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Improving Social Responsibility of Intelligent Engineering under COVID-19

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Abstract: Since 2019, COVID-19 has seriously affected many industries of the economy. It is a major emergency risk event, which has caused a huge impact on all kinds of projects implemented by engineering enterprises. Nowadays, more and more engineering have introduced ecological concepts and achieved remarkable results in the fields of energy conservation, environmental protection, and renewable energy utilization. In the current global situation, how to improve the sustainable development of intelligent engineering has become a new problem. The paper explains the social responsibility connotation of intelligent engineering by using the framework proposed by ISO 26000. It puts forward that the expectations of employees, shareholders, communities, consumers, supply chains, governments, and other stakeholders should be fully taken into account in the whole process of the project. By analyzing the problems of intelligent engineering on social responsibility, it provides some suggestions from the seven core subjects of ISO 26000, such as organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and community involvement and development.

Keywords: ISO 26000, Social Responsibility, Artificial Intelligence, Intelligent Engineering, ISO 45001, ISO 45003

Introduction

With the continuous expansion of the city scale, the rapid developments of the engineering industry effectively promote economic development. However, it also threatens the surrounding ecosystem, such as construction noise, dust pollution during the construction process, and engineering waste. On 9 August 2021, the Intergovernmental Panel on Climate Change (IPCC) issued "Climate Change 2021: The Physical Science Basis". The report notes that human activity is causing climate change, with increasing frequency and intensity of extreme weather events. Unless immediate, large-scale action is taken to reduce greenhouse gas emissions, the global temperature control target of 1.5℃ will not be met. Engineering is an important aspect of energy conservation and emission reduction actions. Behind the prosperous surface of the engineering industry lie many disharmonious factors, such as serious waste of resources, environmental pollution, backward technology level, weak sense of safety, blind pursuit of engineering benefits, fraud, and waste of natural resources. These behaviors of engineering enterprises not only damage the interests of the stakeholders but also seriously disturb the engineering market order and have substantial harm to the healthy development of the engineering industry.

Strengthening the application of artificial intelligence technology in engineering can have a lot of benefits. It can significantly improve the technical content and automation degree of engineering, and improve the safety, reliability, and operational efficiency of engineering construction. It can also reduce the number of workers, and reduce the occupational health risks of employees and human error. Engineering to carry out electric equipment transformation and intelligent upgrades can improve the safety of the equipment. The use of energy-saving and environmental protection technology can reduce exhaust emissions and noise pollution.

Intelligent engineering is an innovative engineering way that integrates information, intelligence, and engineering highly. Its social responsibility effect involves the sustainable development of the organization, industry, and even the economy and society, and its influence is complex and far-reaching. The consequences of a lack of social responsibility (such as catastrophic

accidents in construction and operation, environmental damage, housebreaking, and migration) go beyond the project and become a series of serious social problems. In addition, the one-off construction of engineering projects and the in-convertibility of social responsibility effect make its governance problems more prominent. Under the new crown epidemic, some projects have the one-sided pursuit of immediate interests and neglect of safe production phenomenon. The employee's working environment is more dangerous, and the staff lacks adequate training and neglects management, resulting in the work risk of an employee being much higher than the general enterprise. Some practitioners have a low educational level, weak legal level, and awareness of rights protection and cannot safeguard their legitimate economic interests when economic interests are infringed. Some companies do not pay social insurance for their employees or at a lower standard. The labor contract signing rate of employees is low, there is unequal content in the terms, and overtime labor is widespread. Under the background of the new crown epidemic, how to improve the social responsibility of intelligent engineering has become a new problem that enterprises need to solve urgently.

During the outbreak, the construction of Wuhan Hospital and Leishenshan Hospital was completed and handed over for use in only about 10 days (Xinhua Net, 2020). These engineering construction enterprises actively organized backbone forces and invested huge human, material, and financial resources in the construction of emergency anti-epidemic projects regardless of their gains and losses. It demonstrated their high sense of social responsibility, won wide praise from all sectors of society, and enhanced their corporate reputation and image. This has created favorable conditions for them to win new growth points under new circumstances.

Definition and Research Methods

Corporate Social Responsibility (CSR) has become a mature concept (Camilleri, 2016). EU has defined CSR as “the responsibility of enterprises for their impact on society”. Social responsibility has always been a hot topic in the world and there are different ideas about its definition. The International Organization for Standardization (ISO) issued the “ISO 26000: Guidance on Social Responsibility” in 2010. Based on ISO 26000, social responsibility means the "responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behavior that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behavior; and is integrated throughout the organization and practiced in its relationships” (ISO, 2010). There are seven core subjects of social responsibility described in ISO 26000, which include organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, community involvement, and development. Social responsibility means that enterprises should also bear the responsibility of employees, consumers, communities, and the environment while creating profits and assuming legal responsibility to shareholders. It emphasizes the importance that enterprises pay attention to human values in the production process and the contribution to the environment, consumers, and society. Intelligent engineering is the construction of intelligent services for social production and residents' life with intelligent algorithms and the intelligent upgrading and transformation of traditional engineering. Intelligent engineering refers to the digital processing of engineering in design, construction, and management, such as simulating the actual engineering construction behavior, the sunlight of buildings, the heat transfer state of foreign object maintenance structures, etc. It integrates the entire engineering cycle, making it significantly more efficient and less risky throughout the process. Intelligent engineering can find various problems in the early design stage and lay a solid foundation for the later activities by dealing with them in advance. It provides practical guidance in the post-construction period, reasonable construction plan and personnel, and reasonable allocation of material use, which can achieve the maximum range of rational use of resources. Intelligent engineering can establish an online monitoring data collection and storage system, which can achieve alarm that traceability function, reduce equipment failure, avoid accidents and improve the safety of use. This real-time online detection technology is related to the safety, productivity, and even environment of the equipment at the construction site. The development of intelligent engineering needs to be led by the concept of sustainable development, driven by technological innovation, supported by artificial intelligence and other technologies. Then it can support the transformation and upgrading of engineering facilities, and realize the construction of intensive and efficient, economical, intelligent green, safe and reliable engineering systems.

With the development of economic globalization, scholars and entrepreneurs are concerned about the study of corporate social responsibility from various professional fields and industry practices. However, the academic community in the intelligent engineering enterprises to fulfill the corporate social responsibility of the thematic research is not enough, except for some scholars who discussed stray issues related to social responsibility. Such as corruption (Ali and El-adaway, 2020), pollution (construction equipment is a major contributor to air pollution (Rasdorf *et al*., 2015), noise pollution (Hammad *et al*., 2016), environmental issues

(Guevara *et al*., 2021), the selection of sustainable materials (Figueiredo *et al*., 2021), sustainability in design (Schroeder, 2018), project management (Trzeciak and Jonek-Kowalska, 2021), social benefits (Maskil-Leitan and Reychav, 2018), stakeholders 'power over social responsibility issues in construction projects (Lin *et al*., 2017), managing construction workers in different national cultures (Silveira *et al*., 2018), stakeholder communication (De Azevedo *et al*., 2016; Albertson, 2019; Izmailova, 2021), etc. However, under the new crown epidemic, the research on how to carry out the social responsibility of intelligent engineering is still fragmented and lacking in systematization. Based on this, this study builds a research framework for the social responsibility of intelligent engineering (Fig. 1), hoping to encourage enterprise managers in engineering to rethink their role in social responsibility issues and to enhance the social responsibility of engineering through effective cooperation and coordination, strengthen interaction with the community, media, government, the public, and other stakeholders.

Based on ISO 26000, the social responsibility of intelligent engineering starts from seven dimensions, takes into account the characteristics of the intelligent engineering industry, and from the perspective of stakeholders. It should consider the characteristics of the country or region in which the project is located, the possible impact on the social environment, natural and cultural heritage, indigenous facilities and customs, in particular the poor, women in development and employment, indigenous people, land requisitioned residents and other vulnerable groups. It also should consider the impact of the project on local sustainable development. Based on this, it can represent the formula as follows (Table1):

$$IE - SR = \sum_{i=1}^{n=7} X_i$$

IE-SR means the social responsibility of intelligent engineering:

X_1 Means organizational governance
X_2 Means human rights
X_3 Means labor practices
X_4 MEANS the environment
X_5 MEANS fair operating practices
X_6 Means consumer issues
X_7 Means community involvement and development

Results and Discussion

Organizational Governance

Engineering business usually takes the project as the unit, the project itself has the characteristics of completing the goal according to the specification requirements at a specific time and budget. Because of this, it determines the project managers' specificity, utilitarianism, and short-term characteristics when carrying out related activities around the project goal. They do not pay attention to the follow-up impact on the environment, community, and project personnel after the project. Intelligent engineering enterprises need to integrate social responsibility work into the whole organization's management system. Most companies are taking steps to integrate sustainability issues into their overall strategies (ILO, 2021).

During the epidemic, intelligent engineering should, but not be limited to consider the following factors.

The leadership of the company should have the spirit of accountability. First, management should be aware of the bigger vision. They need to be acutely aware that the direction of the organization and make it adjust rapidly. They need to find a place for their organization in the overall epidemic prevention and quickly adjust their operations to fight against the epidemic with the overall interests of society first. Second, management should be responsible. They should actively think about what the public needs in the epidemic, and what their advantages can help the public solve problems. Then they give full play to their strengths, contribute resources, take the initiative to carry out social responsibility actions and strive to help the public and the community through difficult times. They also need to consider giving play to the influence in the engineering supply chain. They can encourage upstream and downstream enterprises to work together to play the engineering industry's human, equipment, materials, and other advantages to quickly win the outbreak. Third, management should have a sense of synergy. During the outbreak, some large infectious disease hospital construction scale is large. It is difficult to achieve the target of an enterprise alone. It needs to mobilize several industry enterprises to meet the epidemic period of prevention and control infrastructure construction requirements by full collaboration. Therefore, intelligent engineering enterprises need to change the competitive relationship of the past into play a spirit of synergy and sincere cooperation to overcome the virus to prevent and control the epidemic.

Establish a mobile office platform to speed up the development of a digital office system. Drive digital, remote, and intelligent management of businesses and functions. Enterprises can issue the company's provisions on epidemic prevention and control, publicity of national epidemic prevention, and control policies through the platform during the outbreak. They need to strengthen communication links between corporate headquarters and overseas project departments. They should give full play to their information advantages, collect and organize the epidemic-related situation, integrate the resources, and achieve comprehensive information sharing.

Table 1: Factors influencing social responsibility of intelligent engineering

X_i (core subjects)	Consideration factors (Not limited to)
X_1	Leadership; Organizational structure; Social responsibility management system ……
X_2	Discrimination and vulnerable groups; Fundamental principles and rights at work ……
X_3	Conditions of work and social protection; Health and safety at work ……
X_4	Prevention of pollution; Sustainable resource use; Protection of the environment, biodiversity, and restoration of natural habitats ……
X_5	Anti-corruption; Fair competition; Promoting social responsibility in the value chain ……
X_6	Fair marketing, factual and unbiased information, and fair contractual practices; Protecting consumers' health and safety;
X_7	Access to essential services …… Health; Technology development and access; Social investment ……

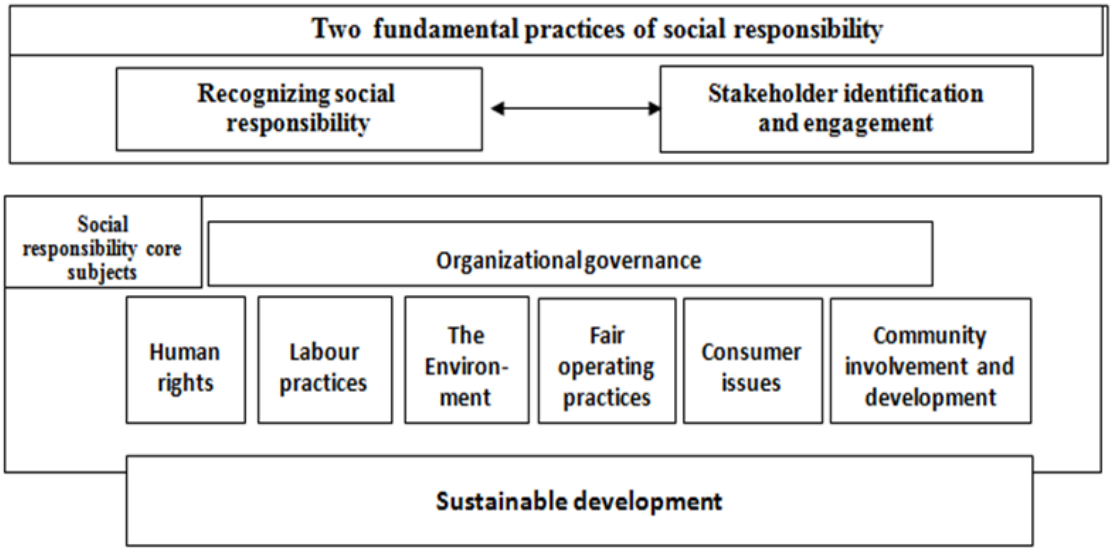

Fig. 1: Research framework based on ISO 26000

Actively disclose relevant information about social responsibility and explain possible questions. Due to the impact of the epidemic, engineering enterprises face problems such as capital shortage, an extension of duration, rising costs, cash flow constraints, etc. The engineering enterprises need to actively communicate with stakeholders, such as applying for government subsidies, negotiating with owners or consumers, adjusting the project cost budget, optimizing the efficiency of capital allocation, and paying attention to the financial situation of enterprises upstream and downstream of the supply chain, responding in advance and disclosing relevant information to the community promptly to prevent damage to social interests. They can issue a social responsibility report that reflects their principles, attitudes, and management at the strategic level.

Use information technology, digitalization, and intelligent technology to strengthen the control and supervision of engineering energy consumption. Make full use of the achievements of artificial intelligence technology development and apply it to the process of organizational governance, such as intelligent production, network collaboration, personalized customization, service extension, digital management, and so on. Promote technology sharing, build an intelligent engineering algorithm framework platform, open-source openness such as general software technology, build a one-stop development application system and reduce the cost of intelligent engineering development, deployment and application. Improve the data utilization rate by integration method, form a complete engineering process application, and improve the level of intelligence. Ensure traceability of responsibility through digitalization. When an organization is responsible for a social responsibility issue, its responsibilities are traceable. Improve security management. To ensure the safety of employees, the organization can rely on big data technology, equipment online monitoring, and early warning, to identify equipment health and staff health promptly. With digital, intelligent upgrades as the driving force, vigorously develop assembly-type engineering. At present, most BIM software design methods are the use of engineering "split" into components or molding. This design method not only increases a lot of work, making the component design, production, and construction difficulty increase, operation and maintenance and subsequent updates re-profit, demolition, and reuse are not possible. The design thinking of engineering needs to be changed from engineering design to the design and reassembly of components.

Establish a comprehensive and systematic intelligent engineering social responsibility planning. It needs to be integrated into the concept of social responsibility from

the pre-planning, design, construction, and evaluation of the whole process system and make the plan, landscape, structure, equipment, and even internal design for the whole professional system into social responsibility into the study. The social responsibility of engineering is systematic work, not only for construction sites and project staff, engineers should also participate in the whole cycle. In addition, the field of social responsibility in intelligent engineering is still relatively scarce, step up the establishment of talent training and development of long-term mechanisms.

Human Rights and Labour practices

The COVID-19 pandemic has upended large parts of society in unprecedented ways. Measures are taken to mitigate public health emergencies, such as border closures, travel restrictions, and closures, which affect labor markets, consumption patterns, and economic activity around the world. Countries need to establish robust and resilient occupational safety and health systems to minimize risks for everyone in the work world in the event of future health emergencies says the International Labour Organization (ILO). Those workers who are in the informal economy continue to work. This puts them at high risk of contracting the virus, while most of them do not have access to basic social protections such as sick leave or sick pay (Yarrington *et al*., 2021). Research has shown that mental health disorders impose a heavy burden on society and that the costs are likely to increase significantly as a result of the pandemic (Li *et al*., 2021). The impact of COVID-19 on mental health is critical because the pandemic has strengthened links between lifestyle behaviors and depression. During the COVID-19 pandemic, people's lives and mental health are disrupted and have a serious negative impact on people's work and lives (Giuntella *et al*., 2021). The impact of COVID-19 on mental health is dire, as highlighted in the May 2020 United Nations policy brief, which urged the international community to protect vulnerable groups.

During the epidemic, intelligent engineering should, but not be limited to.

Raise employee awareness of risk prevention. It is recommended that enterprises formulate corresponding training plans, carry out centralized training for decision-making levels, relevant functional departments, and overseas project departments and enhance the professional level of risk management. Training should be people-oriented, to ensure that enterprise personnel receives comprehensive emergency management training before the sudden risk of an emergency. It should anticipate potential risk events in business and put up barriers to prevent them from occurring through systematic, professional risk assessment. To initiate an emergency management mechanism to reduce losses when anticipating risk events. The training should also be especially aimed at the international engineering expatriates of enterprises so that they have a comprehensive understanding of the relevant laws and regulations of the country where the project is located, and are familiar with the regulations of enterprise management. Then they can strengthen their awareness of prevention, and master the extreme situation of information communication, self-protection, and other treatment methods. Because of the staff-intensive in engineering enterprises, the difficulty of epidemic prevention and control is very high. Intelligent engineering enterprises can use artificial intelligence, big data, and other technologies to grasp the health status of employees and their family members, prevent the spread of the epidemic, and do a good job of epidemic prevention publicity and safety education during the outbreak. All of these can improve the protection awareness of staff on the COVID-19.

Occupational Health and Safety: Most of the construction activities are carried out in the field and the harsh working environment makes the engineering industry more serious than other industries with occupational health problems. The multi-party and multi-behavioral objectives involved in the construction site bring environmental sensitivity and technical complexity, which leads to high occupational health risks and project safety risks, and frequent accidents. Employees' health and safety incidents can have disastrous consequences not only for engineering practitioners but also hurt engineering social responsibility (e.g., government image, contractor reputation) and increase engineering costs. Engineering enterprises can refer to ISO 45001 to establish an occupational health and safety management system (Fig. 2). The purpose and expected outcome of the Occupational Health and Safety Management System is to prevent personal injury and health damage to workers as a result of their work and to provide a safe and healthy workplace. Therefore, organizations need to eliminate hazards and reduce occupational health and safety risks through effective preventive and protective measures, including measures to manage psychosocial risks (Khan and Sandhu, 2016). Based on the situation of the new crown epidemic, the project construction site can implement a fully closed management, set up epidemic prevention and control posts, and implement real-name attendance on the personnel in and out of the site, and temperature testing. The construction site is equipped with full-time personnel, and facilities to carry out comprehensive disinfection and sterilization, waste masks, and other medical waste collection. Control the number of staff quarters and keep ventilation. Set up disinfection and handwashing facilities, and provide virus-killing supplies. It is recommended to eat in batches, scattered, control the number of diners and avoid face-to-face dining. In addition, qualified enterprises should add to the overseas project department the storage

of personal anti-epidemic supplies, such as masks, gloves, disinfectants, etc., which ensure the safety of life and health in the event of such risk events. Control meeting frequency and size to minimize meeting time. Promote the use of video, telephone, and other online meetings. Meetings should be held centrally and participants need to be personally protected. Make employees wear gloves to operate. Construction workers of different nationalities also need to achieve decent work from different cultural perspectives. Understanding and managing national cultures and improving universal decent work practices will help to improve the economic and social conditions of migrant construction workers and help to halt the development of pressing health problems (Silveira *et al*., 2018).

Provide adequate personal protection for employees and enhance their self-protection awareness. Enterprises should educate employees on epidemic prevention and control so that employees can master the correct wearing of masks, cleaning and disinfection, and other protective knowledge. They can poster health and epidemic prevention wall charts and other promotional materials in the prominent location of the factory and living area. When employees develop suspicious symptoms, they should be temporarily quarantined in the area and reported to the local disease control department, by the requirements of the relevant norms promptly to seek medical attention.

Care about the mental health of employees and timely relieve their psychological pressure of them. During the outbreak, many enterprises require employees to reduce unnecessary outings and avoid crowd gathering, especially in places with poor air mobility to reduce the risk of cluster infection including avoiding gather to chat or play cards. This kind of closed management will affect the mental health of employees. Considering promote a reasonable diet, moderate exercise, regular rest, and another healthy lifestyle under such circumstances. Psychosocial hazards are increasingly regarded as the main challenges to health and safety and well-being at work. It involves the way work is organized, social factors at work and work environment, equipment, and hazardous work. Organizations should consider adopting ISO 45003, which is the first practical guide in the world to provide the management of social mental health in the workplace. It helps identify working conditions, work environments, and workplace requirements that potentially impair social mental health and well-being. It is based on a system of ISO 45001 coverage and design to prevent work-related injuries and health damage and to build safe and healthy workplaces (ISO, 2021). It helps organizations create a positive work environment, provides a framework for managing mental health and safety, improves organizational viability, and enhances performance and productivity. It demonstrates the organization's commitment to ensuring good working conditions, health, and well-being.

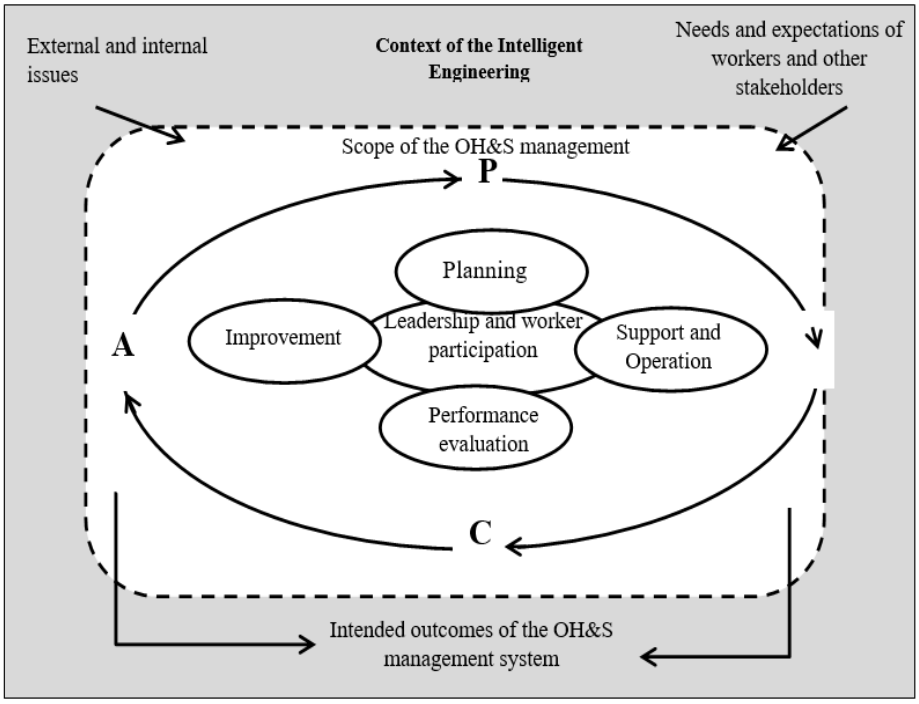

Fig. 2: Implementation based on ISO 45001

Protect employees' right to work and organize employees' return to work in an orderly manner. In line with the requirements of epidemic prevention and control of employees, reasonable organization of batch returns to work. For returning employees who can be transported centrally, encourage the adoption of special or chartered vehicles and other means of transportation and make good protection. Priority should be given to the use of mechanized, highly automated, air-conditioned cab equipment, the driver should change jobs when the cab disinfection treatment. When entering or leaving the vehicle, the doorman and the driver should avoid unnecessary contact. Optimize the construction process. Construction equipment, test equipment, etc. shall be used by a special person, which is taken turns to use and disinfection treatment is done well. Once the enterprise finds the case, it should implement the prevention and control measures of internal non-proliferation and external anti-export, which cooperate with the relevant departments to carry out an epidemiological investigation, close contact tracking management, and epidemic disinfection, and so on.

The Environment

The engineering industry is a large energy consumer, which from material manufacturing, and construction to the project delivery and acceptance of the entire process of energy consumption, including the operation of the project energy consumption. The implementation of the project requires the consumption of a large number of natural resources, which brings about the project waste and causes air pollution, water pollution, and soil pollution. Many projects have been shelved or even canceled because they have not been adequately considered on environmental issues. Some construction projects do not take into account the particularities of the local people. The construction of the Belmont hydroelectric dam, for example, has taken up large areas of territory and diverted damage to the most vulnerable social groups, such as coastal and minority communities. The implementation of the project has increased environmental and social problems in the area, with implications for health and quality of life (Izmailova, 2021). It's worth noting that most environmental initiatives are doomed to failure due to political discrepancy among conflicting parties and the tendency of executive and judicial branches to defer to long-established ideas of progress and development (De Azevedo *et al*., 2016). It is far more than an ecological problem amenable to a scientific or technical approach, instead, it is a complex project shot through with the sociocultural identities, visions, and narratives of all involved (Albertson, 2019). If the problem is not addressed, it will continue to provoke confrontation between the company and the residents (Guevara *et al*., 2021).

Intelligent engineering should, but not be limited to.

Develop assembly engineering. The effectiveness of assembly engineering in energy saving, material saving, water saving, and emission reduction has been demonstrated in practical projects. According to statistics, assembly concrete construction projects in the construction process compared to the traditional way can reduce the project waste emissions, save wood, save cement mortar, and reduce water consumption. At the same time, assembly-type engineering can effectively reduce the air pollution and engineering waste discharges caused by the engineering process and minimizes dust and noise, and other environmental pollution.

Actively look for new energy-saving materials, promote the development of energy-saving projects and reduce engineering energy consumption. Strengthen low-carbon technology research and development. Optimize process technology, research, and development of new low-carbon building materials and new products. Encourage enterprises to actively adopt photovoltaic power generation, wind energy, hydrogen energy, and other renewable energy technologies.

Make sustainable resources usefully. The priority should be given to the selection of green building materials, the implementation of full decoration delivery, and reducing the construction site engineering waste generation in the engineering industry. Recycling building materials is not only beneficial to environmental protection but also effectively reduces engineering costs and increases productivity. Form a comparative system of energy-saving technology systems and standard systems. Make full use of natural ventilation, natural lighting, enclosure structure insulation, and other technical measures. Make full use of efficient energy equipment and reduce the project heating, air conditioning, and lighting energy consumption.

Protect the environment, biodiversity, and restoration of natural habitats. Engineering can significantly alter the local natural environment (including land, sea, rivers, air), and so on, which can easily affect the ecological balance of the region. Damage to plant and animal habitats, destruction of vegetation, and reduction of wildlife activity areas are directly damaging to biodiversity and ecosystems. Water infrastructure can change the water cycle and nutrient cycle in nature and dam projects cause large tracts of upstream land to be submerged, significantly affecting terrestrial life while lowering water levels downstream can hurt the survival of aquatic plants and fish.

Prevent pollution. In the process of construction, enterprises should use new technology, and new methods to prevent and control. It should start from the root cause to reduce or eliminate the pollutants produced by enterprises in the construction process. Improve the recycling utilization rate and the level of waste technology of industrial by-products in the field of engineering materials. Replace and save resources and reduce

greenhouse gas process emissions. Improve the disposal of technologies on household waste, sludge, hazardous waste, and the rate of fuel replacement.

In the construction of emergency medical facilities and epidemic prevention facilities, the construction should not have brutal construction and destruction of the ecological environment. They can accept the supervision of the community by initiating the construction activities open and broadcast live on the Internet and online.

Fair Operating Practices

In engineering practice, ethical issues such as bribery, misuse of the customer and corporate resources, favoritism, discrimination, and injustice seriously hinder the sustainable development of engineering and participating organizations. One of the main reasons for the trend reversal of hydropower development in the Marañón River is the revelation of the corruption scandal around the Brazilian construction company Odebrecht and its ongoing investigations in Peru. The political crisis in Peru has led to the involvement or investigation of four former presidents (Israel and Herrera, 2020). Engineering corruption often permeates all stages of the life of the project, which has a disastrous negative effect on its sustainability.

During the outbreak, intelligent engineering should, but not be limited to.

Strengthen discipline management and establish a system against commercial bribery. Establish a consensus against commercial bribery among cooperative enterprises and promote the construction of a fair market. When signing cooperation agreements or agency agreements with local partners in international market development, the anti-bribery clause is included in the agreement, restricting the use of funds for project development and avoiding commercial bribery.

Drive the standardization of intelligent engineering. Fully implement the green design, promote assembly engineering methods and promote the application of green building materials. Production, design, and construction enterprises should unify the size of components, improve the new type of industrial product design and construction efficiency, and promote intelligent engineering towards standardization and scale.

Increase the investment in scientific and technological research and development. Although this will increase the cost of enterprises to a certain extent, the transformation of scientific research results and the further application of new technologies, can effectively reduce the consumption of resources and thus greatly reduce the production costs of enterprises. These achievements are advanced, applicable, and guarantee the quality and safety of the project. These are also good for environmental protection, improving the efficiency of construction, reducing the cost of the project, and so on. When engineering enterprises fulfill their social responsibilities, they can also promote technological progress in the industry, and enhance the industry's overall international competitiveness.

Consumer Issues

Consumers prefer engineering companies with a sense of social responsibility. Even if the price is slightly higher, most consumers will still choose to buy. Intelligent engineering enterprises use their advantages to provide low energy consumption and other differentiated products to form a competitive advantage. Consumers are more willing to choose to buy the products of green, social responsibility image as a prominent symbol of intelligent engineering enterprises.

During the outbreak, intelligent engineering should, but not be limited to.

Take full account of the needs of various stakeholders, including consumers, when renovation, expansion, and new construction projects focus on the treatment of patients with new coronavirus pneumonia. Following the basic principles of controlling the source of infection, cutting off the chain of infection, and isolating vulnerable populations, they should meet the medical procedure requirements of infectious disease hospitals.

Meet the actual needs of consumers realistic. For individual owners or consumers, regardless of the actual configuration of the air-energy air-conditioning system or solar hot water system, it will result in demolition or idle after acceptance, which is waste. For consumers, these systems either take up more space or use higher rates than traditional systems. This is not a simple technical problem, but a systematic design that integrates natural climate, geographical environment, historical context, and many other aspects. Energy conservation cannot be equated with the construction of technology, the engineering model cannot be simply copied, but should be adapted to local conditions. According to the situation, enterprises create regional climate adaptability of the project, which is considered for consumers. These enterprises are with a sense of social responsibility.

Provide consumers with transparent and open information and meet the needs of consumers and community residents of the construction site. Provide timely information on the progress of the project and environmental monitoring throughout the site. Consumers can see the relevant monthly reports, weekly reports, and so on in real-time by entering data on the mobile phone side. Platform relying on Internet technology through on-site video and environmental sensing means to real-time control construction focus issues for traffic, dust, noise, and so on. The use of AI automatic analysis and early warning platform to provide project indicators of the owners most concerned, including the current progress of each standard segment, and cumulative completion. The information can be simultaneously received and updated by the construction

supervision mobile app site input engineering information. The big data comprehensive analysis helps generate reports, and scientifically assisted project decisions.

Community Involvement and Development

A community is a group of people directly affected by an engineering project. Communities are likely to be direct victims of environmental pollution and safety incidents, but they can also be beneficiaries of projects. They may have the chance of increasing income and improving living conditions. Intelligent engineering should, but not be limited to.

They need to establish a good corporate image and reputation when they undertake overseas projects, which also represent the image of the country. Actively participate in the construction of local communities, and make use of the professional advantages of enterprises. They can support local transportation, water, sanitation, and other public infrastructure construction and improve the living environment of local people. All of these actions are good for promoting international exchanges and having a win-win cooperation situation.

Treat engineering immigration decision-making with caution and support the introduction of systematic policies for immigrants. Engineering immigration is a social problem related to social equity, regional differences, social stability, and ecological balance. The contradiction between government behavior, public demand, and economic development is very prominent, especially the problem of immigration adaptability and immigration compensation. Therefore, reasonable compensation and effective resettlement policies need to be carefully considered and planned at the initial stage of the project.

Respect the customs of the location of the project and consciously accept public supervision. Vocational skills training can be carried out in poor and backward areas to create local employment opportunities. This can promote regional economic, and social development and safeguard the health of the people in the areas where the projects are located. Actively participate in community public welfare undertakings and charitable activities following their conditions. Use engineering construction to provide the community with hospitals, schools, kindergartens, fitness places, nursing homes, community service centers, and other public service facilities to support the development of community cultural education.

Conclusion

The social responsibility of intelligent engineering enterprises will become an important factor in restricting the progress of the industry. It will decide the success or failure of the industry to expand into developed markets and transition to high-end projects. So the study of improving the ability of social responsibility of intelligent engineering has become an important proposition for the development of the industry, which is of practical significance. Based on the framework model of social responsibility proposed by ISO 26000, this study puts forward the general idea of improving the CSR ability of intelligent engineering enterprises. It researches specific measures to explore ways to improve it. ISO 26000 expounds on the principles of social responsibility and seven core subjects: Organizational governance, human rights, labor practices, the environment, fair operational practices, consumer issues, community participation, and development. As for organizational governance, intelligent engineering should consider but not limit to leadership; organizational structure; social responsibility management system. As for human rights, they should consider but not limit to discrimination and vulnerable groups; fundamental principles and rights at work; labor practices; conditions of work and social protection; health and safety at work. As for the environment, they should consider but not limit to the prevention of pollution; sustainable resource use; protection of the environment, biodiversity, and restoration of natural habitats. As for fair operating practices, they should consider but not limit to anti-corruption; fair competition; promoting social responsibility in the value chain. As for consumer issues, they should consider but are not limited to fair marketing, factual and unbiased information, and fair contractual practices; protecting consumers' health and safety; access to essential services. As for the community involvement and development, they should consider but not limit to health; technology development and access; social investment.

The improvement of the CSR workability of intelligent engineering can refer to ISO 26000. The research of this study is of practical significance for intelligent engineering enterprises to enhance their internal strength, complete the transformation and realize sustainable development. It is of great significance for engineering enterprises to enhance their ability to fulfill their social responsibilities to complete the transformation and upgrading of the industry. It is good for eliminating the vicious competition of low prices and achieving sustainable development, strengthening their understanding of international standards, actively participating in and using these standards, and winning the recognition of the international market. Incorporating social responsibility work into corporate strategy and daily operation work and ensuring consistency of strategy and policy implementation. Improve the work system and appraisal system, which truly provide an organizational guarantee for the normalization and continuous improvement of corporate social responsibility work.

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Author's Contributions

Weiwei Zhao: Contributed to the conception of the study and wrote the manuscript.

Zhou Jiang and Xiongfei Ji: Experimented.

Ning Gan, Xia Liu, and Jingshu Zhang: Performed the data analyses.

Ethics

The authors declare their responsibility for any ethical issues that may arise after the publication of this manuscript.

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