



# An overview of HR Analytics in Fortune 500 companies in IT sector in India

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## ABSTRACT:

Many IT fortune 500 companies in India are actively involved in the planning and execution of successful implementation of HR analytics across different functions of human resource in corporate world. As per the research findings, there are various effective tools which the IT sector companies are implementing and finding the loopholes in it as well. The research paper will focus on how HR analytics is guiding effectively the perfect shape of Human Resource management in the technological era.

Additionally, the gap also considers, how HR analytics helps a company in improving its efficiency and how to check if the company is ready for introducing HR analytics at functional level, what can do to prepare the organization to implement this tool.

*Key words: HR Analytics, Human resource management,*

## 1. Introduction:

The Fortune 500 companies are mentioned in the detailed description of the fortune magazine's annual ranking of the United States. There are most of the 500 plus largest corporations, which are ranked on the basis of the generated revenue, this compiled data also includes relative information to the after-tax profits, assets, stockholders' equity, market value and earnings per share for any private company. In India, the Information Technology sector consists of two major sub-industries or divisions : IT services and business process outsourcing (BPO) . The Leading Indian IT firms like Infosys, Wipro, TCS and Tech Mahindra etc, are diversified on the basis of their services offered and the major leading ideas linked in the blockchain, artificial intelligence to their clients with the potential usage of innovative hubs, research and development departments, in order to identify the difference.

The IT industry especially refers to the digital processing unit, storage and communication of information of all kinds. IT can be also be referred in computing and telecommunication technology where it provides the automatic means of handling the pertained information. Today, whether it's booking an online ticket or paying taxes or returns online or transferring the fund, it is now just a few clicks away. India's IT Services industry was born in Mumbai in 1967 with the establishment of the Tata Group in partnership with Burroughs. The first software export zone was, SEEPZ – the precursor to the modern-day IT park – was established in Mumbai in 1973.

The IT and ITes industry are one of the world's largest and fastest growing industries among various existing sectors. The technological industry rapidly booming with the findings of latest applications in all sectors of the economy and thus it is acceptable as a key enabler in overall development. In last two decades, the Information and Communication Technology (ICT) sector in India has emerged rapidly on the global stage as well. India's IT potential is on a steady march towards global competitiveness, increasing energy efficiency and meeting environmental challenges amongst others. The IT sector is broadly categorized into IT services and software, Information technology enabled services (ITes) and IT hardware products segment. Indian IT exports are forecasted to increase at 7 to 8 %. IT.

## 2. Literature review:

HR analytics is “The application of the methodology and integrated process for improving the quality of people-related decisions for the purpose of improving individual and/or organizational performance” (Bassi et al., 2010, p. 16).

This study is analysed to an extent in which Fortune 1000, selected global firms which is performance related to HR research and analytics activities is been considered along with how these data collection affects and facilitate the minute and major HR strategies, along with playing a crucial role in decision making, and execution, along with the morals and ethical implications associated with the use of predictive analytics in the context of HR decision-making. According to Faldetta(2008), “businesses in all industries require real-time intelligence to facilitate strategy formulation, decision-making, strategy planning and execution, along with organizational learning” (p. 21).

In the early 80s, the automation of some HRM processes (mainly payroll and data administration) attracted the prior attention that is primarily more focuses on various HR related examining factors that affected the adoption of an HR information system (HRIS) and the identification of HR practices that could be automated (DeSanctis, 1986; Mathys and LaVan,1982; Lederer,1984; Magnus and Grossman, 1985; Taylor and Davis, 1989). Nearly close to end of 90s the generations saw more rapid and more intensive developments in both academic research and everyday business practices. This decade showed increasing interest towards the learning new skills of HRIS among industries, although academic publications were still trying to “catch-up” with the growing HRIS practice. While these two decades (1980s and 1990s) brought awareness and a slow acceptance, with considerable doubt of information systems in HR practices, the years that followed showed rapid growth and an increasing interrelatedness between information systems and HR practices, mostly due to developments happened with the internet.

The research paper aims to explore the role of human resource (HR) analytics on existing employees of three major IT companies and their willingness to improve their performance with the help of new upcoming software's. In doing so, the paper also examines issues related to the performance appraisal (PA) system which affect employees' willingness to improve their individual and team performance and how HR analytics can be a potential solution to deal with such issues. Employees are a significant investment for any organization (SchraederandJordan,2011), as they have the power to affect organizational effectiveness (Sundaray, 2011) and to meet the increasing competition, they are expected to perform higher and better within the organisation (Biswas and Varma, 2011).

This is where HR analytics can play a significant role. Although most of the organizations till now used analytics to make financial and operational decisions, organizations have begun to use analytics for HR decisions, such as to evaluate employee performance and/or to allocate employees' time and effort. This paper examines the role of HR analytics on the PA system as well. (Lawler, Edward E, III; Levenson, Alec R; Boudreau, John W HR. Human Resource Planning; 2004; 27, 4; ABI/INFORM Global) HR functions often collect data on their efficiency, but not on the business impact of their programs and practices. If HR wants to play a strategic role in organizations, it needs to develop its ability to how human capital decisions affect business and how business decisions affects human capital. HR can play a key role in developing and implementing corporate strategy and become a high-value-added part of the organization. If hr can present a strong case for being an important part of strategy development and implementation why does it lack to be a strategic partner?

The purpose of this study was also to gain insight into the extent to which these high performing companies (i.e., high performing firms in terms of annual gross revenue) are conducting a wider range of HR research and analytics practices in the context of human resource strategy and decision making.

HR analytics has a long way to go. In this study, an attempt was made to investigate ethical judgments associated with HR research and predictive analytics. Ethical questions have begun to arise about the potential abuses of HR analytics with respect to technological advancements and mining and modelling "Big Data" (Bassi, 2011).

### **3.Objective of the study**

In recent years HR analytics has risen greatly in popularity among practitioners and consultants in the field of human resource management. To this date, however, HR analytics has not been subject to scrutiny from academic researchers. The aim of this paper is therefore to examine the rise of HR analytics over the last few years through the theoretical lens of management theory. This theoretical learning emphasises on:

1. How different companies in IT industry are involved in the human resource management field have developed and positioned HR analytics as a necessary solution to contemporary challenges. To critically examine the concept of HR analytics in identified sample companies.
2. To understand how HR analytics rose to fame and if it will fall.
3. To understand how the fortune 500 companies are using HR analytics and if they are getting real time benefit from it.

## 4. Methodology:

### 4.1 Secondary Information:

For the purpose of the research study, the collected data is based on secondary data collection technique. Where the researcher has taken care of was collected through online research papers, internet articles and books. The relevant data collected as secondary information was mostly from the previously published research paper on the upgrading graph of HR analytics, along with the HR analytics in fortune 1000 companies, the use and effectiveness of HR analytics and how companies can benefit from implementing HR analytics. We also referred to internet articles related to how **Google, Microsoft and IBM<sup>1</sup>** are using HR analytics. The kind of analytical tools they are using and how they are benefitting from it.

For conducting the research, we will be considering the sample of IT Sector, including the major 3 fortune 500 companies that is Google, IBM and Microsoft. These are the companies that are using HR analytics in their day to day operations. Google uses PiLab which is a unique subgroup that no other firm has. It conducts applied experiments within Google to determine the most effective approaches for managing people and maintain a productive environment. They have also developed mathematical algorithm that proactively and successfully predicts retention problem with employees. These are just a few of the technologies that Google is using and we will be discussing these in detail in our research paper.

Microsoft uses Workplace Analytics, a new and powerful solution that enables organizational analytics. Workplace Analytics collects metadata from Office 365 email and calendar. The aggregated and de-identified metadata includes information about subject lines, contacts, and timestamps that are related to everyday work. They also use a tool named Power BI. Their HR Analytics Solution combines the power of Workday and Power BI to give the insight you need about your Human Resources.

IBM also uses Watson Talent Insights uses workforce analytics to get fact-based answers and easily accessible insights. It helps to discover hidden patterns and relationships in talent data to provide deeper insight. They also have other programs which helps them to measure employee attrition. They also use workforce analysis.

### 4.2 Data Analysis:

In Google, the Human Resources function is termed as “People Operations”. People management decisions at Google are guided by the powerful “people analytics team”. All people decisions at Google are based on data and analytics and the goal is to bring the same level of rigor to people-decisions that we do to engineering decisions. Google is replacing the 20th century subjective decision-making approach in HR. Although it calls its approach “people analytics”, it can alternatively be called “data-based decision-making”. Google’s reinvention of its HR function through people analytics has had a dramatic impact on its business success. Google is one of the most valuable firms in the world by market capitalization thanks to its forward-thinking approach to HR and people analytics. Its approach has resulted in Google producing amazing workforce productivity results that few can match (on average, each employee generates nearly \$1 million in revenue and \$200,000 in profit each year). Some of Google’s past and current people management practices to highlight its data-driven

approach:

1. **The PiLab:** The PiLab is a unique subgroup that no other firm has. It conducts applied experiments within Google to determine the most effective approaches for managing people and maintaining a productive environment (including the type of reward that makes employees the happiest). The lab even improved employee health by reducing the calorie intake of its employees at their eating facilities by relying on scientific data and experiments (by simply reducing the size of the plates).
2. **A retention algorithm:** It developed a mathematical algorithm to proactively and successfully predict which employees are most likely to become a retention problem. This approach allows management to act before it's too late and it further allows retention solutions to be personalized.
3. **Predictive modelling:** People management is forward looking at Google. As a result, it develops predictive models and uses "what if" analysis to continually improve their forecasts of upcoming people management problems and opportunities. It also uses analytics to produce more effective workforce planning, which is essential in a rapidly growing and changing firm.
4. **An effective hiring algorithm:** One of the few firms to approach recruiting scientifically, it developed an algorithm for predicting which candidates had the highest probability of succeeding after they are hired. Its research also determined that little value was added beyond four interviews, dramatically shortening time to hire. Google is also unique in its strategic approach to hiring because its hiring decisions are made by a group in order to prevent individual hiring managers from hiring people for their own short-term needs. Under project Janus, it developed an algorithm for each large job family that analyzed rejected resumes to identify any top candidates who they might have missed. They found that they had only a 1.5 per cent miss rate, and as a result they hired some of the revisited candidates.
5. **It doesn't dictate; it convinces with data:** The final key to Google's people analytics team's success occurs not during the analysis phase but instead when it presents its final proposals to executives and managers. Rather than demanding or forcing

managers to accept its approach, it instead acts as internal consultants and influences people to change based on the powerful data and the action recommendations presented. Because its audiences are highly analytical, it uses data to change present opinions and to influence.

## 1.2 Microsoft

Microsoft has launched Workplace Analytics, a new and powerful solution that enables organizational analytics. This solution will be generally available as an Office 365 enterprise plan add-on and can provide unprecedented behavioral insights which can be leveraged to improve employee engagement, productivity, and effectiveness. We live in the era of the knowledge worker, but companies can struggle to understand knowledge work. Workplace Analytics provides visibility into how work happens, based on data from Office 365, presented as behavioral metrics. Workplace Analytics uses everyday work from Office 365 apps to connect collaboration patterns to business outcomes. It provides a way for companies to understand the behaviors and patterns across their organization and see how they influence productivity and engagement. As a result, companies can start a continuous improvement loop - fueled by real data --on what's working and what's not. Workplace Analytics collects metadata from Office 365 email and calendar. The aggregated and de-identified metadata includes information about subject lines, contacts, and timestamps that are related to everyday work. This data is converted into a set of behavioural metrics which provide insights about how the organization/ employee collaborates and spends time on a regular basis. Workplace Analytics comes with built-in compliance and privacy capabilities, where the users of Office 365 enterprise plan own the data and can, therefore, decide how they apply the insights to solve some of their tough business challenges. Workplace Analytics is equipped with flexibility and capabilities to address a variety of organizational and strategic culture-based initiatives.

Microsoft also introduced Power BI. HR Analytics Solution combines the power of Workday and Power BI to give the insight you need about your Human Resources. This can give you real-time visibility into your data allowing you to generate greater insight into your HR key performance indicators (KPIs). You can also build dashboards to monitor staff turnover, performance, or to measure the efficiency of trainings. These dashboards are easy to adopt and use by HR professionals with no IT background.

Examples of Power BI HR dashboards:

1. Turnover dashboards: Annualized voluntary turnover rate, average retirement age and percentage of new hire retention.
2. Training efficiency dashboard: Percentage of the HR budget spent on training, the ratio of internal versus external training and return on investment (ROI) for training
3. Recruitment dashboard: Average interviewing costs, job vacancies as a percentage of total positions as well as internal, external, and total headcount recruiting costs and ratios
4. Staff management dashboard: HR department cost per FTE, HR headcount, workforce productivity.

### 1.3 IBM

As the complexity of workforce challenges continues to rise, so will the demand for more quantitative approaches to deal with the increasingly difficult people related questions central to organizational success. The facility of workforce analytics lies in its ability to challenge conventional wisdom, influence behaviour, enable HR and business leaders to form and execute smarter workforce decisions, and ultimately, impact business outcomes. To understand value from investments in workforce analytics, organizations must understand: the connection and therefore their workforce strategies and their business challenges; the approaches at their disposal; and the capabilities required to translate raw HR data into defensible action. IBM believes that a spread of external and internal forces are leading organizations to use workforce analytics which may be seen below.

IBM identified the importance of applying workforce analytics to solve business problems through HR actions and interventions, such as identifying the best hiring sources or optimizing employee engagement. From their research, they found companies applying workforce analytics to address six primary business issues.

Employee Attrition: IBM has gathered information on employee satisfaction, income, seniority and some demographics. It includes the data of 1470 employees. They plan to run a Logistic regression model and CART to determine the probability of a certain employee to fall into the condition of Attrition and thus its high risk of leaving the company. They then test different parameters and probability threshold using confusion Matrixes, Area under the Curve and Gini Coefficient to determine which of the three models is the best predictor and will recommend its use in practice. Their process of classification:

1. Create an estimation sample and two validation samples by splitting the data into three groups.
2. Set up the dependent variable, employee attrition (as a categorical 0-1 variable)
3. Estimate the classification model using the estimation data, and interpret the results.
4. Assess the accuracy of classification in the first validation sample, possibly repeating steps 2-5 a few times changing the classifier in different ways to increase performance.
5. Finally, assess the accuracy of classification in the second validation sample. You should eventually use and report all relevant performance measures and plots on this second validation sample only.

IBM Watson Talent Insights: Watson Talent Insights uses workforce analytics to get fact-based answers and easily accessible insights. It helps to discover hidden patterns and relationships in talent data to provide deeper insight. It also leverages built-in cognitive capabilities to make better organizational decisions based on talent data. This helps them to predict outcomes and make confident decisions that positively impact business results.

### 5.1 Conclusion

In the research done the learnings are the major reasons behind the rise of HR Analytics and how the sample companies' data for Fortune 500 companies Google, Microsoft and IBM are using HR Analytics for utilizing their human capital. We have seen the various technologies used by all the companies to make their HR department more effective and data driven.

According to the research, from the sample responses that we have studied so far Google has best HR Analytics practices. Their PiLab is a great initiative by which they conduct experiments within Google to determine the most effective approaches for managing people and maintaining a productive environment. Every action in the HR function in Google is data driven from their hiring algorithm to the retention algorithm. All of the efforts that they put can

be seen in the satisfaction level of their employees. Their unique and scientific methods can be attributed as the reason why Google is the most desired company for many employees.

Microsoft also has some great initiatives like Power BI and Azure software and they try to implement HR Analytics in as many fields as they can but currently Google is ahead of them. IBM on the other hand has good resources with them but they have not fully implemented HR Analytics they only use it in a few dimensions thus making Google the best among the three.

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