

# Big data for managing human resources: The haves and the have nots.

Tanaya Acharekar, Avinash Palghadmal

Soft skills trainer, Pune, India.

Principle QA Engineer, Calsoft Pvt Ltd, Pune, India.

\*\*\*

**Abstract** - Big data is here to stay. From predicting an athlete's vulnerability to injury to predicting traffic, big data plays a role in every person's life. For businesses, it has illuminated the 'blind areas' and helped them take well informed decisions thereby reducing huge risk and costs. The world is becoming increasingly data driven and the HR department too is trying to catch up with the rest. As human capital is the biggest contributor to the sustainable economic value of the organization, investing in HR is priority. The paper brings out the benefits and limitations of the use of big data in managing people.

**Key Words:** Big data; Talent Analytics

## 1. INTRODUCTION

'Big Data' is going viral. With the dimension of the term 'big' changing from gigabytes and terabytes to petabytes and exabytes, big data is presenting an enormous challenge to manage and use this gigantic data. Earlier, people having information were considered kings, but now people who interpret and use the information well will rule.

By 2020, one third of the data will live in or pass through the cloud; and the data production would be 44 times greater than it was in 2009[1] Big data is all set to change the rules of the game by expanding customer intelligence, improving operational efficiencies, and making information transparent and digital; and is being viewed as the new competitive advantage.

After years of talking, people are finally serious about applying numbers to the people side of organisations. It is expected to have control over attrition, employee behaviour, motivation, people driven results and so on. In the world where everybody is leveraging the benefits of 'big data', the paper takes a sneak peak of the pros and cons of big data for managing human resources.

## 2. CONCEPT OF BIG DATA

'Big data is a term that describes the large volume of data – both structured and unstructured – that inundates a business on a day-to-day basis. [2]

According to industry analyst Doug Laney, there are three dimensions of big data: [2]

- **Volume:** There is humongous amount of data collected by organisations through a variety of sources such as social media, business transactions, sensors, etc.
- **Velocity:** Sensors, smart metering, RFID sensors are generating torrents of data at unbelievable speeds.

- **Variety:** The data is a heterogeneous mixture of video, audio, numerical data, e mails etc.

Big data has a wide range of applications right from weather, politics, sales, consumer behaviour, pricing, advertising, reducing healthcare costs, education to managing human resources and business governance.

Fig 1. takes us through the brief history of big data.

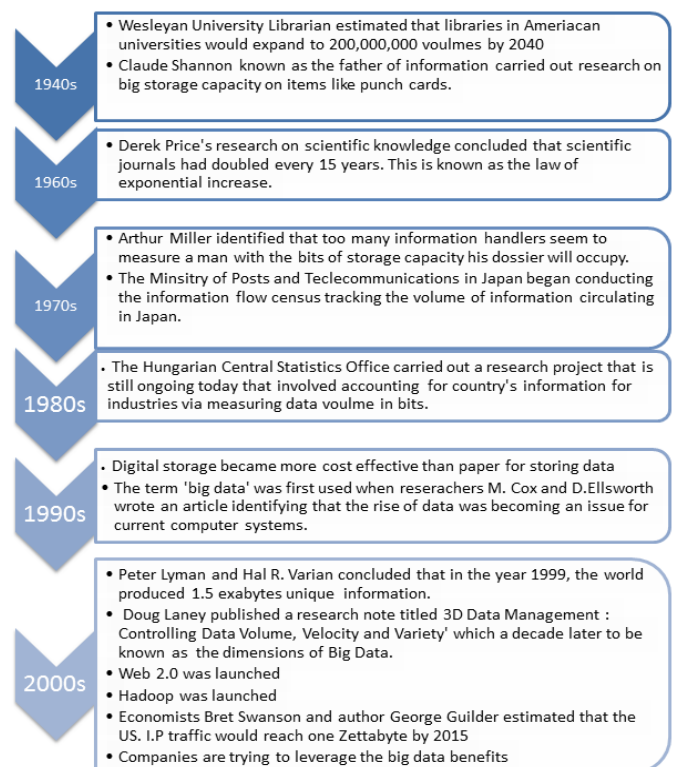


Fig -1: Big Data Timeline. [3]

## 3. NEED FOR GREATER ANALYTICS IN MANAGING PEOPLE

Human resources analytics, also called talent analytics, is the application of sophisticated data mining and business analytics techniques to human resources data. [4]

According to the Harvard Business Review, 71% of CEOs surveyed believe that human capital resource is the most important contributing factor to sustainable economic value. [5] There are a lot of statistics being put to use by the Human Resource department for its key tasks like manpower planning, training and development, employee retention, performance assessments, talent acquisition, career and

succession planning however the use of big data can support the above with greater accuracy. When it comes to making decisions on employee satisfaction and engagement, more leaders are beginning to rely on facts more than experience. [5]

As per a research carried out by Deloitte, only 14% businesses have any type of talent analytics programmers and just 4% have predictive analytics capabilities. [6] HR costs are always critical to the companies as sometimes the payroll makes up almost half of the company’s costs. Not to forget training costs, hiring costs, attrition costs also sum up to huge amounts. Use of big data would help reduce the uncertainty and bridge the gaps that exist in some of the HR functions as shown in table 1:

TABLE 1: Existing gaps in various areas of human resources [7]

| Item   | Gap |
|--|-----|
| Defining knowledge skills and capability requirements for execution of business strategy | 48% |
| Determining headcount and FTE capacity requirements by job assignments and locations     | 31% |
| Sourcing and recruiting individuals  | 22% |
| Developing training strategies   | 35% |
| Retaining valued talent within the organisation  | 38% |
| Evaluating workforce performance   | 46% |
| Determining strategies for reduction in force, redeployment and retraining               | 24% |
| Understand collaboration and knowledge sharing   | 48% |
| Developing succession plans and career paths   | 49% |

#### 4. AREAS OF BIG DATA APPLICATION IN HRM:

Big data for HR is the use of qualitative and quantitative data to bring in a predictive insight for the purpose of making decisions to manage people in organisations. Even though it may look at the past data, it essentially helps make predictions for future. Big data can be used in most of the functions of HR department such as:

- Recruitment and selection
- Training and development
- Job analysis and Job design
- Job evaluations and wage and salary administration
- Manpower planning
- Performance measurements
- Employee retention
- Career and succession planning

- Incentives and benefits
- Maintaining employee records
- Legal compliance

#### 5. THE HAVES

Use of big data for managing people offers the following benefits:

1. **Better insights:** Big data serves as a window into the professional lives of the employees. It can be used to track employee behaviour with peers, customers and it can be used to boost employee motivation, increase performance and increase employee engagement. Companies like The Container Store are using wearables to track employees when they are at work helping to gather a lot of performance data. [8]
2. **Employee retention and predicting turnover risks:** Various tools like employee satisfaction surveys, team assessments, exit interviews can be used to essentially predict and prevent attrition. By tracking employees on the job, analysing their behaviour, gathering performance data organisations can more accurately identify why employees leave and the data can also be used to improve employee job satisfaction. Xerox managed to reduce its attrition rate in call centres by 20% by using big data. [8] Google in 2009 started crunching data in a mathematical formula from employee reviews, pay histories and promotions and it was able to identify 20,000 most likely employees to quit. [5]
3. **Effective trainings:** Organisations spend a considerable amount of money on trainings and hence it is important that the money is wisely utilised. CEB’s 2014 Global Assessment Trends Report revealed that only 45 percent of its 1,400 respondents use measures of potential to guide development and succession plans. Companies can use big data to make wise training investments, track employee participation in trainings, their feedback, to see whether employees apply what they have learnt in trainings, correlate trainings and performance reviews. [8]
4. **The right hires:** Bad hires can be huge costs to companies. Big data prevents mistakes in hiring by making them more analytical and strategic. With the help of social media profiles, online resume databases, employment applications and tests, and by sorting all this information into trends, the talent pool can be narrowed down and great choices could be made. [8]
5. **Performance Measurements:** It is highly difficult to investigate as to why some employees outperform the others or predict how would be the performance of employees at certain jobs. We tend to correlate employee’s success with their grades, experience and references which do not turn out to be accurate most of the times. Linking performance to employee cost is one way to measure ROI. Big data can help probe into the matter and help employers make better decisions and

use talent of the organisation to the fullest by saving costs. [9]

6. **Better workforce planning:** The human resource department plays a crucial role in satisfying the business needs of organisations in terms of people. Talent analytics can help in it by studying the current trends, providing an inventory of skills within the organisations, studying labour movements, and predict future deficiencies. [10]
7. **Leadership forecasts:** Data on employee performance, career goals of employees could be correlated with the future position of the organisation and its demands and the same can be used to frame career and succession plans.

## 6. THE HAVE NOTS

In spite of the huge benefits associated with the use of big data for managing people, there are certain limitations to its use:

1. **Taking away of 'human' from human resources:** For a lot of employees it may be intrusive. People could be concerned about privacy, accuracy and validity of the data being tapped about them. They would be worried all the time of what the data says about them. At the end humanity is more important than data and everything in case of human beings cannot be statistical. That is what makes them unique from the other factors of production i.e. land and capital. [11]
2. **There can't be rules for everything:** Creativity amongst human beings cannot be tapped and quantified or predicted. It is worthless asking questions without being creative to get the right data and the answers. Also in case of interpretation and strategic use of big data, creativity is required. [11]
3. **An expensive affair:** Most of the budgets are often swayed towards sales and marketing and the HR department will now have to demand its share. Also specialised people would be required at all times to organise and interpret the data. Another mistake that most of the organisations do is focus on internal HR. The more we know about the market and the competitors; we could better predict our people.
4. **Big data overload:** Important clues about employee retention or morale could easily get lost in a constant flood of information as bottlenecks could push requests, demands, and concerns into absurdly long data queues. [12]
5. **Problems in interpretation:** A dedicated team of data scientists and programmers are required to handle the 'big data affair' in larger organisations. A key problem behind gathering and analysing people related data is people are highly biased and irrational. They may not always mean what they say and many a times they may not do what they say. This poses problems for data interpretation. [12]

6. **Experience v/s data:** Big data should be a man plus machine approach. For e.g. during hiring processes or assigning new projects, the discretion and experience of the person in charge cannot always be undermined. The decisions made by using the data have proved successful but they should always not be relied upon. Machines cannot take the entire control of the decisions made at the HR department. [13]
7. **Limits to quantifying:** Can there be a unit to measure enthusiasm or initiative? There are people with different sets of skills and abilities. There always couldn't be parameters available to measure such unique talents. Most companies make this mistake of treating everybody equally. [14]

## 7. CONCLUSION

The data when combined with a range of tests and measurements help organizations move closer to answering relevant questions about the organization. Big data benefits can be harnessed to most of the areas of human resources management with relatively fewer limitations if the use is made strategically at the right places, at the right times in the required areas.

## REFERENCES

- [1] Big Data Just Beginning to Explode - Interactive Infographic.(n.d.).[Online],Available: [http://www.csc.com/big\\_data/flxwd/83638-big\\_data\\_just\\_beginning\\_to\\_explode\\_interactive\\_infographic](http://www.csc.com/big_data/flxwd/83638-big_data_just_beginning_to_explode_interactive_infographic)
- [2] What is Big Data and why it matters. (n.d.). [Online],Available: [http://www.sas.com/en\\_us/insights/big-data/what-is-big-data.html](http://www.sas.com/en_us/insights/big-data/what-is-big-data.html)
- [3] Big Data Timeline. (n.d.). [Online],Available: <http://www.hcltech.com/sites/default/files/big-data-timeline.jpg>
- [4] What is human resources analytics (talent analytics)? - Definition from WhatIs.com. (n.d.). [Online],Available: <http://searchfinancialapplications.techtarget.com/definition/human-resources-analytics>
- [5] How Big-Data can help manage your Human Resource better. (2015,September 4). [Online],Available: <http://suyati.com/six-reasons-for-hr-to-leverage-big-data/>
- [6] 7 Reasons Big Data Is HR's Most Important Natural Resource. (2015,October 15). [Online],Available: <http://blog.hrtecheurope.com/7-reasons-big-data-is-hrs-most-natural-resource/>
- [7] Getting Smart About Your Workforce: Why Analytics Matter.(n.d.).[Online],Available:[http://www-935.ibm.com/services/us/gbs/bus/pdf/getting-smart-about-your-workforce\\_wp\\_final.pdf](http://www-935.ibm.com/services/us/gbs/bus/pdf/getting-smart-about-your-workforce_wp_final.pdf)
- [8] Why You Need to Embrace the Big Data Trend in HR. (2015,April6).[Online],Available: <http://www.entrepreneur.com/article/244326>
- [9] Bigdata in human resources talent analytics comes of age. (n.d.).[Online],Available:

<http://www.forbes.com/sites/joshbersin/2013/02/17/bigdata-in-human-resources-talent-analytics-comes-of-age/>

[10] Big Data and HR: Why HR Needs to Enter the Game. (2015,July22).[Online],Available:

<http://www.halogensoftware.com/blog/big-data-and-hr-why-hr-needs-to-enter-the-game>

[11] Loehr, A. (n.d.). Big Data for HR: Does Big Data Take the Human Out of Human Resources? [Online],Available:

[http://www.huffingtonpost.com/anne-loehr/big-data-for-hr-does-big-data-take-the-human-out-ofhuman-resources\\_b\\_6662816.html](http://www.huffingtonpost.com/anne-loehr/big-data-for-hr-does-big-data-take-the-human-out-ofhuman-resources_b_6662816.html)

[12] How big data can take the pain out of performance reviews.(2015,October9).[Online],Available:

<http://fortune.com/2015/10/09/big-data-performance-review/>

[13] Big Data is Changing the Game for Human-Resource Hirers.(n.d.).[Online],Available:

[http://mashable.com/2014/06/11/big-data-recruiting/#\\_UEyi.3Ggsqa](http://mashable.com/2014/06/11/big-data-recruiting/#_UEyi.3Ggsqa)

[14] Buckner, D. (2015, February 26). Big data trend now being applied to managing human resources.

[Online],Available: <http://www.cbc.ca/news/business/big-data-trend-now-being-applied-to-managing-human-resources-1.2971266>