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Microprocessor Information Response Design of the Service Platform for Innovative and Entrepreneurial Enterprises and the Application of Internet of Things under Entrepreneurship and Innovation Policies

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SUMMARY: *This paper intends to meet the particular needs and promote the innovation and development of Internet of Things (IoT) enterprise and to deal with the multi-user problem that exists in traditional platforms. A new and forward-looking company service platform based on microprocessor-driven IoT technology is presented in this paper. Questionnaires were distributed to different groups of users, managers and operators of the traditional platform for this study. It promotes the development of the conventional platform and establishes a new IoT-based platform in line with the achievements and innovations of policy support for innovation and entrepreneurship in the past three years. The first is that this platform can realise the information-response function of microprocessors based on IoT. Based on the above data, approximately half of the operators believe that model management, metadata management and data quality need to be improved; only 5 per cent of the operators believe that the existing platform performs well. Over 40 per cent of the managers believe that the operation management and problem identification and classification need to be improved, and only 10 per cent are willing to approve of identification and classification. Nearly half of the users believe that the data security and fuzzy interface need to be improved, and about 60 per cent have changed their attitude towards problem-solving. The new Design will help me organise and analyse the problems more conveniently to promptly address them. Users can select a problem to report on the platform beforehand and choose a necessary component from the new window. After solving the multiple problems in the service, the platform will automatically organize, generate views and handle these problems according to the severity of the problems. In order to meet the specific needs of creative entrepreneurial enterprises in the Internet of Things era, this paper hopes to help platforms for entrepreneurial enterprises in various industries provide high-efficiency and reliable support. Safe Services are equipment management, data analysis and application development.*

KEYWORDS: *Internet of Things; service platform; information response; innovation and entrepreneurship services; data management; view processing*

1 Introduction

1.1 Research Background

With the development of the Internet of Things (IoT) and information technology, all areas of life have been changed by innovation and entrepreneurship. Innovation and entrepreneurship

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are now popular trends and a new type of force for advancing social and economic development [1]. However, although many industries have built innovation and entrepreneurship platforms, problems such as delayed feedback for users' information platform concerns and the risk of data leaks due to a lack of understanding have arisen [2, 3]. Therefore, one of the main areas of concentration for many enterprises is how to build an all-encompassing, timely, personalised, interactive, and high-security innovation and entrepreneurship information service platform.

1.2 Literature Review

Some studies have also been carried out on the management platform of IoT technology. Kitsios and others (2023) have increased the number of satisfied patients by adding an online appointment reservation system. They did not meet the demands of both doctors and patients, and therefore the service level of the electronic reservation system was inadequate. Among them, the quality of the website is also one of the reasons for the patients' dissatisfaction. At the same time, most of the users are willing to use the new design of the digital service medical electronic reservation system; they believe that if such a system is available, it will help them book an appointment with a doctor online [4]. Bi et al. (2022) used blockchain technology to build a decentralized medical trust management system for a large-scale IoT system. The above solution can help medical institutions share data without revealing private information about the data subjects. Based on the simulation exercise, the system was not vulnerable to attacks based on the trust model. The system is also scalable, trustworthy, converges and is fault-tolerant against malicious attackers; thus, it has exceeded the performance of the current trust management system [5]. Suciu et al. (2021) analysed the first set of data from questionnaires in the quantitative marketing research. Based on the above analysis, a considerable number of small and medium-sized enterprises in Romania's Information Technology (IT) sector have employed advanced marketing technologies, but relatively few among them have integrated IoT solutions at this time. It was mainly because of some cost problems. Nevertheless, the results show that these companies are aware of the advantages of IoT and plan to introduce such solutions in the near future to promote the continuous development of their businesses [6].

Zhu and others (2023) proposed a Sentinel mechanism-based Redis cluster for improving the access efficiency of the cluster. The first idea of this way was to add a sentry to the Redis cluster and have it monitor the status of the cluster. When the Redis cluster fails, a sentinel can be used to perform fault detection and recovery of the Redis cluster to restore normal operation. A study in recent years has also verified this method [7]. Zhang and others (2022) put forward a system scheme based on IoT, integrated the latest technology, and used it to design an agricultural machinery management platform with an automatic navigation system. At the same time, a demonstration prototype system was built, and experiments were carried out to determine whether it was feasible and effective. They have learned that, through the application of advanced equipment, technological innovation and high-end computer systems in smart agriculture, it is possible to boost the economic benefits of agriculture and reduce labor costs [8]. Wu and others (2021) introduced a decentralised mechanism for pallet management to build the technical ecosystem of pallet pool, which consists of pallet service, based on alliance blockchain and IoT. Alliance Blockchain was considered blockchain 3.0 to promote more industrial applications of cryptocurrency. A suitable hierarchical structure can be built to establish the system's industry deployment and formulate the location-inventory path problem of the pallet pool. Based on the analysis of the actual case, it was found that the decentralized pallet management had been standardised in a closed-loop system and thus benefited the continuous development of the logistics industry [9].

The above studies in China and other countries have shown that the management platform of IoT can provide real-time monitoring and data collection, and the data obtained through IoT can be used for analysis and decision-making to help managers better understand and supervise all aspects of business activities. It can serve as an automatic and remote-control system. The Equipment connected to the IoT can be operated in a remote-control mode and is therefore more convenient and practical. Based on the above analysis and forecasts, provide data for the management platform that supports decision-making and enhance the efficiency and operation of the company. It can serve as the system for safety and risk control. Internet of Things (IoT) devices and sensors can be employed to monitor the safety environment of a construction site in real time, promptly notify managers of any potential dangers or risks, and take remedial actions without delay.

1.3 Research Significance

It is feasible to develop a service management platform for IoT-based micro-processing innovation and entrepreneurship enterprises. The platform will increase the efficiency and responsiveness of the innovation and entrepreneurship service platform, connect all links and participants more closely, and build an intelligent innovation and entrepreneurship ecosystem.

First, the new-economy enterprises that are innovative and entrepreneurial will be the drivers of economic and social development. Through the study of the application of microprocessor information response design and IoT in the service platform for innovative and entrepreneurial enterprises, people can explore how to provide better support and services for these enterprises using advanced technical means. Second, the information-response Design of a microprocessor is to enhance the efficiency and responsiveness of the service platform for innovative and entrepreneurial enterprises. Design an efficient and reliable microprocessor-based information-response system to realize real-time monitoring, data collection and automatic control for improving the service quality and impact of innovative and entrepreneurial enterprises. IoT technology also has many applications in the area of innovation and entrepreneurship. Through the Internet of Things (IoT), many devices and sensors have been connected to collect real-time data on the market, make predictions about new-age enterprises, improve products and services, and offer personalised assistance. Finally, provide a theoretical and empirical foundation for the development and implementation of entrepreneurial innovation policies through sufficient studies. Based on research into the application of microprocessor information response design and IoT in light of the innovation and entrepreneurship policy, individuals can offer recommendations and guidance to policymakers on how to promote the development of innovation and entrepreneurship, optimise the innovation and entrepreneurship environment, and improve the success of entrepreneurs.

Based on the above analysis, this paper aims to meet the particular needs and respond to the special requirements of innovative entrepreneurial enterprises in the Internet of Things (IoT) field by developing a microprocessor-based information response service platform driven by IoT technology, addressing the shortcomings of traditional platforms in handling multi-user problems, and helping enterprises provide efficient, reliable and safe services to promote sustainable development.

2 Theories and Methods

2.1 Construction of the Innovation and Entrepreneurship Service Platform Based On Iot

Innovation and entrepreneurship refer to forms of entrepreneurship that are based on technological innovation, product innovation, brand innovation, service innovation, business model innovation, management innovation, organisational innovation, market innovation and channel innovation. Both entrepreneurship and enterprise are characterized by innovation, and the goal of both is entrepreneurship [10]. According to the concepts of innovation and entrepreneurship, innovation serves as the foundation and basis for entrepreneurship, and entrepreneurship expresses and expands innovation. The first difference between innovation and entrepreneurship is whether there are new ideas in the activities of entrepreneurs [11, 12]. Innovation refers to technical, managerial, knowledge-based, process and marketing innovations [13, 14]. Innovations are, in short, changes that can create new value from the use of resources. Great risks, high rewards, and the advancement of society and the economy are all characteristics of innovation and entrepreneurship [15, 16].

The following three areas will receive most of the attention under China's latest innovation and entrepreneurship program in 2022: First, policies for college students' innovation and entrepreneurship. Second, Budgetary and tax policies for small and micro enterprises. Third, Policies for entrepreneurship and innovation in epidemic-affected areas. Figures 1 and 2 are the general entrepreneurial process and operating modes.

Information-sensing devices and the protocols that link all things to the network are employed to enable smart object recognition, placement, tracking and supervision in the Internet of Things (IoT) [17]. The elements of the Internet of Things (IoT) are sensors and R-F identification (RFID), embedded systems, intelligent technology, and nanotechnology. As shown in Figure 3, many different parts of the country can also be used.

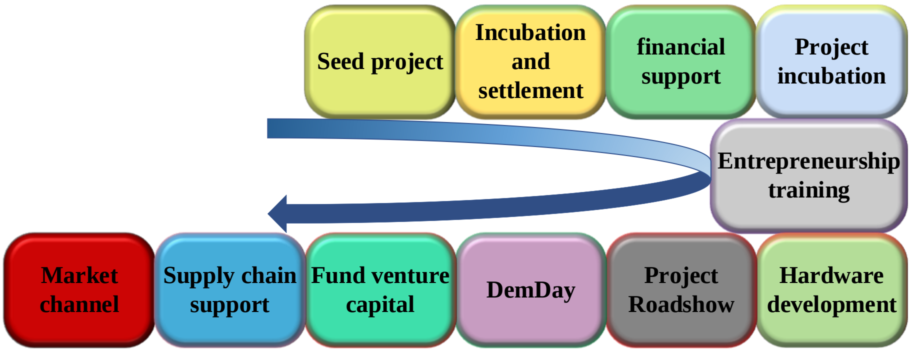

Figure 1: Innovation and Entrepreneurship Process.

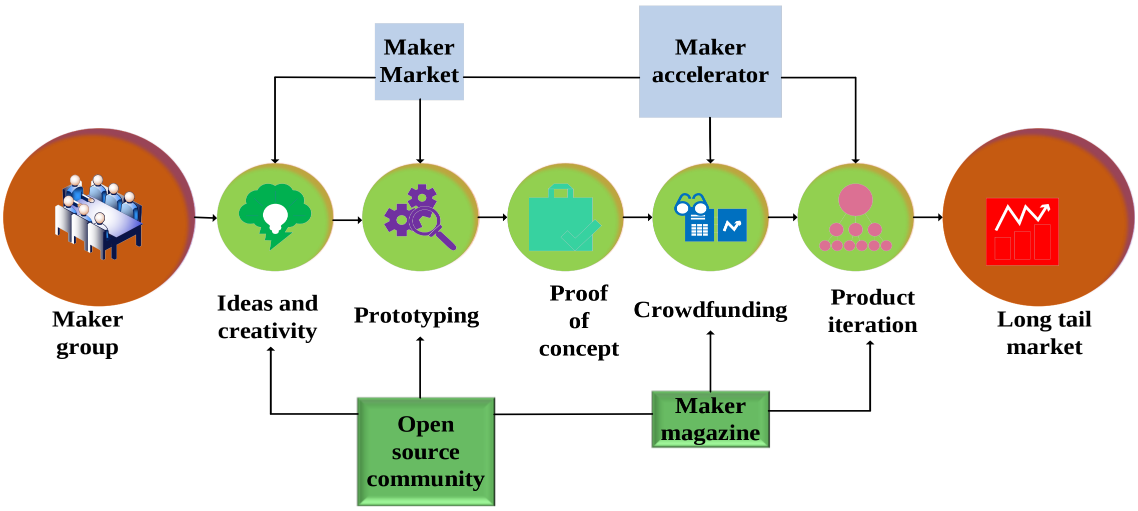

Figure 2: Operating Modes of Innovation and Entrepreneurship.

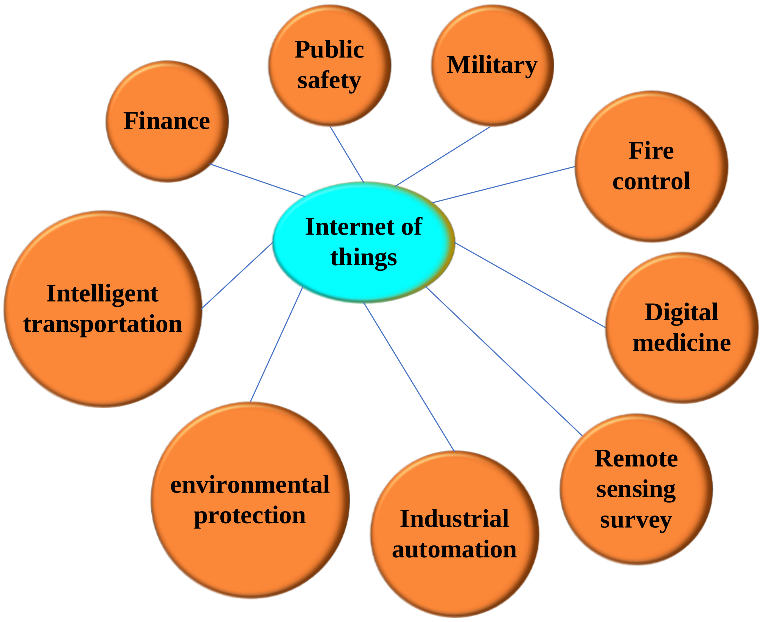

Figure 3: Application Areas of IoT.

The three levels of the Internet of Things (IoT) are the lower, middle and upper levels. The bottom layer is the sensor layer responsible for data collection, and the intermediate layer is used for transmission [18]. The application layer has many applications and middleware that can support resource management and other diverse application requirements for users, as shown in Figure 4.

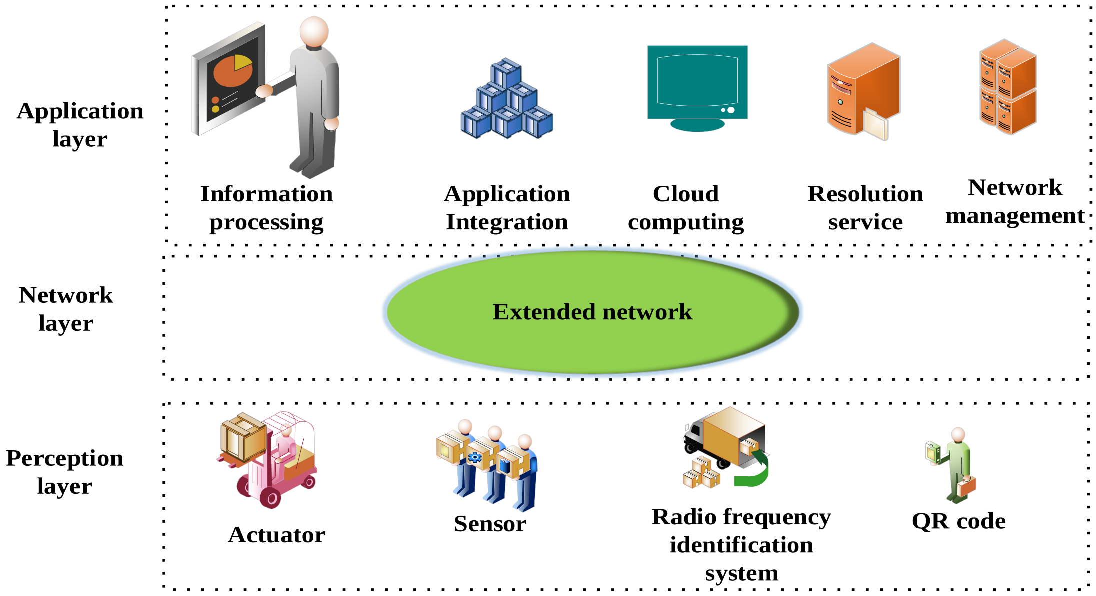

Figure 4: Architecture of IoT.

At the bottom of the RFID, this module will be responsible for collecting environmental data in an IoT system. Connect the application layer and the perception layer via a secure, high-capacity private network to act as an intermediate link at the network level [19]. The two parts of the application layer are as follows. The first is a support service layer, and the second is a user service layer. The primary functions of the support service layer are to gather and process data, and this layer does not offer services for the public such as transportation, environmental monitoring or smart homes.

2.2 Key Technologies Needed and Related Calculation Process

RFID queries a reader for a tag; upon detection, it will read and associate with that tag. RFID is convenient and efficient, so it can be used in the supply chain for innovation and entrepreneurship [20]. Its particular application process is shown in Figure 5.

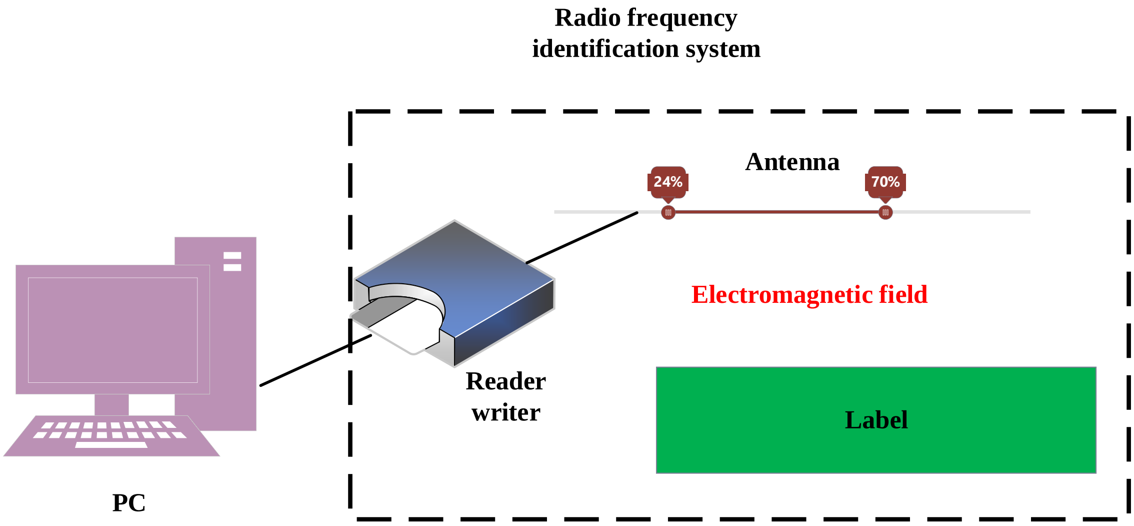

Figure 5: Application Process of RFID.

The parameters of RFID are as follows: Table 1.

Table 1: Technical Parameters of RFID

Items	Parameters
Working frequency	902~928MHz
Applicable agreement	ISO1800-6B/6C, EPC G2
RF power	0~31dBm
Card reading sensitivity	-80dBm
Card reading speed	Single label 2000 times/min
Processor	ARM CORTEX M3 100M
Appearance dimension	275mm*225mm*83mm
Power supply	DC + 9V ~ + 15V
Working temperature	-20~60℃

The equations to calculate the optimal inventory of a business without and with the technology are shown below:

$$S_D = F^{-1}\left(\frac{p+g-c}{p+g-s}\right) \tag{1}$$

$$S_D = F^{-1}\left(\frac{p+g-c-t}{p+g-s}\right) \tag{2}$$

$S_D$represents the optimal inventory, p means the price of the goods, g represents the cost of the goods to be lost in the shortage, c describes the demand for the goods in the market, s represents the supply of the goods in the market, F represents a cumulative function, and t represents the time required to sell the goods. Based on RFID, businesses' expected profits for the entire supply chain can be calculated by equations (3) - (5).

$$\pi_D = (w-c)S_D = \gamma S_D \tag{3}$$

$$\pi_D = (w+\partial t-c-t)S_D = (w-c-(1-\partial)t)S_D \tag{4}$$

$$\pi_D = (\mathrm{w-c-}(1-\partial)\,\mathrm{t})\mathrm{S}_D - (\mathrm{w-c})\mathrm{S}_D \tag{5}$$

In equations (3), (4), and (5), π_D is the expected profit of the enterprise, γ is the profit of the enterprise unit product, ∂ is the RFID tag, w is the wholesale price provided by the product manufacturer for retailers, and t is the RFID tag cost. The meanings of the remaining letters are the same as those in the above equations. Based on the expected profit, the mean and variance of enterprise commodity demand can be counted by equations (6) and (7).

$$\pi_C = (p+g-s)\theta\mu\left(\frac{S_C-\theta\mu}{\sqrt{\theta}\sigma}\right) - (p+g-s)\sqrt{\theta}\sigma \tag{6}$$

In equation (6), π_C is the normal distribution of the enterprise's demand, μ is the mean value, σ is the variance, and θ is the ratio of the retailer's efficiency of replenishing the empty shelves without RFID tags to that with RFID tags. The meaning of the remaining letters in the equation is the same as that in the above equations.
In special circumstances, the supply chain is decentralized, and it is not necessary to use the equations in (7) and (8) to determine the optimal inventory level via RFID.

$$S_D = F^{-1}\left(\frac{p+g-w}{p+g-s}\right) \tag{7}$$

$$\mathrm{S}_D = F^{-1}\left(\frac{p+g-w-\partial t}{p+g-s}\right) \tag{8}$$

The meaning of the letters in equations (7) and (8) is the same as the above.

As science and technology have developed rapidly, so has the system for RFID technology. Now the time slots have been combined into a frame, and the label can give any time slot response in that frame according to equation (9).

$$T(Y=a) = B_A^a\left(\frac{1}{C}\right)^a.\left(1-\frac{1}{C}\right)^{A-a} \tag{9}$$

In equation (9), T represents the probability, C represents the number of intra-frame slots, B represents the reader, A represents the number of tags waiting to be identified, and a represents that the a labels all select this slot.

The probability is given by equation (10) when there is only one label in a slot, and the computer successfully recognises the label.

$$T(Y=1) = B_A^1\left(\frac{1}{C}\right)^1.\left(1-\frac{1}{C}\right)^{A-1} \tag{10}$$

System throughput D can be obtained from the above equations (9) and (10), and these equations are shown below.

$$D = \frac{F(Y=1)}{C} = \frac{A}{C}(1-\frac{1}{C})^{A-1} \tag{11}$$

As shown in equation (11), the system throughput will be maximum when A=C.

RFID divides each node into several sub-nodes and sends instructions "a" and "b" to nodes 1 and 2, respectively; "a" enters node 1 and "b" enters node 2. The period of communication is as follows: Equation (12).

$$C(E=E_a) = E - 2^n \cdot E \cdot \frac{1}{2^n}(1-\frac{1}{2^n})^{E-1} \tag{12}$$

In equation (12), C（E）is the communication cycle, E_a is the tag, 2^n is the number of time slots, and E is the total number of tags.

The time complexity is as follows: Equation (13).

$$D(\mathrm{E}=\mathrm{E}_a) = \frac{E - 2^n \cdot E \cdot \frac{1}{2^n}(1-\frac{1}{2^n})^{E-1}}{E} \tag{13}$$

$D(E)$ Represents the time complexity, and the rest of the letters in the equation have the same meaning as the above equations. The throughput of RFID is given by Equation (14).

$$T = \frac{E}{C(E)} = \frac{E}{E + \frac{E}{\ln 2} \cdot (1-\frac{\ln 2}{E})^E - 1} \tag{14}$$

In equation (14), T is the system throughput, and the meanings of the remaining letters are the same as the above equations.

The centre of a high-precision radio navigation and positioning system for all-weather operation is a geostationary Earth-orbiting satellite of the Global Positioning System (GPS). It is suitable for transport logistics and traffic safety because it is timely, precise and convenient. Design a service platform for innovation and entrepreneurship at this time.

Web Services (WS) are applications that build distributed interactive operations. WS has been developing rapidly in recent years due to the spread of the Internet. It does not require language and is relatively fast in data transmission. Here, it will be used to study the innovation and entrepreneurship service platform.

An equation is used to check the validity of the system, and it is equation (15).

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{\sum X^2 - \frac{(\sum X)^2}{N}}\sqrt{\sum Y^2 - \frac{(\sum Y)^2}{N}}} \tag{15}$$

In equation (15), r represents the reliability coefficient, X represents the dependent variable, Y represents the independent variable, and N represents the quantity. According to equation (15), the reliability of actual data can also be obtained. The specific calculation equation is as follows:

$$\alpha = \frac{K}{K-1}\left(1-\frac{\sum_{i=1}^{K}\sigma_{Yi}^{2}}{\sigma_{X}^{2}}\right) \tag{16}$$

In equation (16), α is the coefficient, K is the quantity, Y_i is the i-th independent variable. Other letters have the same meanings as those in the equations above. In general, a high level of internal consistency between variables is indicated by a high reliability coefficient, which measures the dependability between variables. When α is less than or equal to 0.3, the variable is untrustworthy. The variable is initially believed to be reliable when it is between 0.3 and 0.4. The variable is somewhat believed to be reliable when it is between 0.4 and 0.5. The variable is considered reliable when it is between 0.5 and 0.7. The variables are reliable when it is in the range of 0.7 and 0.9. The variable is very conceivable when it is more significant than 0.9. When the internal consistency of the questionnaire's reliability is evaluated, the result is 0.86, which demonstrates the high level of the questionnaire's dependability.

3 Research Methods

Quantitative and qualitative analysis methods: Collect relevant research data to perform various analyses, investigations and summarisations of traits, logical connections and changing trends in the variables. Based on changes in historical data, relevant modifications to government policies and other significant changes in society have been studied qualitatively to predict future trends and the characteristics of this data [21].

A simulation method is used to create an artificial realistic working environment for the subject of research, and detection can be carried out based on possible scenarios in society. Based on the results of the detection, identify the problems. This way will prevent the above errors and reproduce the scenarios [22].

The first method of study and analysis for the relationship among data is to build a mathematical model that suits the internal structure of the data. Representative mathematical analysis methods are quantitative analysis, correlation analysis and regression analysis [23, 24].

Literature Review: Related research has been collected from CNKI, Google Scholar, Wanfang Data and other places. Many original works by columnists and the Internet have also been read. In addition, a large number of journals and books related to the research have been reviewed, such as "entrepreneurship management - successful creation of new enterprises", "from 0 to 1: opening the secrets of business and the future", and "entrepreneurship scripts: the secrets of entrepreneurs to achieve rapid growth of the company". The collection and integration of the above data provide a theoretical basis for the ways and ideas used in this study [25, 26].

Questionnaire Survey: In March 2019 and May 2020, approximately 300 questionnaires were randomly distributed to relevant staff of innovation enterprises for use-feeling questionnaires on service platforms. Consultation with relevant professional experts has been conducted to ensure the scientific basis of the questionnaire, and its deficiencies have been addressed. A recovery rate of 90% was achieved, and among the recovered questionnaires, 70 were judged to be valid; 239 out of these were valid, with a valid rate of 88.52%.

The two divisions of the analysis and discussion in this paper are as follows. The first part of this paper is based on a questionnaire survey to explore the current situation and existing problems in the development of the information service platform for innovative and entrepreneurial enterprises. The first three categories of the main body of the questionnaire are: under the four dimensions of model management, metadata management, data standards and data quality, current enterprise information service platforms are examined and evaluated.

Secondly, three types of operational management were chosen for the questionnaire survey of managers on the data security management, problem classification and identification of the current enterprise information service platform. Thirdly, based on questionnaires in three areas, the current enterprise information service platform has shown deficiencies in problem-solving, data security and a fuzzy interface. The second is a new, entrepreneurial service platform based on Internet of Things (IoT) technology. A new platform addresses the needs of various groups by designing a process-oriented in-service business, generating and handling business. The platform design is divided into Strategic Positioning Layer (SPL), Scope Specification Layer (SSL), Logical Structure Layer (LSL), Process Framework Layer (PFL) and Interface Presentation Layer (IPL), and the survey results of operators, managers and users have also been analysed at the above five levels.

4 Analysis and Discussion of Information Response and Iot Application Results of Service Platforms

4.1 Analysis of the Current Service Platform

The users of the entrepreneurship and innovation service platform are mainly governments and institutions. The operators, managers and users of the platform are generally people who need a strong sense of responsibility. Therefore, the current enterprise information service platform was evaluated by a questionnaire survey on them, and the exact results are shown in Figure 6.

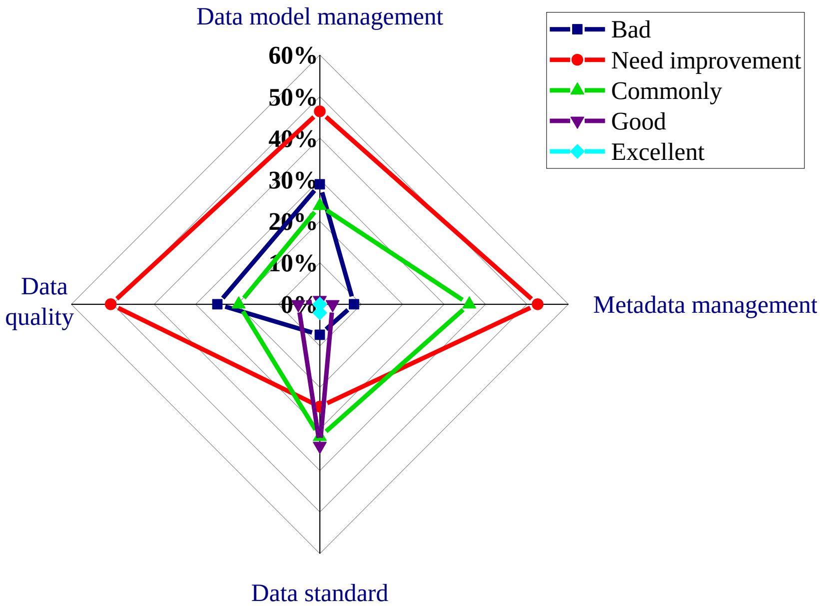

Figure 6: Evaluation of the Service Platform.

As shown in Figure 6, regarding the management of models, 46.42% of the operators believe that improvements are needed, 28.87% think it is not good, 23.71% consider it acceptable, and only 1% are in favour; for metadata management, 52.58% feel that improvements should be made, 8.25% consider it poor, 36.08% believe it is acceptable, and 3.1% think it is good; and for data standards, 24.63% believe that they need to be improved, 50.47% of the operators believe that data quality needs to be improved, 24.74% think it is poor, 19.59% consider it acceptable, and 5.2% believe it is good. It can be seen that more work needs to be done to strengthen data governance, manage the data model, manage metadata, standardise data, improve data quality, etc. As it is very displeasing to the operator, the data model management needs to be improved.

The results of the managers' evaluation of the service platform are shown in Figure 7.

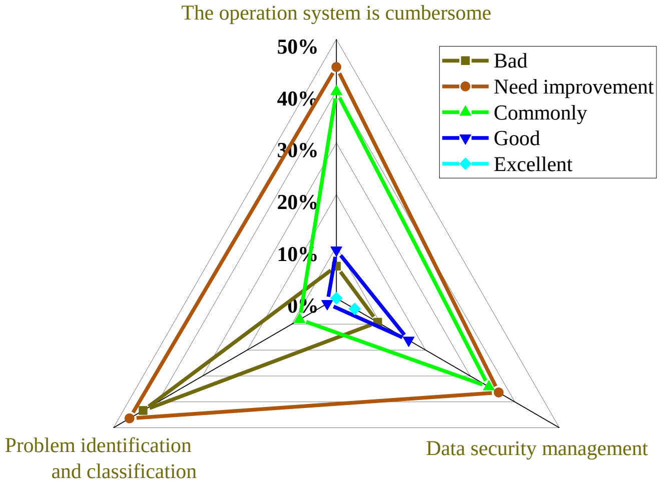

Figure 7: Managerial Assessment of the Service Platform.

Figure 7 shows that in the area of operation management, 44.62 per cent of managers believe that the system needs to be improved, 6.19 per cent believe that it is poor, 39.9 per cent believe that it is reasonable, and 9.3 per cent believe that it is good; in data security management, 36.42 per cent of managers believe that the system needs to be improved, 9.28 per cent believe that it is poor, 34.2 per cent believe that it is reasonable, and 16.2 per cent believe that it is good; and in problem classification and identification, 46.39 per cent believe that the system needs to be improved. The above indicates that the system's data operation management, data security management, and problem classification and identification all need to be strengthened. Classification and identification management need to be improved, otherwise the managers will be very unhappy.

Figure 8 is the individual results and a summary of user evaluations.

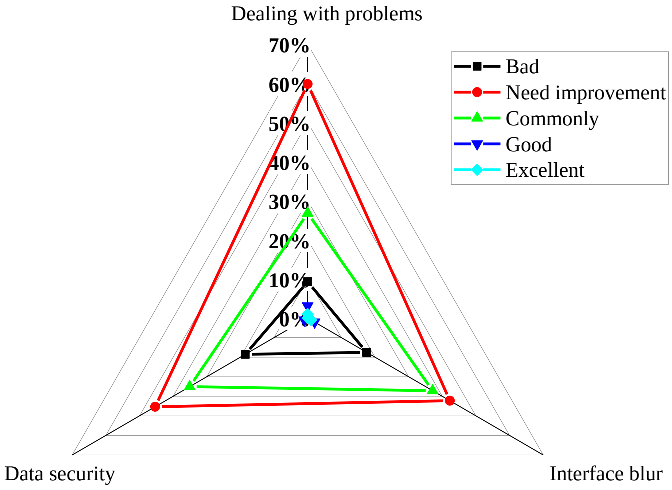

Figure 8: Users' Evaluations of the Innovation and Entrepreneurship Service Platform.

As shown in Figure 8, the three criteria for user evaluation of the innovation and entrepreneurship service platform are problem management, data security and interface clarity. 59.82 per cent of the people believe that problem processing can be improved, 26.8 per cent believe it is acceptable, 9.28 per cent believe it is poor, 3.1 per cent believe it is good and only 1 per cent believe it is perfect; for data security, 42.27 per cent of the people believe that it needs to be improved, 37.15 per cent believe that it is acceptable, 17.53 per cent believe that it is poor, 2.06 per cent feel that it is good. Only 1 per cent are perfect. Interface blur: 45.36% think it needs improvement, 35.08% believe it is acceptable, 18.56% think it is very bad, and only 1% think it works well. In short, we need to increase the speed of the system, strengthen data security, or simplify its interface. Therefore, the focus of innovation and entrepreneurship will be on the optimisation and enhancement of the service platform.

4.2 Analysis of Information Response Design Results for Innovation and Entrepreneurship Service Platforms Based On the Internet of Things

Service is the core of the platform's architecture for creativity and entrepreneurship. Given that the platform has good generality and applicability, the survey results for operators, managers and users are mainly divided into five categories, as shown in Figure 9.

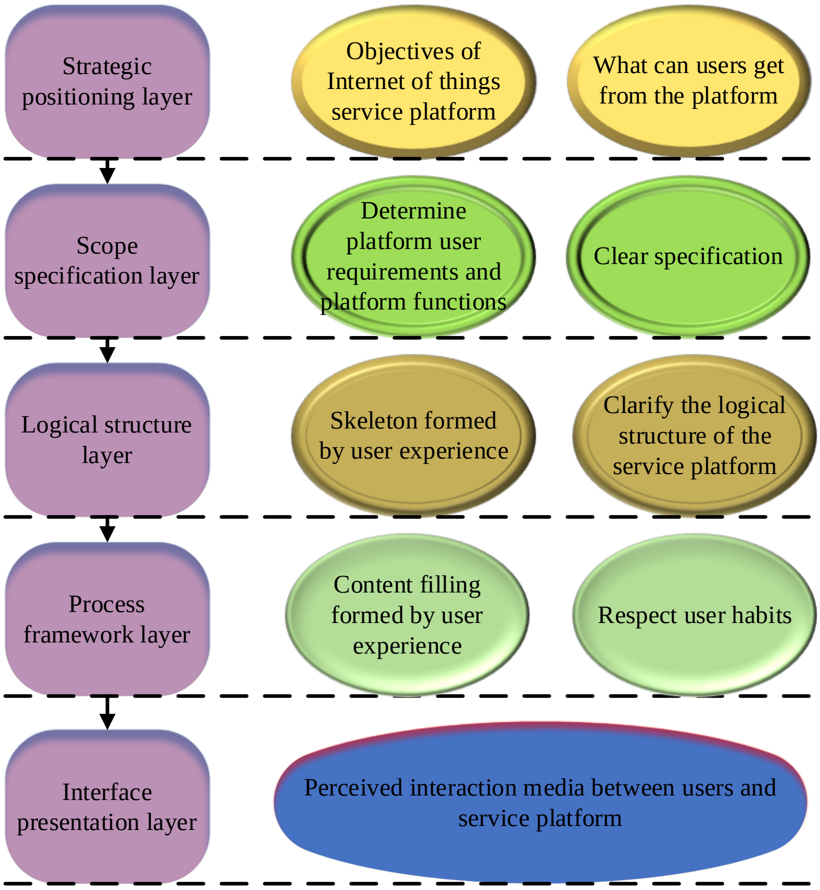

Figure 9: Design of the Innovation and Entrepreneurship Service Platform Based on IoT.

As shown in Figure 9, the five parts of the design are the strategic positioning layer (SPL), the scope specification layer (SSL), the logical structure layer (LSL), the process framework layer (PFL), and the interface presentation layer (IPL). SPL needs all enterprises to know where the platform has been developed. Based on the users' requirements, set the company position accordingly, and build a logical structure for the platform according to these needs via SSL.

The framework of LSL has been extended in many ways, and the corresponding algorithms and technologies are shown in the interface.
The levels of the service platform are designed based on IoT to meet the complexity of the operation system proposed by the managers, and they include process design, in-service business, business formation and problem-solving.

Based on the principle of "simple tasks online and complex tasks offline", the processing flow of the original platform has been optimised, and the specific results are shown in Figure 10.

As shown in Figure 10, WS and GPS can perform classification and simple analysis of related problems to solve the problems that users encounter after accessing the online platform accurately and efficiently. The three groups of users for the new application interface are now price issues, after-sales problems and product problems. Users only need to select the modules that meet their actual requirements at this time.

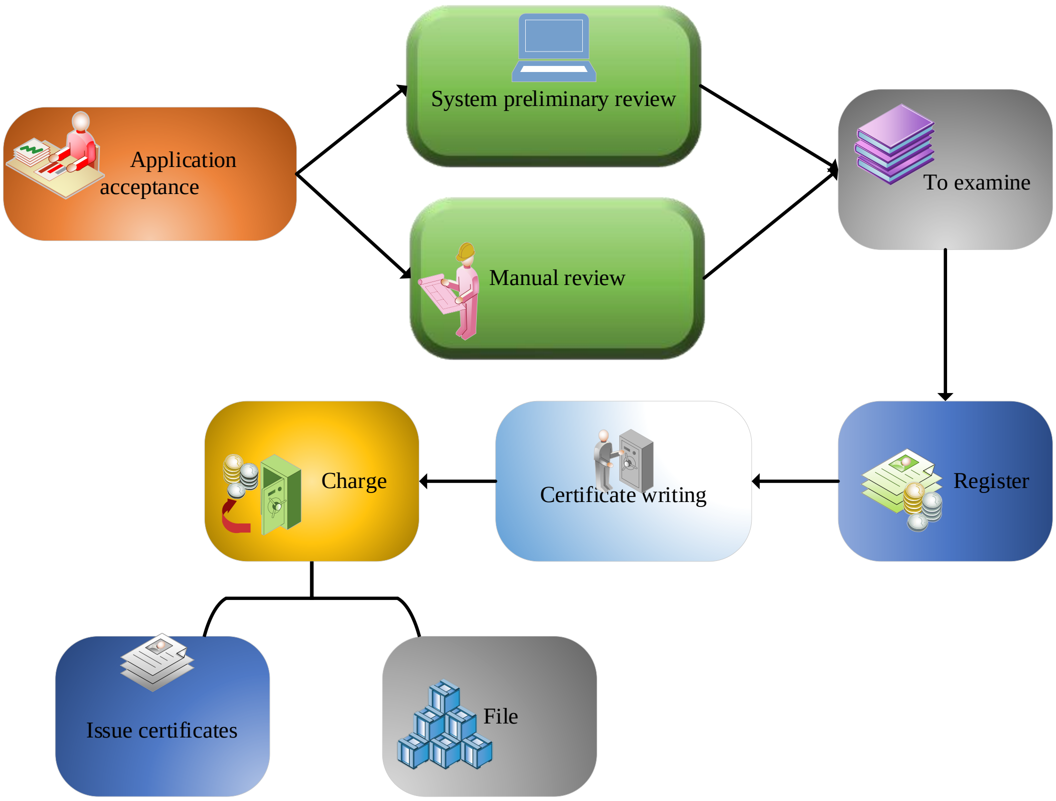

Figure 10: Business Optimisation for Users Based on IoT.

A user has several problems. If the problem does not appear in the process, the user will be unhappy and thus cannot be addressed. Therefore, there should be a "view" function in the relevant process. The particular display form is as follows: Figure 11.

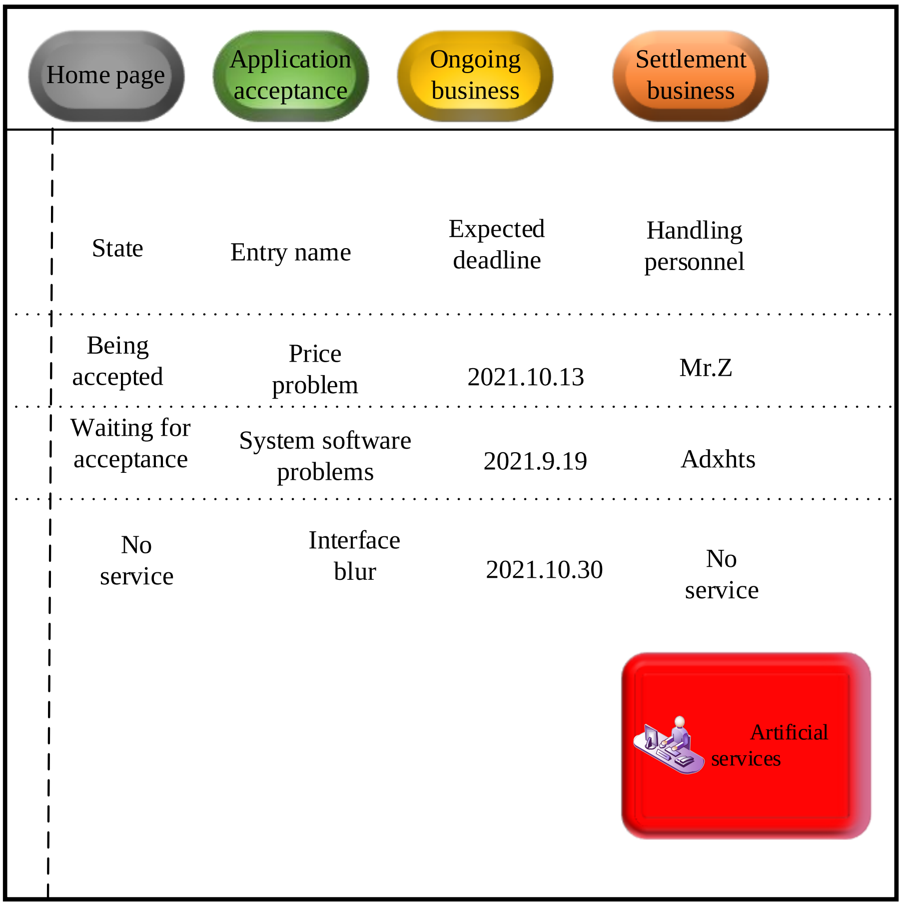

Figure 11: "View" in the user's business.

As shown in Figure 11, there are in-service and settled business projects in the original module. RFID can obtain real-time data on the processing process, log the data, and log the system. To list the problems a user has posted, they need to be logged in. He can also know whether he needs to provide relevant certificates and information after clicking the two kinds of businesses.

Many methods are used to ensure the safety of data in the development of the innovation and entrepreneurship service platform, addressing the data security problems listed in the questionnaire above. The first three will be role encryption, system authentication and password verification, and the fourth will be user data management. Role encryption refers to different encryption methods and levels for other users; system certification includes certification supply, cancellation settings and supply link detection; the service platform sets the password. Users have different management permissions, such as users' services, groups and roles.

5 Discussion

The three subjects of this paper are operators, managers and users of the traditional platform, and the research method will be questionnaires. Based on the results and the innovation-entrepreneurship policies in recent three years, the traditional platform has been improved and a brand-new IoT-based platform has been built. The new platform has resolved the problems through process design, in-service business, business generation and processing to meet the needs of various subjects [27-29]. Analysis of the collected questionnaire results shows that the newly designed platform can meet the needs of different scenarios for multiple users and realize online problem-solving of multi-user platforms. In line with the research results of Ding et al. (2023) and Fotia et al [30]. (2023), the entrepreneurial activities of college students have also received some attention from scholars. In the light of the wave of mass innovation and entrepreneurship, college students are emerging as new drivers of entrepreneurship, and therefore, the fundamental knowledge of entrepreneurship needs to be introduced in university courses to help students grasp what entrepreneurship is better. Compared with the methods and theories put forward by the scholars above, the advantage of this paper is that the evaluation of the designed system platform by operators, managers and users is more realistic, and the new platform fully considers a series of time delay problems caused by frequent scene switching of each subject under fragmented time management. Among all other studies, this paper makes full use of the quantitative data obtained from a questionnaire survey, conducts a multi-dimensional analysis of this data, and proposes a feasible improvement plan to offer substantive support and a basis for upgrading and innovation of the traditional platform.

6 Conclusions

The traditional platform has poor support and response capability for multi-user problem handling, cannot meet the specific needs of innovative and entrepreneurial enterprises in the field of IoT, and thus limits the development prospects of these entrepreneurial enterprises. Internet of Things technology can be used to construct an intelligent operating model and provide convenient functions for equipment management, data analysis and application development in the service platform. Based on the above problems, this paper puts forward a new and entrepreneurial enterprise service platform that is microprocessor information-response-driven and based on IoT technology. First, a questionnaire will be distributed to the operators, managers and users of the traditional entrepreneurial platform. Based on the evaluation results and the innovation and entrepreneurship policies over the past three years, an innovation and entrepreneurship platform that is suitable for the current entrepreneurial environment and technology system has been designed based on the Internet of Things (IoT). The first is that the new platform can promptly respond to the data of a microprocessor-controlled IoT device. Based on the analysis of the questionnaire data from the three subjects, it was found that approximately half (50%) of the operators believe that model management, metadata management and data quality need to be strengthened, and only about five per cent (5%) thought the traditional platform was satisfactory. More than 40 per cent of the managers believe that the operation management and problem identification and classification of the traditional platform need to be improved, and only about 10 per cent of them have an approving attitude towards the traditional platform in terms of problem identification and classification; they rate it as acceptable and good. Nearly 50% of the users believe that data security and the interface of the fuzzy evaluation need to be improved, and about 60% of the users have an improvement attitude towards the traditional platform when facing problems. Based on the principle that "simple tasks are for the Internet, and complex tasks are for going offline", the processing paths of the original platform have been optimised. According to the above experiments, WS and GPS can be employed for the classification and simple analysis of relevant problems to address users' issues after accessing the online platform promptly. Problems of users can be classified in advance in the new application interface, and only the necessary components according to one's own needs need to be selected. At the same time, if there are multiple problems in the service settlement, a view can be automatically generated to help users organise the problems and deal with them according to their severity.

The deficiency of this paper is that it only upgrades and analyzes the functions and performance of the platform, but does not test the platform's stress and compatibility.

Continuously test and correct in the following experiments to help improve the practical value of the platform. This paper introduces the enterprise application of the Internet of Things (IoT) in smart operations and studies the value-oriented business model for promoting the all-round development of these functions. Help the enterprise better use Internet of Things (IoT) technology to build an intelligent operation and innovation entrepreneurial model, gain a strong competitive edge, and promote commercial success.

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