1. Literature Review

2.1 Introduction

This part of the chapter reviews the literature published in the subject area of study to facilitate the researcher to understand the growth and development of the topic under study. The purpose of this chapter is to analyze the published literature in the relevant topics of HR Analytics, Recruitment, decision making and employee skills. To identify gaps to these research variables of this study may be located. It also assists in identifying the grey area and aspects that need further research. An extensive review of literature published in developed and developing economics was reviewed and in the process of extensive review of literature identified specific themes that could constitute the potential starting point for discussion regarding the research topic. This chapter concludes with identification of gaps in the existing literature and identifying the research problem. However, some work has already been done in this field. A brief overview of some selected studies is given in this section.

2.1.2 Working definitions

1) HR Analytics

HR Analytics is essentially the correlation of employee’s data with organization data to create employees strategies based on available information so as to positively impact business performance. It is not a technology in and of itself, but rather, a group of tools that are used in combination with one another to gain information, analyze that information, and predict outcomes of the problem and solutions.

2) Business Process Outsourcing

Outsourcing can be described as the contracting-out of the organization’s major functions and activities to an external service or goods provider.

3) Recruitment

Recruitment is a process of attracting a pool of high qualified applicants so as to select the best among them for job vacancies within an organization.

4) Decision Making

Decision-making involves the selection of a course of action from among two or more possible alternatives in order to arrive at a best solution for a given problem.
5) HR Skills

The ability to apply knowledge and use know-how to complete tasks and solve problems successfully by perform a range of tasks to a high level of performance; while maintaining the required standards needed to perform a job or set of tasks.

2.1.3 Definition of HR Analytics

Human Resource Analytics may be defined as “a broad category of applications, technologies, and processes for gathering, storing, accessing, and analyzing data to help business users make better decisions” (Watson, 2009). Vendors and academics interchangeably use “HR Analytics”, “Business Intelligence (BI)” and “Big data (BD)” to refer to similar topics. For instance, the term “business intelligence” is used by the information technology community, whereas “Business Analytics” is preferred by the business community (Sircar, 2009) while HR Analytics is used by the Human Resource executive. In this study however, the term “HR Analytics” is used to be consistent with the leading vendors and academia. The definition of “Analytics” as work which use statistics; rigorous quantitative or qualitative Analysis and information modelling techniques to shape make business decisions a broad range of activity.

HR Analytics is defined as evidence based approach that contains the elements of business intelligence, tools and methods ranging from simple reporting of HR metrics to the predictive model. The purpose of HR Analytics is to enable the organizations to make better strategic decisions on the people side of the business. HR Analytics can also be defined as the analytics which helps in the data constructing a storyline. It is mining the primary raw data for useful information ultimately relating the storyline to overall business goal. HR Analytical processes the raw data and then tries to point out the various troubled metrics of HR and highlights the critical area to work upon which helps in making important strategic decisions for the top management. Using a variety of HR and organizational data for the benefit of strategic decision making by organizing, analyzing, interpreting and presenting that data in a meaningful way and giving it predictive and prescriptive power through the application of statistical tools and techniques.

HR Analytics refer to the fusion of quantitative and qualitative data and information so as to have an insight and decision making support to the management of employees in an organization (Handa & Garima, 2014). Definition of analytical process, An Analytical process is defined as any mathematical, statistical or quantitative method combined with
information technology, which is applied to extract relevant information from data in order to make decisions based on quantitative evidence. The purpose of using HR Analytics process in business management is to assist stakeholders to make better informed decisions or to automate and optimize the process of decision making in the organization especial for recruitment of manpower.

According to Gustafsson (2012), analytics targeting human resources has been given many names in the past include; Talent Intelligence (Snell, 2011), talent analytics (Davenport, Harris and Shapiro, 2010), HR Analytics (Mondore, Douthitt and Carson, 2011) or workforce analytics (Hoffmann, Lesser and Ringo, 2012b). Bassi (2011) suggest that HR Analytics ranges from basic reporting of HR management information or metrics, to the end of the spectrum being that of predictive HR for major decision making of the organization. For the predictive modellers, HR Analytics involves forecasting, determining consequences of policy changes and looking into what if scenarios. HR Analytics is consequences of policy changes and looking into what if scenarios. HR Analytics is sometimes referred to as workforce analytics and involves using statistical models that integrate HR data to predict future employee related behaviour and events (Deloittes, 2011). In addition to this Hoffman, Lesser and Ringo, (2012b), further contend that the answer is probably both that HR Analytics is basic reporting as well as predictive modelling, not either. Bassi’s (2011) in his own definition of HR Analytics is that application of a methodology for improving the quality of people related decisions, using HR metrics all the way to predictive modelling, for organizational staffing performance improvement in decision making. Creelman (2005) surmises the different expert views on the subject of HR metrics and HR Analytics by saying that Dr Jac (Firz-Enz describes the difference as being that HR measures tends to look inward towards what the HR department is doing, whereas human capital (HC) measures look outward toward the sector. Bassi (2001) observe the essence of human capital as measures that determine and predict future business results.

Davenport and Harris (2006) define Analytics as the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions. Boudreau and Ramstad (2007) accept that there is no widely accepted definition of a talent decision science. Worth (2011) concurs with the views advanced by Boudreau and Ramstad (2007) that in HR Analytics, it is vital to measure what is important rather than what is easy. It seems that there is indeed a wide variety of views and opinions regarding what HR Analytics really are HR management information, HR metrics, predictive
HR, from data to insights. In his work, Gustafsson (2012) citing Hoffmann, Lesser, Ringo (2012b) describes HR Analytics as a concept used for denoting analytical techniques and activities used in an organization’s workforce, its employees. It concerns the importance of building a workforce that can achieve current business strategies and focus the future by predicting trends expected in the organization. These techniques are used to get insight into how to organize and motivate the workforce to meet the current and the future trends of the organization. Ingham (2011) extends the description by offering that linking various measures to for example, actual and potential recruitment levels or even something from the rest of the business, such as customer loyalty figures, may start to provide information that is valuable for decision-making.

Levenson, Boudreau and Lawler (2005) who offer a comprehensive definition of HR Analytics: “HR Analytics transforms HR data and measures into rigorous and relevant insights. It includes statistics and research design, but it goes beyond them to include identifying and articulating meaningful questions. Gathering and using appropriate data from within and outside the HR function, setting the appropriate standards for rigors and relevance, and enhancing the analytical competencies of HR throughout the organization” Robinson (2012) stated that HR Analytics is a combination of methodology and software that applies mathematical models to worker-related data, allowing leaders to optimize Human Resource Management.

2.1.4 Understanding the importance of HR Analytics

The application of analytics to manpower is not a recent idea; it has been in use for decades, Gibbons and Woock (2007) state that statistics have been used to track such things as employees’ contribution, employee benefits, manufacturing downtime, and worker productivity. To find out why do employees choose to stay with organization? One way to answer this question is by using HR Analytics to calculate what employees value most, and by using that data to create a model that will boost retention rates. This application of HR Analytics leads to predictive action, a rung on the ladder in which companies anticipate employees’ preferences and future behaviours and modify HR practices to help them hold on to their valuable employees. Help is at hand, fortunately, in the form of a new generation of workforce analytics. A variety of analytical approaches can help HR executives to link investments in workforce to a company’s returns on Human capital. More important, they can help HR leaders actively shape their organization’s future managing talent and directing programs toward the long-term needs of the organization.
The highest purpose for human capital analytics is creating predictive or leading business indicators that can inform business leaders’ strategic planning and decisions. Although the use of HR metrics is well established today, it is not yet common to parlay these metrics into analytics that serve as leading indicators for organization performance. While the interest in human capital analytics is growing and the future of this discipline holds great promise, it is still in its infancy and many barriers are holding back its wider adoption in organization working environment. “To take advantage of analytics, organizations need the integration of data, analyses and processes throughout the enterprise.” In his book ‘Retooling HR’, Boudreau takes the step of translating HR discussions into the language that business leaders already speak. (Boudreau, 2011) Vizier Inc. (2012) further recommend that when making the case to senior leadership for a major investment in HR solutions, credibility is often on the line and HR needs to speak the language of the executive audience. The late 1980’s and 1990’s brought many studies that attempted to link HR practices to organizational performance.

However, many of these studies lacked the empirical vigour required as they were limited to finding correlations between two variables, and still left the question of correlation not equating causality open (Bassi, 2011). Harris, Craig and Light (2010), HR departments are now beginning to look beyond historical data that is a by-product of transaction and compliance reporting systems. They are asking important questions about what really matters questions such as do our organizational recruiting processes create an adequate leadership pipeline?, do our organization currently have the right skills mix to achieve our goals?, what skills organization need in five years”, which people and what positions create the most value for our organization? It follows then that the ability to effectively manage the organization’s investment in human capital can spell the difference between success and failure.

Many contemporary HR systems cannot meaningfully analyze the complex dimensions of employee and leadership behaviours, workforce capabilities and HR processes that keep organizations afloat on course toward their strategic goals. As the companies, increased scrutiny falls on workforce decision makers to promote lean organizations and trim overhead while reacting to top management mandates. To do so efficiently and effectively, HR departments cannot afford to rely on historical data alone; they need advanced analytics to drive informed decisions that demonstrate an understanding not just of past behaviour, but more importantly, of current and future trends.
Workforce analytics is the ultimate tool for making a strategic workforce planning. HR analytics today is targeting critical workforce metric that link workforce strategy to business goals and results that finally provides HR a seat at the table and the integrity to make business and workforce strategy decisions by identifying cost savings opportunities, improving the retention of key talent and increasing workforce productivity and efficiency (Higgins J., Cooperstein G and Peterson M. (2011). Organizations those are capable of leveraging in data driven decision making for the workforce not only outperform their contenders, but also profit higher value to shareholders and be in a better placed to meet workforce and business demands for the future. Google has reached an extraordinary success in the marketplace by identify a strategic focus on employee management using analytics (Sullivan J, 2013). In the article “how Google is using employee analytics to completely reinvent HR” explains how Google has reinvented their focus to employee’s management which has in turn helped them to be recognized in the list of top ten successful companies. It also explains how by re aligning their HR strategy Google has changed its face of productivity. Because talent has never been more critical to organization performance, companies have never had a greater need to understand with precision what it takes to recruit, retain, and motivate employees. In its most recent annual survey of U.S. CEOs, PricewaterhouseCoopers (PwC) found more than 80 percent of respondents said that they needed talent-related insights to make business decisions. Yet most enterprises still base talent decisions on the intuition of hiring managers and HR professionals. Few can offer standardized, systematic evidence to support their hunches. In order to act fast, organizations often need to make critical organization’s decisions in real time. This is where data comes into play. Skilled leaders know that in addition to intuition and past experience, data is critical to making better business decisions. Therefore, it’s no surprise that we found an overwhelming number of organizations who were eager to move toward a culture of real-time, data driven decision making.

The usage levels in terms of the choice, applicability, and application of human resource analytics seems a blur in an Indian context. According to the Accenture report (2011), despite the emerging developments and research in developed countries, specifically the USA and UK, human capital measurement is still in its infancy stage in India. The report adds that by not taking up as it should have, the role of HR is not only negatively impacted, but undesired behaviours are created and sustained as human capital cannot be managed and measured to create and extract value to significantly contribute to an organization’s competitive and
sustained advantage. The report goes on to cite one of few international academic works in this field by Boudreau (2006), who conducted research on the creation of a framework to enable the inclusion of Human Capital information in company reporting in order to demonstrate the effect on performance. Chrysler-Fox (2011) makes a point that Kasselman’s (2006) study does not address the ‘what’ and ‘how’ of human capital metrics as part of HR. Academic research on the extent of HR Analytics in India is therefore necessary to determine usage and inform organizations how best to implement and take advantage of this noble concept of HR Analytics.

HR Analytics believes that providing access to data across the organization leads to better and more confident decisions. The understanding that there’s more involvement than just seeing the data; employees need to explore the information and make their own discoveries in order to fully process and comprehend what is presented before them. For this reason, the primary focus is creating HR Analytics that tap into these natural analytic abilities to help users act with confidence and create value in their work. In this age of big data, all executives should feel empowered and find confidence in data.

2.1.5 Evolution of HR Analytics

Many articles have been written about HR Analytics, to exploring and systematically understanding the workforce management. In 1911, Taylor initially attempted a scientific method to develop measures to capture the effectiveness of the workforce organizations. Munsterberg wrote a book relating to industrial and organizational psychology in 1913. He wrote in his book on fitting of right kind of workforce for a job, procuring the best performance for a job and finding the best possible outcome. Methods of quantitative analysis and its use in decision making were developed during the build-up of both men and material occasioned by World War II. Further study and development occurred during the great post-war industrial expansion in the United States that continued into the 1970s. In fact, many of the most common HR metrics in existence today were first considered and developed during this period (Hawk, 1967).

The measurement in Human Resources took a revolution in 1984 when pioneer Dr Jac Fitz-Enz and his sector, The Saratoga Institute, produced the first national study on HR metrics which made a radical change of the human resources administration. The HR metrics often used in organizations can be traced to the pioneering work of Dr. Jae Fitz-enz and the early benchmarking work he conducted through his Institute. Fitz-enz published How to Measure
Human Resources Management Bailey (1993) stated that in case of programmed or structured jobs, contribution of even a highly skilled and talented workforce will be limited. Because, in these cases, employees knows their job clearly. So there is no scope to user their inner ability to design new and better way to performing the job. HR practices can influence organization performance through provisions of structures like Quality circles, job rotation and cross functional structures. As per his study, maintaining efficient operations and competitive advantages require motivation of the work force to operate from remote places, development of measures to protect integrity of data and protection of customer information to check identify theft.

In addition to the research work of Fitz-enz, Sukumadas and Sawhney (2004) developed and empirically tested a theoretical model of the impact of many workforce management practices on workforce agility. The paper suggests managers adopt employee involvement practices as a set of tools to improve agility of the workforce in the organization. In Bassi (2011), cites that Fitz-Enz as advocating that HR activities and their impact on business activities can and should be measured. Firz-Enz had famously lamented that the days of anecdotal reporting are over, and that hard evidence is the new business language. This was the beginning of what is now commonly referred to as HR Analytics.

As per the Aberdeen Research (June 2012), workforce management is a big part of the core HR portfolio which includes time and attendance scheduling and absent management. In this field of practice where self service tools help individuals to be more involved with their experience and facilitate managers in taking better and informed decisions. In the current context, workforce decisions should be supported by workforce data and analytics instead of fully depending on gut feelings and instincts. Harvey (2012) stated that the global economic crisis brought sudden interest in the area of HR Analytics. However Harvey was not clear in his explanation how the workforce resulted to the global economic crisis he failed to point the root cause of the crises. During the initial application of HR Analytics, departments are ill prepared for the sudden need of the detailed analysis and reporting on workforce data and related activities. As per IBM Global Services Report (2009), the main issue is the way in which organizations of all sizes are taking decisions of their workforce during economic crises. Many sectors have only a partial understanding of the needs and requirements of their current and future workforce. They lack the insights to identify the top talents and try to retain them for the organization to achieve its goals. So they are unable to differentiate their value in the job market. Ringo (2012) explained that the organizations that use HR Analytics
have the most engaged manpower and they thrive in difficult conditions. Rouse (2012) stated that HR Analytics is a combination of methodology and software that applies statistical models to worker related data, allowing enterprise leaders to optimize human resource management. It is possible to make general and specific hiring decisions, identify the necessity for new positions, analyze and predict current and future technological needs and improve recruiting methods with the use of HR Analytics.

The role of HR is critical in enabling the organization to effectively deal with external environment challenges of employees job market; the HRM function is being emerged as a strategic partner of large corporations in formulation of organization’s strategies and in the implementation of such strategies through human resource planning, training, employment, appraisal and rewarding of personnel. Recent researches propose, however, HR is not making much advancement toward becoming a strategic partner in spite of the belief by HR professionals that it should (Lawler & Mohrman, 2003a; 2003b). The reason behind this shortfall is that HR lacks the nature of being analytic and little data based decision-making competence, needed to influence any business strategy. This situation is primarily factor HRM as a discipline has failed to develop the right metrics and analytic models. When it comes to Finance, Marketing and Operations, Department in the organizations, they have the constructive evidence of their contribution towards organizational profitability such as profit and loss statement, sales report, balance sheet, etc. HRM also often fails to establish its relationship with effectiveness of organization. Managing the Human resources is challenging for every organization, to effectively use the latent competencies and skills of employees has always been the ultimate task for HR managers. Measuring its attributes and performance is the crucial part of the HR department. These ultimate tasks can now be solved with the help of HR Analytics, which helps to transform the raw data into insightful and quantifiable decisions which can be justified. With the help of HR Analytics various workforce planning can be made in a more strategic approach. This enables the organization to have an upper hand over its competitors, as human resources have always been the vital assets of every organization.

The human element can be quantified and understood as the essence of HR Analytics. Gartner (2012) explored HR Analytics as an advanced set of data analysis tools and metrics for comprehensive workforce performance measurement and improvement. It analyzes recruitment, staffing, training and development, personnel, and compensation and benefits, as well as standard ratios that consist of time to fill, cost per hire, accession rate, retention rate,
Kiron et al. (2011) stated in MITS loan management review the concept of analytics as the use of data and related insights developed through statistical, contextual, quantitative, predictive, cognitive and other models to drive fact-based planning, decisions, or prescriptive, Lesser and Hoffman (2012) explored that analytics does not have to be a whip used to increase the stroke count associated with extracting more from individuals. Rather, it can provide the opportunity to build a more effective, empowered and engaged workforce that increased the value of the larger organization. As per SAS (2007) report, HR departments are in demand to shift from description of past events and reporting towards predicting future events Predictive modelling is the latest IT advances.

It is important to recognize that many organizations use metrics to measure or audit their HR programs and activities. Historically, the use of such audit metrics to measure the effectiveness of HR was identified by Cascio (1987) and Fitz-enz and Davidson (2002). The Society for Human Resource Management has identified a number of metrics that organizations can use to measure their HR effectiveness (SHRM, 2010)

The road to insight of organizations seeking to use HR Analytics for business advantage will follow the same path to analytical maturity: First, reporting what happened, Organizations need an accurate assessment of the way things really are, one not skewed by emotion or limited to anecdotal evidence. Second, explaining why it happened. They must diagnose the causes of whatever problems exist and create plans to address the underlying causes. Third, predicting what might or should happen. Organizations want to develop forecasting and optimizing capabilities to help them focus the road before they encounter them, or to seize opportunities that others organizations cannot perceive.

HR departments are now beginning to look beyond historical data that is a derivative of transaction and compliance reporting systems. They are asking important questions about what really matters: Do our recruiting processes create an adequate leadership pipeline? Do we currently have the right skills mix to achieve organizational goals? What skills are needed in the organization for the next six years? Which employees and what positions create the most value for our organization? For companies looking to maximize the value of every investment, human capital analytics can help direct resources toward the people and programs most essential to high performance. In today’s rapidly moving, dynamic, uncertain and highly competitive global markets, is facing major decisions and challenges in global talent management (Schuler et al, 2011; scullion et al., 2010; Tarique and Schuler, 2010). The
empirical evidence on talent management remains limited but does point to wide differences between the rhetoric of formal policies and the reality of what happens in practice. While sectors tend to recognize the importance of talent management, they often fail to manage it effectively (Scullion et al., 2007; Schuler et al., 2011; Collings et al., 2011).

The implications of framing Talent management decisions around this include questions about the extent to which decision makers search for pertinent information to guide their decision making and satisfying in terms of the level of information required before managers feel they can make a decision and stop the process of gathering more information on the matter (Simon, 1979). In practice it is unlikely that managers faced with global talent management decisions will have the time or the capability to scrutinize all possible candidates from all subsidiaries who fit the criteria (Melahi and Collings, 2010). It has been argued that in such situations decision makers are likely to select candidates closer to them who are considered based on previous experience and predispositions and cognition-based choice processes, in which bounded rational decision makers evaluate available performance data and anticipations of future potential. In his contributions over the past decade Boudreau has attempted to move the nature of talent decisions beyond such imprecise and bounded frameworks to decisions supported by scientific data and processes. The aim is to improve decision makers’ ability to make informed decisions around human capital and talent management.

The most recent contributions point to evidence of the increasing adoption of sophisticated methods of analyzing employee data in pursuit of competitive advantage (Davenport et al., 2010b). Indeed, Davenport et al. (2010b) have developed a useful topology of analytics which represents the different uses organizations can make of talent analytics. These range from simple human capital facts which include individual level performance data and enterprise level data such as head-count, turnover and recruitment metrics to sophisticated real-time deployment of talent based on quickly changing needs. However, the potential of analytics in understanding which actions have the greatest impact on business performance is also an important category in their typology which some could argue is the most significant. Understanding the impact of key roles and optimizing investments in human capital are central aspects of maximizing the efficiency of decisions around talent management (Becker et al., 2009; Collings and Mellahi, 2009; Boudreau and Jesuthasan, 2011). All in all the effective use of analytics (Davenport et al., 2010a) and proven business tools (Boudreau, 2010; Boudreau and Jesuthasan, 2011) in making talent decisions are reflective of the shift
towards evidence based management (Rousseau and Barends, 2011) and represent an important step in maximizing the contribution of the HR function to organizational decision making and performance.

Human resources functions have been in reactive mode for so long, it’s for them to fathom a systematic and holistic approach. An incremental approach to implementing HR intelligence is recommended. The introduction of HR intelligence cycle the flexible and comprehensive approach to make utilize of the disparate data sources that exist in your organization. Studies have found that companies that make fact-based workforce decisions and plans perform better than those that do not. Organizations are more likely to improve their recruiting efforts and leadership pipelines, three times more likely to realize cost savings and efficiency gains, and generate 20 percent higher stock returns (Bersin by Deloitte, 2013). Yet the vast majority of organizations today are limited to reactive, operational reporting. Fewer than 10 percent can count themselves among the elite at the top of the HR Analytics and planning maturity curve. The reason is that the path to maturity has been costly, time-consuming, and technically complex. Many articles have been written about HR’s role and in the last decade is aspiration to be seen as a strategic partner and the often quoted ‘HR’s rightful place at the boardroom table’. Boudreau (2003) frames the distinction in terms of a three-stage evolution of the HR function. In this framework, there was a personnel stage that was focused on control and compliance, the current human resources stage that focuses on delivering HR services and an emerging predictive stage that will focus on making better decisions around human capital.

Bassi and McMurrer (2007) propose that HR professionals need to be working in new, more proactive roles. These roles are necessary in order to bridge the theoretical knowledge gap so that formal training is more consistent with the expectations placed upon them by organizations. However, recent research suggests that not much progress has been made in this regard according to Gardner, McGranahan and Wolf (2011). Lawler, Levenson and Boudreau (2004) content that at least one possibility for this lack of progress could be that HR lacks the type of analytic and data based decision-making capability needed to influence strategy, thus the HR fraternity has not caught up with using the right metrics and analytic models found in other business functions.

Lawler, Levenson and Boudreau (2004) say that having analytic data about strategy is a sure way to gain a seat at the table, while only having data about HR function efficiency is not enough. The current status quo points to the fact that many organizations have good
efficiency data; however, this kind of data does not associate with HR being a strategic partner. While Boudreau and Ramstad (2003) concede that the HR profession has grown in elegance and sophistication over the years, the trend does not seem to be yielding desired results. Business leaders are measured on success based on qualities such as turnover, employee attitudes, and bench strength, and not on creating organizational change. They argue that many organizations seem to be doing the ‘right’ things, but there seems to be an increasing gap between what clients expect in terms of measurements systems and their true effects on organizational operations.

Organizations seem to be ‘hitting a wall’ and on the brink of a paradigm shift according to Boudreau and Ramstad (2004). They equate this paradigm shift to the same that the finance and marketing functions went through finance from accounting, and marketing from Sales. Furthermore, the authors echo the widely held view that the HR profession can evolve into a true decision science of talent and seek to the level of disciplines such as finance and marketing. According to Mondore, Douthitt and Carson (2011), the banking sector already uses predictive models for accessing consumer credit risk; market researchers utilize customer demographics and psychographics to predict buying patterns. The use of HR Analytics to understand impact of HR practices and policies on organizational performance is a powerful way for HR to prove its worth in organizations. Statistical tools and techniques can be used to establish causal relationships as well as predict behaviour and expected trends of manpower in the future (Lawler, Levenson and Boudreau, 2004).

2.1.6 Stages of evolution of HR Analytics

According to a 2004 Workforce Management (formerly Personnel Journal) article, Human resources activities and their impact on the bottom line could and should be measured. It is important to point out that use of analytics, like most business and technology initiatives, is not a neat and tidy process and that not every organization goes through the exact same progression. For the large companies, different departments may be travelling the same road at different speeds and with more or fewer stop signs. There is often a progression in developing an analytics culture shaped around better and faster decision making. The change in skills and decision-making processes is an evolutionary process. In their interviews with respondents who are analytics leaders, they identified a series of steps in how they initiated and spread analytics throughout the organization. Developing HR Analytics ecosystem that marks organizations that are leading the charge toward a data driven decision making process. It is important to point out that use of HR Analytics, like most business and
technology initiatives, is not a neat and tidy process and that not every company goes through the exact same progression. And in large companies, different departments may be travelling the same road at different speeds and with more or fewer stop signs.

Another caveat: Thomas Davenport, co-author of the best seller competing on analytics and other books on decision making notes that a company can be jump started into its HR Analytics journey when a key level executive that mandates the technology’s use comes aboard. In his books and articles he cites the arrival of Gary Loveman as a vice president and later as CEO at Harrah’s as the beginning of its transition to a data driven decision making process.

**Figure no. 1.1: Stages of evolution of HR Analytics**

**Source Bersin and Associates**

**Stage 1: Overreliance on managerial judgment such as intuition and instincts**

Organizations at the adopting stage are often start-ups or have leaders who tend to maintain a sector control of all decision making. The way in which they use information is highly unstructured, and often they resist change. The dangers of excessively relying on managerial instinct and experience alone are manifest. As Davenport points out, sometimes intuitive and experience-based decisions work out well, but often they either go astray or end in disaster. The results can range from companies making poor recruitment hiring decisions based on hunches to executives pursuing mergers and acquisitions driven by intuition to palliate their
egos. As noted earlier, roughly four out of ten survey respondents say that their managers often base decisions more on judgment rather than on data. Of course, management judgment remains the most common factor in decision making even today. There is often resistance to move to a data-driven culture for decision making process. The initial stage of the evolution was an inherent mistrust of statistics, says Jim Bander, national manager of decision sciences in the Risk Management department of Toyota financial services.

**Stage 2: Partial use of analytics in a few departments**

Typically analytics first take hold in a soloed manner, where they are not integrated into company decision making. They are usually a response to a specific challenge in a high profile department, such as finance or marketing. The partial and focused nature of the implementation often means that workers do not develop a deep grasp of the power of data driven decisions making and so do not develop the necessary skill set to appreciate or use analytics. Top executives and even line managers may lack the analytical skills to question the data. In addition, the data neophytes are not able to balance the insights from the data with their managerial instincts and experience. Essentially, many individuals at companies in this stage don’t understand the possibilities of using analytics in organization decision making process.

Having data and knowing how to use it are two completely different things, explains Brian Holman, director of customer support for The Standard, a Portland, Oregon based insurance company. “Knowing how to use data to understand the market place, motivate employees, and drive performance is a learned skill.” Because of the soloed nature of the analytics initiatives, there can be departmental discrepancies and duplicated efforts. These companies can have trouble encouraging interdepartmental collaboration and developing a shared vision of enterprise goals while using analytics.

**Stage 3: Expanding the use of analytics in several departments, noted by an increasing amount of collaboration.**

After companies have had success using analytics to resolve or better manage narrow but important challenges, the technology begins to expand to a few other departments. This stage is typified by structured use of analytics, with a disciplines decision making process in those units. Executives and line managers have learned to rely on past data to identify trends but also are comfortable using their managerial instincts and experience to consistently pose new hypothesis in decision making to test and improve its content. According to J.P. Morgan’s
Williams, individuals at this stage look at the past data for information on trends, patterns, or insights and they ask great questions such as How come? Then What if? They also test their theories and then run small experiments so that they can use analytics to verify, reject, or modify the theses quickly and often relatively cheaply. Companies at this level begin to develop integrated knowledge systems that balance departmental goals with enterprise goals.

Analytics becomes integrated in the culture of these divisions it is recognized as an essential corporate asset. What is interesting is how this approach mixes both data and managerial instincts. Gut feel is still valuable because there are always multiple paths for any project, and based on your experience and intrinsic knowledge of domain you can eliminate a lot of options that don’t make sense, says Oseyi Gregory Ikuenobe, an IT architect at Monsanto. “And that permits a more rigorous process for the better options to determine which is the most valuable.”

**State 4: Scaling decision making throughout all ranks of the organization in an integrated, holistic approach.**

When the benefits of analytics become clear, the technology moves deeper into the organization, empowering more workers to make important day to day decisions based on data and instincts. Frontline staff gains a higher level of knowledge that translates into faster decisions that enhance customer relationships. This enables individuals throughout the organization to be more innovative and independent and to take calculated risks that align with corporate goals. Toyota’s Bander provides the following example. Customers will often contact the finance unit’s call centre asking to skip a car payment due to actual or pending financial distress. The company built an analytics model that suggests whether the skipped payment should be allowed, based on numerous criteria such as the customer’s payment and contact history and score of the employees. But the customer services representatives are better than the statistical model is at determining whether the financial distress is based on a temporary situation such as a medical condition. This helps in making decision to propose to an individual customer, he says. The important thing is the ultimate decision is left up to the customer service representative in this case.

**Stage 5: Continuous improvement built on an evolving culture.**

Many organizations have not attained this key stage.” Bander says. The point of becoming a data driven company is to become a wiser company by making better decisions. And that isn’t simply a matter of data but a matter of fitting analytics into your corporate culture. For
example, Toyota has a culture of continuous improvement and respect for people, including consensus building. The job is to fit analytics and data driven decision making into that kaizen framework. An organization with a different corporate culture whether it’s a mass production manufacturer or a Silicon Valley start-up or a government agency would find a different way to integrate analytics into its decision making processes.

An organization at this stage is marked by the ability to adapt and expand quickly. Business intelligent and analytics are key methods of quickly stimulating, testing, and evaluating ideas. Employees become more proactive and creative. A philosophy of innovation is embedded throughout the organization, resulting in a constant flow of new ideas supported by ongoing feedback and collaboration. A key part of continuous improvement is looking ahead rather than behind. Analytics leaders’ articulate that analytics provides more value when the tools provide insights about the future rather than a snapshot of the past. They belief that predictive modelling, especially to support innovation, is currently the most advanced stage of analytics evolution.

### 2.1.7 Analytics applications in different areas of the organization

The main objective of this compilation of cases is to provide a general perspective of different applications of analytics in modern business. Therefore compilation of Analytical tools applied on different areas of the organization. It is described and exemplified how traditionally non-analytical areas have recently started to adopt quantitative approaches.

Analytical oriented companies are:

i. Sophisticated methods and technology for collection, debugging and analyzing data are present in all company. Data is adding immense value to the decision making process.

ii. High levels of understanding on employees, their motivations and behaviors, have reached through the use of analytical tools. The company can maximize the employees as result use and understanding of HR Analytics.

iii. The use of analytical tools is not limited to create reports only. Several quantitative models are built to anticipate changes, predict events or prevent undesired results.

iv. Rather than swamping to the top management with reports of any kind or activity, the information is shared in all company at the three levels: operative, tactical and strategic levels of decision making in the organization.

### 2.1.8 Analytics use in finances and accounting
It is evident that on the contemporary business environment most of the companies, regardless of its size or activity, use different analytics in order to make better and informed business decisions and therefore improve their financial performance. According to a survey carried out by Jains (2008), the most common applications of analytical tools in finances are focusing on making decisions related with further investments and values of stocks. The first proof example is the utilization of the evidential reasoning for improving the decision making. According with Yang and Singh (1994) the evidential reasoning approach is a powerful analytic tool for analyzing multiple criteria decision problems under various types of uncertainty. The Multi Criteria Decision Making (MCDM) problems can be modelled using decision matrices on which each element represents the outcome of an alternative course of action (or simply an alternative or a decision) measured against a criterion. This analytical tool has been successfully used in solving several MCDM problems, as a portfolio investment. For instance, it may be considered that there are seven different possible options for to invest a fixed amount of money. Each of these investment options has different criteria as interest rate, duration, terms and conditions. The point is to find out which investment option will bring the higher benefit given some attributes and characteristics. It is shown that the evidential reasoning approach allows researchers to make more accurate decisions in financial problems while dealing with different levels of uncertainty, unawareness or random variables.

A second example of analytical tools applied to improve financial performance is the prediction of profits by analyzing non-financial variables, for example, answering questions of this kind: How can it be ensured that the business strategy is effectively translated into financial benefits? Are the mission and vision statements aligned with the financial performance? According to (Davenport and Harris 2007), it is possible to find quantitative relationship between these two sets of variables, by performing a principal to find quantitative relationship between these two sets of variables, by performing a principal component analysis. This statistical method allows us to establish quantitative relationships between variables as training, work environment and employees morale, on one hand, and financial results on the other. In addition, a survey conducted by (Morris et al. 2002) demonstrated that the use of diagnostic tool in companies has significant impact on business performance. More specifically, the main objective for this survey was to find out the experience of 43 companies, all of them located in the USA, which had implemented a strategy based on data analysis. The results show that 54% of the surveyed companies had an
average of 112% per year on the return over investment for the five years after the implementation of any type of business intelligence systems in conjunction with numerical methods and other analytical tools (Burby and Atchison 2007). About the reasons why the companies decided to develop their analytic skills are to increase visibility on data produced, to improve data exploitation across different functional areas and increase company’s competitive advantages.

2.1.9 Analytics use in research and development

It is evident that in the area of research and development (R&D) is where analytics and statistical methods are more frequently used. According with Davenport, Harris and Morison (2010) if the R&D area is properly running, new experiments are conducted on daily basis, hypothesis are tested routinely, different controls groups are defined and new prototypes are introduced. There are several industries such as oil extraction and pharmaceutical, on which according with the law and government regulations, it is mandatory that the company runs a R&D area. The pharmaceutical sector is a remarkable example of sector with a quite developed R&D area. In this particular sector, the introduction of a new drug implies important research, in order to guarantee that drugs are safe for the users. In addition, the severity of the legal requirements for the introduction of new drugs to the market has caused that laboratories and pharmaceutical companies apply sophisticated and complex analytical methods such as clinical trials and survival analysis. It is important to remark that clinical trials are a well established discipline, which have quite standardized methods and procedures combined with cutting edge analytical tools and specialized software. According to National Health System of United Kingdom, a clinical trial is a particular type of research applied to medicine and human health which compares one treatment with another. A clinical trial may involve patients, healthy people, or both. Small studies produce less reliable results than large ones, so studies often have to be carried out on large samples before the results can be considered reliable (“NHS”, 2013). Basically the clinical trials help to determine whether: drugs are safe, treatments have collateral effects on patients or new treatments which could be better than currently available treatments.

The chemical sector is another example of sector where logical tools and statistical methods are widely applied in similar way that a R&D area. There are plenty of documented cases, on which sophisticated analytical tools are applied on this sector, for example the petroleum and plastic industries. More specifically, in Liu et al (2008) it is documented the use of multi criteria decision making methods in order to assess different projects. Usually, starting a new
R&D project implies important amounts of economic resources have been put in place. Consequently, the use of a reliable and rational evaluation system to assess the projects is important to enhance the effectiveness and the capacity of improving competitive advantages. In order to evaluate several projects, various types of attributes need to be taken into account, which may be quantitative, measured by numerical values or qualitative and assessed using subjective judgments with uncertainties. The quantitative assessment is obtained directly by measuring the attributes on each R&D project. On the other hand, the subjective judgments are often provided by a group of assessors because an individual sometimes may be incapable of providing reliable judgments due to the lack of information or experience. The evidential reasoning is a well suited tool for addressing uncertain multi criteria decision analysis problems with qualitative attributes on strategic R&D projects assessment. In addition, this logical tool includes its ability to represent incomplete and vague subjective judgments in decision making.

2.1.10 Analytics use in marketing

The first applications of analytics and statistics took place in production and operations area. At the second half of the 19th century with the advent of mass production, it was necessary to increase the process of control and the analytical tools were a powerful outfit that helped managers to reduce the source of variation. The last two decades has seen and important growth of analytical applications in areas such as sales or marketing (King 2009). The use of data analysis for making better business decisions is a practice as old as the trade itself. Since ancient times, companies have used the available data to know the reasons why their customers buy products and services. The customer behaviour has been always an issue that grasped the manager’s attention since the beginning of trading. During the last century, in the fields of marketing, advertising and sales, art has dominated over quantitative sciences. For instance, talking about marketing and promotion activities, the perception used to be more important than data analysis at the moment of making business decisions. At our present time, there may be companies that consider this approach could lead them to success, but they are not taking into account that now the customer has control over the Internet in contrast with television, radio or written media. The media has changed in the last ten years and with them the way the companies interact with the customer. Now, it is impossible for marketing specialists in companies to design a campaign based only on perceptions, emotions or other subjective approaches without reaching unsatisfactory results in the end of the campaign.
According to Burby and Atchison (2007), marketing specialists should design and create quantitative measures, analyze the available online data and combine all these information with other qualitative measures as emotions and perceptions. In other words, given the increase in complexity of the new business environment over the last years, managers need to create a hybrid approach, which is composed of quantitative and qualitative data in order to reach satisfactory results in marketing campaigns. This scenario makes clear that the emergence of the Internet has radically changed the way companies do marketing and interact with their customers in the marketing scenario. One of the most important consequences of the emergence of the internet has radically changed the way companies do marketing and interact with their customer in the marketing scenario. One of the most important consequences of the emergence of the internet is the massive amount of data that it has been generated. This big data is now available to be analyzed with several analytical tools and statistics methods. Some examples of this massive amount of data include records of bank transactions, responses to promotional emails, clicks on banners ads, personal data captured in profiles and social networks, just for mention the most relevant. In deed all these changes resulted in a new discipline called web analytics. The first analysis of data from the web dates back to the early 1990s, but according to Kaushik (2009) the web analytics was established as discipline in 2000, when there were calculated some basic metrics such as number of visits and web page views. Some years later, with the evolution of the Internet, there were incorporated another more complex analytical tools as design of experiments, Bayesian inference and multivariate methods. On the other hand, the empowerment given to the customer by the internet has been an important reason why contemporary companies are adopting customer centred approaches. Now in order to develop competitive advantages, companies need to understand how customers interact with the web site and, based on those findings, create a strategy based on customer’s behaviour rather than only considering the organization goals. The use of web analytics combined with statistical methods and specialized software allows the company to optimize the web site and gain customer loyalty. In order for the organization to develop and implement a successful strategy of web-analysis, the company may require a considerable amount of resources as technology, skilled manpower and knowledge. First the company should develop a culture of decision making based on data analysis and quantitative evidence, and incorporate the use of several analytical tools and statistic methods. This new way of making decisions must gradually replace the old methods based on perceptions and subjective judgments. Even though the analytical tools are
more widely used in areas as finances, manufacturing or production, the tendency is to incorporate them in greater scale on all areas of the company for the purpose of making better decisions with data coming from the Internet. In order to illustrate the important growing on the use of analytical tools for data coming from the Internet, there is a survey conducted by Janis (2008). This study included 345 companies located in United States. Companies were asked about the use of data from Internet for making strategic decisions. The 40% of the surveyed companies answered that data online was a tactical input on their decision making process. Moreover, 76% of the companies use data from Internet only to create several types of reports. This means that the majority of the companies were using data online to elaborate reports. The most frequently mentioned reports were: number of visits to a web page or the time spent on the web page before leaving. Davenport, Harris and Morison (2010), reporting is just the beginning of the exploitation of data and there is a disadvantage in this. The reports relate only to historical behaviour and past performance, they narrate events occurred in the past. Instead of creating reports it is possible to go further. With online information and the application of several analytical tools, it is feasible to predict trends, behaviours or to establish quantitative relationships between variables. It is also possible to conduct experiments with online data in order to predict trends or apply forecasting methods to know the probability of occurrence of a certain event. With the purpose of creating competitive advantages by the use of Internet data, it is necessary to coordinate staff, processes and technology available and exploit online data in order to perform analysis such as regression models, forecasting, predictive analysis, optimization models and inferences. The analytical tools add greater value to the company than just reporting which cannot be used in decision making without analysis of the data.

2.1.11 Analytics use in Human Resource management

Human resources management is defined as the planning, organizing, directing and controlling the development, compensation, integration and maintenance of the human resources in the organization, in order to accomplish the stakeholder’s expectations according to King (2009). For many years, it has been managed in terms of supply and demand. For institute, the organization has some vacancies to hire and the human resource area was supposed to bring as many competent candidates as possible. This traditional way of managing the human resources put emphasis on bringing people from outside rather than facilitate the necessary resources to let the current staff to grow professionally. Moreover, the
traditional approach should consider this resource as a cost for the organization rather than an investment, and thus it should be minimized at each opportunity.

The traditional approach for the human resource management has been changing in recent years and currently there is a tendency to conceive the human resource as a real intangible asset at the organization; as other tangible assets in the organization, Human resource can be quantified, measured and included in the balance sheet. According with Harris, Craig & Egan (2009), the majority of the USA large corporations have implemented a human resource information system over the last fifteen years. These information systems are able to generate massive amounts of valuable data about the company’s staff. For example, promotions per employee, trained provided in the last year, performance indices and salary level, among others. Having all this data available, it is possible to go one step further and calculate a quantitative measure of the impact that human resources have in company’s competitive advantages. For instance, it would be possible to achieve this calculation by correlating human resources investments against financial performance. Another possibility is to calculate the correlation between money invested in training versus financial performance Masese.F, Kinange. U (2015).

Davenport and Harris (2007) shows the level of quantitative expertise and accuracy that can be achieved in the human resource area. The professional sports in America and the National League Football (NFL) is a remarkable case. Specifically, some NLF teams have produced quite detailed records about their player’s performance. Using all this data, the managers make predictions for player’s performance based in sophisticated analytical models. For instance, the New England Patriots have developed a complex measurement system and indicators about the index of selfishness, teamwork willingness or emotional intelligence. By the combination of powerful computers, experts, on statistics methods and massive amount of data, the managers are able to answer questions like: What is the highest salary that we can offer to each player to renew contract for the next season? The New England Patriots, leading on introducing analytical tools for making decisions about human resources management in the NFL, have played 4 of the last 10 super bowls and have won 3. The best known case of analytical tools applied in sports is found in the book “Money ball: The Art of Winning an Unfair Game” According with Lewis (2003) the main idea behind Money ball is that reaching wisdom in baseball (about human resources: players, managers, coaches and scouts) by using intuition and personal expertise is risky and flawed. The approach with highest accuracy which leads to the best decisions is to analyze statistics such as stolen bases, runs batted in,
batting average, among other. In addition, this book widely describes how the Oakland the
general manager is adopting several analytical approaches to make decisions about players
with the goal of competing successfully against the richer competitors in Major League
Baseball (MLB). By implementing rigorous statistical analysis the athletics were able to
create new metrics (e.g. on-base percentage and slugging percentage) and later demonstrated
that those metrics leads to better results. These new metrics and the new approach for making
decisions changed the conventional baseball wisdom and beliefs in executives, managers and
coaches of the entire MLB this model can also be used to determine the decision to be made
by management during the recruitment process.

2.1.12 Figure no 1.2: Workforce Analytics and planning

Workforce Analytics and Planning

Source: Davenport and Harris 2007

2.1.13 Importance of predictive HR Analytics breakthrough

The predictability of HR has been a subject of discussion for many years, with models such
as the job requirement model being used to predict the relationship between job demands and
job resources skills available (Bakker, Demerouti and Verbeke, 2004). The manpower
planning process includes forecasting the future demand for manpower and the future internal
supply of manpower, and then developing action plans which will balance supply and demand of the organization. Curiosity in the subject of manpower planning has increased sharply during the past decade, particularly during the recent years of economic disruption. Much of the manpower literature which has appeared during the past decade has been devoted to descriptions of generalized planning models and their implications for organization development. It is important to distinguish between internal and external supply forecasts. An internal supply forecast answers the question: how many of today’s staff will still be available in the future? An external supply forecast answers the question: can the external labour market provide adequate numbers of employees to supplement internal supply in the future? When dealing with a specific functional skill group (especially in the short term), external supply is probably outside the influence and control of management.

2.1.14 Business intelligence and analytics

![Figure no 1.3: Business intelligence and analytics](image)

To answer the ultimate question of how many people to hire, lay-off, or transfer, the manpower planner should not only forecast demand several months in the future; there is need also to forecast on internal supply over the same period. In forecasting internal supply, two primary questions must be answered:
1. Out of today’s work force, how many will still be available n periods into the future?

2. The total time available from that future work force, how much will be devoted to execution of the project workload? La Grange and Roodt (2001) also studies predictability in the HR field by conducting a study to determine whether a measure of cognitive ability would significantly predict job performance among insurance sales people. The study used the statistical method of regression analysis and found that certain dimensions did predict job performance or success in a role, but that ‘verbal reasoning ability’ did not have a significant impact. However, according to Ingham (2011) predictive analytics is not all about running statistical models. There are two steps. One needs a logical framework or mental model, to think through what your problem is and identify the key variables. Then need for statistics or metrics to help determine the best decision; but people forget the first part and fixate on the metrics part only. As per the Fitz-Entz, Phillips, Ray (2012) predictive analytics moves the human capital practice further by answering questions such as what could happen and when could it happen. It is not only critical for HR departments to embrace analytics, but to move analytics from beyond analyzing what happened or what is happening to predicting and prescribing solutions that align with the general enterprise goals. The report noted, however, that while there is a strong interest in predictive analytics, the practice in still in its infancy.

The report of Institute for Corporate Productivity (2012) argues that predictive analytics are underused for human capital measures even by high performing organizations. The list of HR predictive possibilities is endless as HR organizations can use predictive modeling to better identify candidates for succession planning and career development programs. The Institute believes that with predictive HR Analytics, organizations will be able to answer questions such as: Where can we find new hires that are more likely to be superior performance?

i. Who is most likely to take up any new challenging task in the organization?

ii. Which employees are at the highest risk of voluntarily leaving the organization?

iii. Which reasons have the statistical significance to why employees leave?

iv. What is the profile of employees most likely to leave?

Fitz-Enz, Philips, Ray (2012) describe the three levels of analytics as descriptive, predictive and prescriptive. Descriptive Analysis answers questions such as “what happened” and “what is happening now”. It is the realm of common HR Analytics for many companies which report on employees and events in the past or, as they exist today. Jon Ingham’s paper,
“Using a human capital scorecard as a framework for analytical discovery” acknowledges that human resources (HR) functions have recognized the need to be more analytical, but cautions that there should be focus on better measurement rather than more measurement. This means measuring what is important, rather than what is easy to measure and making measurement meaningful so that it can be used to inform real decision making. To achieve this, there needs to be a link between strategy and analytics, and the author puts forward a series of steps to create this link development of a strategy map that identifies objectives for the employees management strategy, then creation of a scorecard identifying measures for these strategies and, finally, selection of the analytics that will best add value to the chosen measures. In doing this, a balanced approach combining the qualitative and subjective with the quantitative and objective is required, so that intuition and creativity are not lost in efforts to achieve better measurement in managerial decision making in the organization.

The second level of Analytical is predictive. Citing Bassi and McMurrer (2007), Chrysler-Fox (2011) defines prediction as the production of statistics linked to the organization’s desired business results. This helps an organization predict where it is headed, and is an important attribute of an HR measurement system that will maximize decision support for executives. The ultimate, most rigorous level of HR Analytics according to Fitz-End, Phillips and Ray (2012) is prescriptive analytics. In this case, the data answers the question what is the best course of action? This level of analytics combines predictions and decision making while taking into account the impact of those decisions. The difference with predictive analytics is that predictive describes what is possible given particular factors, while perspective suggests which course of action would be optimal given all the potential combinations of options and outcomes.

Another description of analytical capabilities is offered by (LaValle et al. 2010). The authors describe the three levels of analytical capabilities as inspirational where an organization focuses on the present, and then the experienced level where organizations focus on the current issues as well as using the information to predict the future. The ultimate level of analytical capability is what the authors describe as ‘transformed’ being where an organization not looks at the present but also to predict the future cause of events, start using the insights to prescribe what should happen in the near future hence prompting better decision making in the organization for long time survival.

2.1.15 Convention of HR Analytics

In today’s rapidly moving, dynamic, uncertain and highly competitive global job market, organizations worldwide are facing major decisions and challenges in global manpower
management (Schuler et al., 2011; Scullion et al., 2010; Tarique and Schuler, 2010). Companies seeking to use human capital analytics for business advantage will follow the same path to analytical maturity: First, reporting what happened. Organizations need an accurate assessment of the way things really are, one not skewed by emotion or limited to anecdotal evidence. Second, explaining why it happened. They must diagnose the causes of whatever problems exist and create plans to address the underlying causes. Third, predicting what might or should happen. Organizations want to develop forecasting and optimizing capabilities to help them see bumps in the road before they encounter them, or to seize opportunities that other cannot be able to focus at the moment.

HR departments are now beginning to look beyond historical data that is a result of transaction and compliance reporting systems. They are asking important questions about what really matters: recruiting processes create an adequate leadership pipeline? Currently have the right skills mix to achieve organizational goals? What skills will we need in a couple of years? Which employee and what positions create the most value for our organization? For organizations looking to maximize the value of every investment, human capital analytics can help direct resources toward the employees and programs most essential to attain high performance.

Mondore, Douthitt and Carson (2011) believe the two ways that organizations can use to execute on HR Analytics are cause-effect analysis and regression analysis. Cause-effect analysis is an approach that allows organizations to consider multi-independent and dependent variables that lead to organizational effectiveness, imply cause-and-effect relationships and calculate a more robust return on investment on employees. On the other hand, regression analysis is used to show for example, correlations between survey variables to turnover intentions. Lawler, Levenson and Boudreau (2004) maintain that most organizations currently focus on efficiency measures, even though there is some attention to effectiveness as well, by focusing on turnover, attitudes, and bench strength. However, organizations often do not usually consider the impact, as said by Boudreau and Ramstad (2003) as the relative effect of different talent pools on organizational effectiveness. Put differently, too often organizations focus on inputs such as hours of training completed rather than outputs and results such as improvements in workforce performance because of training (Harris, Craig and Light, 2010). The empirical evidence on talent management remains limited but does point to wide differences between the rhetoric of formal policies and the reality of what happens in practice. While sectors tend to recognize the importance of talent
management, they often fail to manage if effectively (Scullion et al., 2007; Schuler et al., 2011; Collings et al., 2011).

2.1.16 Radical change from gut feels towards evidence based human resource management

“Hiring an employee is more of an art than a science”. Many organizations are competent at generating employee data to inform management action, but fall short at creating frameworks in which it can be used for assessment and evaluation of employees and give a green for the next recruitment of employees. This needs to be a process of assessment and feedback whereby information is accurate, trustworthy and generated in such a way as to be easily implemented and acted on. It is important to recognize that many organizations use metrics to measure or audit their HR programs and activities. Historically, the use of such audit metrics to measure the effectiveness of HR was identified by Cascio (1987) and Fitz-enz and Davidson (2002). The move towards greater embracing of technology allows HR professionals to have more time at the strategic table. Regarding on embracing technology allows HR professionals to have a greater understanding of the drivers of employee productivity and also to measure human capital interventions more effectively. The increase in the specification of analytics and evidence, more clarity on such metrics suits the language of the executive committee and increases the impact of HR related decision making. But many of the analytics such as revenue and expense per employee, time to fill, absence rates and so forth have been around forever, without too much by way of HR image improvement. What still seems to be lacking in a systematic sense are the transformational analytics, the use of demographic data, dimensions of generational change and attributes, knowledge management and scenarios for strategic HR involvement. The promise is that technology will lead to new ways of organizing work, developing new knowledge and skills and building teams, but though this can be seen in a few elite organizations, widespread evidence of this is lacking.

The advanced research in technology and ways of measuring intangibles, the HR community is beginning to use evidence based HR. Gibbons and Woock (2007) define this as “applying scientific standards of causality to demonstrate how intangible human capital can be observed and shown to add tangible business result”. The authors maintain that practitioners of evidence based HR are motivated by the need to find critical levers for improving results, and that the methodology applies the tried and tested standards for proving causation using scientific methods. Furthermore, they continue to explain that evidence based HR serves the important and primary goal of providing genuine insight into how talent and better skills of
manpower drives business success. The array of technology available to organizations and their HR functions continues to expand and advance in sophistication (Davenport, Harris and Shapiro 2010). Wiblen, Dery, Grant (2012) cite Bassi and McMurrer (2007) who share similar views and advise organizations to use technology to facilitate the better decision making by management of employees like other more traditional financial and physical assets because managing human capital by instinct and intuition becomes not only inadequate but it can lead to poor and uncalculated decision in the organization. Kapoor and Sherif (2012) also join hands with the view that by applying advanced analytical techniques, HR practitioners can get intelligent insights, predict changes and make informed decisions at operational and strategic levels in the tedious process of making decision in organization.

2.1.17 Key HR Analytics metrics

It ought to be noted from the argument of Johnson and Dulebohn (2012) contended with over the past four decades, researchers have given attention to the need for HR metrics. Metrics are used by all core business functions and since HR is a core function, a need exists for metric to frame for HR activities in the organization. The metric is an accountability tool that enables the assessment of a function’s results, With respect to HR a primary idea has been that through metrics, HR units could build a business case for their work and this could contribute to an increased partnership between HR and the broader business functions. Fitz-Enz (2010) outlines three levels of measurement that need to be integrated when using metrics to predict future outcomes: strategic, HR Operations, and Leading Indicators; each level includes a variety of metrics that are all interrelated with each other. In terms of predictive analytics, HR departments will be able to better understand the connections between these variables and track workforce data in a variety of areas including engagement, absenteeism/turnover, revenue per full time employee, and other productivity statistics that can be effectively tied back to strategic planning initiatives (Lee, 2011). However Visier Inc. and Fisher Vista (2013) recommend that before moving onto more advanced workforce metrics, organization should focus on the three fundamental HR areas Turnover, Recruiting and Employee Performance. They warn that the reality is that the most commonly measured workforce metrics do little to help HR professionals and business leaders achieve real insight into maximizing their human capital investment in the organization.

Fink (2010) goes further and found that respondents reported a variety of areas where research and analytics were influential in their organizations. Common focus areas for analytics were employee surveys, linkages, manager and leadership assessment, recruitment quality, selection and staffing, retention and turnover, performance management, on-
boarding/lifecycle management as well as culture and employee value proposition matters. Nonetheless, Chrysler-Fox (2011) warns that there are no top measurements or metrics. He found that the importance of measurement and metrics is mediated by an exploratory approach to human capital potential and the unique organizational context and strategic validity for the organization.

### 2.1.18 HR Analytics models

The growing interest in the field of HR Analytics, have led to many models and processes have found their way into the human capital investment arsenal (Fitz-En, Philips, Ray, 2012). The knowledge and experience is often lacking to turn metrics into analytics and analytics into strategies. Many HR executives lack the capabilities to analyze data to turn metrics into analytics and use these analytics to create value as executable strategies. The knowledge that is necessary to produce HR Analytics that is relevant to organization decision making is not widely possessed or easily disseminated. Moreover, relevant analytics vary by sector and company, which can further complicate the issue. Consequently, which HR Analytics hold value for organization decision makers and how to unleash that value is challenging task. As a result, HR Analytics data are not yet being utilized and leveraged to their full potential.

### 2.1.19 Human capital analytical applications

The model by Davenport, Harris and Shapiro (2010) and Harris, Craig and Light (2011) suggests that there are six levels to track, analyze and use employee data – and these range from simplest level (data in order) to most the sophisticated (real-time optimization) as shown in the figure below

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**Figure no 1.4: Human capital analytics applications**
Source: Harris, Craig and Light (2011)

1) **Data in order: Employee database single version of the truth:** Accurate, consistent, integrated, accessible and relevant employee data speaks to the often termed ‘single version of the truth.

2) **Key segments: Critical talent management:** for the second rung, companies can use analytics to identify key segments of employees.

3) **Differentiated action: Focus HR investments:** on the third rung, sophisticated segmentation enables differentiated action. At this level, HR investments can be disproportionately made in the employee groups or workforce segments that create the most value for the sector.

4) **Predictive action: customizing the employee-value proposition:** A rung on the ladder in which companies anticipate employees’ preferences and future behaviors and modify HR practices to help them hold on to their valuable talents.

5) **Institutional action: workforce planning:** the rung on the human capital analytical ladder demands institutional action, in which a sophisticated workforce planning process is integrated with a company’s strategy, finance and other, planning process. Real-time optimization: The authors maintain this level of analytics is still in its infancy across the world, but the study found that many organizations are battling with as far back as level two or three levels (Harris, Craig and Light, 2011).

**2.1.20 HR Analytics maturity model**
The Bersin and Associates talent analytics maturity model shows that four stages that an organization goes through as it evolves from a tactical, non-strategic function into a fully integrated value and business process.

**Figure no 1.5 HR Analytics maturity model**

![HR Analytics maturity model](image)

**Source: Bersin& Associates, 2012**

The model it starts with level one as the level of relative, operational reporting of HR data. Levels move up to two where organizations start being more proactive and advanced in their reporting and include benchmarks and multi-dimensional dashboards. Level three is what Bersin (2012) classifies as strategic analytics and this involves more use of statistical analysis, development of models and segmentation. The ultimate level of maturity according to Bersin (2012) is predictive analytics which involves predictive models, scenario planning and integrates with strategic planning. At Level four organizations have a higher retention rates and generate almost three times the revenue per employee of Level one HR organizations. At Level four, which they content that only few organizations have achieved it, the HR team is not only administering the basic personnel functions, but also staying intimately involved in strategic decisions about where to invest, how to grow the business, and where performance can be improved.

**2.1.21 HR systems**

The research on HR systems by Bersin’s (2012) shows, the fact that the average large company has more than ten different HR applications and that their core HR system is more than seven years old. It takes effort and every to bring this data together and make sense of it. Most importantly of all, there is a real discipline to data analytics. It demands skills in data
analysis, cleaning, statistics, visualization and problem solving. Most HR professionals do not have to these skills. So organizations have to find these employees and bring them together to work HR data. Davenport, Harris and Shapiro (2010) use the acronym ‘DELT A’ to describe the technology as critical to mastering talent metrics. The authors talk about the importance of access to high quality data, enterprise orientation, analytical leadership, strategic targets, and analysts. The model, describes the following fundamentals needed to building analytical capacity:

**D – Data.** Reliable data for organization to analysis and make better informed decisions. Since many HR functions still work with fragmented systems, process and capabilities, it can be challenging simply to get consistent and reliable data from across the organization.

**E – Enterprise.** Strategic perspective- To take advantage of analytics, you need the integration of data, analyses and processes throughout the enterprise. Organizations need access to enterprise wide employee information for meaningful analytics.

**L – Leadership.** To advocates for analytics. For a human capital analytics program to be successful, it must be led by the right people with the right analytical skills. Source of HR Analytics initiative is dependent on support from leaders.

**T – Targeting the right analytical opportunities.** Organization’s ability to determine which of the six previously mentioned kinds of analytics should be employed and when for the highest likelihood of payoff, particularly as there is not enough HR analytical capability to run with all activities.

**A – Analytics:** Deep analytical skills. Having disciplined and methodical approaches to measuring and tracking global HR processes, capabilities and outcomes is only half the battle. The other half is building and using analytical skills throughout HR so that the organization can extract the most value from the data and metrics. For analytical theory to be put into practice, organizations not only need quantitative abilities, but also psychometrics, organizational design specialists and human resource management systems (Davenport, Harris and Shapiro, 2010).

The Delta model above alluded to in compares well with Deloitte’s building blocks, defined in the Deloitte’s Human Capital Trends (2011) report as:

**People:** What kind of organization and specific skills of employees are needed to support an analytics capability?
**Process:** What is the leading way to improve the impact of decision support tools?

**Technology:** What tools and systems are necessary for data-driven decisions?

**Data:** How do we get the optimum value out of internal and external data?

**Governance:** How will data guide decision making and who is accountable for implementing them.

### 2.1.22 HR Analytics capability in the organization

Some research has been done about how HR Analytics should be executed. Lawler Levenson and Boudreau (2004) believe several things are required to perform the kind of analytics that show a relationship between HR practices and organizational decision making of recruitment. To begin with, high quality metrics are required, followed by and perhaps more importantly, good analytical models and valid measures of company performance. However, Ulrich (2010) warns organizations to avoid HR Analytics as a means to an end. He explains that this is akin to a sports fan being consumed with the detailed statistics of the event, and not whether the team has won or lost. Further he advises to avoid measuring what is easy and rather focus on measuring what is right. In this regard, he urges HR professionals to not focus just on activities, for instance the number of employees trained, but rather on the outcome of that training or any other intervention that has been given to employee. Finally, the author advises organizations to keep measures simple and to focus on decisions. The ability to show the correlations between HR activities, HR outcomes and business outcomes is important, but even better would be once causality can be determined.

The most critical building block and challenge posed by analytical talent, according to Harris, Craig and Egan (2010), are the employees at all levels that help turn data into better decisions and better business results. They describe ‘analytical talent’ as the people who use statistics, rigorous quantitative or qualitative analysis and information-modelling techniques to shape and make business decisions. The analysts who bring the data, the quantitative analysis and the statistical models that organizations need to improve decisions while HR dashboards can dissect workforce data in numerous ways, the dashboards cannot decide which information will be of most useful to the business that is the function of HR (Kasselman, 2006). The Deloitte’s Human Capital Trends (2011) report states that when it comes to HR Analytics, the most important step is the first one: getting started. Most organizations already have the data they need and that there really is no excuse for delays to use HR Analytics to make decision in the present organizations.
2.1.23 Viewpoint for HR Analytics

Cornell University (2010) found that HR Analytics has to move in a number of directions to become beneficial for organizations that are applying it. Firstly, the survey found that analytics should be used more often for forecasting and generating predictive models. Secondly, including HR Analytics and HR data in annual reports (and most executives believe this will happen soon) would effectively spread the HR Analytics gospel. Finally, once organizations and HR professionals get better at sharing best practices and developing a common language and standards; this would speed HR Analytics maturation as a discipline. Harris, Craig and Egan (2010) offer that there will indeed be a noticeable take-up and investment in the area of analytics in the next few years, given that in a recent survey of executive at large companies in the US and UK, nearly three-quarters of participants said they are working to increase their company’s use of Analytics. The IBM (2009) survey noted that or organizations that do not currently have workforce analytics applications in place, more than half plan to develop and deploy such capabilities within the next one to five years. This reflects the significant anticipated increase in the interest, usage and investment in this subject of HR Analytics over the next few years of which it has turned to be reality of the present day.

2.1.24 Challenges and inhibitors of HR Analytics

Predicting future needs for employees it is difficult process to ascertain with guarantee since the needs and desires of the individual keeps changing yet the organization do not have control over them. To focus too far ahead time and a number of parameters with possible outcomes can reduce the forecast to informed guesswork. A detailed forecast of what skills will be needed several years out there, under different business scenarios, is critical for organization today. This demands institutional action, the next rung on the HR analytical ladder, in which a sophisticated workforce planning processes is integrated with a company’s strategy, finance and other planning processes. Since many HR functions still work with fragmented systems, processes, and capabilities, it can be challenging simply to get consistent and reliable data from across the organization. Too often, HR is strapped by many systems that generate incomparable metrics based on specific calculations. Metrics must be consistent across units and over time so that companies can compare internal groups, benchmark externally, and track casual relationships between human capital investments and performance outcomes so that the organization can predict the future cause of action. In order to manage talent strategically, organizations need to use human capital metrics that can guide
strategic decisions and actions, and not rely solely on backward looking measures that simply report the past. With the right data, HR can model and predict the performance consequences of specific strategic, workforce and labour market changes. For instance, instead of simply tracking training hours per employee, companies can forecast changes in skill requirements. It can then improve investments in talent management processes and human capital capabilities while the organization is conducting hiring process the requirement can be taken into account.

2.2. Business Process outsourcing

2.2.1 Introduction
Globalization presents many challenges to existing businesses worldwide. Organizations realized that in order to survive and grow, they needed to have a sustainable competitive advantage and need to refocus all their energies and resources on building this advantage. Prahalad and Hamel (1994) stated through their theory of core competence that companies should not try to good at everything but should concentrate on their core competencies, leaving the rest to others for the service provider who are best at doing that. Globalization also meant that companies had to be cost efficient. If the organization does not focus on costs, some other company which is cost competitive will take away the customers by delivering the same value at a lower price. Thus, companies began to restructure their business in such a way to focus on their capabilities and make the process more cost efficient. As a measure to remain globally competitive, companies started outsourcing. Outsourcing has become the mainstay of today’s business reality. Employee skill sets and their consistent delivery capability is the corner stone of successful outsourcing setup. Along with the dynamic growth comes the challenge of keeping up the momentum and motivation among its employees.
Human Resource Management plays a key role in the success of an outsourcing setup. This study aims to look at the various challenges and prevalent Human Resource practice in the business process outsourcing sector in India is faced with high attrition rate of employees (Nasscom Report 2012).

Outsourcing as a key business strategy has been used by companies in various industries for many decades. Competitive pressures have forced companies to look objectively and critically at business processes. Companies have been outsourcing manufacturing operations, business services and even entire business lines successfully for a long time now. The idea of outsourcing has its roots in the competitive advantage ‘theory propagated by Adam Smith in his book The Wealth of Nations ‘(1776). Over the years, the meaning of term outsourcing’ has undergone a sea change. What started off as the shifting of manufacturing of goods to locations or countries providing cheap labour during the industrial revolution, it has taken on a totally new connotation in today’s scenario. Today, information technology has become the backbone of businesses and plays a key role in all types of business process to another company, making it responsible of the outsourcing company. (Aral et.al. 2012) Trends of the global outsourcing functions are more and more as partnerships as taken drastic change. Outsourcing providers are taking increasing responsibility in realms that have traditionally remained in-house, such as corporate strategy, information management, business investment, and internal quality initiatives (Sinderman, 1995).

2.2.2 Outsourcing

Oxford Concise Dictionary of English describes, Outsourcing as ‘Obtaining goods etc. by contract from outside source’, contact (work) out. It highlights that one business sector is taking the service of the other either an acquisition of goods or services as may be to fulfil its needs without much efforts and developing its own physical facilities and without delay in process. A needy sector approaches the suitable sector and enters into contact for a work. The vendor sector renders services in the form of supplying goods and services by producing within its own source and supplies to the buyer sector. In return the buyer pays the agreed consideration and thus the contract is performed.

Outsourcing is a journey of two organizations seeking jointly to overcome predictable challenges (Nakkiran S John; Franklin D, 2005). BPO stands for ‘Business Process outsourcing’ which is the process through which one company hands over part of its work to another company, making it responsible for the design and implementation of the business process under strict guidelines regarding requirements and specifications from the outsourcing company (Destination India, 2009).
Likewise the World Bank defines outsourcing as the contracting of a service provider to completely manage, deliver and operate one or more of a client’s functions (e.g. data centres, networks, desktop computing and software applications) (World Bank E-commerce Development Report, 2003). Similarly, Evans (2006) refers to Outsourcing ‘as the strategic use of outside resources to perform activities traditionally handled by internal staff and resources. It is a strategy by which an organization contracts out, on a long-term basis, major functions to specialized and efficient services providers who become valued business partners. It is often defined as the delegation of non-core operations or jobs from internal production within a business to an external entity (such as a subcontractor) that specializes in that operation. It also includes management and day-to-day execution of an entire business function by a third party service provider. A common misconception about outsourcing is that in involves little more than a relocation of jobs. More than jobs, however, are affected by a company’s decision to outsource. Competencies get outsourced, and for any organization, competencies are a combination of processes, people and attitudes. A related term, offshore’, means transferring work to another country, typically overseas. Offshore is similar to outsourcing when companies hire overseas subcontractors, but differs when companies transfer work to the same company in another country. The definition of Offshore can be defined as relocation of business processes to another service provider in overseas which the cost of the service is relative cheap. Offshore concept can be described in the context of either production offshore or services offshore. The economic logic in offshore is the same as the division of labour. In related issues Ramachandran and Voleti, (2004) have defined outsourcing as transferring certain value contributing activities processes and services to the premises of one’s own or of an agent primarily to save costs and for the principal to increasingly focus on its areas of key competence of the organization in the competitive market.

2.2.3 Need for business process outsourcing

The philosophy behind BPO is specific “Do what you can do best and leave everything else to business process outsources”. BPO creates breakthrough thinking by providing a clear focus on organizations core competencies and then harnessing the unique capabilities of equally talented and focused outside partners to handle non-core competencies. Aplesh B Patel et al (2005) defines BPO as the delegation of one or more service or production to intensive business processes to an external provider, which in turn owns, administers and manages the selected process based on defined and measurable performance criteria. It is the long term contracting out of non-core business processes to an outside provider to help
achieve increased shareholder value. BPO is a business discipline built on a long term commercial relationship between a process supplier and a process consumer that is enabled by a process infrastructure and maintained at a high level of mutual commitment and collaboration (Nakkiran S John; Franklin D, 2005).

2.2.4 Evolution of business process outsourcing
Outsourcing is not a new phenomenon; it can be dated back to the time of Adam Smith, who wrote about it 200 years ago! The theory of ‘Cost Advantage’, Value Chain Concept actually paved the way in BPO. It has been in use since the beginning of the 20th century, when Henry Ford decided that instead of owning rubber plantations to produce its own, it could simply outsource them. Outsourcing has existed for many decades in the manufacturing sector, though outsourcing of services is a recent phenomenon. Services outsourcing occurs when organizations contract out services to a third party vendor, either domestically or offshore. This is also widely known as Business Process Outsourcing (BPO), which in essence means the delegation of ownership, administration and operation of a business process or processes to an external service provider (Rose and Wright, 2005). The external service provider, in turn, manages and administers the process or processes in adherence to some measurable performance metrics. These services can be delivered domestically or from abroad. Outsourcing benefits from the key advantage of specialization. If a service or component can be more effectively provided by a specialist than it can be handled in-house, then both the entities can focus on what they do best and continuously enhance performance (Adler, 2003).

Figure 2.1: Evolution of Indian BPOs and their workforce practices
2.2.5 Perspective on outsourcing

Outsourcing has long been viewed as a make versus buy decision. Traditionally, this was the relative benefit derived in economic terms on a decision of making a particular component or service, against buying it. Management theorists believed that the competitive advantage can be maintained by identifying core and non-core functions and transferring the non-core functions to a specialist. These debates evolved across time and gave birth to the concept of virtual organization, which essentially meant that the organizations should transfer non-core functions to a specialist and focus on its core functions. The management literature has often argued that non-core functions of a sector should be outsourced (e.g., Hamel and Prahalad, (1990, 1994); Venkatesan (1992), Quinn and Himler (1994). As organizations, it is argued, should primarily concentrate on its core-competence areas, from which it benefits in terms of cost or a monopolistic advantage, and outsource the manufacture of other products and services. The words of Tom Peters, as quoted by Salvetti and Shell (1995) goes as “do what
you do best, outsource the rest”. Porter’s value chain concept, drawing on industrial-organization economics, encouraged decision makers to shift their focus from the cost of component to the profit opportunity associated with the underlying activity and decide whether the user should be in the business of producing the products and service (Porter, 1980).

2.2.6 Contextual framework of the Indian BPO sector

The changes in the Indian economy had a critical role to play in the development and prospering of IT sector and eventual percolation to BPO sector. The mixed economy approach followed by Indian up to 1991 did not provide the right environment to nurture entrepreneurship and competitiveness. The Indian economy based on a centralized approach hit the bottom in the year 1991. (Houlihan, 2004) During that period India experienced a double digit rate of inflation, decelerated industrial production, a high ratio of borrowing to the GNP, and a dismally low level of foreign exchange reserves. The foreign reserves were barely sufficient to cover the cost of three weeks ‘imports. The foreign exchange requirements of the Indian government were met by pledging gold to the Bank of England. The multilateral bodies like World Bank and the International Monetary Fund (IMF) agreed to bail India out on the condition that it changed from a regulated regime to a free market economy. This dawned the new era of liberalization, where the government announced a series of changes in the economic policies starting with the devaluation of the rupee, followed by new industrial, fiscal, and trade policies. Control over the banking sector and foreign investments were eased and public sector underwent major reforms. After these reforms, the economy had to become dynamic and vibrant, and foreign reserves have gone up significantly (Budhwar et al, 2006). The outsourcing sector had come to be viewed as the primary engine of the country’s developments over the next few decades, contributing broadly to GDP growth, employment growth, and poverty alleviation (Srinivasan, 2006).

These reforms provided the trajectory for India to launch itself as a superpower in the BPO sector in the early twenty-first century. The already established IT sector and availability of large number of technically literate, English speaking employees provided the right ingredients for this growth (Budhwar et al, 2006). The large IT companies assisted the BPO sector in expanding its base the IT giants were able to offer a wide spectrum of services primarily leveraging on the broad skill sets and global clients. There has been a remarkable improvement in the type of services being offered by Indian companies from the simple beginnings.
Presently, Indian companies are offering a range of services including customer care, medical transcription, medical billing services and database marketing, to web and sales marketing, accounting tax processing, transaction document management, telesales and telemarketing, HR hiring and biotech research. According to Nasscom Strategic Review 2011, BPO is now the faster growing sector in India. Today, India is considered as the electronic housekeeper of the world since most of the outsourcing services from India are typically provided by BPO. The Indian BPO sector has matured and grown across time (Babu, 2004). In just over two decades, the sector has grown to reach nearly US$ 59 billion in export revenues, employs around two million employees, and accounts for approximately 55 percent of the worldwide BPO market (Nasscom-2001, Strategic Review). There were around 784 Indian BPO companies registered with Nasscom (Singh et al, 2009). The main activities or areas covered by the Indian BPO organizations include customer care, such as remote maintenance, help desk, and sales support; finance and administration, data analysis, medical transcription, insurance claim processing, and inventory management; HR services including payroll, credit-card services, cheque processing, and employee leasing. In addition, the BPO sector has expanded into engineering and design, animation, market research, network consultancy and management, remote education, and content development (i.e., digital content, LAN networks, and application maintenance). BPO activities, where knowledge processing is required are on the increase. Some examples of KPO include intellectual property research, legal and medical research, R&D, analytical services like equity research, information security services such as risk assessment and management, bioinformatics (for example, genome sequencing, protein modelling, and toxicology studies) procurement and global trade (Ramachandran and Voleti, 2004; Singh, 2005; Ravichandran, 2005; Christopher, 2005).

2.2.7 Operational structure of India BPO sector

The Indian BPO sector can be divided in six broad categories these include;

**Captive units:** These are units set up by MNCs and domestic companies to undertake work for the parent company.

**Third-party vendors:** These are independently owned units that execute transactions and process for multiple clients.

**Joint ventures:** This unit is setup in collaboration between an international BPO company and Indian BPO company partner.
Indian IT software companies owned: These units are created and added to the service portfolio of Indian software companies (Progeon and Spectramind).

Global BPO players: These are global companies who have set up operations in India (for example, Convergys, EDS, Accenture, Aegis, EXL, Genpact and WNS).

Global consultancies: Global companies (such as Accenture), who have been advising their clients on outsourcing are now leveraging this experience into providing actual BPO service (Economist Intelligence Unit, 2002).

The most common form of BPO operating in India is that of either Captive Units or the Third Party Vendors (Budhwar et al., 2006). As proposed by Deery and Kinnie (2004) three BPO working models can be identified the highly organized, mass production model which prioritizes call volumes, the professional services model which seeks to provide high quality individualized services and, in between, the hybrid mass customization model sharing features of both in their operations.

2.2.8 Components of BPO

In a world where IT has become the backbone of business worldwide, outsourcing is the process through which one company hands over part of its work to another company, making it responsible for the design and implementation of the business process under strict guidelines regarding requirements and specifications from the outsourcing company. This process is beneficial to both the outsourcing company and the service provider, as it enables the outsourcer to reduce costs and increase quality in non core areas of business and utilize his expertise and competencies to the maximum output in the organization (Budhwar and sparrow 1997). Outsourcing is made up of two words ‘out’ and ‘sourcing’. Sourcing refers to the act of transferring work, responsibilities and decision rights to someone else. It will be futile for a manager to expel efforts booking a business trip, as it involves intricacies such as finding fights, booking hotel rooms, reserving a rental car that, need not be remunerated at the manager’s salary.

The organization might run at a loss by having a manager conduct the administrative task rather than sourcing it to an individual who is costing the organization less in terms of salary. Hence costs, both real (the salary) and opportunity (the time, attention and effort), are important determinants in the sourcing decision. No organization is self-sufficient, nor does any organization have unlimited resources. Organization must source work that can be
conducted by others at lower cost and with greater effectiveness or it will waste valuable resources in the pursuit of capabilities that can be readily purchased from others. Sourcing is normally conducted with an external party which is external to the unit conducting the sourcing, hence the word ‘out’. An organization can outsource work to another organization or person who is external to it. Sourcing, as discussed above, is the act of transferring work from one entity to another. Outsourcing is the act of transferring the work to an external party.

Organizations are continuously faced with the decision of whether to expend resources to create an asset, resource, product or service internally or to buy it from an external party. If the organization chooses to buy, it is engaging in outsourcing (Dale, M. 1995). An outsourcing initiative calls for the transfer of factors of production, the resource used to perform the work and the decision rights. The organization transferring these is referred to as the client, the organization that conducts the work and makes decisions is the vendor, and the scope of the work is captured in a project.

**Figure no 2.2: The major components of BPO**

![Venn Diagram](image)

**Source: Nasscom report 2012**

The simple business process outsourcing model consists of 3 components as:

- The client
- The vendor
- The project
1) **The client**: A client is the person or organization that would like to outsource a given project or work. Normally, this entity is thinking about utilizing outsourcing as a strategic tool. A client can be an entire organization or a unit within an organization. If the project being outsourced is the entire IT department of the organization it can said that, the organization is the client. However, if one is only outsourcing the payroll functionality of the human resource department, the client is the human resource department, though indirectly the entire organization is also the client.

2) **The vendor**: The vendor is the service provider who takes over and conducts the outsourced work. Vendors come in many shapes and sizes. For instance, a vendor can be an external organization, which is most often the case. However, a vendor can also be a subsidiary of the organization. For instance, Dell Computers has opened operations in places like Brazil, where they own the outfits. Dell routinely sends software work to these locations because of the availability of a skilled workforce and cost savings. Hence, Dell is engaging in what might be called ‘wholly-owned outsourcing’ by outsourcing work to subsidiaries that it owns by (Wallace et.al.2000) Vendors can be differentiated based on where they are located. Some vendors are located onshore or in the same area as the client. Others are located near-shore, as in the case of potential Canadian companies for US clients. Finally, vendors can be offshore, as in the case of Indian companies for British clients.

3) **The project**: The third component is the actual work being outsourced. In the past, the most common form of such work was manufacturing or labour-intensive projects. Today, however, there is move towards the outsourcing of more complex forms of work, such as software development or Research and Development (Mark J Power; Kevin C Desouza and Carlo Boniface, 2007).

### 2.2.9 Types of models

The major types of BPO models include: Third Party BPO, captive centre Model, Build-Operative-Transfer and Joint Venture. Four of the above models are listed and explained as follows:

**A. Third party BPO**

When the BPO sector came into existence some few decades back, there was no option but to choose only the captive model. However, today there are many vendors who deliver services as diverse as data entry to animation. Overall, the advantages of off shoring to a third party
vendor rather than setting up a captive unit one in many ways is similar to the advantage of outsourcing rather than keeping the function in-house. Using an offshore supplier brings all the advantages inherent in offshore outsourcing including low cost, while allowing clients to concentrate on the core activity. In many cases, these suppliers are better at outsourced services than part of your own internal staff as it is their core business and they want to retain you as their customer as discussed by (Eby et al. 2005).

For instance, if one is running a pharmaceutical company having about 5,500 employees, one needs 60-70 people to handle benefits administration, payroll, leave, and the training needs of companies and also develop the HR strategy for the company. Off shoring to specialists like Automatic Data Processing (ADP), Hewitt or any of the third-party Indian vendors can free up the time and resources to focus on HR strategy while payroll, can be done by a third-party vendor. The advantages of Third party BPO include: scalability, competitive billing rates, access to specialist skills, ability to attract good talent, ability to handle niche and diversified tasks. The disadvantages include: high attrition, lack of direct control, higher start up costs, limited ability to handle complex tasks, higher risk of data theft, privacy and infringement of the data.

B. Captive centre model

The captive centre model is the simple to it yourself method which companies have been doing at their headquarters and now they have to replicate it in a new destination, at a lower operational cost. At the minimum, the savings by off shoring to India are 30 percent according to (Nasscom Report 2012). The more complex the work requiring experts to do it, the more is the savings as the experts come relatively cheaper in India than their counterparts back home of the outsourcing companies abroad.

While cost saving is a driver to off shoring, many companies prefer to set up captive units as it is politically correct. Off-shore results in the loss of some jobs to the host country. To mitigate negative publicity, a company may decide to set up its own operations rather than invite vendors to bid for work bank of America spent almost 18 months evaluating various business models, destinations and cost before moving work to Hyderabad. Computer major Dell is another company that has opted for a strong captive model, operating units in 18 countries around the world. In fact, it is ramping up its India presence with 7000 staff in its captive back office operations to perform technical support functions for its customers. About 60-65 percent of the revenue of the Indian BPO sector is from the captive units (Watson et al.
Captives will continue to grow in India. Wherever the needs of clients are large and desire for control is high, the captive route may be the best option. Advantages of the Captive Centre Model include: it offers high control on operations, works as a shared centre for the company; low start up costs and low operational risks, protection from data theft, privacy, and rights managed better and high sense of ownership among staff. Disadvantages of the model are that they are not scalable and they do not offer economies of scale. Also the long term costs are high in this case.

C. Build-Operate-Transfer (BOT) Model

Companies have traditionally chosen between the captive and the third party vendor models. Some companies have chosen a combination of both to spread the enterprise risk. The build-operate-transfer (BOT) modes is relatively new under which the client makes a contract with an independent vendor to undertake a process in a dedicated manner and acquire it once an agreed scale and scope has been achieved.

Under the BOT model, the entire offshore centre is built by one entity usually an offshore vendor and then transferred to another. In many cases these centres are built specifically for a single client with intention of ultimately transferring ownership. In other cases, an existing centre may be sold to a foreign buyer, complete with staff and equipment as noted by (Callaghan and Thompson 2002). The typical scenario, however, is one in which an offshore supplier has been operating a dedicated centre on behalf of the client sometimes for several years and the client decided it want to own it and run it by itself. Many offshore suppliers would prefer to sell it to the client rather than losing the contract entirely or seeing the client opens its own offshore centre. Advantages of the model are: low start up costs and operational risk, competitive billing rates and it better protects privacy and IP rights. The weaknesses of the model includes: limited control, high attrition and difficulty of transition from third party to captive. Atena and AIG are such MGCs that now own their captive offshore centres, initially built by offshore suppliers. British Airways is one of the few that have actually gone the other direction. After establishing its own offshore centre and successfully operating it for several years, the entire operation was acquired by WNS. The BOT model is gaining preference as it offers client organizations the ability to leverage the third-party vendor’s process expertise and efficient cost structure, lower transition time and
maintain a relatively higher degree of control on the outsourced operation (Snigdha Sengupa; Shelley Singh; Nelson Vinod Moses, 2007).

D. Joint venture model

The operation of the joint venture model is on the 50:50 bases. It allows setting up a BPO company in India with 50 percent equity participation from other foreigner Company. The joint venture model could be the model of the future. It marries the captive and third party model, where by core functions remain captive while less mission critical services are given out to a third party vendor (Christopher, 2005). Joint venture model has the advantages such as scalability, low risk and start-ups cost, access to specialists, local skills and competitive billing rates. It also has limitations like limited control, risk, of data theft, and instability.

2.2.10 Employee attrition in BPO Sector

Employee Attrition (also known as labour turnover) is the rate at which people leave an organization. Employee attrition has a huge economic impact on the organization, both in direct and indirect costs. In the case of knowledge industries, a departing employee may have the critical skills needed for working with specific skills in a given area in the organization, completing a step in an important process, or carrying out a task for a project which will have a greater impact on the end result of the organization (Callaghan and Thompson 2002).

In the beginning global companies were attracted to the call centre business in India due to low costs and lower attrition rates. The manpower costs in India were estimated to be around one-tenth of that in the USA; this was regarded as being relatively cheap, while attrition was lower both because of the initial attractiveness and incentives of a new kind of a job and the significantly lower number of call centre companies by (Watson et.al. 2000). In addition, jobs were offered mainly to fresh graduates at salary levels higher over the years, the activities has broadened and included maintenance of customer’s relations building rapport with the company, telesales, etc. Additionally, with the increased outsourcing by global companies, Indian employees needed to work during night hours to coincide with the business hours of the USA and the U.K. Working night shifts led to emotional stress and ailments such as sleeping disorder, depression, physiological and psychological problems. These factors gradually put pressure on the employees, resulting in the problem of increased employee attrition. The biggest problem faced by BPO organizations in India today is the increased employee attrition, which varies between 25%-50%. Attrition in the voice business is high across the globe. The new challenge facing the Indian BPO sector is deliver value and move
up the value chain. Attrition causes huge loss to the company, not only in terms of manpower but also in monetary terms. Attrition is like rust (Watson et al. 2000). Not only does attrition hamper the growth of business, it also creates an organization with no value. Culture building is impossible and that again is one of the reasons why there is such high attrition. It is a vicious circle and the biggest problem in this sector.

Various estimates suggest that losing a middle manager in most organizations, translates to a loss of up to five times his salary. This might be worse for BPO companies where fresh talent intensively trained and inducted and then further groomed to the successive stages. To ensure that attrition rates are kept to a minimum business need to redesign their reward and recognition packages to help the sector hold onto staff and to find the right kind of people who can keep pace with the unique work patterns (Nakkiran S; John Franklin D, 2005).

Repetitive low end jobs, physical and psychological problems and inadequate growth opportunities are the major reasons cited for the high attrition rate. This disadvantage has increased the operating costs of BPO organizations and is considered to be a threat to the sector. BPO organizations earlier paid huge salaries to attract a large number of employees. Though the big packages and sophisticated work environment in BPOs succeeded to attract a large pool of youngsters, they failed to sustain the pod. And the reasons range from physiological fatigue, psychological stress to fear of an elusive future (Callaghan and Thompson 2002). It is a fact that, retention of key employees is critical to the long-term health and success of any organization. The performance of employees is often linked directly to quality work, customer satisfaction, and increased product sales and even to the image of a company. Whereas the same is often indirectly linked to, satisfied colleagues and reporting staff, effective succession planning and deeply embedded organizational knowledge and learning. Employee retention matters, as, organizational issues such as training time and investment, the expenses of candidate search etc., are involved. Hence, failing to retain a key employee is a costly proposition for any BPO organization (Attrition in the BPO, 2007).

However another interesting finding that emerged from prior researches and focused group interviews taken for pilot survey is that reducing attrition may not always mean increasing retention. Attrition may reduce if the negative characteristics of the job are taken care of. However, that does not indicate employees increase their willingness to stay in the same organization. Thus, different set of factors emerged for attrition and retention respectively. Looking at the big picture of the much realized potential of the BPO sector in India and the impending curse of attrition in this sector, it can be understand that the problem cannot be
overlooked (Singh et al, 2009). There is dire need of tackling the problem of attrition in the BPO sector of India and for this HR Analytics has been chosen as an effective tool? There is need to develop a concurrent strategic method, an innovative and proactive development paradigm that can be utilized to curb the ever-increasing attrition rate in the BPO sector by enhancing the quality of the employees who are recruited to the BPO sector to address the current problem in this sector.

2.3 Recruitment
2.3.1 Introduction to Recruitment

Recruitment is the set of activities and processes used to legally obtain a sufficient number of qualified manpower at the right place and time, so that, the employees and the organization can select each other, in their own best, short and long term goals. In today’s competitive business world it is difficult to survive without highly qualified manpower. It is obvious that successful recruitment will be expensive and time consuming. But unsuccessful recruitment can be cause of the death of the business; therefore recruitment process provides the organization with a pool of potentially qualified candidates from which, judicious selection can be made to fill the vacancies. Recruitment makes it possible to acquire the number and types of employees necessary to ensure the continued operation of the organization (Gueutal and Stone, 2005). Companies are now looking out for new ways of giving themselves a competitive advantage. Now product, new image and new marketing idea are some of the ways this can be achieved but enlightened and successful companies look towards their manpower to provide the leading edge. Successful recruitment begins with proper employment planning and forecasting. In this phase of the recruitment process, an organization formulates plans to fill or eliminate future job openings based on an analysis of the future needs, the talents available within and outside the organization, and the current and anticipated resources, that can be expended to attract and retain such talent. Related to the success of recruitment process are also the strategies, while an organization is prepared to employ in order to identify and select the best candidates for its developing pool of human resources. Organizations seeking recruits for base level entry positions often require minimum qualification and experience. These applicants are usually recent university/technical college graduates, many of whom have not yet made clear decisions about the future career or are contemplating, engaging in advanced academic activity.

At the middle level, senior administrative, technical and junior executive positions are often filled internally by (Braddy et al., 2009). The push for scarce, high-quality talents are often recruited for external sources has usually been at the senior executive level. Most organizations utilize both mechanisms for effective recruitment at all levels. Most organizations utilize both mechanisms for effective recruitment at all levels. Recruitment may be conducted internally through the promotion and transfer of existing personnel or through
referrals, by current staff members, or friends and family members. Where internal recruitment is the chosen method of filling vacancies, job openings can be advertised by job posting, that is, a strategy of placing notices on manual and electronic bulletin boards, in company news-letters and through office memoranda. Referrals are usually word-of-mouth advertisements that are a low-cost-per-hire way of recruiting (Christopher, 2005). Internal recruitment does not always produce the number or quality of personnel needed; in such an instance, the organization needs to recruit from external sources, either by encouraging walk-in applicant or advertising vacancies in newspapers, magazines and journals, and the visual or audio media; using employment agencies to “head hunt”; advertising online via internet; or through job fairs and by using campus recruitment methods in educational institutions.

External recruiting methods can be grouped into two classes: informal and formal. Informal recruiting methods tap a smaller market than formal methods as explained by Stone and Lukaszewski, (2009). These methods may include rehiring former employees and choosing from among those “walk-in” applicants, whose unsolicited resumes had been retained on file. The use of referrals also constitutes an informal hiring method because, they are relatively inexpensive to use and can be implemented quickly. Informal recruiting methods are commonly used for hiring clerical and other base level recruits who are more likely than other groups to have submitted unsolicited applications.

Formal methods of external recruiting entail searching the labour market widely for candidates with no previous connection to the organization. These methods have traditionally included newspaper/magazine/journal advertising, the use of employment agencies and executive search sectors, and campus recruitment. Further now of the late, job/career fairs and E-Recruiting are reaching the job seeker market. Posting vacancies externally through the various arms of media or via employment agencies reach a wider audience and may turn up a greater number of potential candidates from which the organization can choose. At the same time, this method is relatively expensive and time consuming as the organization works through initial advertisements, short listing, interviewing and the other processes that precede selection (Aguinis and Lawal 2012). Even then, there is no guarantee that the results will be satisfactory to the organization, since the cost of advertising often limits the frequency and duration of the job posting as well as the amount of information made available, thus making it difficult for a job seeker to accurately judge the work of the position being offered. In addition, the organization may hire a candidate who fails to live up to the high potential displayed during the selection process. Most homes and workplaces now use computerized
equipment for communication; the internet is rapidly becoming the mode of choice for accessing and sharing information. First-time job seekers are now more likely to search websites for job postings, than to preview newspapers, magazines and journals. Online recruiting also provides access to passive job seekers, individuals who already have a job, but would apply for what appears a better offer that is advertised on the Internet. These job seekers may be of better quality since they are not desperate for a job change as are the active job seekers who may be frustrated, disgruntled workers, looking for a new position.

Companies that are likely to advertise online usually have a website to apply, thus lowering the incidence time, wasting through the submission of unsuitable applications. The website can be used as a tool to encourage potential job seekers to build an interest in joining the organization.

Job websites can be used, not only to post vacancies, but also to publicize the organization. This allows candidates to become more familiar with the company, seek what skills the company is looking for and get to know about its culture. Most importantly, the system provides a proper path to securing quick responses to job openings. Online recruiting facilitates the decentralization of the hiring function by making it possible for other groups in the organization to take responsibility for a part of the function (Brown and Charlier, 2012). The increasing globalization of the marketplace combined with an ever increasing shortage of skilful staffs and advances in technology have resulted in large scale changes to the recruitment practices throughout the world. The recruitment process in an organization nowadays can be organized in a variety of ways. It can be coordinated in-house or by an external recruitment agency. Smaller organization may have limited staff or budget to run their own recruitment agencies because they do not have a recruitment function of their own. Many organizations have moved to outsourcing all of their non-core activities. The recruitment agency can recruit candidates through several of methods such as newspaper advertisement, online job portals, their own websites, and walk-in interviews and so on (Zulkifli Musa, 2008). Many companies would advertise the job vacancies even though they are not hiring, as they are accumulating candidate database for agency’s future references. However, for head hunters, they would normally approach highly competent employees directly, due to the fact that most people who are good at their job are not actively looking for jobs.

In the present 21st century, most organizations have shifted their external recruitment method attention from recruitment agency to online recruitment. Online recruitments which operate
without consultants and need fewer administrative support employees of online recruitment with an increasing ability to less costly recruitment which is faster and flexible. Job postings on employer Web sites; online newspaper classified advertisement; and job matching Internet sites operated by educational institutions and professional associations complete with this sector thereby start to limit the growth of recruitment agency (Cardy and Miller, 2005). Thus, this study was conducted to find ways to maximize the roles of recruitment agency in staffing activities.

The objectives of manpower decisions maker is to design recruitment and training strategies based on three main factors

1. The current available skill pool
2. The average attrition rate
3. The forecast manpower demand in the future.

Skills loss due to attrition has to be considered when formulating recruitment strategies. Any existing gap between demand and supply has to be covered up over time. As such, skills loss and skills gap should be averaged over time and be used as feedback to the manpower system. Therefore, in a dynamic corporate environment, recruitment policies are to be formulated according skills loss (attrition) averaging time, skills gap averaging time, as well as training time.

2.3.2 Meaning of Recruitment

Any organization is merely a blueprint for human activity and requires manpower in order to function. The mere passage of time causes some people to grow old and retire, die or to become incapable. Seasonal and cyclical fluctuations in business cause a constant ebb and flow in the work force. Hence employees constantly need to be replaced.

Once determination of human resources requirement has been made, recruitment and selection process can begin. The acquisition of human resources can be brought about through recruitment and selection. For the recruiter to obtain fresh supplies, Recruitment means discovering applicants for present or future jobs in an organization. Accordingly to (Edwin B. Flippo 1979) “Recruitment is process of searching for prospective employees and stimulating them to apply for jobs in the organization.” Recruitment may also be described as art of attracting applicants from whom the most suitable one may be selected and offered the job. The purpose of recruitment is to provide a large pool of candidates so that the organization will be able to select the qualified employees taking into consideration it is
needs. In simple terms, recruitment is understood as the process of searching for and obtaining applicants for jobs, from among whom the right people can be selected. Though, theoretically, recruitment process is said to end with the receipt of applications, in practice the activity extends to the screening of applications so as to eliminate those who are not qualified for the job.

### 2.3.3 Definitions of Recruitment

Recruitment is a vital function of human resource management, which can be defined as the process of searching the right talent and stimulating them to apply for jobs in the organization. It is the process of discovering the sources of personnel to meet the requirements of the staffing agenda and attracting the adequate number of employees, as to be able to make the effective selection among the applicants. Hiring is the act of employing new staff, to engage the services of (a person) for a fee or to employ (someone) for wages. Hiring is an action of bringing on a new person to an organization. It is a step in the full Employee lifecycle and represents end of a successful recruiting process. Depending on the size and culture of the organizational unit, recruiting may be conducted by the managing director, human resource generalists or specialists. Alternatively recruiting can be also conducted by global employment agencies, commercial recruitment agencies, or specialized consultancies.

Parry & Wilson (2009) stated that “recruitment includes those practices and activities carried out by the organization with the primary purpose of identifying attracting potential employees”.

According to Castello (2006) recruitment is described as the set of activities and processes used to legally obtain a sufficient number of qualified people at the right place and time so that the people and the organization can select each other in their own best short and long term interests.

Raymond J. Stone (2005) in the fifth edition of his books Human Resource Management defines recruitment as the process of ‘seeking and attracting a pool of applicants from which qualified candidates for job vacancies within an organization can be selected.’

Jovanovich (2004) said recruitment is a process of attracting a pool of high quality applicants so as to select the best among them. For this reason, top performing companies devoted considerable resources and energy to creating high quality selection systems. Due to the fact that organizations are always fortified by information technology to be more competitive, it is
natural to also consider utilizing this technology to re-organize the traditional recruitment and selection process through proper decision techniques, with that both the effectiveness and the efficiency of the processes can be increased and the quality of the recruitment and selection decision improved.

Barber (1998) defines employee recruitment as “practices and activities carried on by an organization for the purpose of identifying and attracting potential employees”. Many large corporations have employee recruitment plans that are designed to attract potential employees that are not only capable of filling vacant positions but also add to the organization’s culture.

According to Montgomery (1996) is on matching the capabilities and inclinations of prospective candidates against the demands and rewards inherent in a given job.

“The activity that generates a pool of applicants, who have the desire to be employed by the organization, from which those suitable can be selected. “Lewis, 1985”

According to Edwin B. Flippo (1979) “Recruitment is the process of searching the candidates for employment and stimulating them to apply for jobs in the organization”.

2.3.4 Evolution and important milestones of Recruitment

The concept of recruitment is dated back to 55 B.C. and leads us to the Roman Army. In this year Julius Caesar signed a decree that stated that any soldier who brought another solider into the Roman Army would earn a reward of 300 sestertii. This is an extremely generous reward, considering it made up 30% of the soldier’s annual pay. Thus the first employee referral program was born. Regulation of the Recruitment Agencies: In 1919, International Labour Organization of US recommended for the abolition of fee-charging agencies. After 14 years of discussions by the government and agency unions about this convention a bill was passed in 1933 that resulted in abolition of for-profit agencies if the agencies were not licensed and a fee scale was not agreed in advance (Maarten Veger, JA, 2006).

It was not until 1940, however, that we saw a more modern birth of the staffing sector. During the start of World War II many employees’ positions were vacated when they left to join the military. The extreme lack of talent and increase of open positions crated a need for the first-ever staffing agencies. These companies operated in many different sector spaces. During this time, the resume went from an added bonus to a job search requirement. Recruitment agents worked tirelessly to connect available people with open positions in the various military organizations. In the current market, the staffing agency was more about finding eligible workers (who were not shipped off to war) than finding high quality talent.
This developed the marketing skills of those staffing agencies; the agencies who were first to provide clever advertisement and deliver results grew quickly and dominated the job market.

In the latter half of the decade, once the war ended, the agencies remained with the time and purpose of finding the returning war veterans with their new skills a job. With the revitalized workforce and increase in available positions, staffing agencies that found soldiers good jobs excelled in this, at this point of time in the sector, many job opening were related to day labouring and factory work. However, many staffing companies or job shops were consistent in finding people work on a daily basis. On those days, the primary objective staffing companies was to generate interested candidates and provide open positions to fill (Mullins 1999). There was much less screening and recruitment involved in their business processes. At that time, the staffing sector was in its infancy stage.

In most countries agencies are regulated for example, U.K - Recruitment agencies Act 1973; Germany Employee Hiring Law of 1972. By 1970s along with the booming economy, there was a shift in focus. Recruiters began to work for the client as an increasing amount of corporate and expanding businesses began to outsource their hiring needs so recruitment agencies. Though Internet was launched in 1982, Commercial Internet service providers (ISPs) began to emerge in the late 1980s and early 1990’s; fully commercialized I the U.S. by 1995. With the emerging technology/ internet, was the birth of E-recruitment? Recruiters started using web based Applicant Tracking Systems, databases, jobs, advertisements. The first job portal was launched in 1994 by Monster followed by Net start which is not Career Builder. Today, we have numerous job portals that are available now in the job market.

In 2000s, the landscape of recruitment was completely changed by the use of internet which has highly influenced recruitment sector by letting recruiters leverage Social Media. The concept of “headhunting” became ever popular while mobile based recruitment was popping in the market. With several sources available and the need for niche talent, recruitment sourcing has transformed from being a task to a Research Function (Werther, 1993). Agencies started forming exclusive sourcing teams and research functions. Today, web based self-branding has become a necessity that most of the applicants, recruiters and agencies have online presence. Such as LinkedIn, Twitter and Google+ just to mention a few of them. This is an ever-ending list. Few recruiters/candidates own blogs, websites, online portfolios/resumes making web/internet ‘One World Database’ and the trend of ‘Cloud Sourcing’. This new technique includes sourcing the resumes/e-profiles of applicants from
web (including but not limited to) search engines, social professional portals bogs, e-directories and many more other sites for recruitment.

Recruitment has been one of the ancient yet prominent industries. Throughout these ages of recruitment, one paramount aspect has remained the notable ‘Change is the trend’. We expect continued transformation in future as well, especially in methodical and technical approach of recruiters. Data analysis/intelligence is expected to be a critical area of focus for the recruiters/agencies. Agencies, recruiters, applicants have high visibility in the internet world for recruitment process. So, everyone be unique, effective and innovative to have a competitive-edge in recruitment.

2.3.5 Understanding the need for Recruitment

Although a recruitment source is one of the most intensely researched aspects of HR functions, the focus has been on post-hire instead of pre-hire outcomes (Barber, 1998).

Recruitment forms a core part of the central activities underlying human resource management: namely the acquisition, development and reward of the employees. It frequently forms an important part of the work of human resource managers or designated specialists within work organizations according to Dessler, (2000). However, and most important, recruitment decisions are often taken by non-specialists, by the line managers. Recruitment and selection can be successful when the process starts with proper employment planning and forecasting strategies that have an important role to play in ensuring manpower performance and positive organizational outcomes. Recruitment has the capacity to form a key part of the process of managing and leading people as a routine part of organizational life, it is suggested here that recruitment and selection has become ever more important as organizations increasingly regard their workforce as a source of competitive advantage of course, not all employers engage with this proposition even at the theoretical level. However, there is evidence of increased interest in the utilization of employee recruitment methods which are valid, reliable and fair. In work of Dessler’s listing the essence of these in the following; build a pool of candidates for the job, have the applicants fill out application forms, utilize various selection technique to identify viable job candidates, send one or more viable job candidates to their supervisor, have the candidate(s) go through selection interviews, and determine to which candidate(s) an offer should be made on the basis of merit.
To be a high performing organization, human resource management must be able to assist the organization to place the right person in the right job as it is indicated by (Mullins 1999). The human resource management practices include recruitment, selection, placement, evaluation, training and development, compensation and benefits, and retention of the employees of an organization. Business have developed human resource information system that support: (I) recruitment selection, and hiring, (ii) job placement, (iii) performance appraisals, (iv) employee benefits analysis, (v) training and development, and (vi) health, safety, and security. Recruitment acts as a link between the employers and the job seekers and ensures the placement of right candidate at the right place and at the right time. Using and following the right recruitment processes can facilitate the selection of the best candidates for the organization. In this competitive global job market with increasing flexibility in the labor market, recruitment is becoming more and more important in every business (Huselid, 1995). Therefore, recruitment serves as the crucial step in fulfilling the needs of organizations for a competitive, motivated and flexible human resource that can help achieve its objectives.

2.3.6 Purpose and importance of Recruitment

i. Attracts and encourages more and more candidates to apply for a job operating in the organization.
ii. Creates a talent pool of candidates and enables selection of the best candidates for the organization.
iii. Links the employers with the employees
iv. Identifies the potential candidates for employment.

2.3.7 Factors affecting Recruitment

Given its key role of recruitment internal and external visibility, recruitment is strained naturally subjected to influence of several factors. These include external as well as internal forces. The internal forces or factors are the factors that can be controlled by the organization. And the external factors are those which cannot be controlled by the organization.

2.3.8 External factors affecting Recruitment

The external factors are the forces which cannot be controlled by the organization.

The major external forces are;

2.3.8.1 Supply and demand: The availability of manpower both within and outside the organization is an important determinant in the recruitment process. If the company has a
demand for more professionals and there is limited supply in the market for the professionals demanded by the company, then the company will have to depend upon internal sources by providing them special training and development programs.

2.3.8.2 Labour market: Employment conditions in the community where the organization is located will influence the recruiting efforts of the organization. If there is surplus manpower at the time of recruitment, even informal attempts at the time of recruiting like notice boards display of the requisition or announcement in the meeting etc will attract more than enough applicants.

2.3.8.3 Image/Goodwill: Image of the employer can work as a potential constraint for recruitment. An organization with positive image and goodwill finds it easier to attract and retain employees than an organization with negative image. Image of a company is based on what organization does not affected by sector.

2.3.8.4 Political, social and legal environment: Various government regulations prohibiting discrimination in hiring and employment have direct impact on recruitment practices. For example, the government of India has introduced legislation for reservation in employment for scheduled castes, scheduled tribes, physically handicapped etc. Also, trade unions play an important role in recruitment (Breaugh and Mary 2000). This restricts management’s freedom to select those individuals who it believes would be the best performers. If the candidate cannot meet criteria stipulated by the union but union regulations can restrict recruitment sources.

2.3.8.5 Unemployment rate: One of the factors that influences the availability of applicants is the growth of the economy (whether economy is growing or not and its rate). When the company is not creating new jobs, there is often over supply of qualified labour which in turn leads to unemployment.

2.3.8.6 Competitors: The recruitment policies of the competitors also affect the recruitment function of the organizations. To face the competition, many a times the organizations have to change their recruitment policies according to the policies being followed by the competitors.

The condition of the labour market plays a big role in determining the recruitment sources for the organization. During periods of high unemployment, organizations may be able to maintain an adequate supply of qualified applicants from unsolicited resumes alone. A tight labour market, one with low unemployment, may compel the employer to advertise heavily
or seek assistance from local employment agencies. (Snell, 2012) Labour market conditions in a local area are of primary importance in recruiting for most non-managerial, supervisory and middle-management positions. (Mandy, 1981) However, so far as recruitment for executive and professional positions is concerned, conditions of all India market are important.

In India, there are central and state acts dealing with labour regulations. They cover working conditions, compensation, retirement benefits, and safety and health of employees in industrial establishments. There are acts which deal with recruitment and selection. Employment Exchange (Compulsory Notification of Vacancies) Act, 1959, which mandates that employees (industrial establishments employing 25 workers each and above) must notify the vacant positions to the employment exchanges. The Apprentices Act 1961, the Inter-State Migrant Workmen (regulation of Employment and Conditions of Service) Act, 1979, the Factories Act, 1948, and the Mines Act, 1952 also deal with recruitment. The Constitution of India prohibits discrimination in matters of employment and also provides for protective discrimination to the less-privileged sections of the society. Preferences is given to the sons of the soil is another political factor. Political leaders clamour that preferences must be given to the people of their respective states in matters of employment. The employment brand of the organization also matters in attracting large number of job seekers. Blue chip companies attract large number of applications (Huselid, 1995). Often, it is not the money that is important. It is the perception of the job seekers about the company that matters in attracting qualified prospective employees to the organization.

2.3.9 Internal factors affecting Recruitment

The internal forces i.e. the factors which can be controlled by the organization are:

2.3.9.1 Recruitment policy: The recruitment policy of an organization provides a framework for implementation of recruitment programme by taking into consideration the following factors

Factors Affecting Recruitment Policy

I) Organizational objectives
II) Personnel policies of the organization and its competitors
III) Government policies on reservations
IV) Preferred sources of recruitment
V) Need of the organization
VI) Recruitment costs and financial implications

2.3.9.2 Human Resource planning: Effective human resource planning helps in determining the gaps in the existing manpower of the organization. It also helps in determining the number of employees to be recruited and the qualifications they should possess.

2.3.9.3 Size of the sector: The size of the sector is an important factor in recruitment process. If the organization is planning to increase its operations and expand its business, it will think of hiring more personnel, which will handle its operations.

2.3.9.4 Growth and expansion: Organization will employ or think of employing more personnel if it is expanding its operations.

There are certain internal forces which deserve consideration while recruiting manpower, one such internal factor which deserves consideration while recruiting manpower, one such internal factor is the recruiting policy of the organization. Most organizations have policies on recruiting internally (from own employees) or externally (from outside the organization). Generally, the policy is to prefer internal sourcing, as own employees know the company well, experience and can recommend candidates who fit the organization’s culture. Another related policy is to have temporary and part-time employees who are typically used for short term assignments or to help when managers cannot justify hiring a full-time employee, such as for vacation fill-ins, for peak work periods, or during an employee’s pregnancy leave or sick leave. Increasingly, temps are being employed to fill positions once staffed by permanent employees. This practice is growing because temporary employees can be laid off quickly, and with less cost, when work lessens. (Snell, 2012)

In multinational corporations (MNCs), there is the policy relating to the recruitment of local citizens. MNCs operating in our country prefer local citizens as they can understand the local languages, customs, and business practices well than the outsiders (Breaugh and Mary 2000). A major internal factor that can determine the success of the recruiting program is whether or not the company engages in Human Resource Planning. In most situations, a company cannot attract prospective employees in sufficient numbers and with required skills overnight. It takes time to examine the alternatives regarding the appropriate sources of recruits and the most productive methods for obtaining them. Once the best alternatives have been identified, recruiting plans may be made. (Mandy, 1981) Effective Human resource planning greatly facilitates the recruiting efforts.
The size of the organization is another internal factor having its influence on the recruiting process. An organization with ten thousand employees will find recruiting less problematic than an organization with just one hundred employees. Cost of recruiting is yet another internal factor that has to be considered. Recruiting costs are calculated per new hire and the figure is considerable now-a-days. Recruiters must, therefore, operate within budgets. Careful manpower planning and forethought by recruiters can minimize recruitment costs. One cost saving measure, for instance, is recruiting for multiple job openings simultaneously. The best solution is to use proactive personnel practices to reduce employee turnover, thus, minimizing the need for recruiting. Evaluating the quality, quantity and costs of recruitment helps ensure that is efficient and cost-effective. (Werther, 1993)

**2.3.10 Recent trends in Recruitment**

The following trends can be observed in recent times in the recruitment process:

I. **Outsourcing:** In India, the HR processes are being outsourced from more than a decade now. A company may draw required personnel from outsourcing sectors. The outsourcing sectors help the organization by the initial screening of the candidates according to the needs of the organization and creating a suitable pool of talent for the final selection by the organization. Outsourcing sectors develop their human resource pool by employing people for them and make available personnel to various companies as per their needs. In turn, the outsourcing sectors or the intermediaries charge the organizations for their services.

II. **Poaching/Raiding:** This is the latest manta being followed by the organizations today. Poaching means employing a competent and experience person already working with another reputed company in the same or different sector; the organization might be a competitor in the sector. A company can attract talent from another sector by offering attractive pay packages and other terms and conditions, better than the current employer of the candidate. But it is seen as an unethical practice and not openly talked about (Breaugh and Mary 2000). Indian software and the retail sectors are the sectors facing the most severe brunt of poaching today. It has become a challenge for human resource managers to face and tackle poaching, as it weakens the competitive strength of the sector.

III. **E-Recruitment:** E-Recruitment is the use of technology to help the recruitment process. To advertise job vacancies through worldwide web. The job seekers send their applications or curriculum vitae (CV) through an e-mail using the internet.
2.3.11 Role and impact of technology in Recruitment

Through the literature review an effort has been made to review the findings of past research work in the area of impact of technology in recruitment practices from global and distinct perspectives. It is a widely held view that an organization’s human resources are its most important assets and, among the resources available, may offer the only non-imitative competitive edge (Pfeffer, 1994; Huselid, 1995). Thus, an organization’s ability to attract and retain capable employees may be the single most important determinant of organizational effectiveness. As the point of entry for the employees, the recruitment function plays a critical role in enhancing organizational survival and success in the extremely competitive and turbulent business environment.

Traditionally organizations depended on fairly low technology methods, including newspaper advertisements and employee referrals, to locate and attract qualified candidates. Currently the recruitment function has been undergoing dramatic changes as a result of information technology (IT), leading one observer to remark, “few markets have been hit as hard by the power of the Web and E-commerce as the recruiting sector. While there are still more dramatic changes underway, it’s clear that the Web has quickly and dramatically changed the way the recruiting sector works” (Kay, 2000, p. 72). The Internet is one of the most popular IT methods used in recruiting job candidates, and even though it is difficult to gauge the actual level of hiring via this source, it has been estimated that recruitment is the second largest source of income for service providers sector. A study was conducted by DeVaro 2008; He chose a sample of clerical workers from a large cross section of establishments in four metropolitan areas of the USA. In this study, author proposed a model in which employers chose either informal recruitment methods or formal methods. (De Varo-2008). The researcher stated that the effects of exogenous policy or environmental changes can be decomposed into “pure wage effects” that affect the wage offers employers post, holding constant their recruitment strategies, and “recruitment wage effects” that involve changes in recruitment methods. The results showed that changes in recruitment strategies represent an important channel through which changes in the economic environment affect the starting wages and vacancy duration for new recruitment (Breaugh and Mary 2000), introduced an organizing framework in their study of sources of recruitment, recruiters and job previews. Through their review research work on the area of recruitment they recommend that the future studies need to be designed with an appreciation of the complexity of the recruitment process as result of change of technology, However one wonders if this statement is academic.
sound or it is just the conclusion drawn by Breaugh & Mary. A paper was presented at an international conference by (Florea and Badea 2013), which emphasized the manner in which the organizations use technology increases or decreases its positive net effect. The findings suggest that through the Internet, IT can develop an effective recruitment program, which can help to manage the highly competitive and time consuming process of finding skilled personnel. Another study addressed an important issue while using social media as a hiring tool that the reliability and validity of using social networking sites to screen and select applicants is unknown. Until the reliability and validity of the information from social networking sites is examined, hiring organizations should be cautious when relying on social networking sites to make selection decisions (Madera, 2012).

In the Indian organizational perspectives a study by (Sen and Saxena 1997) on managing the knowledge workers has given importance to the process involved during the time of recruitment and hiring. They believe that the most striking feature of the Indian labour market is the apparent abundance of labour, yet the right type of labour is not too easy to find. A similar study has been done by Tendon (2006) giving importance to hiring quality candidates who are hard to find. In his research article he has made an attempt to study why talent deficiency prevails in Indian job market in spite of a huge population.

2.3.12 Recruitment trends in Indian BPO Sector

Recognition of recruitment as a strategic issue led to increased research on matters related to recruitment both at the organizational and sector level. Many organizations started using innovative recruitment practices for procuring the talented employees. Human resources are critical to the development of Indian BPO sector. With the rapidly changing business scenario, the BPO companies are recruiting not only on the basis of technical knowledge, but also on the basis behavioural aspects (Hausdorf PA Duncan D, 2004). For recruitment, the companies require professionals. Organizations face stiff competition for attracting and acquiring the right talent. Sectors release advertisements in business and IT magazines, and conduct career fairs and events with video shows for junior management positions. Organizations’ mostly depend upon internal sources for filling up executive positions and also on head hunting. On-line recruitment has transgressed the more conventional sources. E-recruitment is fast, cost effective and ensures the rare dual presence of quality and quantity. All major BPO companies have their own web sites, and associations with leading job portals in India and abroad. This system allows applicants to post and update their resume on the websites (Huselid, 1995).
The team maintains rapport with the interested applicants. In case of sudden recruitment drive arising out of business needs, the team identifies the opportunities for such applicants and conducts walk-in-interviews in different cities. So, it is fast as well as cost effective. Some BPO companies use bill boards at prominent junctions for recruitment advertisement mainly for junior and middle-level executive position. For attracting fresh talent all BPO companies conduct on-campus recruitment at various Engineering colleges and Business Schools. Many companies are engaged in ‘talent raids’ or poaching.

2.3.13 Recruitment sources

Most employers combine the use of internal and external sources of recruitment in the current organizations that are facing a rapidly changing competitive environment and conditions may put emphasis on external sources in addition to developing internal sources (Mathis & Jackson, 2005). Promoting employees from within the organization is known as internal recruitment and hiring from outside the organization is known as external recruitment. However the HR department will have to emphasize more on the external recruitment sources rather than internal sources because by using external sources of recruitment the recruiter has a wide pool of employees to make the decision on whom to offer the job position with the required set of skills of employee and organization strategies.

2.3.14 Internal sources of Recruitment

According to Khan (2008), existing employees of an organization provide the internal sources. At basic organization, promotion, transfer and job postings are sometimes used as methods for recruiting people internally. Employee referral is another source of internal recruitment source where the current employees refer the new employees to specific position in the organization.

2.3.14.1 Promotion

The most important sources of filling vacancies from within are through promotions. Promotion involves movement of employees from a lower level position to a higher level position accompanied by changes in authority, duties, responsibilities, status and remuneration (Khan, 2008). Organizations have some specific criteria for promoting an employee. If there is any vacancy and then all those employees having all the qualifications of the senior level post can apply for the job. Obviously each employee can get this opportunity for higher posts, remuneration, job facilities with vital responsibilities through a formal interview.
Advantages of promotion:

- Present employees if promoted can handle the process products and problems easily as they are already connected to organization but new incumbent may take some time to adjust or may not adjust at all.
- The cost of training the insiders for the higher position is nearly nil hence no extra training cost.
- Employees will give their best as they know that reward of giving good performance is promotion.
- High morale of the employees is achieved.

2.3.14.2 Transfer

Organization also practices this method of internal recruitment through transferring the employees from one department to another without changing status and remuneration. As Khan (2008) mentioned, transfer is a lateral movement within the same grade, from one job to another without any change in remuneration. Generally, employee can be transferred from one department to another. Organizations use this transfer method for several reasons such as one

1) To motivate and to remove monotony from the job of the employee.
2) To keep an employee interested in his or her key skills responsibilities
3) To secure the business operation by removing dishonest activity in a particular department.
4) To maintain and keep balance in a particular department by transferring experienced employees to another department, for example, when a department is filled by a greater number of new employees.

2.3.14.3 Job posting

Job posting is a system of providing notices of job openings and employees respond to by applying to the job vacancy which is internal recruitment source (Mathis & Jackson, 2005). When a new job position is created, HR department of the organization informs the other departments and branches through phone or some times by giving formal letter

2.3.15 External sources of Recruitment

Human resource management department mostly utilizes the external sources of recruitment such as advertisements in newspapers and websites. When an organization desires to
communicate to the public that it has a vacancy, advertisement is one of the most popular methods used (Khan, 2008). The media of advertisement often depends on the type of the job. Large organizations give job advertisements only in reputable daily newspapers, internet advertisements are getting popular increasingly among the employers and social media like linked in, Twitter and recruitment websites.

2.3.15.1 Newspaper advertisement

To draw the right candidates, organization’s HR unit publishers their advertisement for several positions in national daily newspapers, such as, the Hindu, business line and times of India as the legal law require for any government job it has to be advertised.

2.3.15.2 Website advertisement

Organization, like many employers have found its own website to be more effective and efficient for recruiting employees. The job seekers are encouraged to e-mail their resume or complete online applications on the website of the organizations or in the website of recruitment naukri.com

2.3.16 Recruitment Process

Recruitment is the process of identifying and attracting job seekers so as to build a pool qualified job applicants. The process comprises of five integrated stages:

- Planning
- Strategy development
- Searching
- Screening
- Evaluation and control

The ideal recruitment program is the process that attracts a relatively large number of qualified applicants who will survive the screening process and accept positions with the organization when offered. Recruitment program can miss the ideal in many ways: by failing to attract an adequate applicant pool, by under selling the organization, or by inadequately screening applicants before they enter the selection process. (Heneman, 1986) Thus, to approach the ideal, individuals responsible for recruitment process must know how many and what types of employees are needed, what inducements to use or avoid for various types of
applicants group, how to distinguish applicants who are not competent from those who have a reasonable chance of success, and how to evaluate their work.

Human Resource Planning is required to understand the job vacancies that are available in the organization at any given point of time. Barber (1998) discussed the recruitment function more closely related to the organization’s strategic human resource planning. From the organization’s perspective, developing a recruitment tactic involves three basic decisions, determining the target population, determining the applicant source, and deciding how to attract applicants to the organization. Recruiting is not just a game of human numbers anymore. For HR professionals this implies going a step further then developing a recruitment plan. It means working closely with management on shaping organization culture and looking closely at the job attribute preference of its current and future employees needs in the organization. One liability of the HR professional is to converse the attributes of a particular job undoubtedly.

This along with job analysis leads to Recruitment Planning from which stage the actual recruitment process will start. The job analysis identifies the tasks, responsibilities and outcomes required of a job as well as identifying the knowledge and skills required to perform within the position (Compton and Nankervis, 1998).

**Figure no 3.1: Process of recruitment**
2.4 Human Resource Skills

2.4.1 Preamble
Skill is widely regarded as a focus for analytical research and as a core object for policy interventions in the modern global high technology era. A substantive body of evidence shows that different skill levels have large economic effects for individuals, employers, regions and whole organization. Yet there is no consensus among social scientists about the meaning of the concept of skill. Skill is the ability, talent or competence to perform a task well or better than average (Henry, C 2008). There are essentially two types of skills: soft skills and hard skills. Hard skills are defined as mechanical skills or technical skills that are the level of technical expertise such as anatomy for a doctor, programming language for a computer programmer, legal expertise for a lawyer, subject knowledge for a teacher etc. Every employee need to have a proper blend of skills for effective to discharge of their duties and responsibilities in various roles (Azmi, 2010). Skill means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials tools and instruments), in the utilization of skill.
2.4.2 Definition of skill: The ability to successfully perform a range of tasks to a high level of performance; while maintaining the required standards needed to perform a job or set of tasks. HR professionals who have the business acumen to contribute to business strategy at the highest organizational levels are leading the shift in the HR profession from administrators to strategic advisors. Those HR professionals who understand the language of business, who speak in financial terms and who express the value of their work in relation to its impact on the bottom line make HR a compelling component in strategy discussions (Ahmad Saufi, 2008).

The utilization of resources is being shifted from current capital strategic resources to strategic resources in the form of information, knowledge, creative thinking and innovation. Skills and knowledge belong to critical factors of production. Enterprises can gain competitive advantage by implementing continual and on-going innovations, managerial skills and knowledge are in the centre of this process of innovations. Clearly, there are new skills required to manage a new kind of workforce (Ulrich et al., 2013). The selection of HR employees should be based on leadership skills as well as functional skills. Further, the best business partners are not just change agents they are the navigators of change. Navigators are part of the small strategic team that directs the course of a business. Today, the skills that in-house HR professionals need are generally compliance related. HR keeps the organization in compliance with the many laws and regulations associated with the workforce. HR also needs technical competence in specific disciplines like compensation, benefits or training (Shivpuri and Kim, 2004). These skills have not changed a great deal over the years. The inherent problem is that it’s possible to be successful in HR with these skills; yet still have no real understanding of business or the ability to contribute on a strategic level. To be a true business partner, you need to have business savvy. HR needs to understand where the business’ “mission critical” folks are and focus its efforts there.

2.4.3 Important skills for HR professionals

i. Business knowledge and the willingness to take risks
ii. Strong technology and Internet skills
iii. The ability to meet challenges where they are and the confidence to “mix it up” with clients
iv. Consulting and partnering skills
v. Alliance and vendor management experience.

How does HR establish metrics to quantify the value added by the function? Doing so requires HR professionals not only to understand the business, but also to know how to
develop strategy and to execute (Fallows and Steven, 2000). How many HR leaders could answer, with precision and content, the following questions about their company?

a) Where is the business going?

b) What are the measures of success, i.e., business drivers?

c) How is the business performing on these success measures?

d) What are some of the key challenges faced in achieving success

After answering these questions, HR professionals should then frame their work as business partners as follows:

1. What are the business issues that require partnership from HR, i.e., the people implications of business strategy?

2. What is the HR strategy that addresses these business issues? What are the skills needed specifically, how do you do it?

3. How do you measure the impact of the HR strategy on the business success measures?

4. How will the strategy be executed?

a. **Strategic opportunities** HR models are being created to support these businesses. HR is playing a key role in setting up an organizations and applying the best of their experience to these new companies.

b. **Partnering with executive leadership** When HR personnel contribute at the strategic level, they become partners with executives in setting up the organization and its people strategies (Cox and King, 2006). While this tend blurs the lines between HR and the business, it promotes a new level of partnership between HR and management.

c. **Measurement** For several years, HR has struggled to develop standard measures of its effectiveness, with limited success. The Internet now provides desktop access for benchmarking on a global basis. New management portals will give managers broad access to information about their workforce as well as the ability compares this information with a multitude of performance indices nationally and globally (Tyler, R. 2011). Effective measurement is essential in an era of outsourcing, where HR is at the “nexus of treaties”. This means having standard criteria to measure the value delivered by outsourcing arrangements. Further, the number of employees working on a contract basis of off-site, “Distributed workforce,” makes new means of performance measurement a necessity. How does HR stay focused on the compelling work? It requires leadership from the top. The best HR executives have an agenda derived from the company’s business objectives.
The executives focus on a few strategic priorities. HR leaders who are driving business results also marshal the efforts of their own senior team. When HR is organized into functional silos, includes compensation, benefits, training, etc., the HR executive can over-rely on balancing resources and priorities within the function. This is a trap. It takes real leadership to develop a business based HR agenda and a high level of discipline to execute this strategy (Brown et al., 2003).

a) Employee self-service
b) Recruiting
c) Vendor management
d) Workplace portals
e) Total reward competitiveness
f) Linking HR designs to regular organizational sensing.

2.4.4 Critical HR Skills

2.4.4.1 Business skills
HR professionals must understand the dynamics of business and possess the financial acumen to assess and communicate how HR strategies impact the bottom line. Project and process management skills also fall within this broad category (Kivinen and Silvennoinen, 2002). Business partnering skills are really consulting skills which include active listening, asking the right questions and feeding back to the management team.

2.4.4.2 Leadership skills
A team is the most important constituent of any organization. HR professionals must have the ability to create a vision and strategy and to ensure the alignment of the organization with the strategy and the ability to manage and motivate a team. Problem solving may seem like a straightforward skill to have, but it’s actually considered to be one of the most complex intellectual abilities. According to Beyer (1995) Periodical interventions, benchmarking and performance enhancement initiatives are necessary for leader to ensure the effectiveness of any term performance. Effective leaders assume the roles of a trainer, coach and mentor continuously by empowering their team members to shoulder higher roles and responsibilities. In addition, leaders should institutionalize leadership development in the organization and build a second line leader who would eventually be able to assume the role of first line term leadership.

2.4.4.3 Consulting skills
An effective HR professional develops their consulting skills, with a focus on the ability to market their work within the organization (Fallows and Steven, 2000). Cultivating an executive presence through progressive experience working with senior business leaders is also important.

### 2.4.4.4 Global mindset

Business is increasingly global, requiring HR to understand the dynamics of the global marketplace. HR leaders should cultivate a staff that is multi-lingual and has direct experience working in other cultures. In fulfilling their duties managers use managerial skills. Which are needed for an effective managerial work (Piskanin, Rudy et al., 2006, p. 11)? These skills are important for middle or top manager. This is the ability to “grasp the whole picture”. The skill Perceive the organization as one whole intertwined with the surrounding environment with the relevant priorities and important issues that will enable the business to prosper.

### 2.4.4.5 Adaptability to change

The ability to shift one’s views to smoothen the situation and people is a real life component of HR skills. To be a good leader and professional, one should have the flexibility to change and tune oneself according to various changes in the environment (Truss and Gill, 2009). It is the ability to match oneself with the people, things, ideas etc. One need to remember that what’s best for an individual might not necessarily be best for the organization or team hence it requires the HR managers to be acclimatized to different situations at work place.

### 2.4.4.6 Creative thinking

It is the desire and habit to find newer and improved ways of doing things. It is the ability to generate new ideas by combining, changing, or reapplying existing ideas. Everyone has substantial creative ability, but it has been too often suppressed through education and experience, and need to take efforts to reawaken these skills. Often all that is needed to be creative is to make a commitment to creativity and make it a habit by consciously finding time for improving these skills in the organization (Shivpuri and Kim, 2004). Creativity is also an attitude, the ability to accept change and newness, a willingness to play with ideas and possibilities, a flexibility of outlook, a habit of enjoying the good while looking for ways to improvise it. A creative thinking person realizes that there are other possibilities and always seeks better ways of doing things and achieving more goals.

### 2.4.4.7 Decision making in a group

The ability to make better decision is a critical skill, especially when other people are involved in decision process and also decision implementation has an influence on others. It
needs a skill to arrive at a decision by sorting it out to a win-win approach. This is a basic skill and demands a better understanding of the self and people (Branine, 2008). Managers in an organization need to implement decision in a group of individuals this is also another area which needs consideration in decision making skill for a manager at the individual capacity as well as in a group.

2.4.4.8 Positive attitude
A positive attitude is something that is developed by training one’s self. Attitude is a matter of choice; each situation encountered offers choices to make either to react positively or negatively (Brown et al., 2003). The attitude reflects on individual behaviour in different situation. Positive attitude is an important skill, and a central cause in an individual’s ability to develop other effective performance enhancement skills. Performing a regular attitude check-up will help one to build a positive attitude.

2.4.4.9 Interpersonal skills
Interpersonal skill is most valuable resource of any enterprise and manager needs to know how to use interpersonal skill to lead employees. The abilities include motivation of workers, solving work conflicts, communication and working with people. Therefore interpersonal skills are essential on every level of management (Cox and King, 2006). It will enable one to reduce conflict and increase participation in teams for completing tasks effectively. This would help to improve the productivity on organizations with least conflicts. Productive, successful, fulfilled people in careers that encompass all intellectual disciplines and majors have the ability to nurture and develop successful and satisfying relationships in the working environment (Jackson, D.2010). Effective employees are skilled in understanding other people and they are curious about the issues such as; what motivates individuals, how they think, how they feel, and prepares themselves to work cooperatively and productively with other employees inside and outside organization. Effective managers are excellent communicators and possess effective relationship skills such as active listening, empathic communication and assertive responding.

2.4.4.10 Building trust and rapport
In today’s high pressure and chaotic work place, the skills to build rapport is important. Rapport results from trust and consistency boosts trust. Accept responsibilities for one’s own actions and behaviour. Trust grows when one accept accountability for their actions. Also,
one needs to be more open with information to demonstrate his trust and relationships are always reciprocal (Galihardi, R. 2004). Perhaps the most important and simplest way to build trust is to tell the truth. The most essential human tasks are sending, judging, creating, and building relationships.

2.4.4.11 Communication skills
Manager needs information for decision making. The capability to disseminate and receive information is thus significant tools for manager to develop in their managerial career. It is not only verbal communication (Ulrich et al., 2013), but the manager should be able to distinguish non verbal signals, mood and feelings to filter the right information from the employees.

2.4.4.12 Conflict management skills
Conflict can be a good thing if managed well as it can win respect and find better solutions to problems. If it is managed poorly, it can engender resistance or even become opposition to the organizational performance. The parties to conflict may be the employees or customers (Henry, C 2008).

2.4.4.13 Counselling skills
This skill is important in organization as tool to overcome personal emergencies. It is like a sports trainer running onto the pitch in the middle of the game to help an injured player to get back into game as soon as possible. Some project managers take the view that personal problems should be left at home’, but at extreme this attitude is both unrealistic and detrimental to the performance of the organization as personal problems will have an impact on one’s performance at work consequently it affect the holistic working of the organization’s output (International labour office, 2010).

2.4.4.14 Empathy skills
Empathy is defined as the ability to recognize, perceive and feel directly the emotion of another. A person good at this skill will be able to define another’s mode of thought and sense their mood more effectively and will also sensitive to other’s state of mind, beliefs, and desires of empathy is often characterized as the ability to put oneself into “another’s shoes” or experiencing the outlook or emotions of another being within oneself, a sort of emotional resonance (Jackson, D. 2010).

2.4.4.15 Motivating skills
This skill is essential for team leaders in my business organization. Motivating people requires a clear, unbiased understanding of the situation and a deep insight into the complexities of the human nature both individual and team levels. It requires establishment of appropriate and reasonable expectations and goals, and a balance between tangible and intangible incentives (Mark, K and Karmel, T 2010). The ability to motivate oneself even without any external intervention should be inculcated as a valuable skill in today’s competitive corporate world.

2.4.4.16 Negotiation skills

Negotiation skills are required at various levels of business organization. It requires special skills to effectively deal with the process of negotiation. Negotiation involves various steps such as identifying common goals among different parties in conflict; possible ways to resolve conflict; make reasonable compromises. This can instil harmony in relationships and group understanding in the organization.

2.4.4.17 Team player skills

A good team player can get a lot of work done by compliment others on their good effort at work, and employees are likely to produce better performance. This is a good technique for maintaining a positive work environment and maintaining clear communication channels. Work cooperatively with others; contribute to group with ideas and endeavour to produce more; help other to achieve their results; encourage team members; resolve differences for the benefit of the team; responsibility challenge existing procedures, policies or authorities (Branine, 2008). The ability to share responsibilities, confer with others, honour commitments, and seek help when needed could be listed as essential skills for effective team performance.

2.4.4.18 Technology skills

The landscape of technology is rapidly changing and there are five major trends driving this change: social, mobility, analytics, cloud and wearable’s. These trends have had major impact on talent. Take the case of social media, which now plays an important role right from recruiting to talent development; and today’s world with more employees joining the workforce, it is important for organizations to be attuned to this new reality of the technology and skills requirement of it manpower (Brown et al., 2003). Significant advancements in technology continue to free HR from the administrative role, providing more opportunity to focus on strategy. Increasingly uniform standards for systems language are being created, in large part, to enable companies to “plug to play” without major systems conversions
Even small companies could access sophisticated HR solutions through such developments. The ability of manager to use specific methods and techniques in doing the managerial work; however these technical skills are not related to technology, such as skills of engineer. The technical skills for managers represent the usage of methods like break even analysis in planning or ability to prepare for and conduct a structured interview. HR professionals need to develop a proficiency in broad HR applications and their potential delivery systems. They ought to be able to apply this knowledge to the business planning process (Fallows and Steven, 2000).

2.4.4.19 Computer skills

Computer skills refer to one’s ability to use the software and hardware of a computer. Computer skills are treated as a part of basic literacy in the present business world. It is an important skill for business executives as modern business management depends on computer for discharging many of its functions (Cox and King, 2006). There are software’s that is one of frequent use for the executives such as word processor, spread sheet and presentation skills.

2.4.4.20 Mobile phone skills

In the present business environment mobile phone is more than just a telephonic instrument. It has evolved to almost a full computer and a crucial instrument for executives and professional for improving the efficiency (Ulrich et al., 2013). Some of the regular functions frequently used by the executives include personal data processing sending and receiving emails, internet browsing, managing schedules and calendar, reminder, and many more. It often acts as a personal data assistant and a basic competency is expected from every professional to achieve the dead line for the business transactions.

2.4.4.21 Email Etiquette

According to the reports published by University of California, Los Angeles Centre for Communication Policy, of all Internet activities, email is the most popular means of communication in the present business. Using the internet at work use it to access business email, also email is used to communicate with others, including superiors, colleagues, clients, or prospective employers. Because of correspondence style, response time, and the related manners say a lot about us, managers should be aware of some basic email etiquette, sometimes knows as etiquette.

To summarize, the whole idea of skills is to understand or find how to bring out the best in self and others in any situation. Mastering these skills dramatically increase one’s chances of achieving the best outcomes out of professional interactions and business challenges. The
ideal executive is someone who is strong in these skills so that one can be able to communicate effectively, promote teamwork within one’s organization (International labour office, 2010), effectively present ideas, efficiently manage projects and people, creatively solve problems, and ensure excellent customer care. They’re critical to the success of any individual or business organization. Regardless of career level, they’re also absolutely essential skills for fostering career development.

2.4.5 Importance of HR skills

In today’s competitive world effective skills are vital for the effective functioning of the organization. They can mean the difference between success and mediocrity. Companies can no longer ignore the Interpersonal skills and have now started linking soft skills to their employee’s appraisals, reward management. They are considered as important criteria during recruitment process. Accordingly to recent surveys however, soft skills are more important than technical skills to reach the top of the career ladder. Improving one’s interpersonal skills can not only benefit one’s career but also help the organizational performance. Improving interaction and soft skills leads to better assignments down the road and poor interpersonal skills will hamper prospects of corporate ladder. Soft skills help to deal more proficiently with the people around us and also helps to project a more powerful, dynamic and professional image. It will help to manage people more effectively while dealing with colleagues, team, customers and other stake holders. The application of skills is not only limited to work, but also in daily life (Brown et al., 2003). A person with good soft skills has an increased awareness of own interpersonal style and ability to ensure it works for better results. One will also have opportunity to practice different skills that will equip the confidence and ability to adopt a flexible approach suitable to the situation.

Soft skills are high in the list of requirements for global business currently. Doing business with clients from across the world demands not just a high degree of technical skills but greater sensitivity and awareness of culture specific behaviours, variety of business situation in relation to the geography specific issues that may arise. Increasingly, employees are ranked by their ability to deal with others effectively and as one raises the corporate ladder, soft skills become crucial. It is soft skills that differentiate winners from also-rans. According to IT Training magazine recent survey, most of survey respondents judged components of soft skills such as communication skills and interpersonal skills as the most important contributor to achieving career success.

Skills training is not longer considered just a matter of self-development; they are recognized to be critical to the success of business. Regardless of career level, development of soft skills
adds balance and interpersonal skills savvy to technical talents. Technical skills and technical certifications don’t necessarily translate into the ability to effectively and efficiently manage oneself and interact with others (Fallows and Steven, 2000). With the increasing competition companies are facing, they are compelled to ensure that their employees acquire the necessary skills to influence others. With the proven technical superiority of Indians, this additional competency can truly enable them to reach the heights. It is this compelling need that training houses are leveraging on to create a sizeable market for soft skills training in BPO sector. Many organizations have incorporated soft skills into their training agenda and now insist on a mix of technical and soft skills training for its employees (Ulrich et al., 2013). Training programmes provide exercises designed-to improve the skills of employees in the organization.
2.5 Decision Making

2.5.1 Introduction to Decision Making

Decisions are an inevitable part of human activities. Each day life is full of decisions and choices of a particular course of action from the available alternatives in a given situation. Bellman and Zadeh (1970) investigated that most of the decision making in the real world takes place in an environment in which the goals, the constraints, and the consequences of possible actions are not known precisely. Management often makes decisions based on incomplete, vague or uncertain information. Several decision tools have been studies with the hope that mangers could make better decisions, even though the environment is uncertain. Bellman and Zadeh question the assumption in decision theory that precision can be equated with randomness. Decision making is at the core of managerial planning. An important question is how top management makes decisions. Specifically, researchers are interested in assumptions, beliefs, habits, and tactics that people use to make decisions.

Research suggests that managers consider various sources of information before making a decision. However, how to do this? In addition, why does the process sometimes go awry, causing management to make impulsive, indecisive and confused decisions; kinds that can lead to risky and potentially dangerous business decision? Business decisions are not the product of a single process (Schacter, Gilbert et al. 2011). To a certain extent it reflects interaction of different specialized subsystems and constrains have to in the thinking pot. The departments usually interact to effectively analyze the issues and come out with the informed decisions. For a long time, economists have argued that human beings make decisions by obeying laws of rationality and intuitions.

Human capital is valuable assets and is currently being used unsystematically by labour markets in the decision processes of recruitment. A human capital analytics offers a systematic way of examining the potential future performance of stocks of employees and can be used as a form of predictive management. Human capital analytics provides opportunities for observers to potentially recognize insights ahead of time (Wally, S. and R.J. Baum 1994). The secret of HR manager performance, irrespective of their role in the market lies within each individual’s ability to read all the information, quantitative and qualitative, and take action upon it. The goal is for organizations to develop a learning environment
which reduces the time it takes to traverse the closed-loop, enabling a more insightful, and accurate decisions in light of changing business environment. Compression of the track analyze decide act timeframe has always been the basis for competitive advantage. However, speed without insight and accuracy may lead to faster but erroneous decisions and actions. Therefore, advanced analytics and data quality are critical success factors, and when combined with speed, create competitive advantage. The organization’s culture and the professional’s interpersonal behaviours and critical reasoning and judgment heavily outweigh technical skills and relevant experience Fernandes. A, Kinange. U and Shaikh. A, 2016.

There are different disciplines approaching the problem through characteristically different techniques and substantial advances, question of how to design and how organization ought to craft judgments and decisions making has engaged researchers for decades. However, HR Analytics decision making has recently emerged as an inter-disciplinary effort to bridge this gap. It seeks to integrate ideas from different disciplines, which has developed at the intersection of engineering, computer science, decision making and quantitative methods to organize, analyze and make sense of the increasing amounts of data being generated by contemporary societies (Mortensen et al., 2015). Analytics has been described as a essential tool that have capability for the HR profession use when they trying to make their estimates, a tool for creating value from employees and a pathway to broadening the strategic influence of the HR function (CIPD, 2013). The effort to find out the decision making model to use in decision making, Research has investigated evidence based decision making, Research has investigated evidence based decision making in organization which predict the value and central parameters in model of expected utility. Neuropsychological multiple systems approach to decision making, in turn, influences, a perspective strongly rooted in organizational psychology and neuropsychological science. Integration of these approaches and methodologies offers exciting potential for construction of near accurate models of decision making as it would be applied by the HR manager in the day to decision making situation.

Manpower planning decisions has been a subject of active research from quite a few perspectives. How to make a decision? Decision makers have a tendency to seek more information than required at times to make a better decision. When too much information is sought and obtained, one or more of several problems can arise. A delay occurs because of the time required to obtain and process extra information. This delay impairs effectiveness of decision or solution (Saaty TL 1996). Information overload occurs. In such state, decision-
making ability actually declines because information in its entirety can to longer be managed or assessed appropriately because of the huge databases. A major problem caused is to determine which data has to be analyzed for specific decision making. Quantification of decision is a major area of exploration. This is due to discovery of ‘Matching Law’ that stipulates that relative response rate on concurrently available alternatives ‘match’ available relative reinforcement of decision making progression. This theoretical construct describes response allocation in more complex situations in the organization that require quick decision making in such situation managers often fail to design rational decisions. Managers are subject to multiple biases that affect the way they perceive events, act upon them and learn from experience. These behaviours cannot be ignored since they have disastrous consequences. When faced with complex decision, individuals engage in simplifying strategies. Adaptive decision making in real-world contexts relies on strategic simplifications of decision problems (Shih H, Shyr HJ, and Lee ES 2007). Yet, neural mechanics that shape these strategies and their implementation remain largely unknown. Although now how much about how the past data in specific decision factors, much less is known about how the future in the same scenario with multiple strategies for managing computational demands of complex decision-making task.

2.5.2 Meaning of decision making

Decision making is the process of selecting one of multiple options based on their true or professed utility. In other words, decision makers must weigh up the probability and compare possible outcomes at different points in time hence decision making is the procedure of making a choice between different numbers of options and committing to a future course of actions. Decision making is a process of decision selection from available alternatives against the chosen criteria for a given decision goal.

Economics and psychologists have long studies how people make choices that can lead to rewards or punishments of different magnitude at different times with different times with different probabilities (Kenji and Shalden 2012). This leads to the development of economic and psychological models of the decision making process. Economic models such as ‘Rational Choice Theory’ imply a tendency to maximize benefits and minimize the costs. This theory uses utilities that represent a patient’s subjective value for choice attributes, such as a health state or a treatment characteristic (Schacter, Gilbert et al. 2011). Psychology models take into account the more emotional or intuitions aspects of decision making, assessing employee’s attitudes in different circumstances and situations.
2.5.3 Definition of decision making

The Oxford Dictionary defines the term decision-making as “the action of carrying out or carrying into effect”.

According to Trewatha and Newport, “Decision-making involves the selection of a course of action from among two or more possible alternatives in order to arrive at a better solution for a given problem”. Decision making is a process that chooses a preferred option or a course of actions from among a set of alternatives on the basis of given criteria or strategies (Wang, Wang, Patel, & Patel, 2004; Wilson & Keil, 2001). According to Baker et al. (2002), decision making should start with the identification of the decision maker(s) and stakeholder(s) in the decision, reducing the possible disagreement about problem definition, requirements, goals and criteria.

Decision making is the study of identifying and choosing alternatives based on the values and preferences of the decision maker. Making a decision implies that there are alternative choices to be considered, and in such a case we want not only to identify as many of these alternatives as possible but to choose the one that best fits with our goals, objectives, desires, values, (Harris 1998).

2.5.4 Need for decision making

Decisions are frequently required in the management process. However, such decisions should be appropriate, timely and rational. Faculty and hasty decisions are dangerous to the organization’s operations. This clearly suggests that there is need of decision making to be supported by scientific decisions for more effective and efficient in making decision has become critical(Baker et al 2002). The main task of human resources department is providing organizations with best employee among the pool of applicants.

The recruitment and selection is the first step towards achieving organizational goals by creating the valuable assets for the organizations. Efforts should be made to search for new information relevant to further evaluation of the alternatives. This is necessary as the quality of decision depends on the quality of information used in the decision making process.

To facilitate accurate decision making the top management should first and foremost understand the need for developing a frame work for decision support system which implements multi-criteria decision making (MCDM) is really needed for effective decision making in the organization (Munda, G. 1996).
2.5.4.1 Implementation of managerial function: Decision making various managerial functions such as planning, organizing, directing, controlling, staffing can’t be conducted. In other words, every employee does his/her managerial work through decision making function in the organization (Forman and Selly 2001). Therefore decision making is essential element to implement the managerial functions.

2.5.4.2 Pervasiveness of decision making: The decisions are made in all managerial activities and in all functions of the organization. It should be taken to engage the entire organization. It ought to be noted that without decision making any kinds of function is not possible. Therefore decision making it is pervasive in nature.

2.5.4.3 Assessment of managerial performance: Decisions making is used to evaluate managerial performance. When decision is correct it is understood that the manager is qualified, able and efficient. When the decision is wrong it is understood that the manager is disqualified hence, the process of decision making evaluate the managerial performance in the organization.

2.5.4.4 Helpful in planning and policies: Any policy or plan is established through decision making. Effective decision making is done out of strategic plans and policies. In the process of making plans, appropriate decisions ought to be made from many alternatives that are available to decision maker Boudreau and Ramstad (2005). Therefore decision making is an important process which is helpful in effective planning.

2.5.4.5 Selecting the best alternatives: Decision making is the process of selecting the best alternatives. It is paramount in every organization because there are many alternatives before the decision makers. Therefore decision makers evaluate various advantages and disadvantages of every alternative and select the best alternative available at the time.

2.5.4.6 Successful operation of business: Every organization, departments and individual make a range of decisions. In present competitive job market; organization can exist when the correct and appropriate decisions are made by the various stakeholders in the organization. Therefore correct decisions help in successful operation of business to cope with day to day challenges of management.

2.5.5 Analytics for HR decision making
1. Set the goals
   I. Decide what to use either practical analytics or academic analytics
   II. What to discover and test?
   III. Determine the stakeholders requirements
   IV. Identify critical questions

2. Identify the source of the data (descriptive)
   i. What data to be collected primary or secondary data and the reliability of the data?
   ii. The size of sample data that is required?
   iii. What methodology required to be used to collect the data?
   iv. What data to be collected internal or external data

3. Collection of data

4. Transforming the data into information (predictive)
   Organize, analyze and interpret
   Factors to consider when transforming the data into information
   i. Technology to be adopted
   ii. Designation of employees to be recruited operational managerial or strategic decisions.
   iii. Work experience and duration of each assignment.
   iv. Salary quotations from the prospective employees.
   v. Aspirations of the employees.

5. Decision making (action) to be taken out of solutions available (prescriptive)
A) Types of decisions to made based on,
   i. Structured decision
   ii. Semi structured decision
   iii. Unstructured decision

B) Predictive analytics for the decision taken.

2.5.6 Information used for decision making

The process starts with these key questions on context, stakeholders and strategies. The information process proceeds with four questions:

   (i) What choices and decision do we need to make?
   (ii) What data can we collect and analyze?
   (iii) What have we find out of analysis and test?
   (iv) Which alternative do we now recommend?

There is a dawning awareness that data and information, as a commodity in and of itself, has little value to an organization unless it is transformed into meaningful intelligence. In our age of information and speed, the sheer volume of data that organizations can and do amass is overwhelming. Amidst the volume, data is often fragmented, conflicting, incomplete and, in some cases, irrelevant. What is needed is the type of alchemy that transforms data and information into intelligence for business decision making that will have a positive impact on organization development (Lai et al. 2002). Organizations require real-time intelligence more than ever to enable strategy creation, decision making, execution and organizational learning.

In the context of human capital management, HR intelligence, as derived from people research and analytics, is a fast emerging mandate for organizations seeking strategic competitive advantage. The concept of HR Analytics, it is of inherent value and how practitioners can build HR intelligence capability within their sector.

HR profession’s battle for strategic legitimacy has given rise to a plethora of methods and techniques such as HR metrics, balanced scorecards, employee and organizational surveys, selection research, 360-degree and multi-rated feedback systems and benchmarking approaches. Although these methods have significantly advanced HR practice, they are treated as very specific and narrow methodological specialties generally managed as independent program and projects and largely exist within functional HR department with the primary objective of effective and evidenced based decision making (Falletta, 2008). More disturbingly, they often lost sight of their original intent and become highly institutionalized and symbolic in the daily decision making practices. Despite the fact that companies spend
millions of money on employee’s research and analytics related practices each year, no systematic process is available to make sense of how to transform these disparate data collected into a meaningful intelligence results with better and competent decision made.

Dr. Jac Firz-enz, founder and CEO of the Workforce intelligence Institute and a respected authority on strategic HR measurement, asserts that “we desperately need to advance traditional people research and analytics practices and develop a more scientific and evidence based approach to predict business and organizational outcomes in decision making” (Falletta, 2008). Boudreau and Ramstad (2007) further call for a HR decision science approach, whereby organizations strategically analyze their data and information and make better decisions with respect to their work force and key talent. Moreover, Pfeffer and Sutton (2006) have introduced the concept of evidence based management. Specifically, they contend that hunches, trends and fads, and the popular press tend to influence organization decisions around what strategies and practices are best. Instead, they advocate an evidence based approach whereby science and empirical evidence drive business decisions and strategies. In conclusion Davenport and Harris (2007) argue that the landscape for using data and information has shifted dramatically, and that leading companies are building strategic capabilities and competitive advantage through data driven intelligence and insight in relation to advanced HR Analytics.