

Overall Development of the Internet Plus Initiative Against the Backdrop of Intelligence Plus

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Abstract: The Internet Plus initiative has been integrated into many sectors of the economy and society in China, profoundly changing the development models, technologies, and ecosystems in a number of fields. It has also led to a constant enhancement of the country's innovation and competitiveness. Technologies for new-generation artificial intelligence, new information and communication, and new Internet systems have been integrated with technologies in various fields, driving their digital transformation and upgrade and ushering in an "Intelligence Plus" era led by intelligence, driven by data, and featuring ubiquitous interconnection, service sharing, cross-field integration, and mass innovation. Against the backdrop of the Intelligence Plus initiative in China, this study summarizes its development status and the problems around it, expounding on new connotations and demonstrating the system's architecture and technology pedigree framework. Moreover, the study analyzed the strategic goals and technological routes of the Internet Plus initiative amid the Intelligent Plus era in China and proposes specific project suggestions by strengthening fundamental research to allow for breakthroughs in core technologies, focusing on the in-depth integration of the Internet Plus initiative with different fields such as smart manufacturing, modern agriculture, smart energy, people-benefiting services, as well as smart transportation and smart environmental protection. A systematic policy mechanism should be established to support the Internet Plus initiative, laws and regulations as well as standard systems should be improved, and a cross-border integrated talent training system created to provide theoretical references for the development in China of the Internet Plus initiative in this era.

Keywords: Intelligence Plus; Internet Plus; intelligent collaboration; cross-border integration; technical routes

1 Introduction

Following the release of *Guiding Opinions of the State Council on Actively Promoting the Internet Plus Action Plan* in 2015, a 2019 government report employed new advances in technology such as big data and artificial intelligence (AI) to build an industrial Internet platform and expand the "Intelligence Plus" action plan, formally proposing the concept of "Intelligence Plus" to empower traditional industry transformation and upgrading. The key technologies involved in Intelligence Plus include seven types of new technologies and their deep integration, that is, new Internet technologies (e.g., intelligent, future, satellite, and space-ground integrated Internet); new information and communication technologies (e.g., fifth and sixth generation mobile communications, blockchain, digital twin, and quantum computing); a new generation of AI technology (e.g., cross-media reasoning, technologies

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based on big data intelligence, and swarm, human–machine hybrid, and autonomous intelligence [1]); new energy, material, and biology technology; and technologies related to new application fields [2]. The key technologies of Intelligence Plus could comprehensively promote the upgrading of many fields from digital to networked and intelligent, and promote model, method, and ecology reforms in the national economy, people’s livelihoods, and national security.

Promoting the in-depth integration of Internet technology in the economic and social fields is the current national task. Concerning the industrial economy field, a series of measures, represented by the *Industrial Internet Development Action Plan (2018–2020)*, has been promulgated at the national level [3,4] seeking to coordinate and guide the construction and upgrade of the industrial Internet amid the Intelligence Plus phase [5], thereby forming an industrial Internet system that would support the development of advanced manufacturing. In March 2020, *the Notice of the General Office of the Ministry of Industry and Information Technology on Promoting the Accelerated Development of the Industrial Internet* relayed the need to “accelerate the construction of new infrastructure” as the primary task for developing the industrial Internet [6]. In April 2020, the National Development and Reform Commission clarified the scope of “new infrastructure” as including information, converged, and innovation infrastructure. The commission indicated a need to strengthen the communication network infrastructure based on the evolution of new-generation information technology, as represented by the industrial Internet. In addition, it identified the need to build and promote the transformation and upgrading of the traditional infrastructure of in-depth applications of the Internet, big data, cloud computing, and other information technologies to form a converged infrastructure.

Integration of the Internet and various fields has also become an international trend. Through national policies, authorities worldwide have sought to improve the level of digitalization in their areas of responsibility to promote development in key areas such as manufacturing, medical care, energy, and transportation. Furthermore, authorities have sought to strengthen the construction of digital infrastructure, develop the Internet platform economy and digital industry, and accelerate the transformation and upgrading to digitalization, networking, and intelligence. In the field of industrial manufacturing, authorities in the United States have released development plans such as the *National Manufacturing Innovation Network Plan* and the *American Advanced Manufacturing Leadership Strategy*, which include the involvement of new manufacturing technologies such as semiconductors, AI, advanced materials, industrial robots, and digital manufacturing. Germany’s *National Industrial Strategy 2030 Plan* focuses on the development of digital technology and Industry 4.0, such as embedded and cyber-physical systems, the Internet of Things (IoT), virtual and augmented reality (VR/AR) technologies, and intelligent manufacturing. Meanwhile, Japan’s *Integrated Innovation Strategy 2019* proposes the use of a large amount of raw foundation data, high-quality industrial social data, as well as research and development (R&D) process data to create a new generation of digital platforms, focusing on the development of intelligent robots, machine tools and electronic equipment, and embedded systems, etc. with the aim of using intelligent factories to enhance industrial competitiveness.

Amid the Intelligence Plus era and the “new infrastructure” plan, to further promote the Internet Plus action plan and accelerate its in-depth integration into many areas, this article analyzed the development status of the action plan and summarizes the problems from the aspects of technology, industry, application, data, and policies. Furthermore, it expounds on the connotations, system architecture, and technical pedigree framework of the new action plan amid the new era. Finally, the strategic goals, technical development routes, special project settings, and corresponding strategic support and safeguard measures of the action plan are proposed.

2 Analysis of the development status of the Internet Plus action plan

2.1 Development status

Relevant departments in China are actively promoting the Internet Plus action plan and have made phased progress in integrating and applying Internet technological achievements in various fields.

Significant progress has been made regarding the necessary support technology and environment for Internet Plus. Key core technologies such as massive data storage and processing, big data mining and other aspects of R&D, and the green and intensive development of application infrastructures such as Internet data centers and call centers have begun to bear fruition. The development environment continues to be optimized and the connectivity of technology, standards, and supervision is accelerating in many fields.

For Internet Plus intelligent manufacturing, industries such as the IoT, cloud computing, big data, mobile Internet, and integrated circuits are developing rapidly, and new models and ecosystems based on the industrial Internet are

constantly emerging. The “Enterprise Cloud” plan and the construction of industrial Internet platforms have accelerated, and the scale of intelligent manufacturing R&D and application platforms continues to increase. The construction of intelligent manufacturing industry clusters is on a steady course. For example, Wuhan plans to build intelligent manufacturing industrial parks with the East Lake New Technology Development Zone and the Economic and Technological Development Zone as the mainstay [7].

For Internet Plus modern agriculture, the application of modern information technologies such as the IoT and big data in the agricultural field has improved in all directions; mature and replicable agricultural IoT application models have been quickly devised and are being promoted. Cities such as Xi’an and Jinan support the application of new information technology. Meanwhile, smart agriculture technology is maturing. For example, Hangzhou city integrated agricultural information resources and built a smart agriculture comprehensive service platform [8].

For Internet Plus smart energy, the new generation of technologies such as industrial Internet, big data, and AI are developing extensively in the new energy vehicle industry, and cities such as Guangzhou and Nanjing are focusing on fostering new ecosystems in this field [9]. The construction of distributed energy networks is gradually taking shape, and cities like Qingdao and Jinan have initiated open and shared energy networks with the level of networked energy supply continuing to improve. Other cities, for example, Chengdu and Jinan have realized intelligent regulation of electricity consumption terminals based on the Internet [10]. Internet Plus promotes the intelligent upgrading of the energy industry, forming a new form of Internet Plus smart energy industry represented by the energy Internet and the ubiquitous power IoT.

For Internet Plus benefiting services, the standardized development and operation of Internet hospitals have been realized by optimizing the management system, and patients’ medical experiences have significantly improved. For a high proportion of tertiary hospitals, appointments can be made within a specific hour. The construction of demonstration zones for benefiting services has achieved preliminary results. For example, Zhejiang Province promotes “one card” for medical treatment and “one portal” for online health navigation, builds “one platform” for Internet hospitals, and promotes “all-in-one services” in the medical and health field. Converged innovative applications represented by big data, AI, and fifth-generation mobile communication (5G) have been further strengthened. Cities such as Jinan and Wuhan have implemented big data applications in health care and fostered new health and medical industry forms based on new-generation information technology.

For Internet Plus intelligent transportation, the quality of transportation services has improved. Jinan and Chengdu are two cities that have opened their transportation service data resources to the public, providing real-time traffic status queries and travel route planning and other services [11]. The online integration of transportation resources has accelerated, the traffic information infrastructure has been renovated and optimized, and the operational status of critical facilities in the transportation network and the ability to collect traffic information continues to be built. The ability of scientific transportation management is being continuously enhanced. For example, Shenzhen gathers various kinds of traffic data on which it bases an Internet Plus transportation management model and rebuilds administrative service processes.

For Internet Plus smart environmental protection, the dynamic monitoring of resources and the environment has been further improved. For example, Hangzhou City has achieved full coverage of environmental elements such as atmosphere, water, noise, radiation, soil, and ecology. Innovative development of smart environmental protection has been accomplished, including in Jinan, Chengdu, Qingdao, among others, all of which use smart monitoring equipment and mobile Internet to increase the types of pollutants monitored and strengthen pollutant discharge management. The implementation of online waste transactions has accelerated. Chengdu, for instance, encourages Internet companies to participate in the construction of urban waste recycling platforms. The application level of big data in the field of environmental protection has been comprehensively improved. For example, the national river basin water environment big data platform has led to the launch of an application demonstration in Jinan to support environmental quality prediction and early warning of polluting enterprises.

2.2 Problems

The Internet Plus initiative still has several problems concerning technology, industry, applications, data, and policies.

The technical, standards, evaluation, and security systems of the Internet Plus action plan have not yet been completed; the cross-border integration technology system, in particular, is lacking. Fundamental core technologies that should be independent and controllable are still weak, namely, the level of self-developed mid-to-high-end sensors is far behind that of other countries and core technologies have not yet been developed. The emerging

technologies involved in integrating the Internet and various fields need to be carefully examined.

At the industrial level, the foundation of smart products and core software and hardware industries is weak. For example, high-end sensor products are generally imported, and thus an independent and controllable software industry and ecology needs to be established. The core support capabilities of the platform are deficient, and a cross-industry interconnected platform and integrated development environment that would support the Internet Plus action plan are lacking.

Business systems in different fields are difficult to connect at the application level, and there has been insufficient investment in technology, product, and data interaction. The regional coordinated development model of the Internet Plus action plan needs to be further explored. These factors weaken the upstream and downstream cooperation of the industrial chain, restricting enterprises' coordinated development. In the application of Internet Plus achievements, the systematic innovation that creates values for enterprises through ubiquitous interconnection is relatively weak.

A data interconnecting and sharing platform that is independent and controllable has not yet been established, and the foundation of data security technologies such as storage encryption and security detection is weak. Inconsistent standards for the data-sharing platform along with incomplete and low-quality data restrict the implementation of the action plan to a certain extent. The policy design and overall coordination management mechanisms for data sharing are incomplete, and the degree of data sharing is low. The benefit distribution mechanism and regulations are also not sound, which makes some industries unwilling, afraid, or unable to share data (especially in cross-industry collaboration).

At the policy level, the Internet Plus management department has formulated and issued a series of policy documents, but some overlap and their continuity and pertinence are not strong, which is not conducive to the smooth execution of Internet Plus at the local level. The lack of an effective means for policy implementation, inadequate understanding of top-level design in some places, and lack of necessary financial policy support and a usable policy implementation promotion and evaluation mechanism have made some local practices unbalanced. In addition, governance mechanisms for public services and data security under new models and new forms are still lacking.

3 Internet Plus action plan amid the Intelligence Plus era

3.1 The new connotations of the Internet Plus action plan

The Internet Plus action plan involves implementing a new intelligent service interconnection system that is based on new Internet technologies and their integration. Guided by new-generation AI technology, its tools are digital, networked, cloud, and intelligent technologies, which are formed by the deep integration of seven kinds of new technologies: Internet, information and communication, intelligent science, energy, material, and biological technologies, and those related to new application fields. It intelligently connects human, machines, objects, environment, and information and provides intelligent resources and capabilities on demand [1].

The connotations of the Internet Plus action plan have expanded with its advancement, and the relevant technical means, models, and forms have been significantly extended. (1) In terms of system characteristics, the new Internet Plus action plan realizes the complete autonomous and intelligent perception, interconnection, collaboration, learning, analysis, cognition, decision-making, control, and execution of humans, machines, objects, environment, and information in the whole system and whole lifecycle activities. (2) Regarding implementation content, the new Internet Plus action plan promotes the integration and optimization of six factors (people/organizations, technology/equipment, management, data, materials, and funds) and six flows (of people, technology, management, data, materials, and funds) in the whole system and lifecycle activities to form digitized, networked, cloud-based, and intelligent products, equipment/systems, and full lifecycle activities. (3) In terms of ecosystems a new model that is intelligent, collaborated, and interconnected is formed. This model is user-centered and optimizes and integrates human, machines, objects, environment, and information; it is also service-oriented, flexible, and socialized. Moreover, a new ecosystem is established which is led by intelligence, driven by data, and features ubiquitous interconnection, service sharing, cross-field integration, and mass innovation. (4) The new goals become innovation, green, openness, sharing, and individuality [12–15].

It is noteworthy that intelligence guidance represents the new generation of intelligent science and technology (e.g., brain and cognitive science, and AI) and has become the most important and disruptive form of technology for the development of the Internet Plus action plan. Digital, networked, cloud, and intelligent technologies have become the new means for evolutionary advancement for the Internet Plus action plan; they are based on new Internet

technologies and integrate new-generation intelligent science and technology with that of new information and communication as well as technologies related to new fields and application scenarios [1].

3.2 New architecture of the Internet Plus action plan

The new architecture of the Internet Plus system mainly consists of a new intelligent resources/capabilities/products layer, a new intelligent perception/access/communication layer, a new intelligent edge-processing platform layer, a new intelligent system cloud service platform layer, a new intelligent system cloud service application layer, a people/organization layer, and the standard specifications and security management of each layer (Fig. 1) [1,14]. The newly added new intelligent edge-processing platform layer is used to provide real-time intelligent services on system architecture innovations. The “new” before each level specifically refers to the integration of new generations of AI technology, new information and communication technologies with new professional technologies in the fields of the national economy and people’s livelihoods and national security, and the continuous upgrade of new architecture and new content.

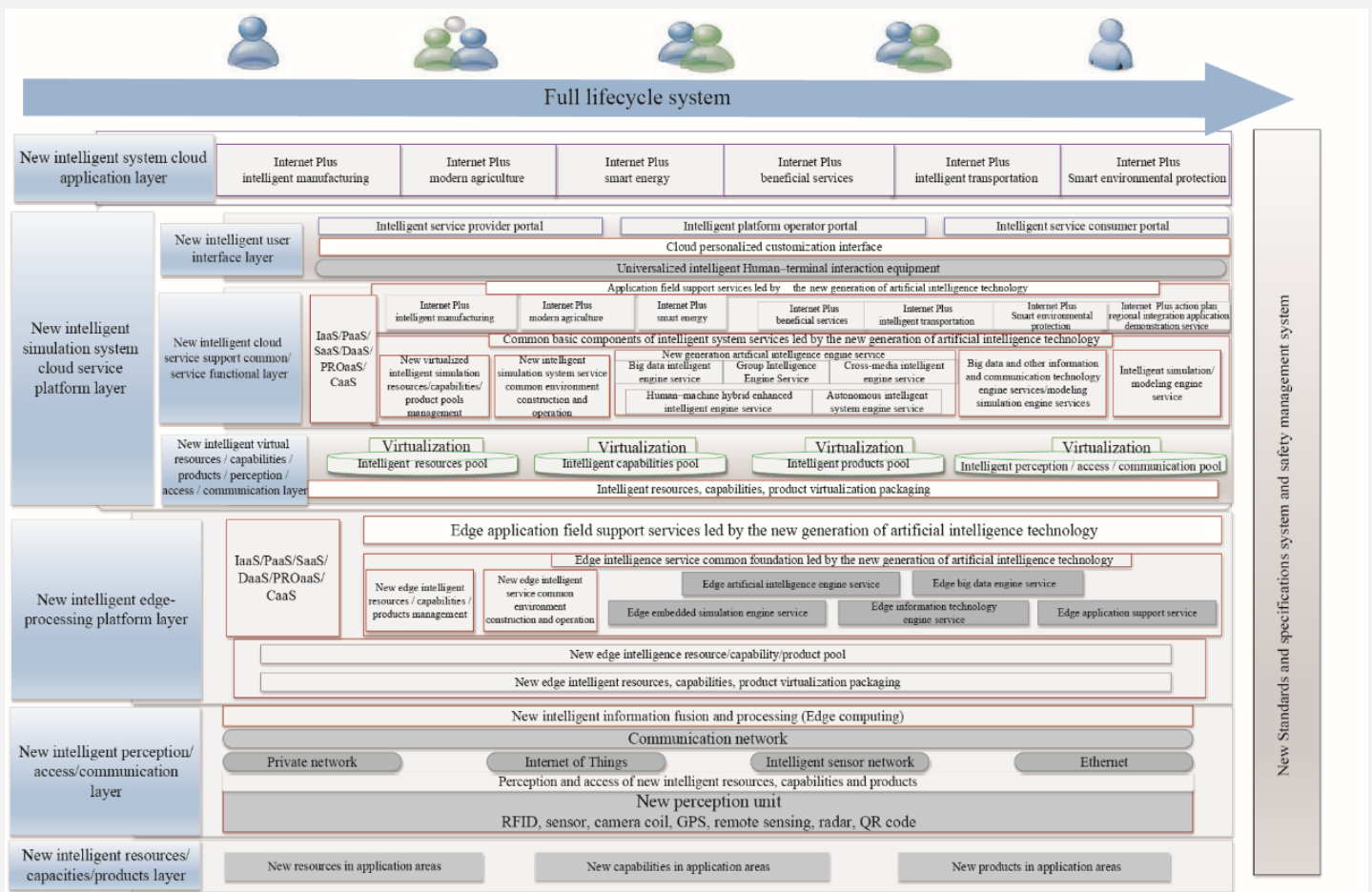


Fig. 1. New architecture of the Internet Plus system.

(1) The new intelligent resource/capability/products layer includes new resources, capabilities, and products which are oriented to the new Internet Plus system; it involves the national economy, people’s livelihoods, national security, and other similar aspects.

(2) The new intelligent sensing/access/communication layer includes new sensing units (e.g., radio frequency identification (RFID), sensors, camera coils, global positioning systems (GPS), remote sensing, radar, QR codes), transmission networks (e.g., private networks technology, IoT, sensor network, ethernet, and mobile communication network), and new intelligent information integration and processing.

(3) The new intelligent edge-processing platform layer mainly focuses on the intelligent resources, capabilities, and products on the edge of the Internet Plus system; it carries out virtualization encapsulation to form a new edge intelligent resources/capabilities/product pool. Edge applications support services can be provided through infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS), data as a service (DaaS),

product as a service (PROaaS), and capacity as a service (CaaS); edge application support services; and the common foundation of intelligent service led by the new generation of AI technology, such as the construction and operation of a standard environment for edge intelligent system services [1].

(4) The new intelligent system cloud service platform layer mainly includes the new intelligent virtual resources/capabilities/products/perception/access/communication layer, and the new intelligent cloud services support common/service function layer. Among them, the former is based on new intelligent virtual manufacturing resources/capabilities/products/perception/access/communication pool, which provides virtualized packaging of new intelligent resources, capabilities, and products; the latter forms an Internet Plus common infrastructure based on information and communication technology engine services such as new virtualized intelligent resources/products/capability management, the new generation of AI, and big data [14], which provide application support services for Internet Plus in various fields and regional integration application demonstration of the Internet Plus action plan [12].

(5) The new intelligent system cloud service application layer includes models of Internet Plus application in various fields, and new models of regional integration application demonstrations of the action plan.

(6) The people/organization level refers to those participating in the new intelligent system and the system's full lifecycle.

3.3 New technology pedigree framework of the Internet Plus system

The technical pedigree framework of the new Internet Plus system is mainly composed of new technology, software technology, standards, security, evaluation, and management systems [14].

(1) The new technology system includes overall technologies (e.g., system architecture technology and system integration technology); various perceptron technologies; perception/access/communication layer technologies (e.g., satellite Internet and space-ground integrated networks); edge-processing platform technologies (e.g., edge AI engine services and edge big data engine services); basic generic platform technologies (e.g., intelligent virtualized manufacturing cloud trusted service technology and universal human/machine interaction technology); application platform technologies (e.g., intelligent manufacturing, modern agriculture, benefit services, and smart energy, transportation, and environmental protection technology); supporting technologies (e.g., information processing and application technology and intelligent science and technology); and integrated application technologies oriented to Internet Plus intelligent manufacturing as well as Internet Plus modern agriculture.

(2) The new software technology system involves the following: system software technologies (e.g., edge computing software technology and cloud platform system software technology), other platform software technologies such as real-time data intelligent processing and container isolation, and application software such as data-driven component combination engines, application development, and operation integrated environment technologies.

(3) The new standards system covers the following: Internet Plus overall standards, and security, common support, service integration, guidelines and evaluation, and Internet Plus industry application standards.

(4) The new security system is categorized into the following security protection technologies: physical (e.g., safe physical environment, usage rights and identity); technical (e.g., information confidentiality, anti-virus, and mimic security defense) [16]; management (e.g., security regulations and culture); and commercial (e.g., behavior recognition and instant recognition).

(5) The new evaluation system includes the evaluation of resource input capability, integrated application-level, collaborative innovation capability, and economic and social benefits.

(6) The new management system includes managing data, technology, business processes, and organizational structures.

The new technical pedigree of the architecture of the Internet Plus system has correspondingly increased edge-processing platform technology. More attention is paid to the perception, acquisition, transmission, processing, and application of the supporting technology's information. The integration of new resources, products, and capabilities for the new system is emphasized. Within this new software technology system, edge-computing platform software technology is added and, in turn, the data-driven construction combination engine and domain knowledge recommendation are added to the application software technology. In terms of technical security protection within the system, new technologies such as autonomous mimic security defense [12] have been added. Moreover, deep integration of various technologies with new-generation AI, and new information and communication technology have been highlighted.

4 Implementation design of the Internet Plus action plan in the Intelligence Plus era

4.1 Development goals of the new Internet Plus action plan

By 2025, the technical, standards, evaluation, and management aspects of the new Internet Plus system will be standardized, paradigmatic, and service-oriented; both core key and integration technologies will be mastered. The Internet infrastructure will be further consolidated and intelligent [14], forming an independent cross-border integration support platform, and a batch of typical application demonstrations of cross-regional and cross-domain integration will be implemented. A new Internet Plus industrial ecosystem that is networked, intelligent, service-oriented, and collaborative will be formed.

By 2035, an intelligent integrated development environment and a general integrated platform for the new Internet Plus system will be established, and intelligent interconnected products and an independent intelligent middle station that will be internationally competitive developed. A new Internet Plus industrial ecology for global coordinated development is to be created, from which a system covering new Internet Plus actions will be formed along with a complete innovation system [14]. This new form featuring ubiquitous interconnection, data-driven, shared services, cross-border integration, independent intelligence, and mass innovation, will inject new vitality into the high-quality development of various fields.

Based on research on the technologies, industries, and applications of the new Internet Plus action plan, a roadmap for the development of the action plan is proposed (Fig. 2).

4.2 Suggestions for the Internet Plus action plan

4.2.1 Basic common research

To maintain continuity of the new Internet Plus action plan, detailed research projects on the technology, standards, evaluation, and management systems should be undertaken. Special research projects for cross-border data interaction fusion, digital twin, and high-performance simulation cloud technologies for the common needs of the new Internet Plus system should also be conducted. Furthermore, there is a need to accelerate the development and industrialization of intelligent products, edge computers, new software products, and cross-border integration and innovative cloud platforms under the new generation of AI technology, and to establish a cross-industry, -field, and -regional application demonstration project for the cloud platform of the Internet Plus action plan. A special science and technology project “Cross-Border Integration Technology Innovation of the Internet Plus Action Plan” and a major infrastructure project of the “China Science and Technology Cloud” platform of the National Internet Innovation Center should be created, and construction progress of major scientific and technological projects of the national future network testbed accelerated.

4.2.2 Internet Plus intelligent manufacturing

The projects for IoT communication technology and the Internet Plus intelligent manufacturing service platform should be promoted. Projects for intelligent basic manufacturing equipment, intelligent display terminals, and networked collaborative manufacturing technology for civil aircraft should be included. Independent R&D and industrialization of industrial software and industrial Internet platforms/tools should be supported. Cloud manufacturing and AR/VR auxiliary assembly demonstration projects for Internet Plus should be implemented, and catch-up and breakthrough trends in related industries maintained.

4.2.3 Internet Plus modern agriculture

The unique germplasm resources and intelligent breeding projects should be encouraged, and an Internet Plus modern seed industry platform for the property rights transaction of scientific research results built. Special research and development projects for agricultural sensors, an agricultural big data intelligent service platform, blockchain-based agricultural product quality traceability, and agricultural robots ought to be included. The Internet Plus industries for agricultural software, intelligent equipment manufacturing, and robots, as well as an Internet Plus intelligent service industry for agricultural and rural big data should be developed. An Internet Plus new application demonstration project for the modern seed industry could be established.

4.2.4 Internet Plus smart energy

Based on the source–network–load fusion symbiosis mode of Internet Plus smart energy, technology projects for the transparency of the energy system, its ubiquitous acquisition, and zero marginal costs should be included. The industrialization of distributed perception based on the use of smart materials, sensors, pervasive energy networks

based on IoT and energy terminals based on edge computing, and smart decision-making systems for energy systems based on cloud computing and AI should be promoted. A demonstration project of the comprehensive service platform for Internet Plus smart energy needs to be established.

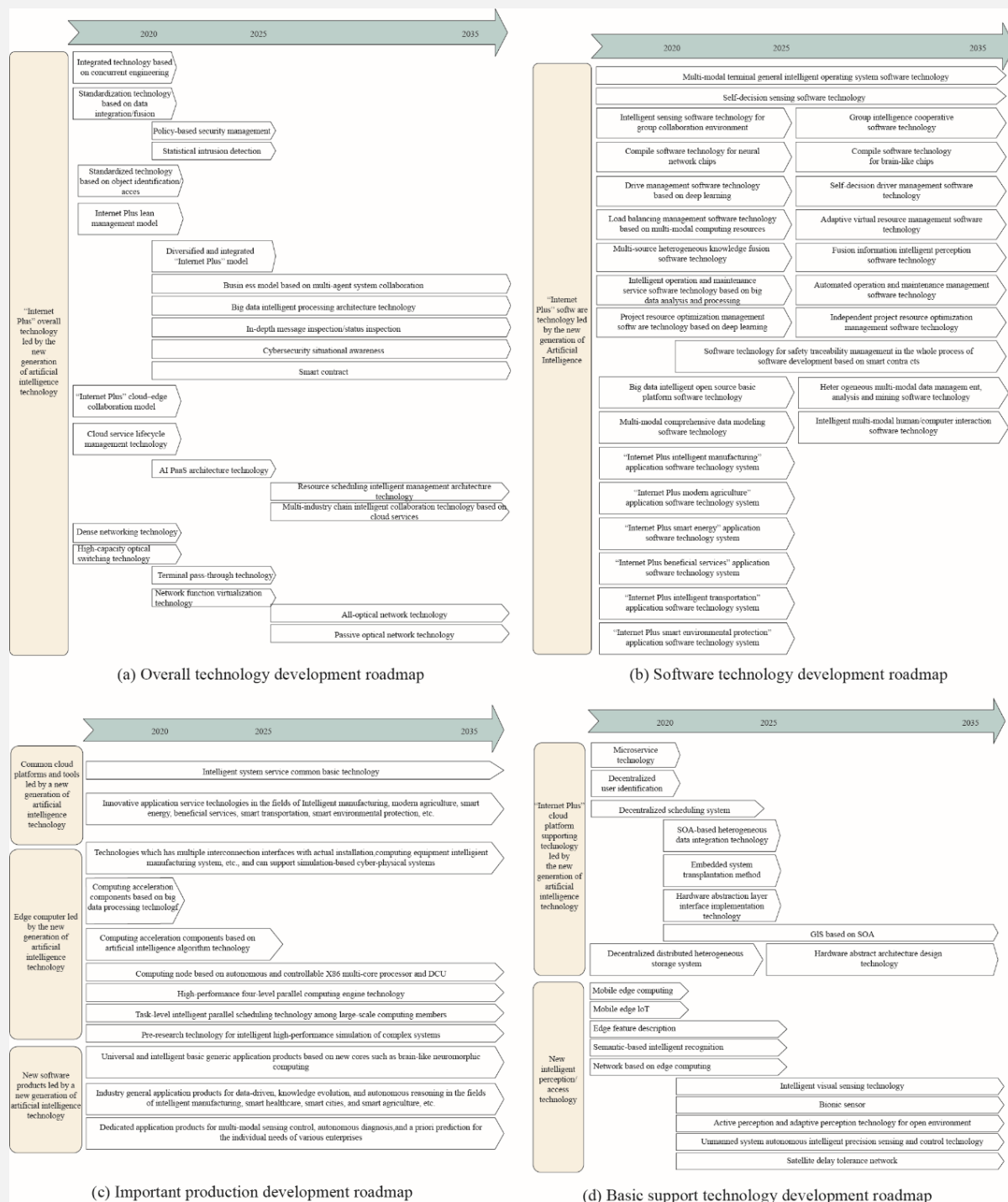


Fig. 2. Technology roadmap of new Internet Plus action.

4.2.5 Internet Plus benefits services

The engineering and industrialization of core products such as telemedicine and medical e-commerce platforms should be accelerated, and a technology project for a national-level open cloud platform oriented toward digital health of all people should be included. Internet hospital application demonstration projects should be improved. A demonstration project for the networked prevention and control of infectious disease information must be strengthened, and the application demonstrations for AI disease-assisted diagnosis, blockchain-based information

sharing, and chronic disease holographic management and integrated medical care services implemented.

4.2.6 Internet Plus intelligent transportation

Special technical projects for real-time high-precision location service networks, vehicle–road collaborative intelligent road networks, and automatic driving simulation should be implemented, and include projects for intelligent high-precision maps and standards and a “Beidou + 5G” intelligent network service. The development of intelligent networked vehicles and the Internet of Vehicles industry should be accelerated, and a one-stop service for Internet Plus shared travel cultivated. A major demonstration project for Internet Plus intelligent transportation could be set up to encourage related services in cities.

4.2.7 Internet Plus smart environmental protection

Special technical projects for intelligent monitoring equipment for R&D and the construction of both a comprehensive application and an industrial platform need to be included. The R&D and industrialization of public support platforms for environmental protection based on cloud services, and comprehensive environmental information platforms that support the national environmental health management and intervention system, as well as independent R&D and industrialization of intelligent environmental monitoring equipment should be promoted. Demonstration projects for a space/air/ground integrated monitoring system, precise haze control, systematic water control, solid waste trading, and ecological supervision must be implemented.

5 Measures and suggestions

5.1 Establish and improve the policy formulation and implementation mechanisms, and the fiscal, taxation, and financial support methods, as well as standards and regulation systems

A multi-departmental joint decision-making model and a responsibility implementation mechanism for policymakers should be adopted. In addition, a diversified policymaking participation mechanism should be introduced, a joint system centered on departmental cooperation established, and the supervision of the implementation of the Internet Plus action policy strengthened. Innovation in financial service methods is recommended and the orderly development of guarantee companies must be actively promoted. The protection of intellectual property rights and the Internet Plus security construction need to be strengthened, the process of big data legislation accelerated, and the Internet Plus governance mechanism improved.

5.2 Establish and improve the cross-industry talent education system

Colleges and universities should be urged to strengthen their support of emerging disciplines in the field of Internet Plus integration; in interdisciplinary fields such as intelligent manufacturing, environmental information, medical AI, and bioinformatics engineering, advanced companies should participate in teaching plans and a talent training system devised for Internet Plus.

A cross-field and three-dimensional talent training system should be established, and an Internet Plus talent supply and demand docking platform and professional talent database developed along with a talent map for the Internet Plus action plan. Enterprises and institutions should be guided to support the construction of innovation mechanisms, innovation posts established, and amateur innovation encouraged; the implementation of income distribution policies such as equity, option incentives, and rewards for the transformation scientific and technological personnel's research results should be accelerated [14,17].

5.3 Optimize the environment and ecology for the long-term cooperation and sound development of “government, industry, university, research institute, application, and finance”

Resources from relevant national ministries and commissions, enterprises, scientific research institutes, colleges and universities, industry organizations, etc. should be integrated, and market demand-oriented Internet Plus action industry alliances with leading enterprises as the core in critical areas set up to promote the formulation and application of Internet Plus standard systems, such as system technical and information standards, and application specifications. Emphasis should be placed on supporting enterprise-led national and regional Internet Plus integrated development and innovation centers in various fields, and the integrated development of various fields of Internet Plus should be comprehensively promoted. A long-term collaborative ecology of “government, industry, university, research institute, application, and finance” should be formed, integrating open policies, experience sharing, and innovative application.

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