ISSN 2522-6398 Vol. 6, Issue 17: 37-41, DOI: 10.25236/FER.2023.061707

A New Way to Develop Talent in Well-Engineering Based on a "Digital Platform"

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Abstract: *With the development of science and technology, 5G, big data, and Internet of Things technologies are gradually maturing, digital talent training is receiving widespread attention, and the digital transformation of well-engineering talent training in oil companies is imminent. Based on the "digital platform", this paper finds a new way to develop well-engineering talent training. It builds an overall framework for the digital talent training model from three aspects: the decision-making system, the support system, and the promotion system, to continuously promote the sustainable development of talent resources and the continuous improvement of talent competitiveness.*

Keywords: *Digital Platform, Well Engineering, Talent Training*

1. Introduction

The times are moving forward, big data and Internet of Things technologies are maturing, digital talent training is coming into the public eye, and the demand for well-engineered talents is changing from traditional skilled talents to innovative and complex high-quality technical talents, with digital knowledge, digital competence, and digital achievement becoming important elements in the three-dimensional goals of talent training [1]. The digital transformation of well engineering personnel training in petroleum enterprises is urgent. Oil enterprises should explore the digital talent training model with "digital man" as the main body, create digital dynamic capabilities to adapt to new management situations, and build an organizational structure supported by a digital platform [2]. Therefore, based on the "digital platform", this paper constructs a new path for training well-engineering talents. This cultivation way can make full use of digital technology, respond to the background of the digital economy era, and optimize the talent management mode based on the digital platform [3].

2. A New Way to Train Well-Engineering Talent

2.1. Construction of A Digital Platform

The "digital platform" refers to the use of big data, artificial intelligence, cloud computing, blockchain, and other digital technologies to visualize the business and data of existing or new digital systems in oil companies, and is a support platform to realize new businesses and applications enabled by data[2]. In order to build an organizational structure supported by the digital platform, the overall framework of the digital talent training model should be built in three aspects: the decision-making system, the support system, and the promotion system, and manage energy saving should be achieved at the same time based on technical energy saving.

The platform construction process, should adhere to the "scientific decision-making, efficient implementation, strong support, timely feedback, sound system" principle, to digital transformation and upgrading as an opportunity to build a well-engineering digital support-based advanced management platform, around the "one-stop system of the whole chain" management mechanism innovation, the formation of international advanced, domestic first-class "oil company" well engineering management of the new model, which are presented in Figure 1, covering party building, drilling, geology and other types of personnel training. It can greatly improve the efficiency of scientific decision-making, shorten

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the talent training cycle, continuously promote the sustainable development of talent resources, and promote the continuous improvement of talent competitiveness.

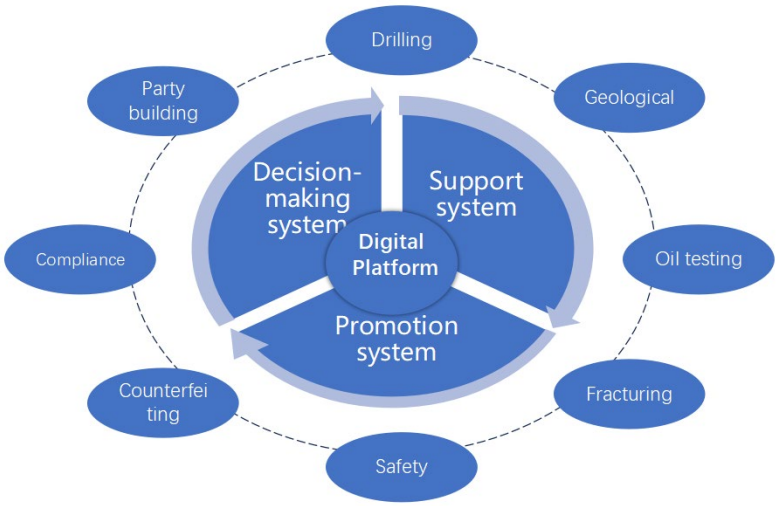

Figure 1: "One-stop digital platform" talent training model.

2.2. Decision-Making System for Well-Engineering Training

The Company has developed its production command centre in line with the digital and intelligent development concept of international oil companies, focusing on the "Five elements" decision-making mechanism, playing the role of collective decision-making by experts, focusing on geology, engineering, safety, environmental protection and supervision of multi-disciplinary cooperation, and training a group of management, technical and accounting well engineering decision-makers, which can further improve the quality of well-engineering, shorten the drilling cycle, further enhance the control ability, and improve the quality and efficiency, as shown in Figure 2.

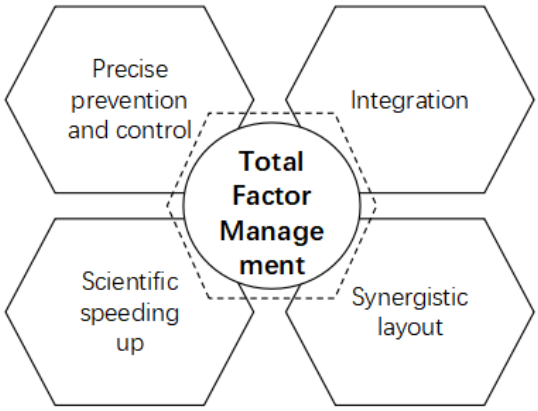

Figure 2: "Five elements" decision-making mechanism.

(1) Relying on total element management, build a digital intelligent decision-making platform for the well-engineering production command centre. Digital upgrade as an opportunity to build a production command center, focusing on organizational structure flattening, team organization specialization, synergy linkage institutionalization, engineering process efficiency, to provide a platform, environment, opportunities for talent training, to become well engineering talent training "booster", greatly improve the efficiency of talent, shorten the talent training cycle. Continuously promote the sustainable development of talent resources, and promote the continuous improvement of talent competitiveness.

(2) Rely on big data analysis, innovative well-engineering risk control prevention, and control

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decision-making mechanisms, as shown in Figure 3. Pursuit of the "two full" management concept, the establishment of a "four three" early warning system, the formation of experts - optimization engineers - site supervision of the "three levels of supervision" closed-loop prevention and control process, to achieve well engineering efficient and accurate risk control and early warning management capabilities.

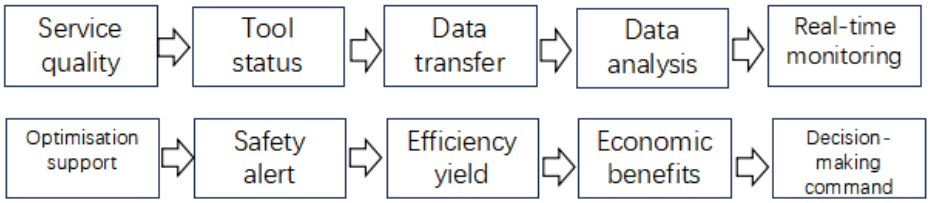

Figure 3: Well-engineering risk control prevention and control decision-making mechanism.

(3) Create a well-engineering "management - implementation" consortium to share decision-making mode, as shown in Figure 4, the establishment of four major communication joint systems, to achieve production command and drilling company linkage, strengthen the drilling, geology, oil testing, safety, operation, compliance and other multi-professional integration of synergy, to achieve the A-led technology, the B-party collaborative linkage of the new situation.

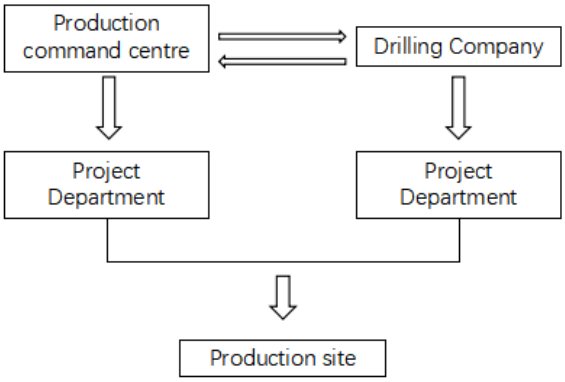

Figure 4: Joint shared decision-making model

2.3. Well-Engineering Talent Training Support System

The development process of human resource management has gone through the stages of "economic man" in scientific management theory, "social man" in the school of behavioral science, and "knowledge man" in the era of the knowledge economy. In today's digital economy, it is necessary to establish a human resource management system. In today's digital economy, it is necessary to establish and improve the digital talent support system with "digital man" as the main body[2].

The support system consists of a set of systems, regulations, training, and practical activities aimed at preventing accidents and taking timely action to minimize damage when accidents occur. The whole chain, from system-decision-making-execution-safety, ensures smooth drilling operations holistically.

1) Establish a closed-loop workflow for system optimization and improve the quality of the program.

Based on advanced international drilling concepts, the Company has adopted "economical and efficient drilling" as a goal, applied big data analysis, drilling column mechanics, borehole cleaning, and other technologies to optimize the well structure, drilling fluid density, drill bits, and operating procedures, and formed a closed-loop workflow of "optimize - implement - summarise - optimize again".

2) Establish a good iteration: Theory guides practice and practice refines theory

Combining scientific drilling concepts with successful regional experience, we constantly

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summarise our practices, compile various technical templates based on the characteristics of the block, and constantly iterate and update the technical templates in actual management.

Combining scientific drilling concepts with successful regional experience to build a "design optimization + remote real-time optimization + technological innovation" training model, providing a theoretical basis and technical guidance to speed up the block

3) Building a well-engineering support system by taking advantage of experts and technology

The introduction of AI intelligent optimization software models to create a team of technical experts consisting of several senior technical experts and technical optimization engineers, with a team of disciplines covering a wide range of areas to support talent training and technical upgrading.

2.4. Well-Engineering Talent Training and Promotion System

Building a talent database is the basic work of realizing talent macro management[4]. Combine the well-engineering talent training and promotion system with the digital platform, construct a well-engineering talent competency evaluation index system, build a talent training database, and archive the well-engineering talent competency. The well-engineering talent file after digitalization can effectively solve the problem of asymmetric information about employees' skills, and provide the enterprise with a more comprehensive understanding of the specific skills of well-engineering talents. After the file is archived, statistical analysis and evaluation of various elements of well-engineering talent can be carried out to target talent training and development and promote the overall development of well-engineering talent.

1) "Youth and Blue" project to cultivate basic skills and build up reserve capacity

We should insist on taking field practice as the first classroom in the life of reserve talents, taking the improvement of basic skills as the primary training task, sending reserve talents in drilling, geology, oil exploration, safety, costing, party construction, and other professions to the first line of practice, specializing in practice, practicing in multiple posts and improving their basic skills.

First, to strengthen the ideological quality of talent education, party building with league building to create a "three-tier education platform", the party building and league building ideological education integration, the construction of party members and league members of the pioneer education platform. Give full play to the pioneering role of Party members and League members. Deepen and improve the thematic education platform for young people, and enhance the sense of responsibility and mission of young innovative talents.[6]

Second, the precise formulation of training plans, highlighting the relevance. To sign a commissioned internship agreement with the drilling company, let the entry-level college students do the well team internship for a year, focus on filling the knowledge gaps, experience blind spots, skill weaknesses, and other shortcomings, for drilling, geology, oil testing safety, and environmental protection and other specialties to accurately develop the internship training plan, to achieve accurate implementation of "one person, one policy".

Three is to accurately determine the training content, and emphasize the comprehensiveness. To take into account factors such as professional orientation and knowledge structure, break the boundaries of professional internship, let well engineering internship college students of all majors understand the process, equipment types, job responsibilities, comprehensive learning of drilling engineering, well completion engineering, oil testing engineering, geological engineering basic knowledge.

The fourth is the precise designation of internship positions, emphasizing professionalism. Adhere to the principle of "what to do and what to learn", so that internship students are in a position to practice, in the process of practice to improve the basic skills of well-engineering.

2) The "Prosperity" project cultivates comprehensive capabilities to build backbone support

In order to strengthen the practical training of mature talents, relevant business departments, grassroots units, and temporary agencies are included in the big cycle and a targeted training mode is established. Combined with cross-professional synergy, cross-unit linkage, cross-position exchange, and other forms to enhance the composite ability of mature talents.

Firstly, the digital platform is focused on rotational training. Relying on the advantages of the integrated, scientific, precise, and collaborative platform of the digital platform, the training of young

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cadres' abilities is achieved by strengthening scientific concepts, optimizing paths, and dealing with problematic methods.

Second, the orientation rotation training of the joint project department. Professional and technical talents who have been working in the organ department for a long time and have insufficient experience at the grassroots level are arranged to be trained in the joint project department and the front line of well construction, to improve the management and coordination ability of young people. Strengthen young people's awareness of safety, environmental protection, quality, and cost awareness [5].

3) "Elite" project to develop decision-making skills to lead the way

Adhere to the site as an important platform for training technical leaders. There are plans and focus on key positions to train, key work to refine, key technical refinement, and other forms, so that cadres in the work to be tested, can improve.

The first is the mentoring system guidance. Play the role of "old with new", carry out "teacher with apprentice" activities, designated "master" focus on training, and enhance the decision-making ability of young technical cadres.

Second, taking inspirational and interventionist training for talents. Support talents to lead scientific research projects, so that they can really participate in technical decision-making, and constantly improve their professional and technical decision-making ability.

Thirdly , giving practical assessment for talents. It is planned to send outstanding young cadres to the front line of well-engineering, where there are many contradictions, difficulties, and heavy tasks. They will be provided with emergency rescue, complex fault handling, key link gatekeeping, and other practical opportunities to improve their skills.

3. Conclusions

With the development of the times, the demand for well engineering talents is transforming from traditional skilled talents to innovative and complex high-quality technical skills talents, and digital knowledge, digital ability, and digital literacy have become important elements in the three-dimensional objectives of talent training. This paper is based on the "digital platform", relying on the "full factor management, big data analysis, and joint sharing model" decision-making system, combined with "closed-loop workflow, theory-practice combination, expert technical support based on the support system of "closed-loop workflow, theory-practice integration, and expert technical support", this paper formulates the promotion system for talents of "three major projects", constructs the overall framework of digital talents training mode, and provides a path for digital training of well engineering talents.

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