

Design and Implementation of Intelligent Property

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Abstract-With the implementation of new pattern urbanization, the smart city construction in China is gradually out of the stage of project and conception, and switching to the stage of exploration and practice. Intelligent property is the important component of smart city. With recent years' development, property informatization construction has generally built a mature and stable work platform and a preliminarily comprehensive platform of "digital property" from the eye of the entire framework, like software, hardware, Internet and so on. Every provincial and municipal government regard intelligent property construction, like housing security and property information management, as a major project. Under the background of industry structural adjustments, various departments proceed intelligent property system's design and implementation on the base of mature digital property informatization platform. This paper briefly illustrates the conception, the general structure of intelligent property and this whole system, and poses the author's opinions on some problem of intelligent property.

Keyword-Digital property; Intelligent property; Difference; Intelligent frame; Design and Implementation

I. INTRODUCTION

Following the raising of some new conceptions, like internet of Things, cloud computing, Big Data, and the rapid expansion of internet technology, IBM formally put forward the conception of "smart city" in 2010, therefore, smart city construction comes into being. On the process of smart city, the government should set up and improve housing security and real estate data base, construct kinds of application platform, like housing security management, real estate market supervision, prediction and early warning, real estate register management and personal housing information management, and improve the soft power of real estate and keep real estate healthy moving.

The premier Keqiang Li, first put forward the plan called "internet+" in 2015 government work statement. "Internet +" refers to updating the traditional industry to freshly new industry status by the means of internet's technology, tools and application. Nowadays, the competition of domestic real estate tends to be more intense, the implementation of intelligent property brings a new opportunity to the uprising of real estate industry, also makes a preparation for the updating of traditional industry and national economy transformation, and provide a theoretical guidance for real estate to stride forward to "intelligent manufacture"

II. A SPAN FROM DIGITAL PROPERTY TO INTELLIGENT PROPERTY

Digital property refers to the digitization, networking and integration of real estate. In recent years, the real estate has fundamentally built a powerful geographic information data base through general digitization of housing physical data, ownership data and property files and relative property information, realizing integration management of image, text, chart and files, and achieving processed operation and office automation through uniform electrical affairs platform.

Intelligent property is on the basis of digital property construction, through Internet of Things to fuse real world and virtual world effectively, realize visualization, perception, controllability, networking and intelligentize, and take advantage of cloud computing to conduct mass and complex data, provide intelligent service for property management and the society.

The difference between intelligent property and digital property lies on: firstly, intelligent property focus on integration and sharing of different apartment's data; secondly, intelligent property emphasizes providing intelligent service for the public; thirdly, intelligent property can visualize in three-dimensional, which is different from two-dimensional of digital property; fourthly, besides applying technology of digital property, intelligent property can depend on internet of Things, cloud computing, big data and other new technique.

III. THE GENERAL FRAMEWORK OF INTELLIGENT PROPERTY

The general framework of intelligent property can summarize "one focus, one platform, three network, four targets"

"One focus" means uniform data central, for example, the physical data of land and house at the same area, including the space data and attribute data of parcel, floor, storey, household, and its household's ownership data, like warrant data, pledge, sealing etc, and including tenement, developers or other data, and terrain data, business data. Centering on table sale, conduct design of data base for all kinds of data, and conduct integration management of property's image, text, chart and file.

"One platform" means a intelligent property management platform which focuses on GIS, follows the management idea of covering the whole house land lifecycle, realizes the whole lifecycle informatization management of property development project, from land

supply, construction, sale, fund supervision, ownership register, tenement service etc to remove, and fundamentally supplies for relative department's business , official, service.

Three network is property business management network, officialautomatic network, public service

network

Four targets mean promoting real estate's healthy development; promoting information sharing and improving administrative efficiency and management level; fusing data, macro-control, wise decision; providing intelligent service, people first.

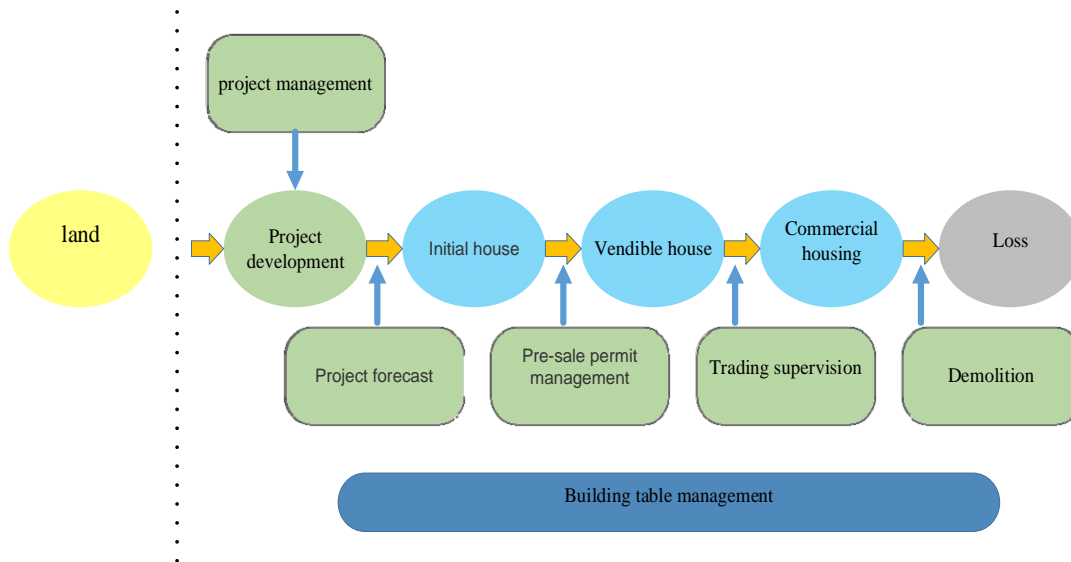


Figure 1. The whole house land lifecycle

IV. DESIGN AND IMPLEMENTATION OF INTELLIGENT PROPERTY

Intelligent property includes real estate market information system, personal housing management information system, house security management information platform, uniform real estate register management platform, intelligent property integrated electrical official platform, real estate market warning system and intelligent property expansion application.

4.1 real estate market information system

4.1.1 mapping and result-management son- system

Mapping and result-management son-system achieves the function of mapping and collection of real estate's physical data and updating management, provides base data for other applications, which separates data collection module and result management module. Data collection module realizes the data-collection function of cadastral revision, land survey and delimitation, predicting mapping and real mapping of real estate's areas. Result-management module is in charge of data storage, image update etc. , to make sure the physical data of real estate adapting present situation, and trace back to the history data during the process the recording change.

4.1.2 register management son-system

Register management son-system functions real estate register management. Operation staff can complete each business's register operation through this system, which is a very complicated business process. We can separate function into business adoption, examination(include preliminary examination, reexamination, final examination)and verification, modification, delivery,

trouble case, search(include house searching, process searching, register searching). We also separate as business classification into preliminary register, change register,transfer register, logout register, herald register, file record and other register, these kinds of business have its self small business.

4.1.3 newly-built commercial house online recording son-system

Newly-built commercial house online recording system achieves the function of presell and contract-sign of commercial house. This system depending on presell permission management business or preliminary register business' setting of newly-built commercial house, focus on whether the newly-built commercial house register and check or not. The developer adopts the way of online, realizes newly-built commercial booking, preselling, selling and relative contract recording , knows the real-time sale situation of newly-built commercial house , grasps the tendency of real estate and opens information to the public to avoid dark operation , keep justice.

4.1.4 stock house online-recording son -system

Stock house online-recording system provides a safe and reliable exchange platform for buyer and seller, parties to lease or pre-lease. Through this system, not only manage whole second hand house market resource, conduct the behavior of buying and selling, leasing and renting under the transparent and just environment, and also provide communication platform for buyer and seller, leaser and renter, in order to regulate market behavior of intermediary company and to make sure trade fund's safety.

4.1.5 project-management son- system

Project management system overall tracks and manages

the construction process from construction land receipt, remove process, construction schedule report and so on. Through data reported by company, master construction land's real usage situation timely, grasp the specific process of project construction, realize the target of real estate market warning, and provide necessary evidence to adjust real estate market.

4.1.6 involving subject management son-system

Real estate involving subject management son-system refers to managing and regulating the basic behavior of real estate employee and staff, ensuring the subjects' being standard, by the way, providing convenient, flexible, standard ways for the consistency of real estate system data.

Involving subject management system mainly register the basic information of real estate employee and staff, manages basic information of the set-up, aptitude apply, aptitude change, cancel and so on, and information of employee and staff's register, training, revocation and integrity record etc..

4.1.7 statistic analysis and information publish son-system

Statistic analysis and information publish system is built on newly-built commercial house online-recording system, stock house online-recording system, mapping and result-management system, register management system. This son-system bases on the table sell data of mapping and result-management system, newly-built commercial house online-recording system, trade data of stock house online-recording system, and ownership register data of register management system, to conduct frame, ensure veracity of trade parties' ownership data

4.2 personal housing management system

Personal housing information system refers to each city should follow its own situation and requirement of "personal housing information system fundamental data standard", complete the work that extract fundamental data of personal housing information from register business system of real estate and market information system. The construction of personal housing information system, overall provides basic personal housing information and data in changeable situation, provides technique support for scientific making control-regulated policy of real estate and creates condition of improving industry management and social service level.

4.3 information platform of housing security management

Housing security management information platform provides enter-permission examination, rent-sell management, usage management(include security housing and security target files, moving supervision on the situation of housing security target's family people, housing and economy change), and security exit mechanism etc, improves management level and work efficiency of housing security, realizes uniform supervision.

4.4 uniform real estate register management platform.

Real estate register management system focuses on land and table sell, proceeds register management of land, housing, sea, forest, grassland and minerals. This system ensures uniform management of all the register state in one

real estate register unit, clears the handling process of register, circulation process and register book process, and through the temporary register state, current situation and history transformation, builds a module of tracing back to real estate register history, so that to make sure the authority, veracity and certification of register institution.

Real estate register management system mainly realizes the adoption of real estate's ownership, ownership examination(first examination, reexamination, final examination), modified certification(property ownership certification, table, special map), certification delivery, file, charge management, information query, register information query, operation process query and other assistant function.

4.5(OA)uniform electrical official platform of intelligent property

The construction of uniform electrical official platform not only takes advantage of the advanced technology of computer, which helps manual jobs solved online, but absorbs advanced management idea and methods into OA system, where every user of application system can be guided to finish daily work and get benefit. Co-operation management is the development tend of management. So OA system, which is blended with co-operation management's ideas and methods, can present the idea of netted- information、contacted-operation and situation-adapted, then integrate a piece of resource-net after breaking the walls among resources, so that we can furthest develop and utilize resource and add value form resource and help them move harmoniously, and push the management into a new altitude as supporting mobile-terminal official solution.

4.6 early warning and forecast system of real estate

Accurate market data helps to increase the veracity and power of control measures that the government takes to the real estate market, and play a key role in setting up a standard, healthy and ordered market.

Pre-warning and forecast system refers to obtaining the first-hand market information from multi-channel, then forming into a set of easy to understood and accurate market data and providing evidence for supervision institution's decision after wisely conduction of data.

4.7 intelligent property application-expansion system

Intelligent community service platform realizes informatization and centralization of community management and service, provides full and accurate community information, like community basic information, community public information, community activity area and booking management of community service etc, for the community civil, community manager, shops and supermarket, servers, tenement management, community public service institution.

Besides, we can develop a series of application-expansion, like intelligent evaluation system of real estate, intelligent real estate service platform, intelligent parking system etc.

V. CONCLUSION

Simple formula illustrates, intelligent property= digital property + internet of Things +big data +cloud computing. Intelligent property forces the industry of real estate into

qualitative change, but the process is not gentle: firstly, the survey and study of intelligent property indoor is still on the way of exploration, the basis of this theory is weak, no guidance and full of blindness, so the problem of resource wasting is easy to be seen; secondly, the passion of building intelligent property is high, but because of the unbalanced development in different areas, there is no plan as a whole, no uniform standard of evaluation system, and the innovation of mechanism is lagging so that to be guided; Thirdly, profit allocation lags each department's share-to-share, and it's hard to set up a suitable and complete standard. Therefore, every city should follow itself situation, do the best design, implement whole plan, move forward as distribution, and create an international-leveled smart city.

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