

# Analysis of the Impact of New Technology Development on the Talent Team of Electric Power Enterprises

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## ABSTRACT

In recent years, the development of power technology has increased rapidly, and technologies such as UHV, smart grid, energy Internet, and clean energy have been widely used. The rapid development of technology has brought about tremendous changes in the management mode and work content of power enterprises. The demand for talents of electric power companies has also adjusted accordingly. This article deeply analyzes the impact of new technological progress on the operation and business development of electric power companies, and expounds the changes in the company's demand for talents under such influence.

**Keywords:** Power Enterprise, Team of Genius, New Technology.

## 1. INTRODUCTION

In recent years, breakthroughs have been made in electric power technologies such as UHV, sensor technology, and energy Internet. The update iteration of power grid equipment is also accelerating. The requirements for the quality and composition of the human resource team for the related businesses of electric power enterprises are also constantly changing.

On the one hand, the development of power grid technology has continuously increased the demand for the professional qualities of the talent team of electric power enterprises. The demand for talents and skills of power companies has changed, and a large number of talents with new power grid technologies are needed. On the other hand, the development of information technology has put forward new demands on the quality structure of the talent team of electric power enterprises. The rapid development of information technology not only requires relevant personnel to rapidly change the technical skills they have already mastered, but also generates a large number of new positions and new personnel requirements. Therefore, on the one hand, power companies are facing pressure to further improve the overall quality of the workforce, promote the transformation of the talent team structure, and introduce external talents. On the other hand, power companies are also facing the problem of how to balance and coordinate

the contradiction between internal and external talent supply and demand.[1]

## 2. THE IMPACT OF PROFESSIONAL TECHNOLOGY DEVELOPMENT ON THE COMPANY'S HUMAN RESOURCES TEAM

In recent years, breakthroughs have been made in electric power expertise such as UHV, sensor technology, and energy Internet, and the iteration of power grid equipment has been accelerating. The quality requirements and composition requirements of the company's related businesses on the human resources team are also constantly changing.

### 2.1 Increased Demand for Highly Skilled Talent

As customers continue to improve the reliability of the power grid, the company is also constantly upgrading and transforming power grid equipment and technology. A large number of new equipment and tools have been widely used and promoted in the operation and maintenance of the power grid, and the traditional operation and maintenance of the power grid has radically changed.[2]

On the one hand, the upgrading of power grid operation and maintenance technology puts forward new requirements on the skill level of employees. The impact of changes in power grid operation and maintenance

technology on employee skills is mainly reflected in the use of labor tools, requiring employees to further deepen their skills on the basis of their original skills to meet new operation and maintenance standards. For example, in terms of non-power failure maintenance operations, due to the continuous improvement of customers' requirements for continuous power supply, the tasks of non-power failure detection, operation and maintenance, and maintenance of the power grid are increasing. The voltage level continues to increase, and the development of related technologies accelerates. A large number of new equipment and technologies for non-stop power operations have been widely used in power grid operations. The current overall technical skill level of the workforce has been unable to meet the needs of power grid operations without power failure. This requires the company to continue to introduce new skilled personnel on the basis of training and further training for existing personnel to meet the needs of power grid operation, maintenance and repair tasks.

On the other hand, the update of the power grid equipment itself puts forward new requirements on the skill categories of employees. The requirements for employee skills in the renewal of power grid equipment are mainly reflected in the changes in the object of work and the content of work. For example, the widespread application of equipment status sensing technology has resulted in the addition of sensing elements in conventional power grid equipment, which has changed and updated the original equipment operation and maintenance work content. Employees must not only master the traditional power-related technologies, but also master the operation and maintenance technologies related to sensing elements. This requires the company to carry out training and education for existing employees to prompt them to quickly acquire new skills.[3]

Therefore, the company needs to clarify the skill gap of the current talent team on the basis of clarifying the current technical development of power grids and the skills gap of the current talent team, and formulate targeted measures to meet the needs of the power grid technology development for the talent team's technical skills.

## ***2.2. Synchronous Transformation of Employee Skills***

With the rapid development of renewable energy and distributed energy technology, the development of microgrid technology is very rapid. And because of the independent operation characteristics of the microgrid itself, it can greatly improve the reliability of the grid operation in a small area, because the technology is strongly welcomed by major customers such as large industrial parks, residential communities, and office buildings.[4]

In 2017, the National Development and Reform Commission and the Energy Administration issued the "Trial Measures for Promoting the Construction of Grid-connected Microgrids", which provided strong support for the construction and development of microgrids. However, compared with the traditional power grid, although the microgrid has many advantages, the large-scale microgrid access to the grid will bring greater uncertainty to the company's main distribution network operation, and even cause strong fluctuations in the stable operation of the grid. In the future, the grid structure will also present a pattern of coexistence of large grids and micro grids. It is necessary to develop a DC grid model or an AC-DC hybrid grid model, and the grid operation and inspection business will undergo major adjustments.

When performing grid operation and maintenance work, not only should we pay attention to the operation status of the main grid immediately, but also always be aware of the impact of the microgrid being connected or disconnected at any time on the operation of the grid, so the company's employees' operation and maintenance technology should also be adjusted accordingly. This requires the company to compare the overall skill structure and level of the current human resources team with the demand for the overall quality of the talent team from the adjustment of the grid structure, and on this basis, clarify the strategy and path to promote the company's employee skills transformation.[5]

## ***2.3. The Staff Structure has Undergone Major Changes***

In recent years, with the widespread application of integrated equipment and intelligent equipment, the content of the company's employees' operation and maintenance work has also changed. The original work mode that was solely responsible for equipment monitoring, operation and maintenance, and overhaul has gradually transformed into a work mode that focuses on monitoring and operation and maintenance, with overhaul as a supplement.

The reason is that most of the newly introduced integrated devices and smart devices have relatively complicated internal components, and the devices cannot be disassembled or assembled at will. In addition, the composition of the combined equipment of different manufacturers is quite different, and even the various equipment produced by the same manufacturer in different periods are also very different, and it is difficult to share maintenance personnel. In addition, the probability of abnormalities in the equipment is highly random. Therefore, due to the consideration of labor costs, this part of the maintenance tasks will generally be directly handed over to the equipment manufacturer, and the company will no longer allocate long-term labor for such positions.[6]

Therefore, as the company's old equipment continues to be eliminated, the demand for employees in such positions will gradually decrease. The company needs to reconsider the setting and staffing of related positions, re-adjust the structure of the talent team, and make proper arrangements for relevant personnel to minimize the turbulent impact of the adjustment of the talent team on the company's overall management. On the one hand, the company must judge the changes in the company's human resource team requirements by equipment iteration, understand the total number of personnel and skill requirements of the current grid operation and maintenance business, and make adjustments and improvements to the company's related job settings and job competency requirements. On the other hand, the company should conduct a survey on the overall situation of the employees who have cancelled the positions, and compare and analyze the needs of the new positions, and arrange the transfer, waiting and training according to the actual situation of the human resources team.

### **3. THE IMPACT OF THE DEVELOPMENT OF EMERGING INFORMATION TECHNOLOGY ON THE COMPANY'S HUMAN RESOURCES TEAM**

At present, a new round of technological revolution and industrial transformation is sweeping the world, and a variety of new technologies such as big data, cloud computing, Internet of Things, mobile Internet, and artificial intelligence are constantly emerging. The digital economy is profoundly changing the production and lifestyle of mankind. Related information technology is further integrated with grid production, operation, and service, injecting new impetus into the transformation of production methods and the innovation of service models.

#### ***3.1. The Professional Needs of the Human Resources Team Have Changed***

With the maturity and promotion of emerging information technologies such as "Big Cloud, Mobility and Intelligence", the application scenarios of related technologies in the company are also increasing, such as power grid regulation, operation and maintenance, marketing services, and power grid construction. Remoteness, intelligence, and automation have also become the main modes of power grid work.

On the one hand, the use of a large number of smart devices reduces the total demand for on-site staff. Tasks such as monitoring, overhaul, construction, operation and maintenance, control, and operation that had to be carried out only when workers arrived at the site can now be solved by relying on a remote terminal platform. Originally, it was necessary to send a large number of people to the site to carry out monitoring and maintenance tasks, but now only a small number of personnel need to be placed on the monitoring terminal

to carry out real-time monitoring, operation and maintenance. This kind of remote terminal control work mode greatly reduces the demand for the number of personnel, and requires the company to take inventory of the current human resources team, clarify the personnel requirements and make corresponding adjustments.

On the other hand, the application of emerging information technology requires employees to have information technology-related skills on the basis of their original professional skills. As information technology is widely used in power grid business, the original content of power grid operation and maintenance has undergone tremendous changes. The monitoring methods, operation methods and maintenance methods of related equipment are completely different. The responsibility of employees in related positions is no longer just to do well in the operation and maintenance of equipment and facilities, but to use new information technology to do well in the operation and maintenance of related equipment and facilities. The company needs to focus on analyzing the current information technology development on the changes in the skills requirements of relevant positions, and take corresponding measures to promote the skill transformation of the workforce.[7]

#### ***3.2. Enterprise Employees Must Adapt to New Service Demands***

With the rapid evolution of the "big cloud, moving intelligence" technology, the boundaries of the traditional business fields of power grid companies are constantly melting. The original power marketing services are gradually being replaced by new integrated energy services.

On the one hand, the overall quality of the workforce must be able to meet the needs of customers for quick response to services. In recent years, various mobile terminals have gradually become popular. Most corporate customers prefer to handle related businesses online. Consultation, guidance, material review, and progress feedback must be completed online. The resulting surge in the number of users, shortened processing time, and increased customer monitoring have brought greater pressure to the company, which requires the company's workforce to quickly improve work efficiency and business processing levels to meet the company's quality service standards. This requires the company to analyze the current demand for online business processing, and make corresponding adjustments to the size and quality of the human resources team based on this.[8]

On the other hand, the promotion and application of new online tools has brought about changes in the competitive situation of the workforce. As customers' requirements for service progress control increase, the company has also developed relevant mobile terminal

software for customers to use. For example, the company widely promotes the application of low-voltage emergency repair APP at all levels of its affiliates. Its operating mode is that employees respond to customer needs based on their own work conditions, and settle employee performance based on workload. This kind of work mode urges employees to strengthen their own quality and ability building and improve the work efficiency of the unit. If things go on like this, the workforce will experience a process of survival of the fittest, and the overall size of the company's human resources team will gradually shrink. Therefore, the company must re-approve the current workforce and make predictions on the adjustment of the size of the human resources team in advance.

#### **4. CONCLUSION**

The rapid development of new technologies has mainly brought about two impacts on power companies.

On the one hand, it has an impact on the overall size of the talent team. Emerging technologies have replaced traditional human labor to a certain extent. Some positions will completely disappear from the company, and the demand for personnel in some positions will drop. Therefore, the company's overall demand for human resources may decrease. But at the same time, the development of new technology has also enriched the types of production equipment and businesses, which has resulted in many new job demands. From this level, the company's demand for total talents will increase again. Under this circumstance, the company must pass a more detailed talent inventory and a comprehensive assessment of the talent surplus and talent gap to determine the company's overall demand for the talent team.

On the other hand, the development of new technologies has brought a nearly disruptive impact on the overall structure of the company's talent team. The promotion and use of emerging technologies puts forward new and higher requirements on the technical skills that employees should possess. Compared with the old equipment, the use and operation of the new equipment has undergone great changes. For some old employees, this is almost equivalent to asking them to learn new technology.

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