

Patent Literature as a Tool for Talent Acquisition – A Case Study

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Abstract— Human resource management is an important task in any organization involving strategic approach for effective and efficient utilization of human resources to achieve an organizations core objectives and help gain competitive advantage. Hiring of right professional at the right time and right place is hence an important aspect of human resource management to have a positive impact on organizational performance. To identify experts in the field, authenticate professional data about personnel and their work is required. Social media plays an important role in harnessing this information available in public domain. As a new avenue for searching professional expertise in particular fields or technology, patent document can also be used.

This paper attempts in providing a fresh dimension of looking towards patent literature from the aspect of human resource identification. Patent provides exclusive right over an innovation. It contains authentic information about innovation, its inventors and assignee. This feature can be utilized to extract information about authentic inventors working in particular areas of interest. Hence patent literature can be put to use to hire experts in the field on basis of their innovative work graph and its value in the market. This paper discusses two case studies to showcase a methodology for human resource managers for searching and obtaining valid information about legitimate inventors and their team by making use of patent literature. Two different case studies are looked upon in two totally different domains of technologies to emphasize that patent literature can be used as a tool for human resource recruitment in almost any field of technology.

Keywords: Human Resource Management, Patents, Patent Analytics, HRM

I. INTRODUCTION

Education along with professional expertise provides a strong foundation for the knowledge-based economy. Having well qualified staff is a key asset to a company. This asset is essential to initiate, develop and implement innovations and thereby enhance business competitiveness. The quality of human resources employed, defines the quality of research performed. It is the prerequisite for the development of new knowledge and new technologies. To recruit the right person at right place and for right task is extremely important from the strategic point of view for a

business. Hence, decisions about people can influence the success of R&D projects as well as the learning process of a company (Moehrle et al. 2005). The human resource management is maintained by the human resource department and is responsible for the procuring, nurturing and maintaining the resources.

The term “Human resource management” implies list of activities which involves planning, executing and administering programs that are designed to increase the effectiveness and productivity of a business, (Moehrle et al. 2005). It includes the vast area of activities like recruiting, staffing, compensation, benefits, training, learning, employer-employee relation, organization development, labour welfare, medical and other basic amenities etc (Palshikar et al. 2018 ; Ruparel et al. 2020). For the same, recruiters have to surf different databases for fresher and experienced candidates. They have to sort candidate profiles as per the vacancies generated and find the correct match for the position.

Now a days candidate profiles are shortlisted from social media websites like Linked In, Glassdoor etc. (Behrenz & Lars, 1995; Bridgstock, 2019 ; Ruparel et al., 2020). Even social media are now enabling recruiters to search for qualified applicants who were not necessarily searching for a job, says Matt Reider, president of Reider Research and VP at Champion Recruiting Services (Blacksmith & Poeppelman, 2014). Candidate profiles on social media sites are taken into consideration to know about their social activities, status and behaviour. This paper highlights the different ways and strategies employed by companies for recruiting research and development personnel. Then it showcases a methodology by making use of patent literature as a tool for searching and obtaining valid information about legitimate inventors and their team in a particular technology. Initially to start with, an area of interest from which leading innovators are to be discovered is chosen. Two different case studies are looked upon and overall information about leading inventors in the respective domain is discovered

through the discussed process. Employing paid as well as free patent database, patent data is extracted. This data is sorted in accordance with the available hiring position and analysis is carried out for the leading inventors against various indicators such as application countries, associated assignees, patent classification codes, and application year respectively.

II. INTELLECTUAL PROPERTY

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce (WIPO 2003). Intellectual property Rights (IPR) is the rights given to inventors for their work by nations for a limited amount of time. It covers all fields of technology and arts through various frameworks such as patent for inventions, copyright for novel and music compositions, plant variety for protecting different varieties of seeds, Geographical indication for specific type of handicraft or dish or fruits etc. and trademark in the form of logos and distinct marks are used as to distinguish the goods of recipient owner from the rest (WIPO 2003).

A patent offers the strongest protection within the framework of IPR (Shaikh & Singhal 2018). Patent data include specific information details like title, name of inventors, assignees, their application country, prior art, claims, background of the invention, drawings if required, method of using the invention in case of product or machine and much more. Many electronic patent databases will incorporate assignment data by providing separate fields for the original, and current assignee, where the current assignee will reflect the impact of any changes in the ownership of a patent right since it was first applied for, (Trippe, 2015). This makes the patent data of immense value with respect to Human Resource identification, and at the same time this information is provided to the public through authorized patent offices of respective jurisdiction.

Profiles of inventors' technological competence are a valuable source of information for decision-making in research and development (R&D) management, e.g. concerning inventor assessment, human resource development and R&D team-building, (Moehrle et al., 2005). On the other hand, Patent literature is a major source of information which when properly processed and analysed, can yield a wealth of information (Shaikh & Singhal, 2018). Therefore, this paper attempts to make use of patent literature as a tool for searching and obtaining information about inventors and their team for a said technology.

III. LITERATURE REVIEW

This literature review is based on how ways of recruiting personnel and human resource management changed over time. Initially resume were send by post in early 1980s, then interview began to be conducted on telephone in 1990s (Behrenz & Lars, 1995). Later with the advent of internet,

came online sources like website, portals, social media, Blogs, social networking websites (SNWs) like Orkut, Facebook etc. enlarged the scope of both job seekers and employers as well (Blacksmith & Poeppelman, 2014). Professional networking website like linked In, Glassdoor entered the market after 2008 (Gelinaz et al., 2017; Ruparel et al., 2020). Recently people have started looking upon patent as a source of information for recruitment and analysis process (Moehrle et al., 2005).

Behrenz & Lars (1995), investigated the recruitment behaviour of 1000 employers. Analysis revealed that careful choice of the recruitment channel is the means of the employer to increase the average marginal product of the applicants and also to increase the arrival frequency of the applicants. Different recruitment channels also have different costs for the employer. The analysis is based on about 800 telephone interviews with employers regarding the last person they had hired. Analysis showed the employers mainly recruit personnel in order to expand a certain activity of their firm. Initially employers mainly look for job seekers with good education and experience and later during the job interview the persons with professional knowledge, personal engagement and social competence are selected.

Nikolaou (2014), addressed another important source in online recruitment job boards or job search Web sites (such as monster.com or careerbulider.com). This paper focuses on how both employer and job seekers used online sources for correct candidates and correct jobs respectively. Job search Web sites have been used widely from job seekers since the later 1990s to upload their curricula vitae (CVs) and apply to job openings. They offer a number of advantages to job seekers, such as posting their resumes online and access to an extensive database of jobs for free. Nevertheless, as job boards have been around longer than SNWs and are well established between job seekers compared with new forms of SNWs.

Gelinaz et al. (2017), suggests to normalizing social media recruitment techniques while remaining sensitive to their potentially novel aspects. They propose to do this by making resemblance to traditional off-line recruitment explicitly and then applying the appropriate ethical considerations and scrutiny. But they also taken into consideration that social media needs review further to cross check in contrast to offline recruitment.

Becker et al. (1999), have given a lucid conclusion based on their analysis of five leading management firms. The foundation of a value-added HR function is a business strategy that relies on people as a source of competitive advantage and a management culture that embraces that belief. They also emphasized value-added HR function will be characterized by operational excellence, a focus on client service for individual

employees and managers, and delivery of these services at the lowest possible cost. Lastly they concluded that the value-added HR function requires HR managers that understand the human capital implications of business problems and can access or modify the HR system to solve those problems.

Moehrle et al. (2005), have given a completely new approach to map inventors in two groups' viz single key inventors and key inventor set. Both of these sets serve to support the work of human resource managers and R&D managers. This method overcomes the limitations of prevailing approaches in two respects. Firstly a detailed picture of the inventor's know-how and capacities can be extracted from similarities between all patents of one inventor or a complete inventor set. Furthermore, international patent classification (IPC) substructures can be identified within or between classes. Secondly this method also applies semantic structures, resulting in a more indicative measurement of similarities between patents.

IV. METHODOLOGY

The literature surveys show how the paradigm of recruitment aspect of human resource management has shifted from hard copy bio data to social media and also to patent literature. On the same note, this paper showcases a methodology to analyze and gain genuine information about inventors in a particular field of technology using patent literature. As a case study, the topics of "Data security in cloud backup mechanism" and "Fertilizers in Nanotechnology" are chosen and the numbers of patents in the field are analyzed. For this subscription-based database, Derwent Innovation Index (DII) from Thomson and Patseer along with free database like Google patent, Espacenet and USPTO are used to gain relevant patents. The patent applications and granted patents published till Dec 2018 for Data security and 18 Feb 2019 for Nanotechnology have been taken into consideration to understand the latest trend. Appropriate keywords in combination with classification codes are used in the search strategies to get the relevant dataset. The search methodology for obtaining patent publications is explained briefly below.

V. CASE STUDIES

A. Case study I: Data security in cloud backup mechanism

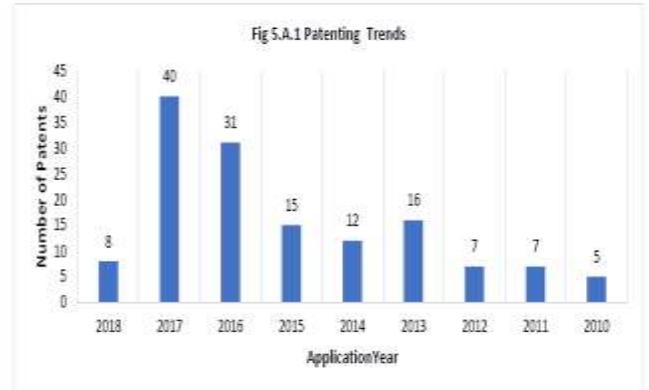
1. Application year – till 2018.
2. International Patent Classification codes for cloud computing, data security, cryptography etc as given in table 1

Using the following query on Thomson Innovation, a result set of 233 records was obtained. The query on Patseer resulted in 100 records. All these records (333) were combined, filtered, and sorted for the purpose of analysis. After filtering the records and removing the duplicates, a total of 141 patent records were used for further analysis.

The query used was for the search on the data bases comprised of keywords like Data security, cloud, and cloud storage cloud computing along with relevant IPC like G06F, G10L H04H, H04L and H04I.

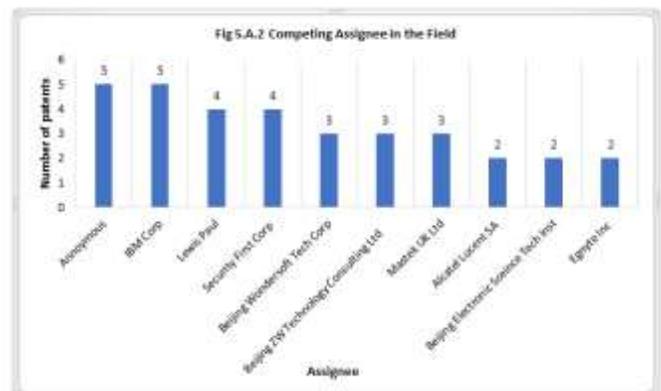
Analysis of Data:

1) Patent Filing trends in the field of Data security in cloud backup mechanism



The figure 5.A.1 depicts the trends of patenting in the field of Data security in Cloud Backup Mechanism. It started with advent of cloud computing and the year 2010 got registered with 5 patents. 2011 and 2012 have 7 patents each to their timeline. Then the graph gradually goes up till recently with registering 40 Patents in 2017. But 2018 shows only 8 patents, which is only 20% of patents filed in 2017. It portrays sudden decrease in patenting trends. However, as a patent application is hidden from public for a period of 18 months from application to publication date, many patent applications might not have been published yet and hence the figure depicts a dip in patenting activity for the recent years which might not be the actual case (Shaikh et al., 2018). Figures that are meant to appear in color, or shades of black/gray. Such figures may include photographs, illustrations, multicolor graphs, and flowcharts.

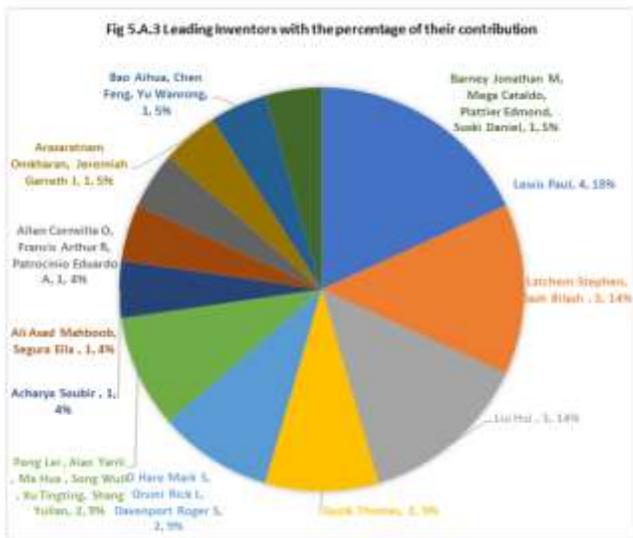
2) Competing Assignee in the field of Data security in cloud backup mechanism.



This figure 5.A.2 displays leading competitors in the field. In this field not only universities, private firms but individuals also are contributing equally with good number of patents. China with its educational Universities and Private firms altogether is leading with 6 patent to its credit. Second leading position is shared by IBM followed by an individual named Mr. Lewis Paul earning 4 patents each.

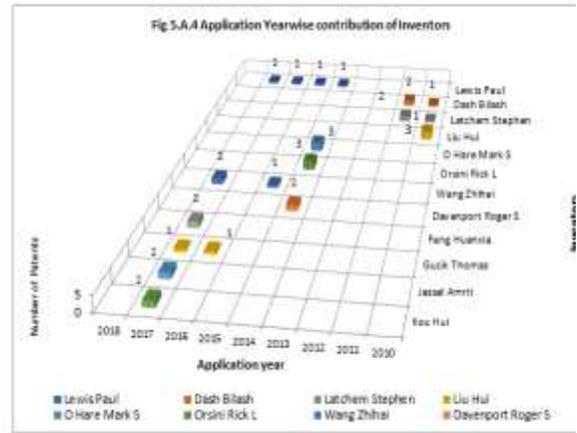
Others private firms like Alcatel Lucent from France, Beijing Electronic Science Technology Institute and Beijing Technology consulting co ltd from China and Egnyte Technology Inc. from US have 2 patents each in their account, thereby occupying last position in the top ten leagues.

3) *Leading Inventors in the field of Data security in cloud backup mechanism*



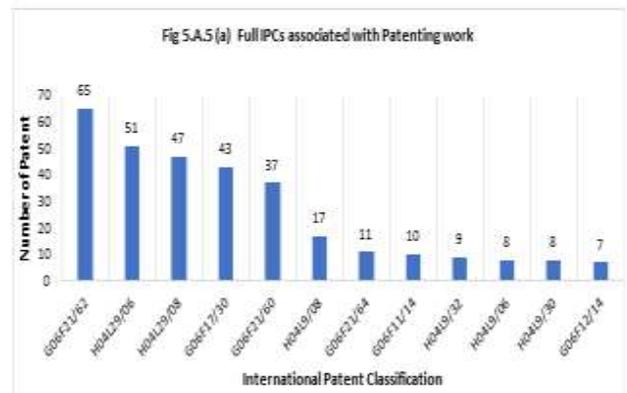
This Figure 5.A.3 is the most important Graph, depicting contribution of different inventors along with number of patents to their credit, in the field. From the figure, Lewis Paul is the leading inventor with 18% contribution and earning 4 patents alone. Latchem Stephen and Dash Bilash jointly and Lui Hui have obtained 3 patents respectively, thus contributing 14% each. Three teams with Guzik Thomas in first, Ohare Marsk S, Orsini Rick L and Davenport Roger in second team and third team comprising of Peng Lei, Xiao Yanli, Ma Hua, Song Wuli, Xu Tingting, Shang Yulian, have earned 2 patents each, thereby contributing 9%. There are few more teams with single patent in their account at the last position. Those teams are Ali Asad Mehboob and Segura Ella as a team, and team of Allen Corville, Francis Arthur and Patrocinio Eduardo. Acharya Soubir has gained one patent to his credit as well. This data hence points to inventors in the field of data security in cloud backup mechanism.

4) *Inventor Contribution with respect to application Year in the field of Data security in cloud backup mechanism*



The figure 5.A.4 explains the year wise contribution of the different inventors in the field. It entails that Lewis Paul with highest number of Patents has started patenting activity in 2014 and since then he has filed one patent every year till 2017. O Hare Mark S and Orsini Rick L has filed 3 patent applications each in 2014. Again, Lui Hui has made three patent applications in the year 2010 but disappear thereafter. There are many inventors with two patent applications, which is the least as per the graph like Kou Hui, Jassal Amrit etc. This data thereby highlights the past and current activities the researchers are involved in.

5) *Patenting work of inventors is classified with respect to International Patent Classification (IPC) used and number of patents gained in respective IPCs.*



IPCs are very important in the field of Patenting. They determine to which class and sub class, an invention belongs to. Basically, only two main G06F and H04L are focused. Taking subclass in to consideration G06F 21/62 which stands for “protecting access to data via a platform, e.g. using keys or access control rules” is the IPC with maximum number of

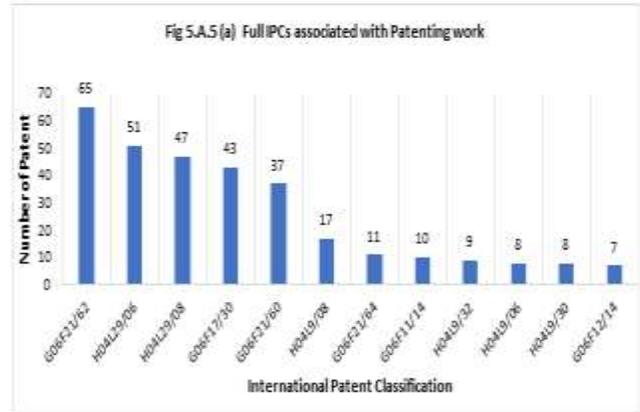
patents. Thereafter H04L 29/06 which stands for the “arrangements, apparatus, circuits or systems, characterized by a protocol”, is the IPC with 51 patents. IPC G06F 12/14 which means “protection against unauthorized use of memory” is the one with least number of patents. The details of IPC are described in Table 1 below.

Table 1: Description of IPC used

IPC	DESCRIPTION
G06F002160	Security arrangements for Protecting access to data.
G06F002162	Security arrangements for Protecting access to data via a platform, e.g. using keys or access control rules against unauthorised activity.
G06F002164	Security arrangements for Protecting data integrity, e.g. using checksums, certificates or signatures
G06F0011/14	Error detection or correction of the data by redundancy in operation
G06F0012/14	Protection against unauthorised use of memory or access to memory
G06F0017/30	Information retrieval or data processing systems or methods specially adapted for administrative, commercial, financial managerial, supervisory or forecasting purposes.
H04L0009/00	Cryptographic mechanisms or cryptographic arrangements for secret or secure communication involving public key infrastructure (PKI) trust models or network communication protocol for supporting authentication of entities using certificates in a packet data network.
H04L0009/08	Cryptographic mechanisms involving homomorphic encryption
H04L0009/30	Cryptographic mechanisms involving public key encryption
H04L0009/32	Data integrity verification for supporting entities authentication in a packet data network
H04L0029/06	Arrangements, apparatus, circuits or systems, characterised by a protocol.
H04L0029/08	Arrangements for transmission control procedure, e.g. data link level control procedure

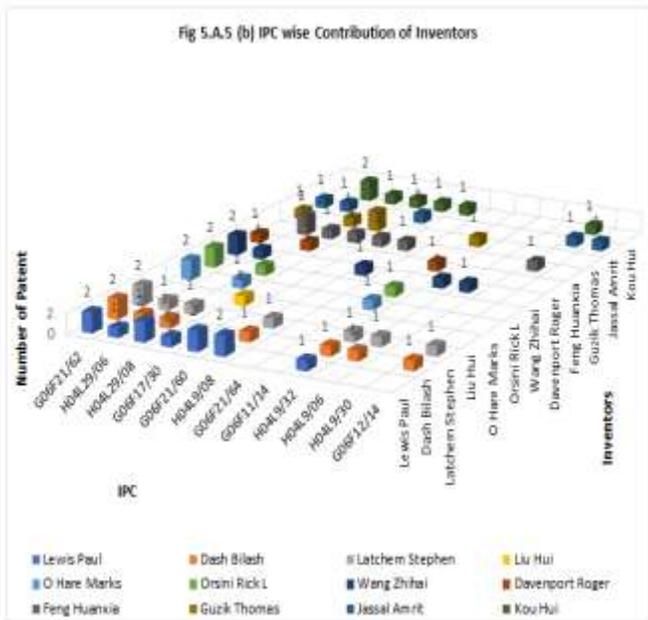
G06F 21/62, G06F 21/60, G06F 17/30, G06F 12/14, H04L 20/06, H04L 9/08, H04L 9/06 and H04L 9/30. Likewise we can determine the area of interest of every inventor in the field individually. Similarly Lui Hui is the inventor, who has worked with only one IPC – G06F 17/30, means information retrieval.

6) Inventors with their Associated Assignee Countries in the field of Data security in cloud backup mechanism

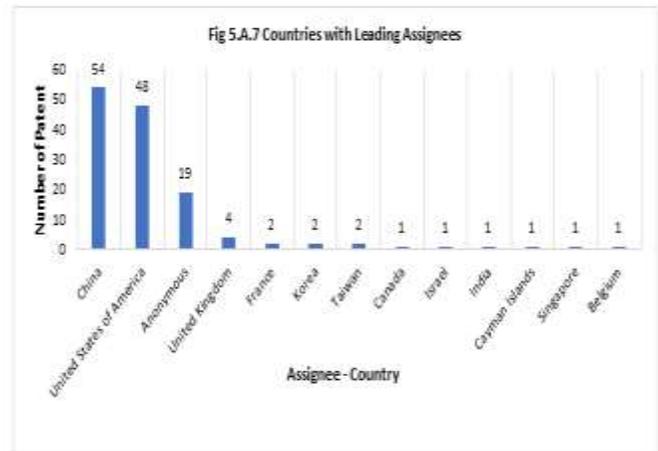


The graph 5.A.6 above depicts association between inventors and their respective Assignee countries. US tops among the assignee countries with 16 patents. It implies the field has good market in the country. Lewis Paul with highest number of patents i.e 4 is associated with Assignee from US. It brings to notice that two inventors, kou Hui and Feng Huanxia have filed patents with no mention of assignee. Hence being labelled as anonymous in the graph.

7) Countries with maximum number of Patents in the field of Data security in cloud backup mechanism



Now when we know about major IPCs in this field, a graph with inventors against IPC related to their work is plotted as below. It points to the specific technological domain in which each inventor has work. Three Inventors Mr. Lewis Paul, Mr.Dash Bilash and Mr.Latchem Stephen are working with 7 different IPCs at almost the same time period. For instance, Mr. Lewis Paul has worked with seven different IPCs like



This figure 5.A.7 shows Assignee countries with count of patents registered in its jurisdiction. It gives an idea about the countries that are leading with maximum number of patents in

the field thereby highlighting the countries that are carrying out research in the said domain. All these answers can be found from the figure above. China is the leading country with 54 patents, followed by US with 48 patents. One more interesting thing to note is 19 Assignees have not mentioned their country of jurisdiction, but still could apply for patents. Among them few have even been granted patents. Few patents are filed for group of countries like India-US together and US-Belgium –France at the same time, may be via PCT or WIPO filing.

B. Case study II: Nanotechnology

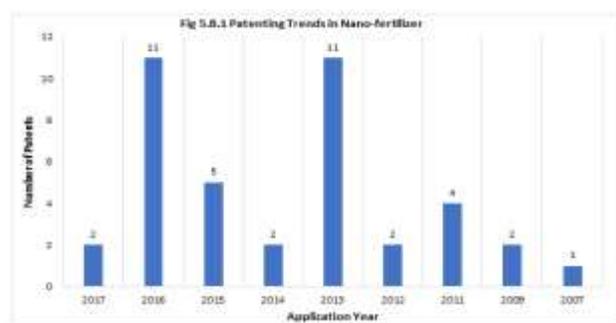
1. Keywords- Nanotechnology, Nano science, Nano-Fertilizers
2. Application year – till 18 Feb 2019.
3. International Patent Classification codes for Nanotechnology, fertilizers etc as given in table 2

Nano technology is a vast field, hence use of Nano technology in agriculture was selected. There were many fields for Nanotechnology in agriculture too like Nano Formulations, Nano-Polymer, Nano fertilizers, Nano-Pesticides, Nano-Biosensor, etc. As a specific topic, Nano-fertilizers is selected in order to give the present work two different case studies in two different technologies.

We search paid databases like Thomson innovation, Patbase and Patser for each of the above mentioned fields and got 39, 271, 44, 48 and 45 patents respectively. Using the following query 57 records from Thomson innovations and 51 records from Patser are obtained. Thereafter all results were combined and sorted for the purpose of analysis. After filtering the records and removing the duplicates, a total of 40 patent records were used for further analysis. The query used was for the search on the data bases comprised of keywords Nano fertilizer, Nano sized fertilizer, Nanotechnology fertilizer, Nano science fertilizer in combination with relevant IPC grouped under B82Y. The query was further filtered to look for patent applications till 2019.

Analysis of Data:

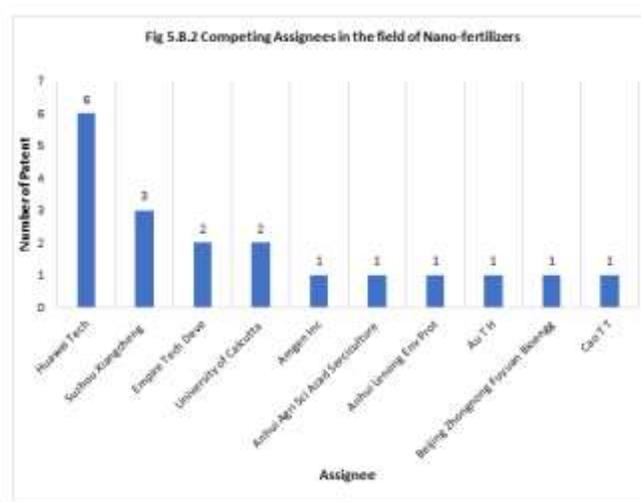
1) Patent Filing trends in the field of Nano-fertilizers



The figure 5.B.1 shows the year wise pattern of patenting filing activity in the field of Nano fertilizer. It started with the year 2007 with a single patent. 2013 and 2016 have 11 patents

each to their timeline. The graph shows fluctuation with sudden highs in 2013 and 2016 and downs in year 2009, 2012, 2014 and 2017. It can be observed, in 2018, not a single patent was registered, which portrays sudden drop out in the field. However, as explained earlier, a patent application is hidden from public for a period of 18 months from application to publication date, many patent applications might not have been published yet and hence the figure depicts a dip in patenting activity for the recent years which might not be actually true (Shaikh et al., 2018).

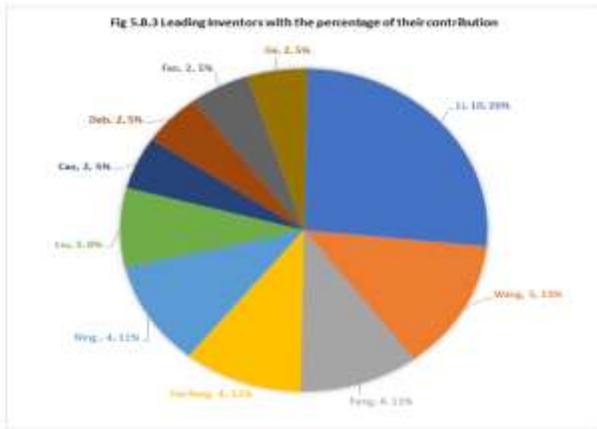
2) Competing Assignee in the field of Nano-fertilizers



The figure 5.B.2 displays leading competitors of the field. As can be seen from the figure, patenting in Nano-fertilizer shows contribution from Academia, private firms as well as individuals. Among the private firms, Huawei Technology tops with 4 patents followed by Suzhou Xiangcheng with 3 patents. University of Calcutta from India has 2 patents. Others private firms like Empire Technology Development, Amgen Incorporation, Beijing Zongnong Fuyuan from China have 3 and 2 patents each respectively. Anhui Agriculture Science Academy Sericulture Institute and Anhui Lenong Environment protection have 1 patent each in their account. Only individual assignees are Au T H and Cao T T.

3) Leading Inventors in the field of Nano-fertilizers

This Figure 5.B.3 depicts the most significant information about contribution of different inventors along with number of patents to their credit, in the field.



From the figure, Li is the leading inventor with 26% contribution and having 10 patents alone. Wang is the inventor with second highest number of 5 patents, thereby contributing 13%. Ning, Hai-feng and Feng have obtained 4 patents each, thus contributing 11%. Liu with 3 patents contributed 8% to the field. Four individuals, CAO, Deb, Fan and Jie have 2 patents each, thereby contributing 5% each in the pie chart above.

4) *Inventor Contribution with respect to application Year in the field of Nano fertilizers*

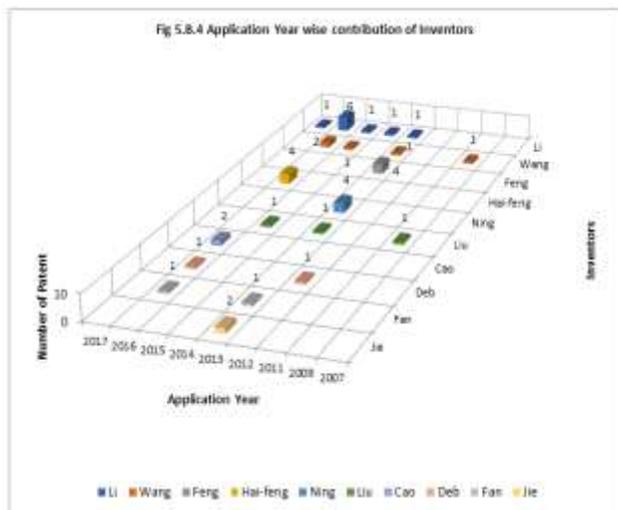
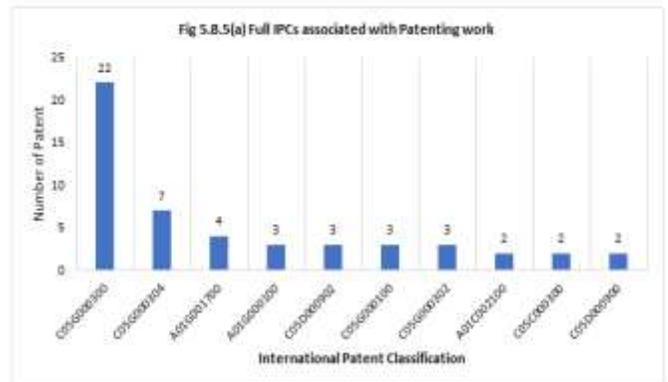


Figure 5.B.4 shows year wise contribution of different inventors. Maximum number of patenting is done in 2013 with 14 patents and 2016 with 16 patents. This year wise contribution is different in number from year wise chart 5.B.1 since in this figure single patent may be counted multiple times, towards each inventor’s contribution if a patent is having multiple assignees. Li has earned maximum patents being consistent with at least one patent each year from 2013. Jie is with lowest contribution of 1 patent. Such representations can point out to the research activities and expertise of individuals in particular technological domains.

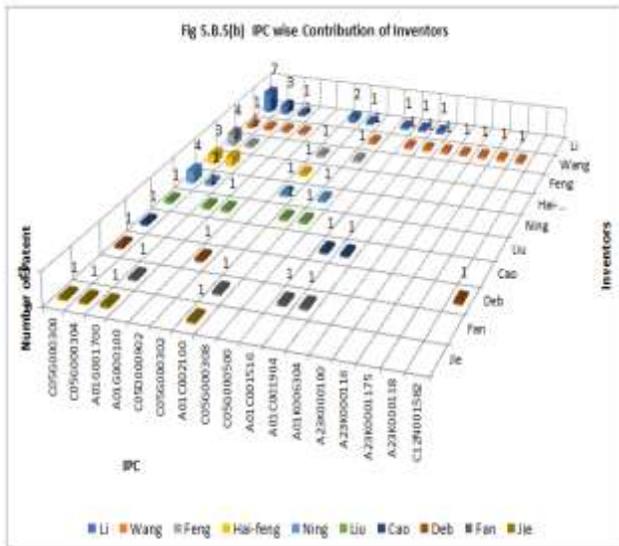
5) *Patenting work of inventors is classified with respect to IPC used and number of patents gained in respective IPCs.*



The figure 5.B.5 display IPCs in which maximum patent are obtained. Basically, only two main C05D and C05G are focused. Taking subclass in to consideration C05C000300 which stands for “Fertilizers containing other salts of ammonia or ammonia itself, e.g. gas liquor” is the IPC with maximum number of patents. Thereafter C05G000304 which stands for the “Mixtures of one or more fertilizers with materials not having a specially fertilizing activity with soil conditioners” is the IPC with 7 patents. IPC A01C002100, C05C000300 and C05D000900 are the one with least number of patents. The details of IPC are described in Table 2 below.

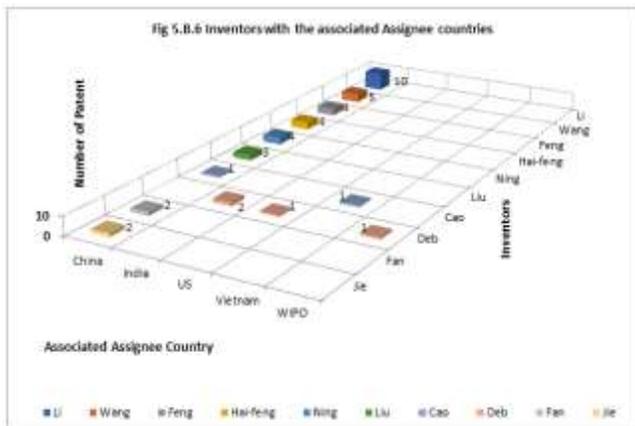
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G06F0011/14	Error detection or correction of the data by redundancy in operation
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G06F0017/30	Information retrieval or data processing systems or methods specially adapted for administrative, commercial, financial managerial, supervisory or forecasting purposes.
H04L0009/06	Cryptographic mechanisms or cryptographic arrangements for secret or secure communication involving public key infrastructure (PKI) trust models or network communication protocol for supporting authentication of entities using certificates in a packet data network.
H04L0009/08	Cryptographic mechanisms involving homomorphic encryption
H04L0009/30	Cryptographic mechanisms involving public key encryption
H04L0009/32	Data integrity verification for supporting entities authentication in a packet data network
H04L0029/06	Arrangements, apparatus, circuits or systems, characterised by a protocol.
H04L0029/08	Arrangements for transmission control procedure, e.g. data link level control procedure
A23K000100	Animal feeding-stuffs
A23K000116	Accessory food factors for animal feeding-stuffs containing Sugars; Polysaccharides
A23K000118	Feeding-stuffs specially adapted for particular animals or ruminants
A23K0001175	Inorganic substances, e.g. oligo-elements along with Silicates, e.g. perlites, zeolites or bentonites



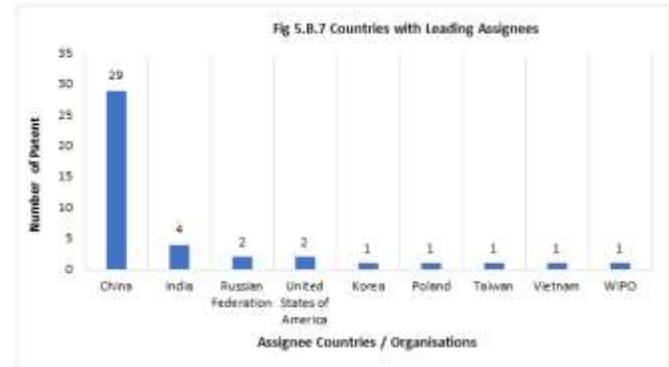
After coming across major IPCs in this field, a graph with inventors against IPC related to their work is plotted. It gives clarification about how the work of an inventor can be classified on basis of IPCs. Mr.Li has work in maximum i.e. eight IPCs like C05G 00/30, C05G00/304, A01G 00/17, C05G00/302, A01C00/2100, C05G00/0500, A01C00/1516 and A01C001904. Thus it also helps to identify the different area of interests, a particular inventor works in, highlighting their expertise.

6) Inventors with their Associated Assignee Countries in the field of Nano-fertilizers



The graph 5.B.6 displays association between inventors and their respective Assignee countries. Both Mr.Li leading the league with 10 patents and Mr.Jie who has least i.e 2 patents are associated with Assignees from China. It seems most of the inventors belong to china and the credit of patent earned by them as well. Other than China, India, US and Vietnam have 2, 1 and 1 patents respectively.

7) Countries / Organizations with maximum number of Patents in the field of Nano-fertilizers



The Figure 5.B.7 shows country wise contribution to the patenting activity in Nano fertilizers. China tops the list with its educational Universities and Pvt Ltd companies altogether leading the track with 29 patents to its credit. India is second highest in the race with 4 patents. Country with least number of patents is Poland, Vietnam, Taiwan and Korea with one patent.

VI. CONCLUSION

Hiring of right professional at the right time and right place is an important aspect of human resource management to have a positive impact on organizational performance. The human resource management activity as well as hiring of human resources has changed over a period of time. To identify experts in the field, authenticate professional data about personnel and their work is required. The digital knowledge economy has forced a shift in the hiring process from manual to automation. With the advent of the social media platform, hiring has taken a leap into the virtual world with initial references and background checks performed on the basis of individuals’ information available on the social media platform which is authenticated publically. Apart from the social media, intellectual property in general and patents in specific are playing an active role in the current hiring process.

Patent provides exclusive right over an innovation. It contains authentic information about innovation, its inventors and assignee. This feature can be utilized to extract information about authentic inventors working in particular areas of interest. Hence patent data can be put to use to hire experts in the field on basis of their innovative work graph and its value in the market. A bibliographic detail of patents is helping human resource management team to hire the right resource on the required technology in huge R&D projects.

As a case study, the topics of “Data security in cloud backup mechanism” and “Fertilizers in Nanotechnology” are chosen and the numbers of patents in the field are analyzed to identify experts working in these two domains. It is observed that a team of experts as well as individuals are involved while

coming up for a technology in the field of data security in cloud backup whereas nanotechnology is dominated by teams from private firms and universities and not by individuals. Inventors are found to be more consistent in the field of nanotechnology as compared to Cloud data security. Agriculture using nano technology is mostly researched in China, followed by India as well as countries like Poland, Taiwan and Vietnam while US is dominant in the field of Data security in cloud backup. The analysis also highlights the individuals who are working in the field along with the duration of their association and their expertise.

The study reveals that there are few patents in the field of Data security in cloud backup mechanism where Assignees country is not mentioned while few patents are without mentioning their assignees. Inventors are found to be more consistent in the field of nanotechnology as compared to Cloud data security. This study also reveals association of inventors with their respective assignees. It helps to understand the trends of association between inventors with same or different assignees in the field. Hence it can be said that analysis of patent data can be one of the tools to target employees for technological domains.

This paper stands apart with its two distinct case studies from two totally different fields. Initially it encompasses area like internet of things by touching “Data security in cloud backup mechanism”. In the second case study, it touches the Agricultural domain and analyses patent literature specifically in the “Fertilizers in nanotechnology” for highlighting individuals, private players as well as academia working in these fields. The dictum behind choosing such wide variant topic is to emphasize and showcase that patent literature can be used as a tool for Human resource recruitment in almost any field of technology.

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