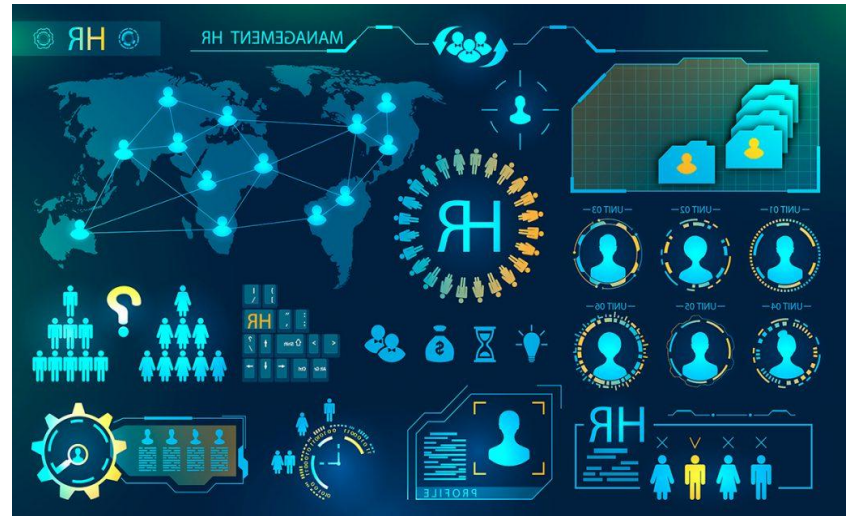
HR ANYALTICS

What comes to your mind



Opening Remarks

To Win the Marketplace
you must first
Win the Workplace
- Doug Conant



Why We are Here

- The age of “TRUST ME, THIS WILL WORK” is over. This is new age and HR is being redefined.
- **Organizations today are augmenting Human Resources intuition with analytics-based talent science.**
- The concept of talent management is to identify competencies for every role in the organization, as well as the skills, credentials, education, and knowledge needed. It's difficult to predict a candidate's success based upon credentials



HR Analytics

The world is full of Data



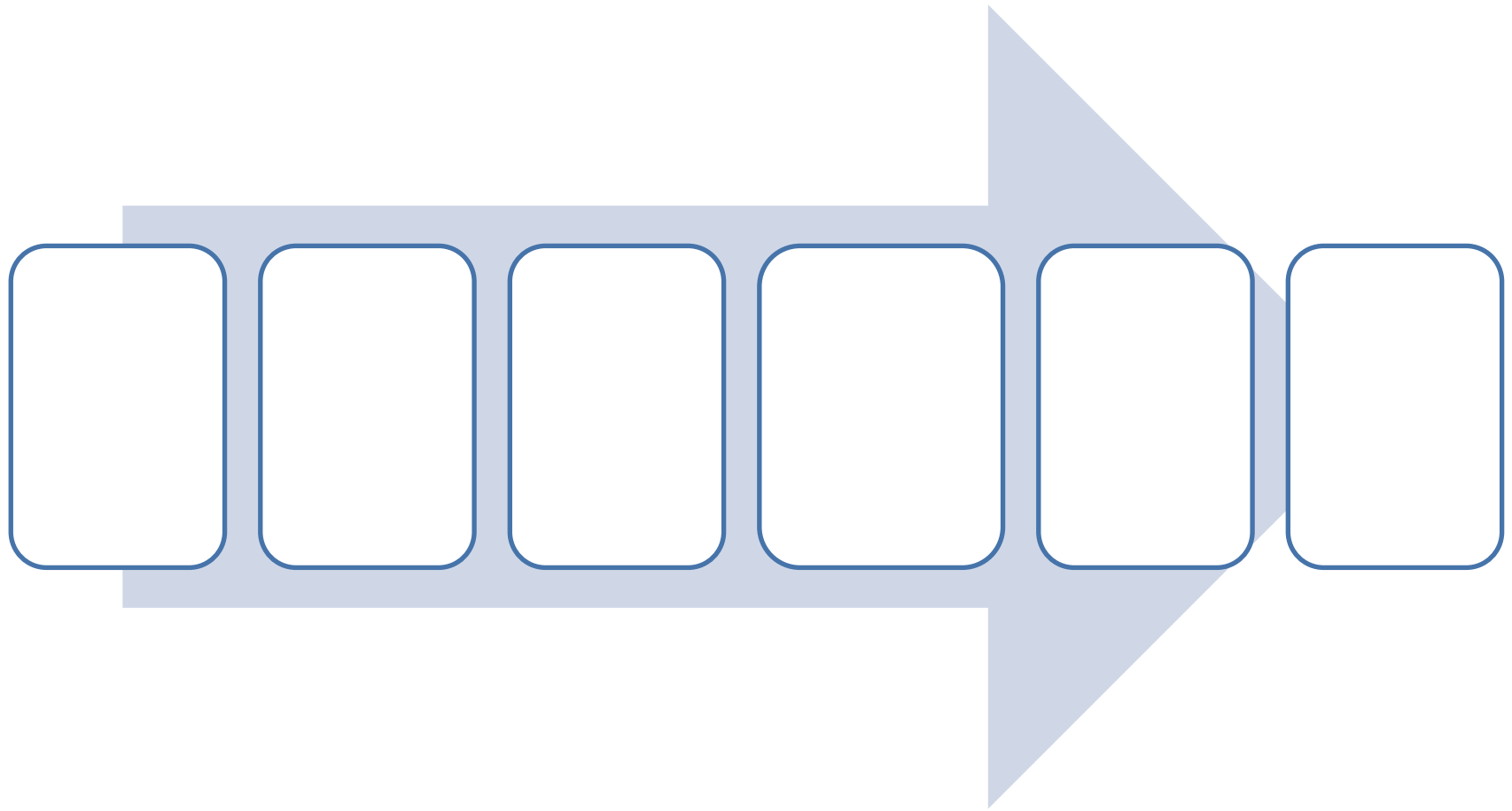
Using Analytics helps to get information for decision making

Let us



- Understand how to deliver timely and accurate dashboards which are used by business leaders to make evidenced based decisions?
- Learn to apply how Investing in people analytics can help reduce costs, achieve and create long-term value.
- How right interpretation of data helps in improving decision making and increase accountability”?
- How HR Analytics leads to improvements in both people and financial outcomes?

Process of Analytics



HR Reporting and Predictive Analytics



HR Analytics

- Conversations about applying data analytics to HR management aren't new. Despite more than a decade of discussion, organizations are at different maturity levels when it comes to its adoption.
- Some use it for simple reporting while others have gone deep and implemented sophisticated predictive analytics.

According to Deloitte's 2017 Human Capital Trends report, 71% of companies see people analytics as a high priority, but only 9% believe they have a good understanding of which talent dimension drives performance in their organizations.



Moving from HR To HR Analytics .. Why Now

Key Drivers

Top Management Focus/ Strategic HRM

According to the PwC CEO survey, 77% of CEOs believe the biggest threat to their business is the lack of availability of key skills.

HR data analytics can help with workforce diversity, geo location decisions, hiring strategy, competitive benchmarking, workforce planning, and employer branding

Growth in Technology enabled solutions

Over the last five years, the adoption of technology has moved from static HR management solutions to more dynamic, real-time cloud and mobile-based tools and platforms.

These solutions are being integrated in the areas of recruitment, collaboration, productivity, learning, wellness, and performance management.

Competitive Landscape

Analytics can also ensure access to a pipeline of qualified candidates so companies can remain competitive in the future.

Many businesses might know where they need to be in the next two to five years, but what about 10 to 15 years down the road? This predictive form of analytics is becoming an irreplaceable tool for managing teams effectively, maximizing profits, and ensuring long-term success.

Competing on Talent Analytics

Six kinds of analytics can help companies answer critical talent questions:

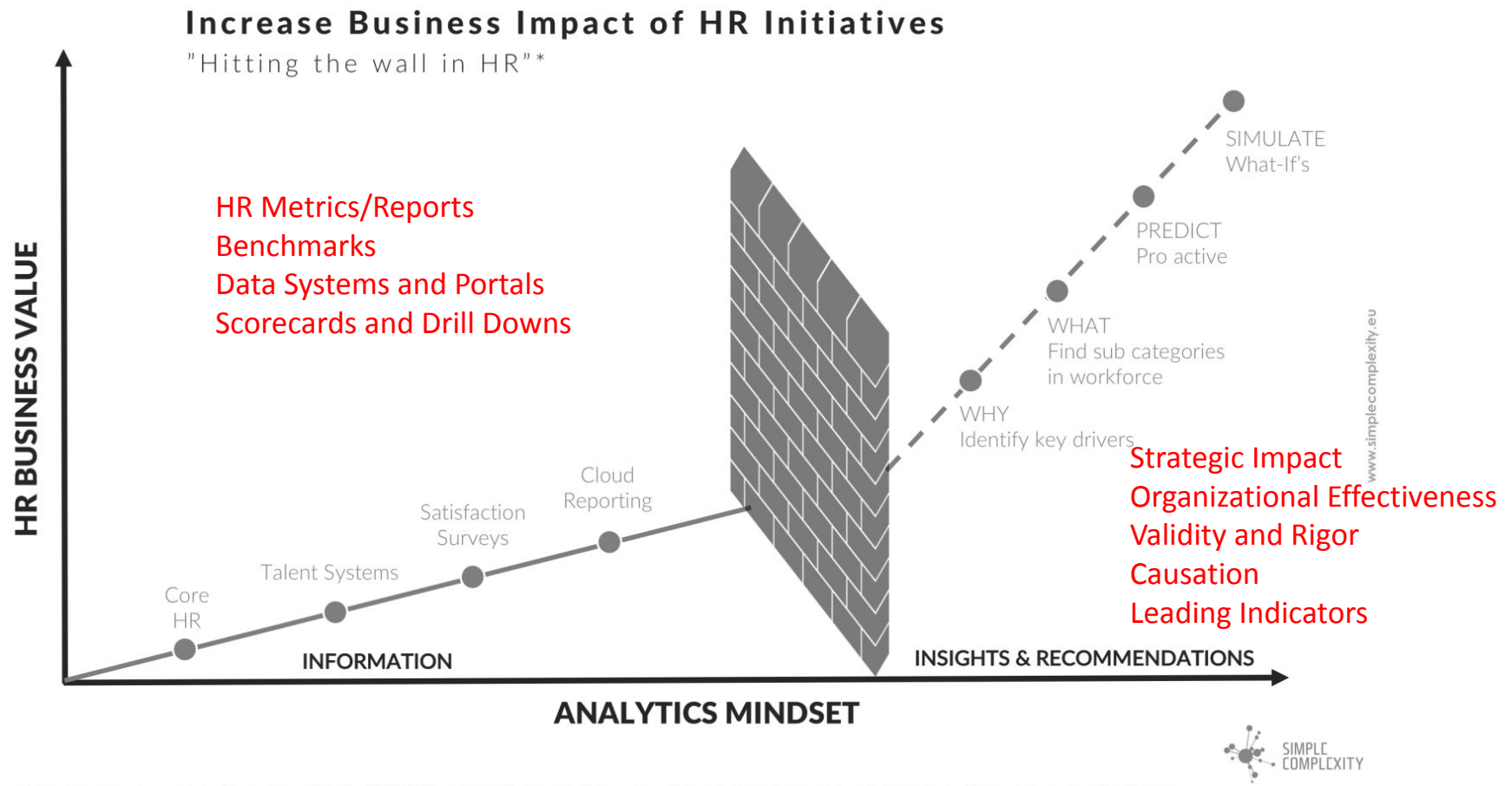
1. Human-Capital Facts - What are the key indicators of my organization's overall health?
2. Analytical HR - Which units, departments, or individuals need attention?
3. Human-Capital Investment Analysis - Which actions have the greatest impact on my business?
4. Workforce Forecasts - How do I know when to staff up or cut back?
5. Talent Value Model - Why do employees choose to stay with—or leave—my company?
6. Talent Supply Chain - How should my workforce needs adapt to changes in the business environment?

IMPLEMENTING ANALYTICS IN ORGANIZATION

– Delta Model



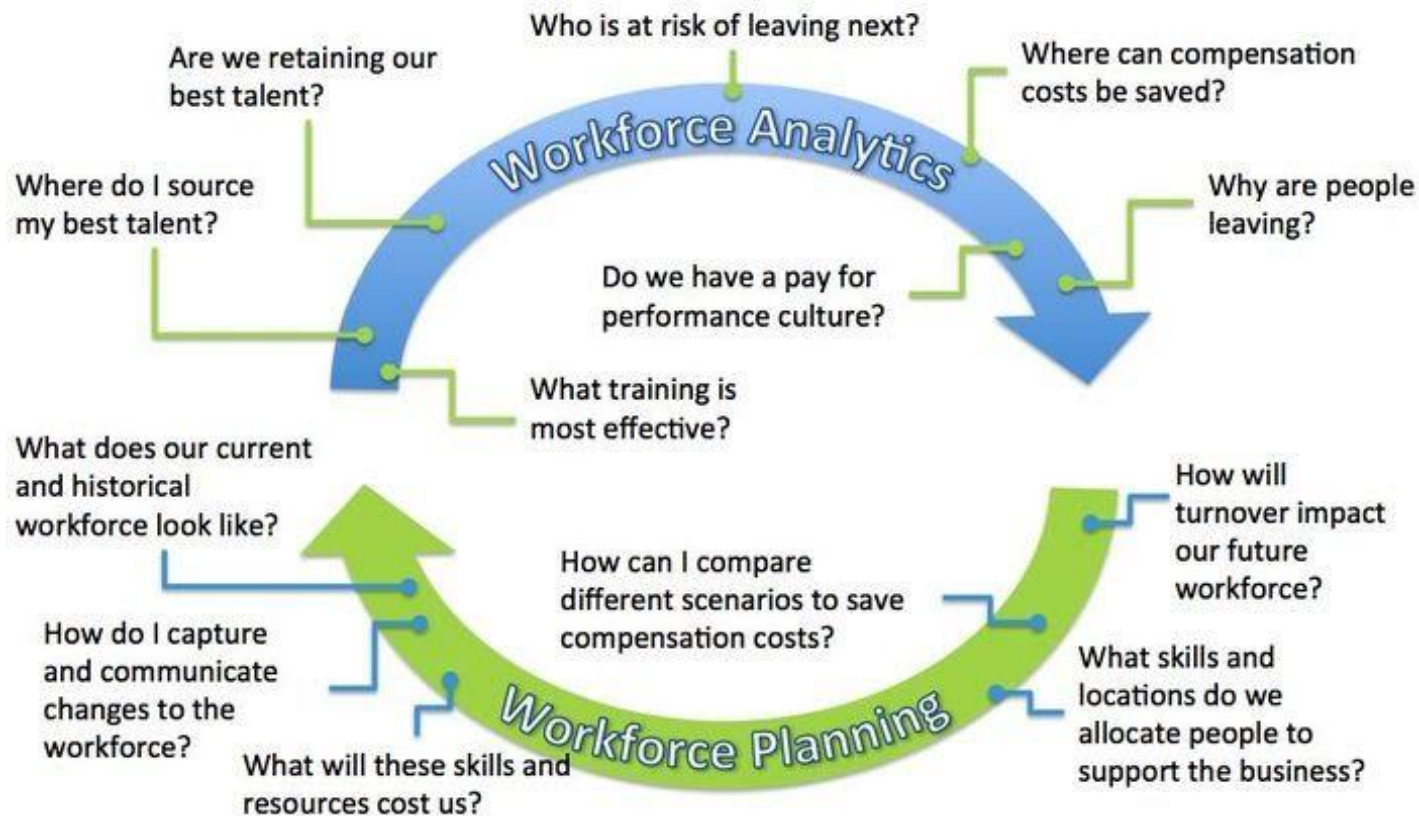
HR Analytics Started mostly post 2011



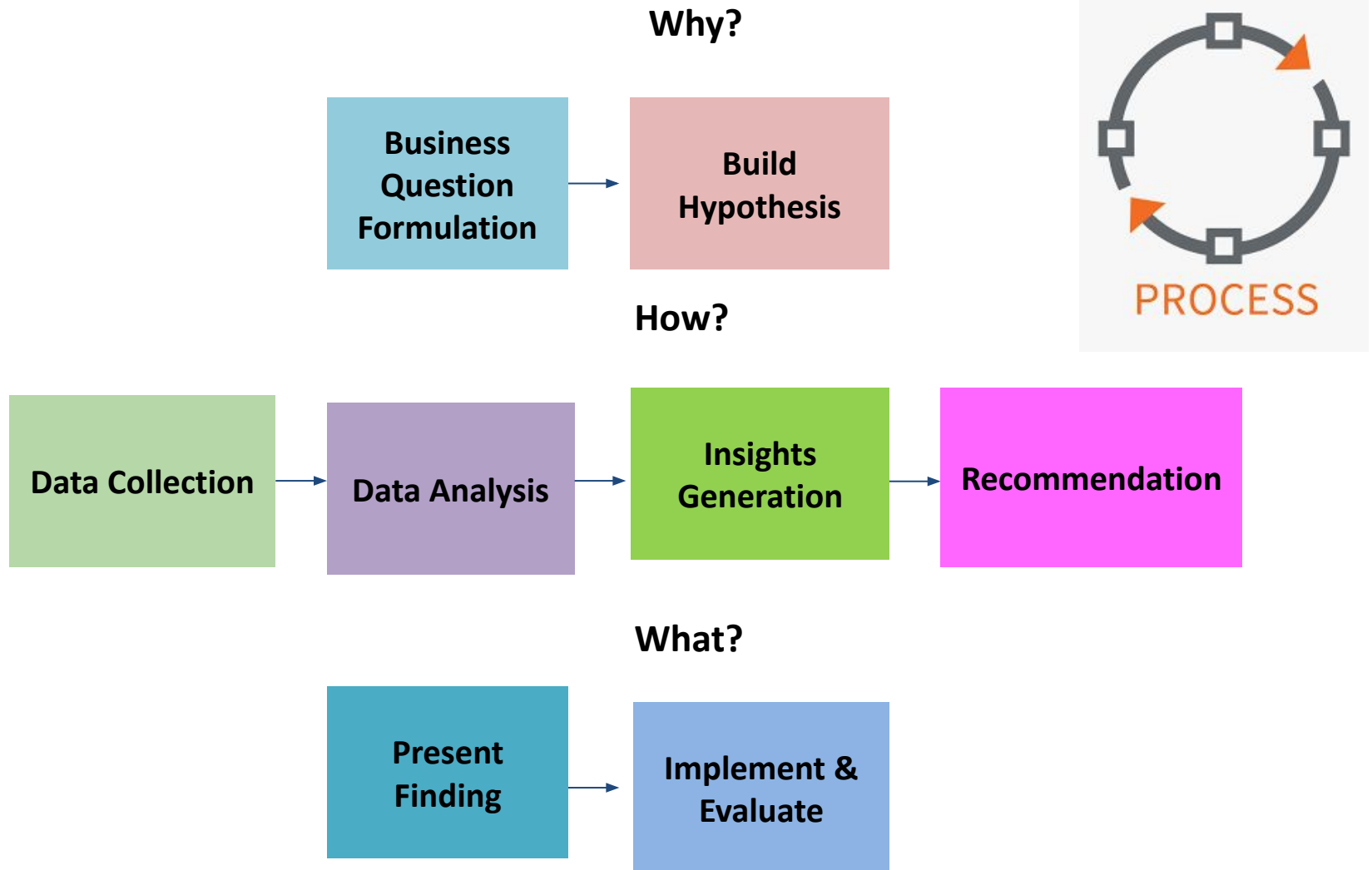
Boudreau, J., and Cascio, W.F. (2010) *Investing in People: Financial Impact of Human Resource Initiatives*.

Key Questions being answered by HR

Workforce Analytics and Planning



HR Analytics Model



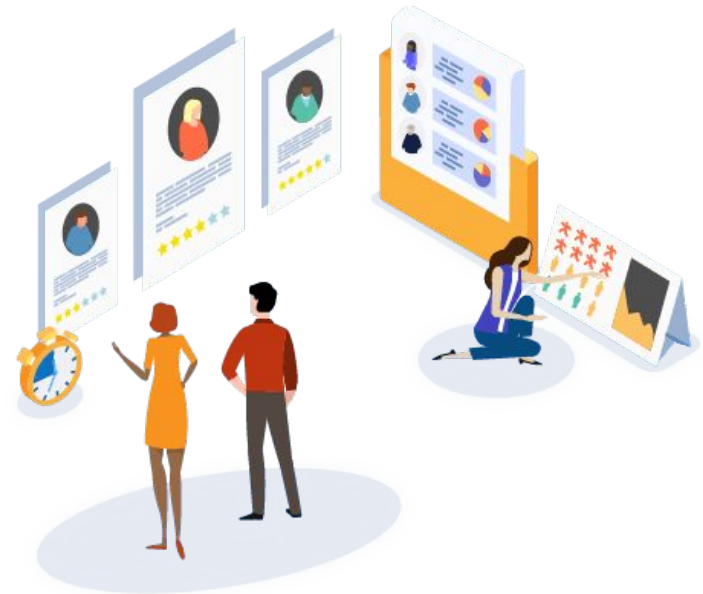
Types of HR Analytics

1. Capabilities Analytics
2. Competency Acquisition Analytics
3. Capacity Analytics
4. Corporate Culture Analytics
5. Recruitment Channel Analytics
6. Leadership Analytics
7. Employee Churn Analytics
8. Employee Performance Analytics



Sources of HR Analytics

- Recruitment & Sourcing
- Assessment Data
- Compensation & benefits
- Demographic
- Tenure & Movement
- Competency Detail
- Health and Safety
- Performance Management
- Attrition & Employee churn



Fundamentals Analytics Concepts

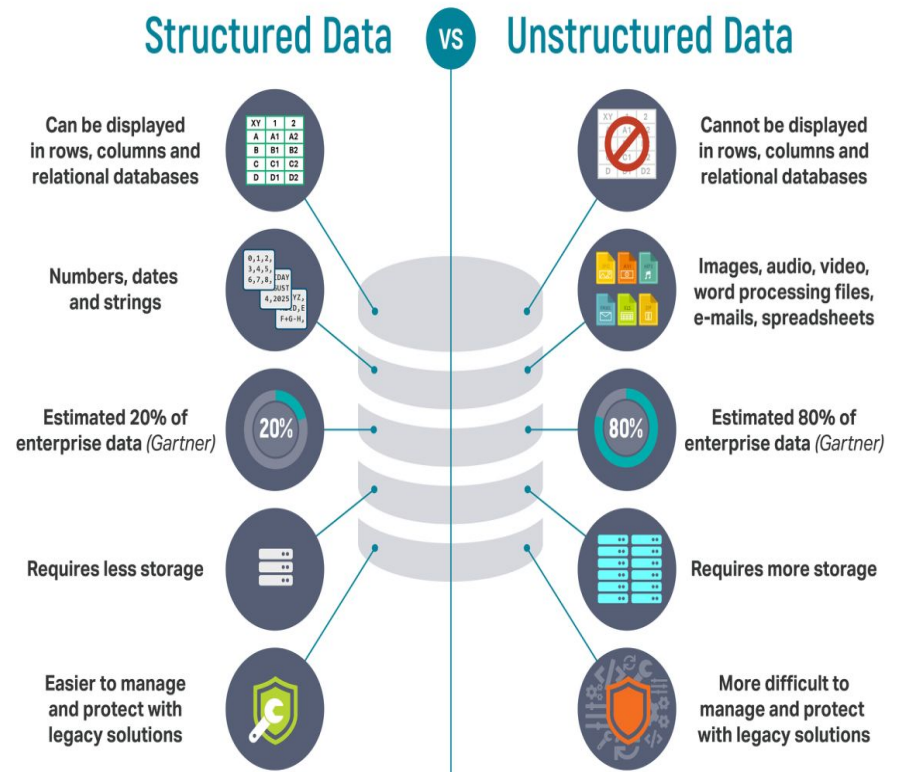


Types of Data

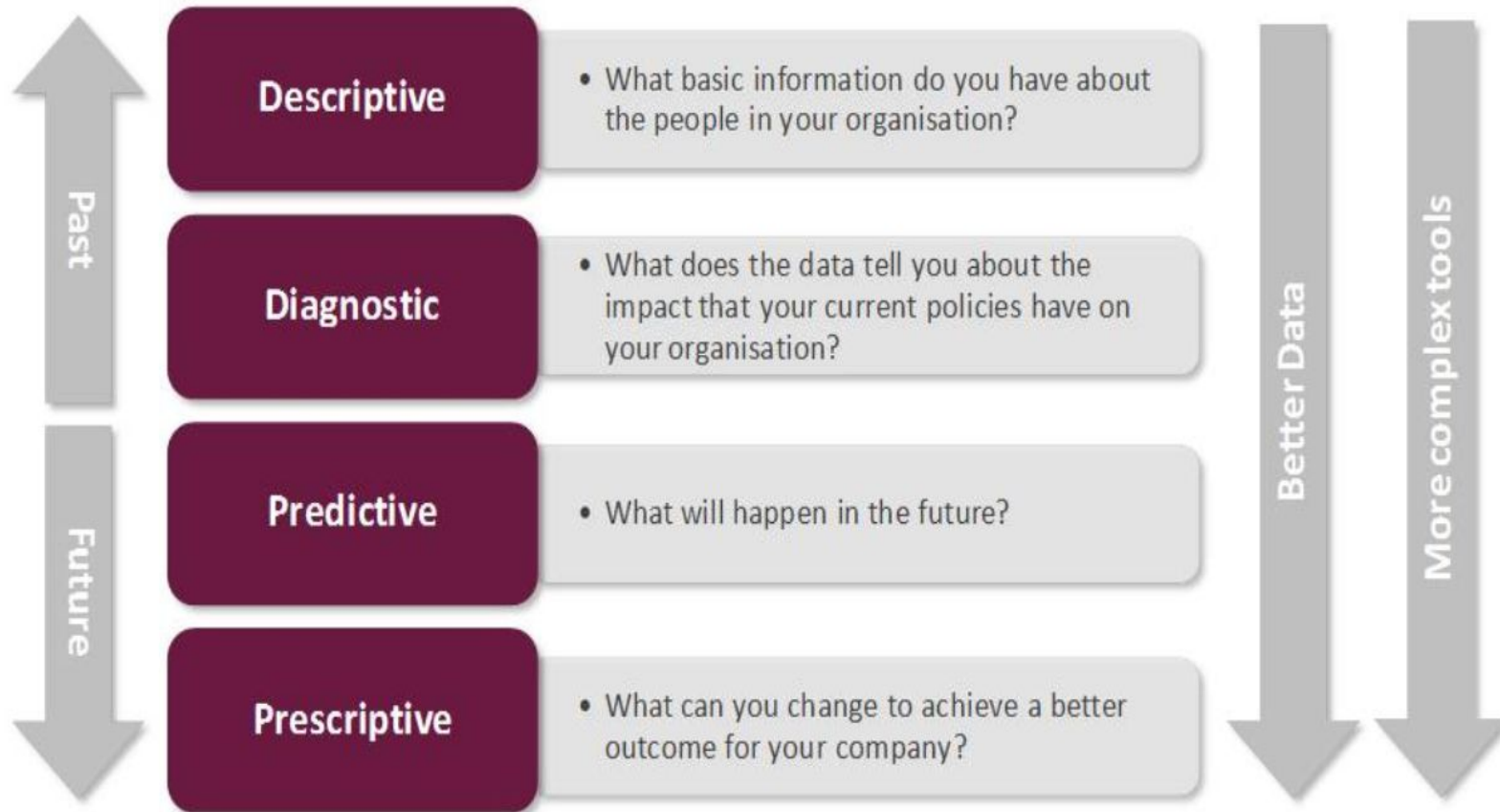
- **Purposive data** – Collected based on defined objective
- **Existing data** – Collected without pre-defined objective
- **Automatic Data** – Collected using any other objective

HUMAN RESOURCE DATA

- Demographic
- Performance Management
- Compensation/benefits
- Educational history
- Job location
- Training
- Talent Movement



Key Areas in HR Analytics



Descriptive Analytics

- A headcount report of all employees within the organization is a form of descriptive analytics. Even taking it a step further to break it down by demographics would still be in the same category.
- More sophisticated metrics like turnover rates or time-to-fill would be descriptive as well.
- They rely on the past and aim to explain why something already happened.
- Only focusing on descriptive analytics is very reactive. HR which is evolving to align with business needs should focus on being proactive

Diagnostic Analytics

- Diagnostic analytics present the *causes* of the events revealed by the descriptive analytics. In our example, it could be a graphic report that shows the ranked reasons why sales people have departed. The reasons may range from low quota attainment to higher base salaries offered by competitors.
- Diagnostics reveal the underlying cause of the events presented by descriptive data. If you know the cause, you know *where* to focus your efforts to mitigate the problem

Predictive Analytics

- Where descriptive analytics look backward, predictive analytics work to look ahead. Statistical models and forecasts are used to answer the question of what could happen.
- Models are built on patterns that were found within the descriptive analytics. The goal is to proactively find the needs of the organization.
- Predictive analytics can help talent acquisition teams determine if someone will be a good cultural fit for the organization before they're hired. It could even provide estimations on how long the person will stay with the company.

Predictive Analytics

Predictive analytics is now a mainstream function for HR teams across several organizations. If you are still not convinced, let's see five areas where predictive analytics can help you manage your talent better



Ways to Drive Predative Analytics

1. Hire the right people
2. Fine Tune Performance & boost productivity
3. Upskill the workforce
4. Employee Engagement
5. Retain Top Tier Talent

Prescriptive Analytics

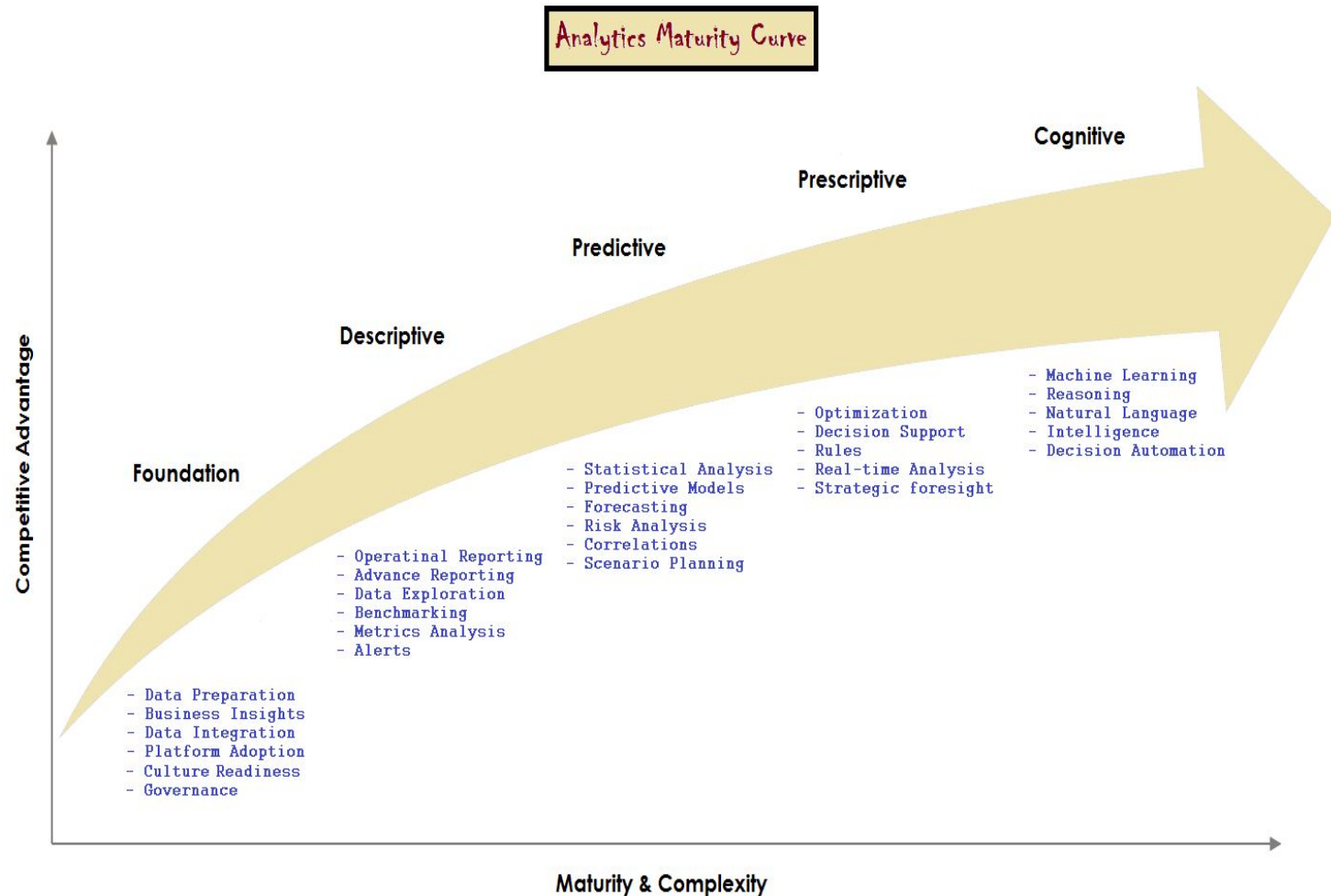
- Once the future is predicted, the next question is what can we do about it.
- Prescriptive analytics provides recommendations on what to do based on predictions and what has occurred in the past.
- This analytical approach can be highly beneficial for organizations with peak or busy seasons.

Example :

- A retailer will want to know how many people to staff during the holidays.
- A park might need to know how many to staff during the summer months.

Prescriptive analytics could even help determine how to properly onboard a new hire base on their skills and strengths.

Maturity Level of HR Analytics

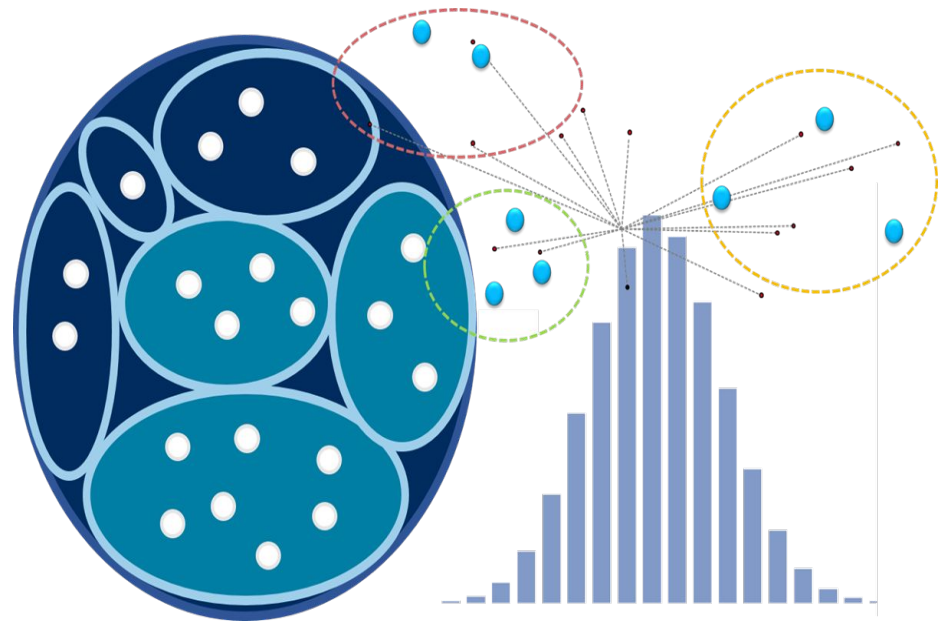


Statistical Techniques for Decision Making

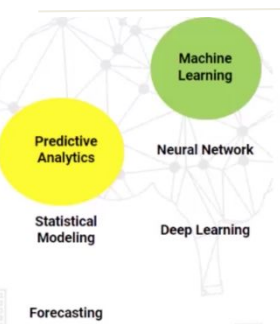
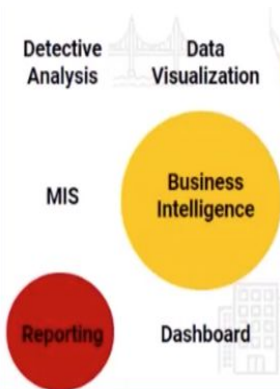


Statistical Technique & Modeling

- Measure of Central Tendency – Mean, Median, Mode, Standard Deviation
- Cross tab
- Factor Analysis
- Cluster Analysis
- Correlation
- Classification
- Association
- Regression
- Other's Analytics Techniques
- Anomaly Detection



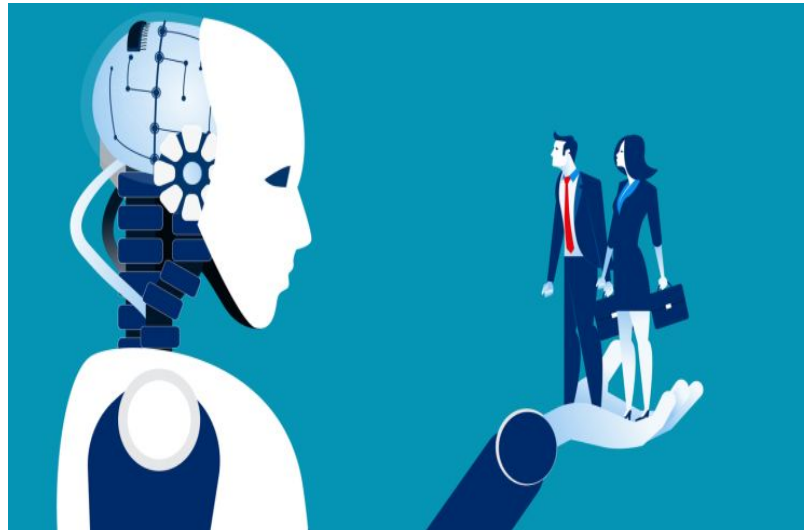
Tools used in Analytics



Company's Logos are shown for illustration purpose only

Source: Google Search

Dashboards and Visualization



HR Dashboard - Sample



HR Dashboard - Sample



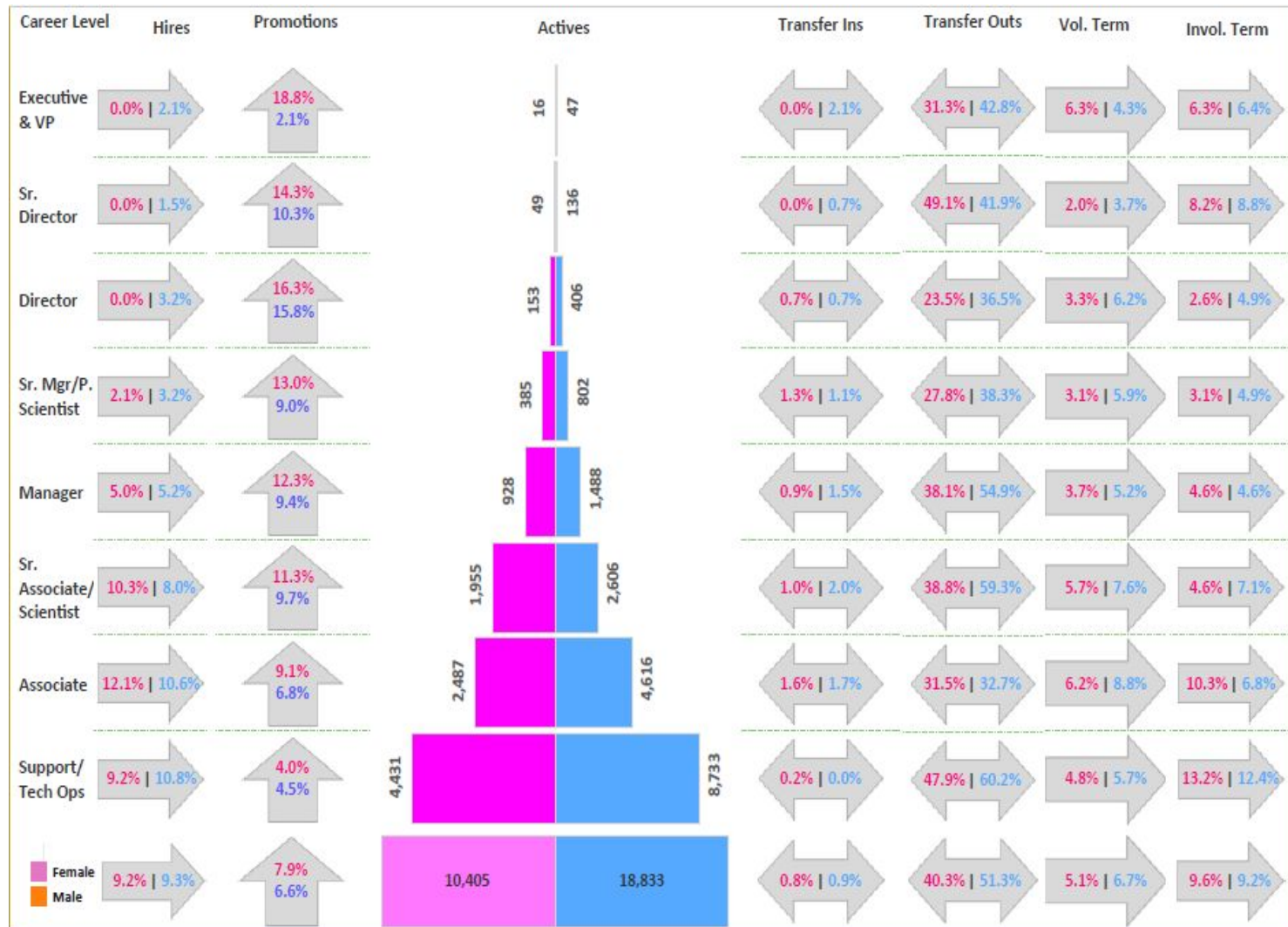
HR Dashboard - Sample



HR Dashboard - Sample



HR Dashboard - Sample



HR Dashboard - Sample

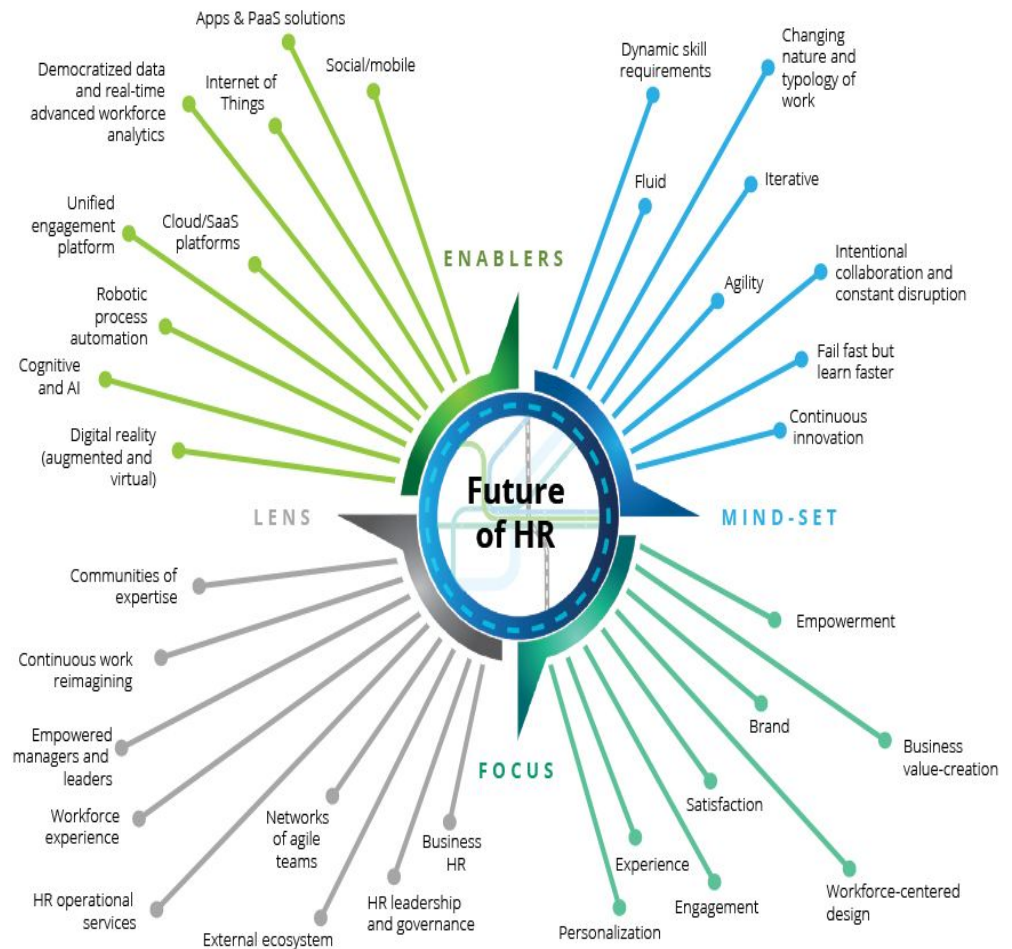


Future of HR Analytics



Future of HR Analytics

How work gets done and role of HR analytics is the main change to be witnessed by the industry...



AI in Analytics

AI enables machines to “think like humans,” and perform tasks such as learning, problem-solving, reasoning, and language processing.

AI is being driven by two fundamental technologies – machine learning and deep learning

Machine Learning - Machine learning enables machines to learn from and make predictions based on data

Key use cases of Machine Learning in the HR context:

Anomaly detection: Identify items, events or observations which do not conform to an expected pattern or other items in a dataset.

Background verification: Machine learning-powered predictive models can extract meaning and raise red flags based on structured and unstructured data points from applicants' resumes.

Employee Attrition: Find employees who are at high risk of attrition, enabling HR to proactively engage with them and retain them.

Content personalization: Provide a more personalized employee experience by using predictive analytics to recommend career paths, professional development programs or optimize a career site based on prior applicant actions.

AI in Analytics

Deep Learning - Deep learning is a branch of machine learning that trains a computer to learn from large amounts of data through neural network architecture. It is a more advanced form of machine learning that breaks down data into layers of abstraction. Instead of organizing data to run through predefined equations, deep learning sets up basic parameters about the data and trains the computer to learn on its own by recognizing patterns using multiple neural network layers for processing

Key use cases of Deep Learning in the HR Context:

Image and video recognition: Deep learning algorithms outperform humans in object classification. Given videos and photos of thousands of applicants, deep learning systems can identify and classify candidates based on objective data.

Speech recognition: While understanding human voice and myriad accents is difficult for most machines, deep learning algorithms can be designed to recognize and respond to human voice inputs. Virtual assistants use speech recognition algorithms to process human voice and respond accordingly.

Chatbots: Natural language processing (NLP) trains chatbots and similar systems to understand human language, tone, and context. NLP will emerge as a crucial capability for AI systems as organizations continue to automate HR service delivery with chatbots.

Recommendation engines: Digital learning experiences often involve personalized learning recommendations related to skill levels and professional interests. Using Big Data and Deep Learning, learning experience platforms can identify learning pathways that might interest individual employees.

Benefits of AI in HR

- Reduce Human Bias
- Improve Relationships with Existing Employees
- Improve Efficiency and Insight in Candidate Assessment
- Increase Predictive Data Decision-Making
- Expand HR as a Resource
- Become a Tactical and Strategic Asset
- Allow More "People Time" for HR
- Improve Decision-Making and Drive Results

Best Practices

Sentiment Analysis - True feedback is a combination of the quantitative and qualitative. AI-based text analysis systems can help understand the sentiments of an entire organization by placing feedback into positive, neutral and negative sentiment buckets

Smart Assistants - AI-based assistance can drive relevant and contextual alerts to managers based on conversations occurring within an organization to identify what needs to be addressed without wasting any time



Best Practices

Talent Understanding - Smart AI mechanisms can scan, read, and evaluate applicants, quickly eliminating 75 percent of them from the recruiting process. This can drastically increase the quality of hiring decisions and provide a huge timesaver for HR.

Assessments	Ratings	Resume	Profile	Public Profile	History
Dimension	Rating	Percent	Score		
Overall	★★★★☆	71%	280 / 393		
Communication Skills	★★★★☆	75%	7.5 / 10		
Video technical quality	★★★★★	100%	5 / 5		
Attention to Detail	★★★★☆	75%	24 / 32		
Empathy	★★★☆☆	50%	8 / 16		
Professionalism	★★★★☆	65%	27.5 / 42		

Chatbot Interactions - AI-powered chatbots can create streamlined and unique employee experiences based on personal interaction with every employee. This would be far too time-consuming without AI assistance and can provide benefits to onboarding procedures, training requirements, and more.

The screenshot displays a chatbot interface for 'hyphy'. The main chat area shows a message from 'hyphy' asking a survey question: 'Quick question for you, posted by a coworker in Hyphen! (🔒 Your answer is 100% anonymous)'. The question is 'How happy are you at work these days?' with five response options: 'Very much so', 'Quite so', 'So so', 'Not quite', and 'Not at all'. Below this, there is a link to 'Survey in Hyphen!' with a note that answers are 100% anonymous. The right sidebar, titled 'About this conversation', shows the chatbot's profile, 'Pinned Items', and 'Shared Files'.

Upkeeping Trends in HR Analytics

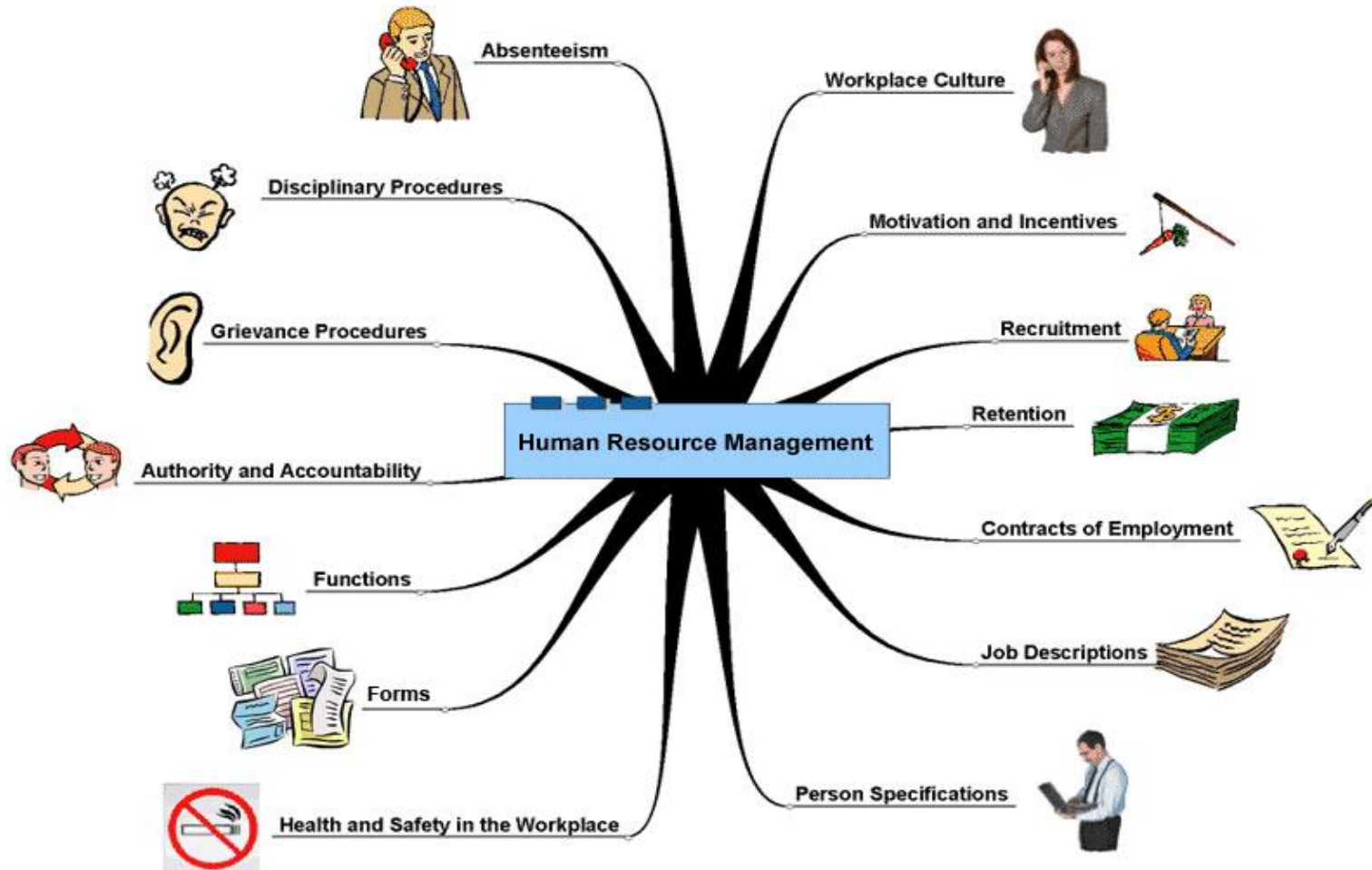
- **Augmented Analytics** - It uses machine learning (ML) and AI techniques to transform how analytics content is developed, consumed and shared.
- **Augmented Data Management** - Augmented data management leverages ML capabilities and AI engines to make enterprise information management categories including data quality, metadata management, master data management, data integration as well as database management systems (DBMSs) self-configuring and self-tuning.
- **Continuous Intelligence** - Continuous intelligence is a design pattern in which real-time analytics are integrated within a business operation, processing current and historical data to prescribe actions in response to events
- **Data Fabric** - Data fabric enables frictionless access and sharing of data in a distributed data environment. It enables a single and consistent data management framework, which allows seamless data access and processing by design across otherwise siloed storage.
- **NLP/ Conversational Analytics** - Analytical queries will be generated via search, natural language processing (NLP) or voice, or will be automatically generated. The need to analyze complex combinations of data and to make analytics accessible to everyone in the organization will drive broader adoption, allowing analytics tools to be as easy as a search interface or a conversation with a virtual assistant.

Upkeeping Trends in HR

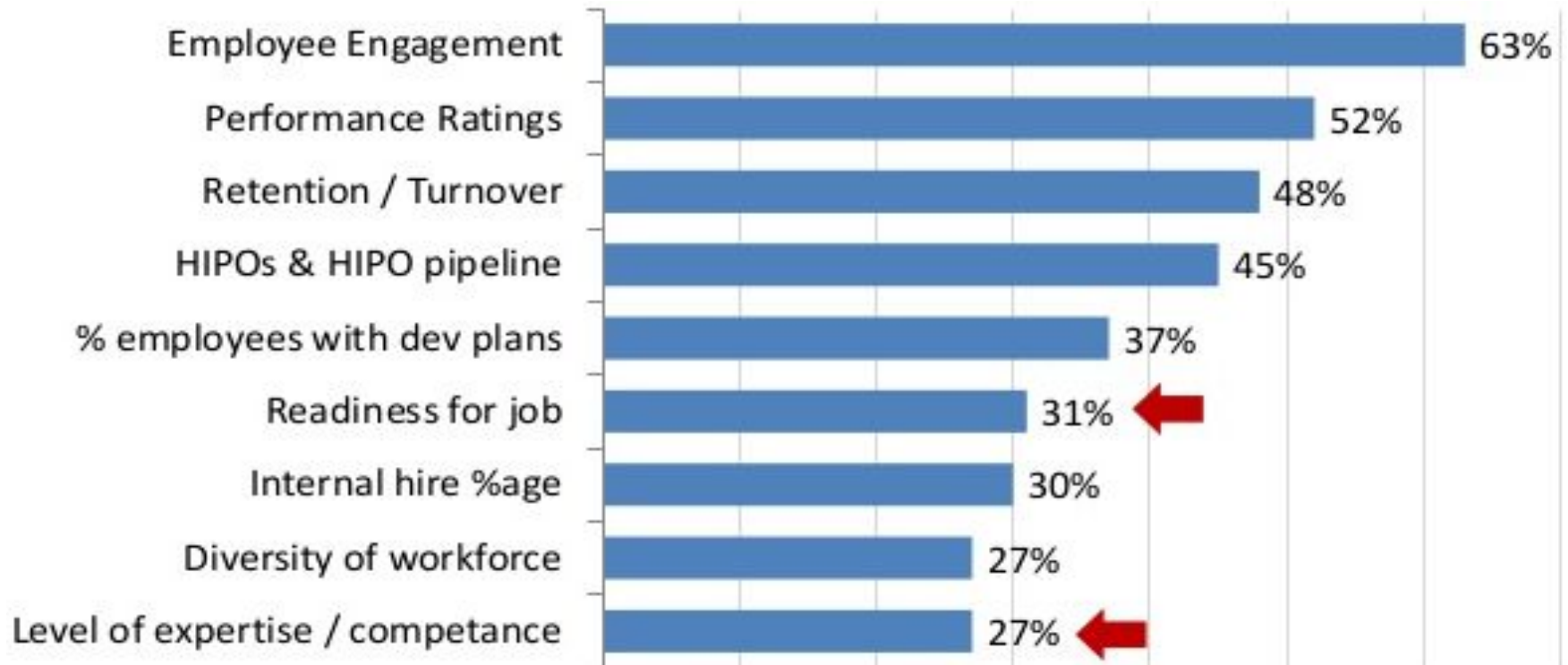
1. Interviewing via video
2. Using Gamification
3. Mandated time off
4. “Owning” unused vacation
5. Social Media Feed
6. Text Analysis
7. Sentiment Analysis



HR Matrix- Should/Could be measured



What is generally measured/tracked ?



Key Goals of HR Analytics

1. To identify opportunities for HR Impact
2. To support organization Strategic Planning
3. To priorities HR investment & actions
4. To Demonstrate the bottom-line impact of HR Practices & programs
5. To enable manager to make better decision regarding workforce engagement/management
6. To better align HR strategy with corporate strategy

Moving from HR Functional Performance to Focus on Human Capital & then moving to Productive Strategy Support to Business

Common Mistakes to avoid

- Keeping a metric live even when it has no clear business reason for being
- Relying on just a few metrics to evaluate employee performance so smart that employee can game the system
- Analyzing HR efficiency metrics only, while failing to address the impact of talent management on business performance
- Insisting on 100% accurate data before an analysis is accepted - which amounts to never making a decision
- Assessing employees only on simple measure such as grades & test scores, which often fail to accurately predict success
- Using analytics to hire lower level people but not when assessing Senior Management

Key Success in HR Analytics

- Transparency of Business & workforce information
- Analytics as a journey not an end
- Develop culture of data driven Decision Making
- Empower line leaders, not just HR & L & OD

In Nutshell, Deliver Actionable Business Information & not just build an HR Data Warehouse.....

There is nothing more powerful for a Business than “Managing Tomorrow. Today’s by properly applying analytics to its human capital

HR Skills Set

Business Acumen: Financial literacy, internal and external awareness

Human Resources: HR processes, HR knowledge, experience and judgement (sixth sense), International HR

Consulting: Problems identification, solutions and change management, project management

Data Sciences: Data awareness, Elementary statistics and comfort with numbers



SKILLS SETS

Communication: Storytelling, visuals
presenting, writing and marketing
Cross functional

Team work: ability to work in
cross-functional diverse
environment, relationship
management in both virtual and
physical space.
Organisational Psychology: ability to
research, design, apply
organisational dynamics.

Summary for Analytics

- Know your Economy
- Know your Industry
- Know your Business
- Know yourself
- Know your Specialist Domain
- Know your Technology
- Know your Data plus Interpretation
- Know your Execution Strengths
- Know your Communication Skills
- Know Your storytelling and Visualization Skills
- Know your Rewards Recognition







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