

Changes and Challenges of Recruitment Models in the Era of Big Data Intelligence

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Abstract: With the rapid development of information technology, we have ushered in the era of big data intelligence. In this era, there is an explosive growth of data, and the application of intelligent technology is becoming more and more widespread. The arrival of the Big Data Intelligence Era has brought a far-reaching impact on the recruitment model. This paper first introduces the development of big data and artificial intelligence, and then analyzes the application of big data and artificial intelligence technology in enterprise recruitment management, and then analyzes the changes it brings to the recruitment mode, including effectively improving the efficiency and accuracy of recruitment, providing data support and scientific guidance for the development of recruitment plans, making network recruitment more efficient and cost advantageous, recruiting groups tend to be more diversified, solving the pain point of accurate matching of people and jobs, etc., and then analyzes the changes it brings to the recruitment mode. Finally, it analyzes the challenges to the recruitment management process of enterprises in the era of big data intelligence.

Keywords: Big Data; Artificial Intelligence; Recruitment Mode; Change and Challenge.

1. Introduction

In the traditional recruitment mode, enterprises often rely on human screening and interviews to select talents. However, this approach suffers from problems such as inefficiency and subjectivity. And in the era of big data intelligence, enterprises can utilize massive data and advanced analysis technology to match talents and positions more precisely. By analyzing job seekers' resumes, social media information and other data, companies can better understand the skills, experience and potential of job seekers, thus improving the accuracy of recruitment. The application of big data and smart technologies has brought unprecedented opportunities for companies to make recruitment more accurate and efficient. However, at the same time, the era of big data intelligence has also brought a series of challenges to the recruitment model. This paper will discuss in depth the opportunities and challenges of the recruitment model in the era of big data intelligence, in order to provide useful reference for enterprises in talent recruitment in this digital era.

2. Overview of the Development of Big Data and Artificial Intelligence

2.1. Definition and Characteristics of Big Data [1]

Big Data (Big Data) refers to a collection of data that is large in scale, high in complexity and difficult to capture, manage and process with conventional software tools. These data collections usually have high-speed generation, diverse data types, and multiple heterogeneous data sources. The characteristics of big data can be summarized in the following aspects.

First, big data is characterized by high-speed generation. With the rapid development of information technology, the amount of data generated by people in their daily life and work is growing exponentially. Whether it is user interaction data on social media, location information on mobile devices, or real-time data collected by sensors, cameras and other

devices, they all constitute an important part of big data.

Secondly, big data has diverse data types. Big data includes not only structured data, such as tabular data in relational databases, but also unstructured data, such as text, images, audio, video and other multimedia data. In addition, big data also includes semi-structured data, such as log files, sensor data and so on.

Again, Big Data has multiple and heterogeneous data sources. The sources of big data include various business systems within an organization, social media, public data on the Internet, and data generated by various sensors and devices. The heterogeneity of these data sources makes the processing and analysis of big data a challenge, requiring the use of various technical means for data integration and cleaning.

Finally, big data is characterized by great value potential. Through the analysis and mining of big data, the laws and trends hidden behind the data can be discovered, providing strong support for enterprise decision-making. Big data analysis can help enterprises discover market demand, optimize product design, improve marketing strategies, improve operational efficiency and so on, so as to gain competitive advantages.

In summary, the definition and characteristics of big data make it an important resource for enterprises in decision-making and innovation. However, due to the scale and complexity of big data, it becomes an important challenge and opportunity for enterprises to effectively collect, store, process and analyze big data. Only through reasonable technology and management tools can enterprises fully utilize the potential of big data and achieve sustainable development.

2.2. Definition and Application Fields of Artificial Intelligence

Artificial Intelligence (AI) refers to the theory, method, technology and application system that simulates, extends and expands human intelligence, so that computers have the ability to be as intelligent as humans. It is a comprehensive discipline involving many fields such as computer science,

psychology, philosophy, mathematics and statistics.

The application areas of artificial intelligence are very wide, covering various industries and fields. Here are a few typical AI application areas:

Machine Learning: Machine learning is one of the core technologies of artificial intelligence, which realizes automated decision-making and prediction by allowing computers to learn and improve their performance from large amounts of data. In finance, healthcare, transportation, e-commerce and other fields, machine learning is widely used in risk assessment, disease diagnosis, intelligent traffic management and personalized recommendation.

Natural Language Processing: Natural language processing refers to the technology that allows computers to understand, process and generate natural human language. It can be used in scenarios such as machine translation, intelligent customer service, and public opinion analysis. For example, intelligent voice assistants can have conversations with users and perform corresponding tasks through natural language processing technology.

Computer vision: Computer vision is the technology that allows computers to perceive and understand images and videos through cameras or other sensors. It can be used in areas such as face recognition, image classification, and drones. For example, face recognition technology can be used in scenarios such as face payment and personnel attendance.

Expert system: Expert system is an artificial intelligence system based on knowledge base and reasoning engine, which can simulate the decision-making process and knowledge reasoning ability of experts. It is widely used in medical diagnosis, industrial control, financial risk assessment and other fields.

Autonomous Driving: Autonomous driving refers to the ability to realize unmanned vehicle driving through artificial intelligence technology. It relies on sensors, maps and algorithms to sense and understand the surrounding environment and make driving decisions accordingly. Autonomous driving technology is expected to change the way transportation travels in the future and improve transportation safety and efficiency.

In short, the application field of artificial intelligence is very broad, covering various industries and fields. With the continuous development and breakthroughs in technology, artificial intelligence will play an increasingly important role in the future [2].

3. The Impact of Big Data and Artificial Intelligence on Enterprise Recruitment Management

3.1. Application of Big Data in Recruitment and Selection

With the development of big data and artificial intelligence technology, enterprises are increasingly beginning to apply big data analysis and artificial intelligence algorithms in the recruitment and selection process. The application of big data in recruitment and selection can provide a more accurate and efficient selection of talents, thus providing enterprises with a greater competitive advantage.

First of all, big data can help companies understand the talent demand and market trends for different positions by analyzing massive amounts of recruitment data. By mining and analyzing job seekers' resumes, career backgrounds,

skills and other information, big data can help companies quickly find candidates that match job requirements and improve recruitment efficiency.

Second, big data can be used to understand a candidate's personal characteristics, preferences and abilities by analyzing his or her social media activity and online behavior. This information can help companies assess candidates' suitability and potential more comprehensively, reducing the possibility of subjective bias and misjudgment.

In addition, big data can help companies make more accurate selections and predictions by analyzing candidates' interview performance, assessment results and performance data. By building talent assessment models and algorithms, big data can help companies identify the most promising and adaptable candidates, reducing the risk and cost of recruitment.

However, the application of big data in recruitment and selection also faces some challenges and issues. First, privacy and data security issues need to be adequately addressed and protected to prevent candidates' personal information from being misused or leaked. Second, the accuracy and fairness of big data analytics and AI algorithms also need to be further improved and verified to avoid undue discrimination and bias [3].

In summary, the application of big data in recruitment and selection can provide more accurate and efficient talent selection and help organizations gain competitive advantages. However, its application needs to be continuously improved and refined under the premise of protecting privacy and data security to ensure accuracy, fairness and reliability.

3.2. Application of Artificial Intelligence in Recruitment and Selection

With the rapid development of artificial intelligence technology, more and more companies are beginning to apply it to the recruitment and selection process. The application of artificial intelligence in recruitment and selection can improve efficiency, reduce costs, and can more accurately assess the ability and adaptability of candidates.

First, AI can help companies screen candidates through big data analysis and machine learning algorithms. The traditional hiring process usually requires HR departments to spend a lot of time and effort screening and evaluating a large number of resumes. In contrast, AI can quickly analyze and screen a large number of resumes through automation, and screen candidates that meet the needs of the enterprise based on preset conditions and requirements. This not only saves time and labor costs, but also improves the efficiency of recruitment.

Second, AI can help companies conduct interviews and assessments through interview robots and voice recognition technology. Interview robots can conduct virtual interviews with candidates based on pre-set questions and criteria, and analyze candidates' answers and expression through voice recognition technology. This approach not only reduces the interviewer's workload, but also improves the objectivity and consistency of the interview. In addition, AI can also determine a candidate's emotions and attitudes through emotion recognition technology to more comprehensively assess his or her adaptability and communication skills.

Finally, AI can also help companies make more accurate selection decisions through data analysis and predictive modeling. AI can analyze data such as a candidate's personal information, educational background, and work experience,

and compare and analyze it with an organization's internal employee data to predict a candidate's performance and adaptability. This approach can help companies make more scientific and objective selection decisions and reduce the interference of subjective factors.

In short, the application of AI in recruitment and selection can improve efficiency, reduce costs, and more accurately assess the ability and adaptability of candidates. However, the application of AI in recruitment and selection also faces a number of challenges and issues, such as privacy and data security issues, as well as the fairness and bias of AI algorithms. Therefore, enterprises need to consider carefully when applying AI technology and actively explore and improve relevant laws, regulations and ethical guidelines.

4. Changes Brought by Big Data and Artificial Intelligence to Enterprise Recruitment Management

4.1. Synergistic Application of Artificial Intelligence and Big Data in Recruitment to Improve Efficiency and Accuracy

With the rapid development of big data and artificial intelligence, the synergistic application between them has become increasingly important in enterprise human resource management. Big data provides massive data resources, while artificial intelligence is able to mine valuable information and knowledge from it through technologies such as machine learning and deep learning. Their synergistic application can bring many benefits to enterprise hiring decisions.

Artificial intelligence can provide more accurate recruitment and selection decisions by analyzing big data. By analyzing big data, AI can identify the candidates that best match the requirements of the position, improving the efficiency and accuracy of recruitment. At the same time, AI can also analyze data such as candidates' language and facial expressions to determine the

In summary, the synergistic application of artificial intelligence and big data can bring many benefits to enterprise human resource management. Their combination can provide more accurate, personalized and intelligent human resource management solutions, help enterprises better meet the challenges of talent exploration, cultivation and retention, and enhance their competitiveness and innovation. However, the synergistic application of AI and big data also faces issues such as privacy and data security, which require enterprises and governments to strengthen regulatory and protective measures to ensure its legal, compliant and sustainable development [4].

4.2. Intelligence and Automation Provide Data Support and Scientific Guidance for the Development of Recruitment Plans

Under the background of big data and artificial intelligence, enterprise recruitment management is facing the development trend of intelligence and automation. With the continuous progress of big data and artificial intelligence technology, enterprises can use these technologies to improve the efficiency and quality of recruitment management.

Intelligent recruitment management refers to the use of artificial intelligence technology to process and analyze large amounts of human resources data to achieve more accurate and efficient decision-making. Through big data analytics and

machine learning algorithms, companies can better understand the needs and potential of their personnel and develop more reasonable, accurate and targeted recruitment requirements and plans based on this information.

The use of AI technology in the recruitment process can automate and intelligently handle a large number of human resource management tasks, such as automatically screening resumes and intelligently recommending candidates. Through the synergistic application with big data, enterprises can realize more efficient and accurate scientific data support for recruitment work, save time and labor costs, and improve management effectiveness.

To sum up, the development of big data and artificial intelligence technology provides the opportunity of intelligence and automation for enterprise recruitment management. However, while pursuing intelligence and automation, enterprises also need to recognize the related challenges and problems and take corresponding measures to solve them. Only by striking a balance among technology, talent and ethics can enterprises truly realize the intelligence and automation of human resource management, thus improving their competitiveness and sustainable development.

4.3. Network Recruitment has more Efficiency and Cost Advantages

In the era of big data intelligence, it makes network recruitment has a greater efficiency and cost advantage. At the same time, network recruitment can reach a wider group of talents through the online platform, without geographical restrictions, and can attract job seekers from all over the world.

The use of big data and intelligent algorithms enables recruitment to more accurately correspond to job requirements and candidates' skills and experience, improving the accuracy of recruitment and solving the enterprise recruitment pain point of accurate matching of people and jobs. Real-time data analysis: help enterprises understand the recruitment effect, candidate behavior and market trends, so as to adjust the recruitment strategy in time. At the same time convenient communication and collaboration tools, such as online chat and video interviews, facilitate communication and evaluation between enterprises and job seekers, making the recruitment group present a diversified situation.

However, there are some challenges in online recruitment, such as verification of information authenticity, network security and other issues. Therefore, when using online recruitment, enterprises need to choose a reliable recruitment platform and take corresponding security measures to protect the interests of enterprises and job seekers.

Overall, online recruitment in the era of big data intelligence has greater advantages, but enterprises need to reasonably utilize and combine traditional recruitment methods to achieve the best recruitment results.

5. Challenges and Opportunities

5.1. Privacy and Data Security Issues

Enterprises face privacy and data security issues when managing personnel recruitment. On the one hand, the application of big data and artificial intelligence technology requires access to a large amount of personal data, including personal information, work performance data, etc. The acquisition and use of these data must comply with relevant laws and regulations, such as the Personal Information

Protection Law and the Labor Law, to protect the privacy rights and interests of candidates.

On the other hand, enterprises also face data security challenges when processing and storing big data. Big data contains a large amount of sensitive information, such as salary, health status, etc. Once leaked or maliciously utilized, it will cause serious losses to employees and enterprises. Therefore, enterprises need to take appropriate security measures, including encryption, permission control, data backup, etc., to ensure data security.

In summary, enterprises must pay attention to privacy and data security issues when conducting recruitment management in the context of big data and artificial intelligence. Only by ensuring the protection of privacy rights and interests and data security can the sustainable development of intelligent recruitment management be realized.

5.2. Technology and Talent Demand

In the context of big data and artificial intelligence, enterprise recruitment management faces the challenges and opportunities of technology and talent demand. With the rapid development of big data and artificial intelligence technology, the demand of enterprises for technology and talent is also increasing.

Enterprises need to have the ability to deal with big data, including technologies for data collection, storage, processing and analysis. In addition, the application of AI technology also requires enterprises to have relevant technical capabilities, such as technologies in machine learning, natural language processing, image recognition, and so on. Therefore, enterprises need to recruit and train talents with these technical capabilities to meet the technical demand.

Technology and talent needs also bring opportunities to enterprise recruitment management. With the introduction of new technologies and talents, the efficiency and quality of recruitment has been improved. For example, through big data analysis and artificial intelligence algorithms, companies can more accurately predict candidates' salary expectations, personality needs, and development direction. Thus, they can make more targeted recruitment requirements, better correspond to the satisfaction of candidates, and attract more talents.

5.3. Moral and Ethical Issues of Artificial Intelligence and Enterprise Recruitment

With the continuous development and application of artificial intelligence technology, enterprises face a series of moral and ethical issues in the enterprise in the recruitment process. These issues relate to employee privacy, fairness, discrimination, and social impact. In the process of using AI technology for recruitment, selection, performance management, etc., enterprises need to seriously think about and address the following issues:

First, AI technology may violate employees' privacy. During the recruitment process, companies may collect a large amount of personal information, including personal background, social media data, and so on. This data may be used for analysis and decision-making, but there is also a risk of misuse. Enterprises need to ensure the security and confidentiality of the data and comply with relevant laws and regulations to respect employees' privacy [5].

Second, AI technology may lead to unfairness and

discrimination. Due to the possible bias of the training data of the algorithms, AI systems may produce unfair results. For example, in recruitment, if there are biases such as gender and race in the training data, the AI system may favor certain groups and lead to discrimination. Companies need to ensure the fairness of the algorithms and review and correct them to avoid discrimination.

In summary, the combination of AI and recruitment management brings many opportunities and challenges to enterprises. Enterprises need to seriously think about and address the moral and ethical issues related to AI to ensure that the application of AI technology not only improves efficiency and effectiveness, but also protects the rights and interests of each individual and the interests of society.

6. Conclusion

The era of big data and intelligence has brought great opportunities for the recruitment model, as well as some challenges. By making full use of big data and smart technologies, the recruitment model can match talents and positions more accurately and efficiently, and improve the quality and efficiency of recruitment. However, organizations also need to address challenges such as data privacy and security to ensure legal and compliant use of big data and smart technologies.

In the era of big data and intelligence, the innovation and development of recruitment models is an inevitable trend. Enterprises should actively embrace change and continuously explore and apply new technologies and methods to meet the development needs of the times. At the same time, enterprises should also focus on the cultivation and development of talents, establish a good corporate culture and values, and attract and retain excellent talents.

In summary, the development of big data and artificial intelligence in enterprise recruitment management is full of opportunities and challenges. Enterprises need to respond positively, make full use of the advantages of big data and artificial intelligence, integrate and innovate, improve the level and effectiveness of human resource management, and realize the sustainable development of enterprises.

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