Report on Cases of **New Rural Integrated Service Innovation Project** based on wireless three-network integration technologies

Qian Weilie

CEO of Sinera

Jan 2014

兆华世纪
sinera

Outline

- **Introduction to Sinera and Practice Review**
- Understanding and value proposition of rural ICT
- Wireless three networks convergence based

  ——Rural ICT technical solutions

  ——New rural convergence service system plan
- Schedule: demonstration of system product (The first generation of engineering prototype)

兆华世纪
sinera

Company vision: a leading IT Investment Service Operator in China

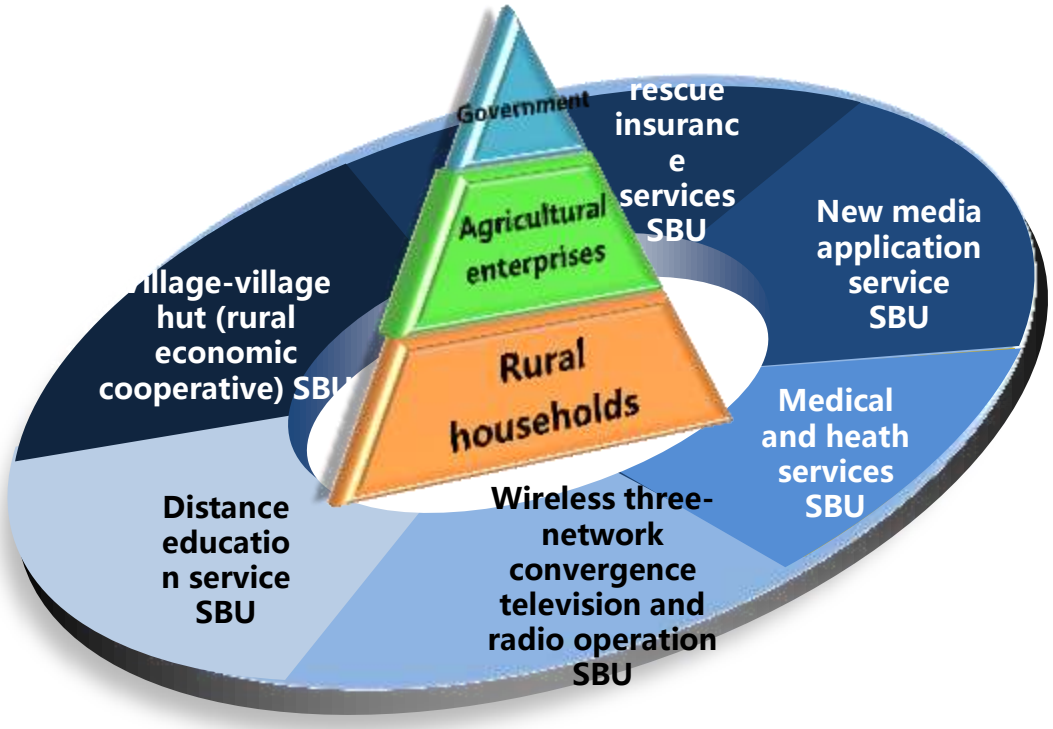
With digital rural areas as its mission

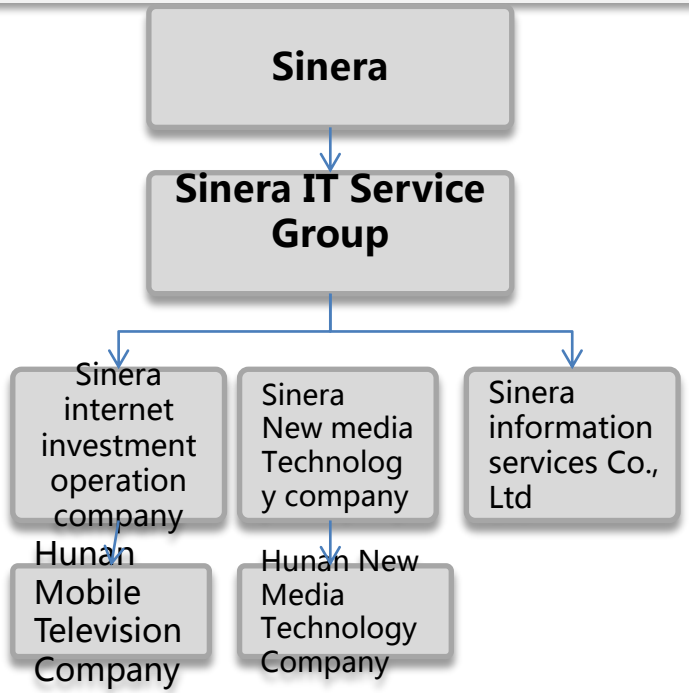
With advanced and appropriate information technology, thee company is dedicated into providing digital services to new countryside and urbanization in China

Business layout from the angle of the development of new countryside in China

Sinera adheres to the value proposition of using information technology to accelerate the development of new countryside, uses wireless three networks convergence technological innovation as impetus, based on digital terrestrial television and broadcasting and developing applications and services for agriculture, farmers and rural areas.

Formed clear "customer oriented, innovation driven and service guided" business layout





Sinera Review of Rural ICT Practice

- Began to be dedicated into the construction and operation of radio and television network in China from the beginning of 1990s.
- Invested in the construction of cable television network in Beihai, Haikou, Guiyang, Zunyi, Chengdu, Xi'an, Taiyuan etc.
- Began to cooperate with Hunan Radio, Film and Television Cooperation in 2003, and established "Hunan Mobile Television Co., Ltd to establish Hunan Terrestrial Digital Television and Radio Network
- Began to establish a high end technical team in 2012, and devoted into the innovation and development of new generation terrestrial digital television and radio network, television cloud platform, and intelligent terminal based on wireless three-network convergence and produced system products.

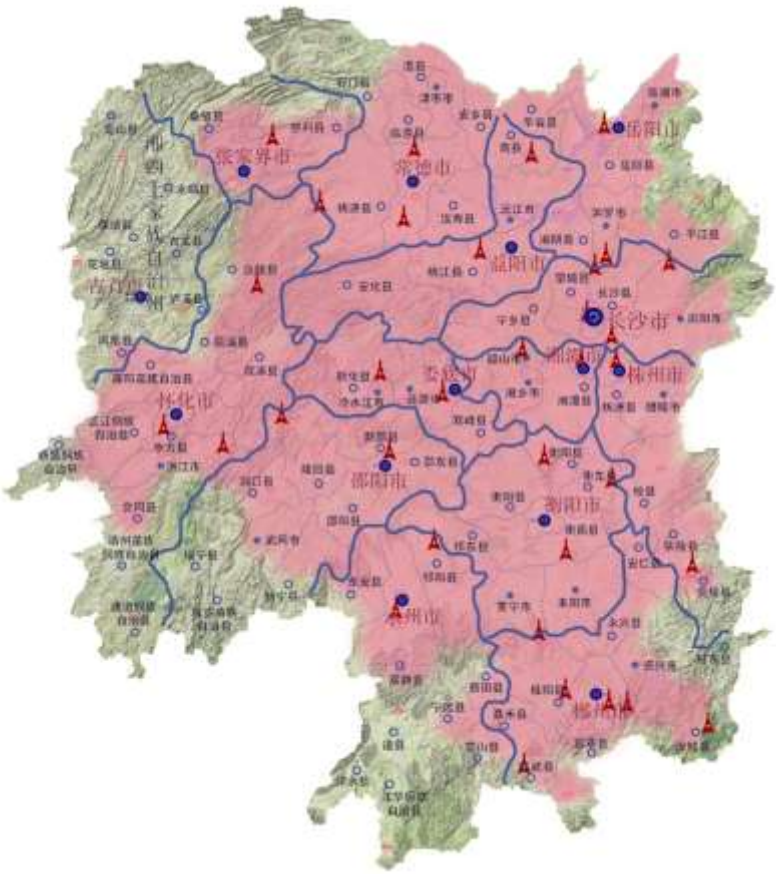
Team

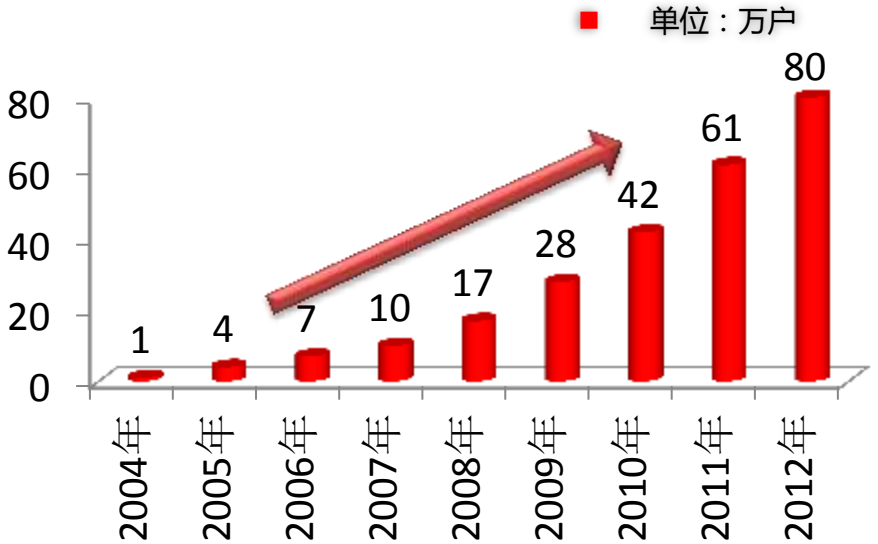
The company has accumulated rich experience in networking technology, digital television network construction, three-network convergence technology research and development, cloud platform technology, application research and development as well as operation and management, and has built a talents team with advance operation concepts and core technologies. The executives of the company all come from famous IT companies such as Digital China, Lenovo, China Mobile, and HP.

兆华世纪
sinera

After 8 years' efforts, a terrestrial Digital TV network covering rural areas in Hunan has been established.

Hunan Radio and Television Mobile TV Co., Ltd





By the end of 2012

500 million invested by Sinera

The largest and most advanced provincial wireless Digital TV network in China

More than 800,000 rural wireless Digital TV commercial household users, about 3 million farmers, the annual income of which exceeds 100 million RMB

More than 20 city and county subsidiaries, and more than 2000 service stations, and more than 10,000 staff in the town service stations.

Outline

- Introduction to Sinera and Practice Review
- Understanding and value proposition of rural ICT
- Wireless three networks convergence based

——Rural ICT technical solutions

——New rural convergence service system plan

- Schedule: demonstration of system product (The first generation of engineering prototype)

Relation between rural ICT and modern agriculture in the new countryside **understanding of rural ICT**

New countryside objective of modern agriculture development and reform

- Equalization of basic public service in rural areas can accelerate culture and education, health and medical treatment and life support.
- Establishment of rural economic mechanism and the urban-rural integration system
- Improvement of rural grassroots organization and governing capacity and innovation of rural social management mechanism
- Transformation of agricultural development methods to improve comprehensive agricultural production, -risk ability and market competitiveness.
- Stable development of agriculture, steady increase in rural incomes, and social harmony in rural areas

Beautiful home for farmers

Serious mismatch of reform development demands and resource supply

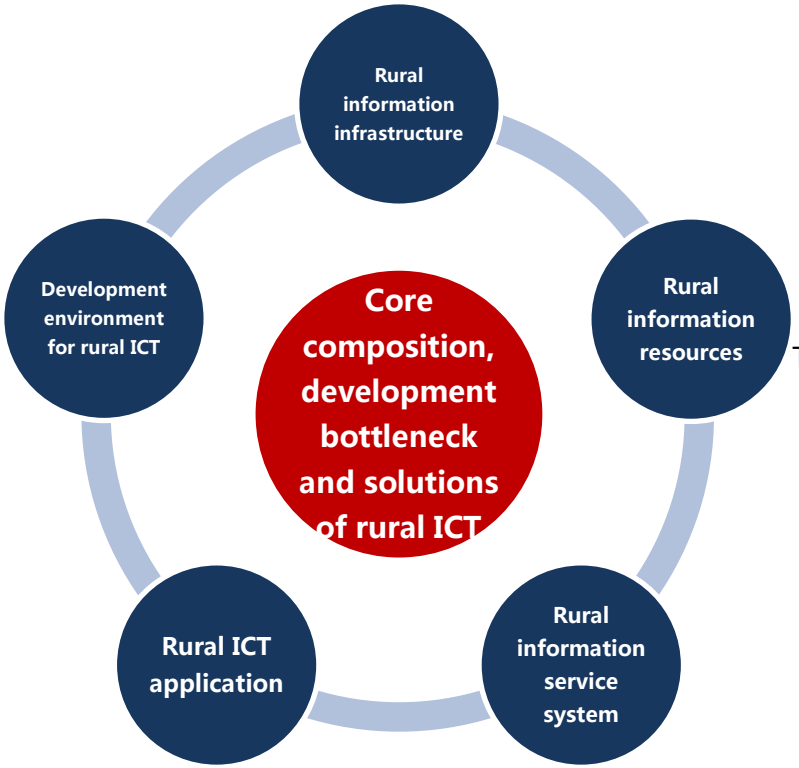
Information technology can ease the conflict between demand and supply.

Rural ICT is an import support method to implement national policy

- ICT will support the fast achievement of the above objectives in a low cost way.
- Innovative integration of digital TV radio network, wireless telecommunication, wireless internet, internet of things, television cloud platform, intelligent terminal
- Autonomous and controllable national ICT infrastructure with independent property rights owned by China can ensure safety.

Great increase of rural information consumption, opportunities for new information industry.

Core composition, development bottleneck and solutions of rural ICT **Understanding of rural ICT**



Challenges of ICT in rural areas

First, relative large digital divide between urban and rural areas. There is still a large difference between rural and urban areas no matter in the last mile of cable network access, or the low popularization of computer in rural areas. Therefore, the low cost wireless three networks integration based on Digital TV and radio network with intelligent TV terminal can form a new application format.

Second, the disperse of rural information service network resources which is in urgent needs of public cloud platform and landing service platform village to village information hut, which can effectively integrate resources for service objective and help the achievements of urban ICT come in and benefit farmers.

Third, the talents team of agricultural ICT in rural areas is still to be strengthened. The situation that urban residents made decisions for people in rural areas should be changed. Making use of rural economic cooperative mechanism, relying on rural residents and veterans, having sustainable management with ICT in mind, as well as an important method to improve farmers' quality, and cultivating modern farmers.

Fourth, lack of sense of urgency and necessary for the ICT in rural areas. The state shall issue engorgement policy to guide farmers' consumption, protect the initiative of private enterprises into ICT sector in rural areas, and accelerate the transformation of rural ICT development from the government's push to the demand pull.

Outline

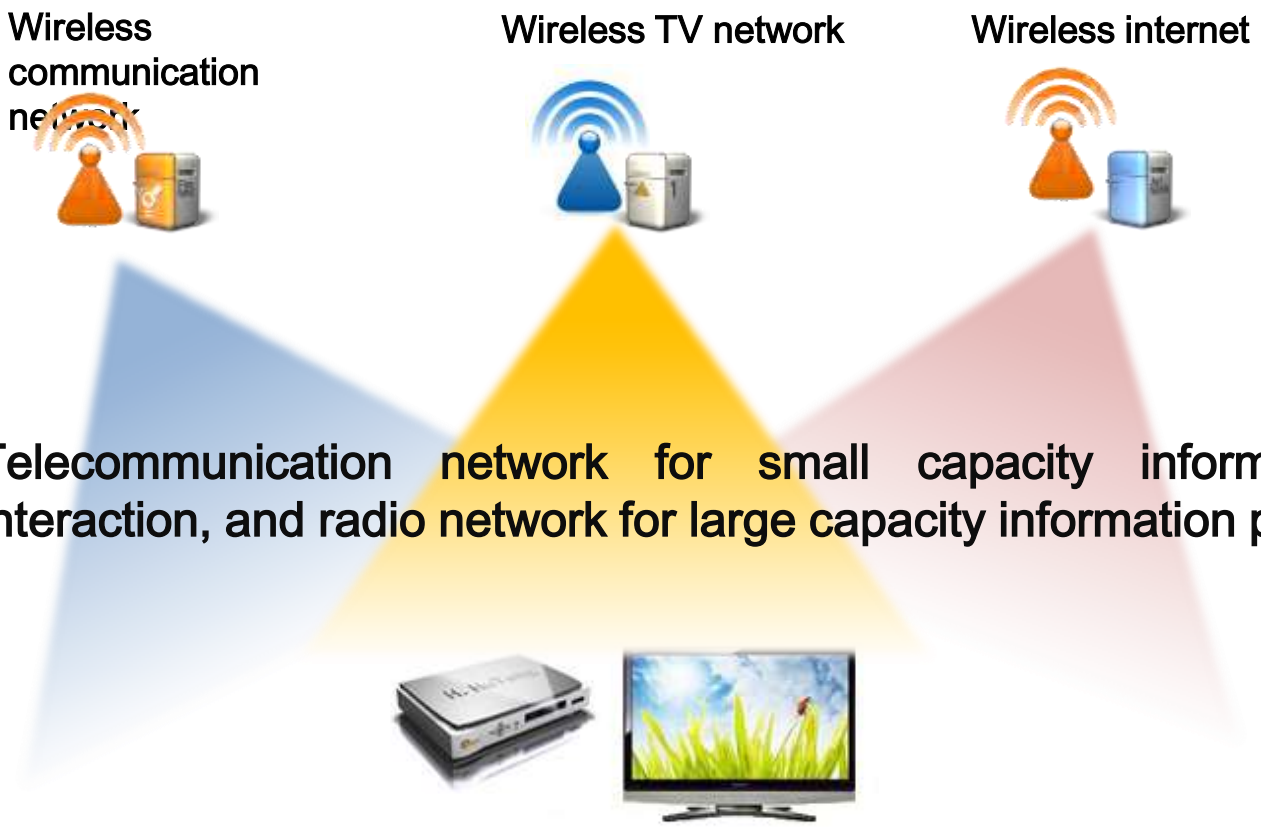
- Introduction to Sinera and Practice Review
- Understanding and value proposition of rural ICT
- Wireless three networks convergence based

——Rural ICT technical solutions

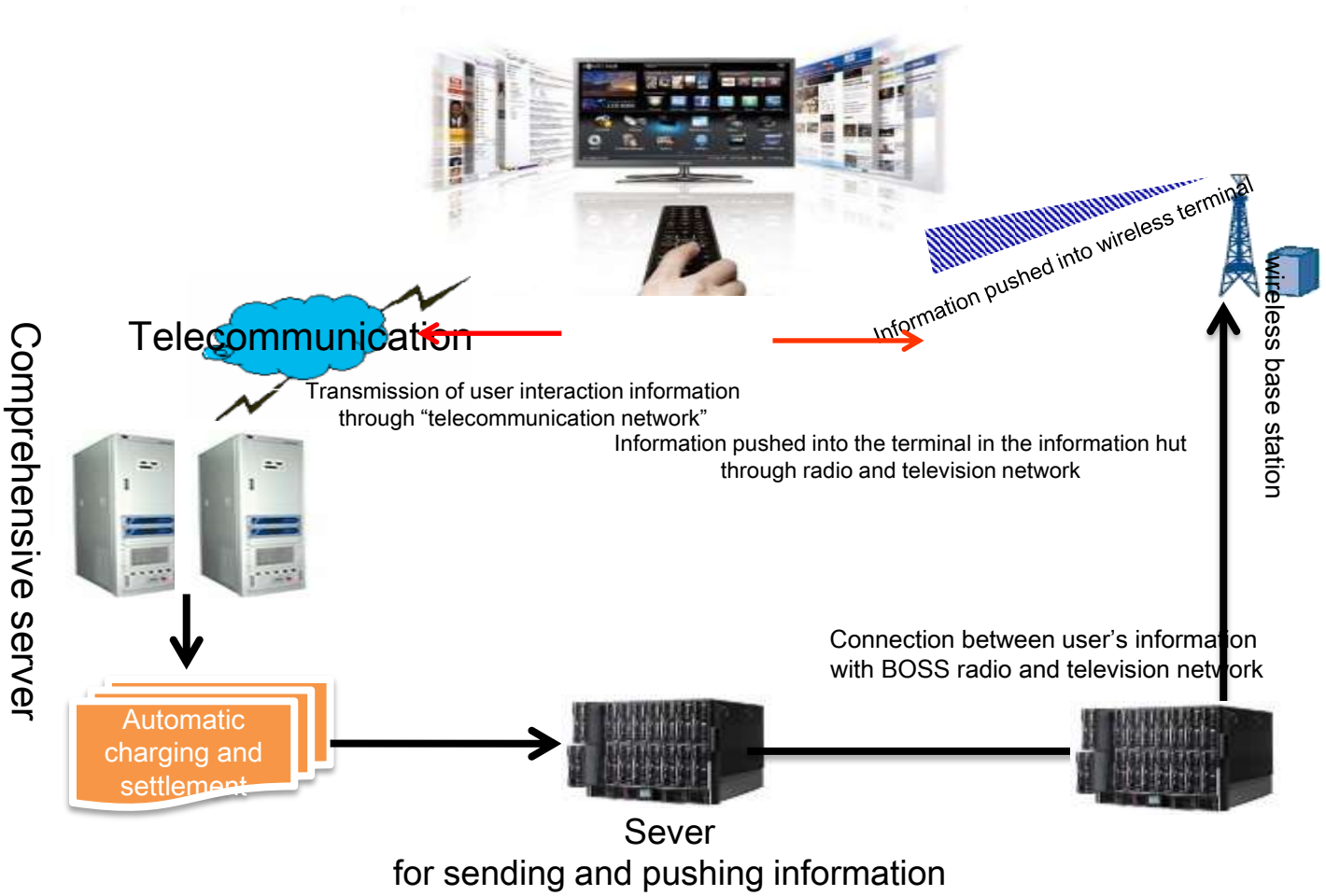
——New rural convergence service system plan

- Schedule: demonstration of system product (The first generation of engineering prototype)

Diagram of “Wireless Three Networks Integration”



Technical Framework of Three Networks Integration



Upward interactive telecommunication, download push through radio, operation through TV display

Characteristics of low cost and effective transmission technology

Upward interaction of telecommunication

Mismatch of user's information demand, the downward information=4 times uploaded information

Downward push by radio

WCDMA rate≈ 2Mbps

CDMA2000 rate≈ 2.4Mbps

TD-CDMA rate≈ 3.84Mbps

DTMB rate≈ 19Mbps

To download 1G video

WCDMA

CDMA200

TD-CDMA

More than 1 hour

DTMB Minutes

Low cost and fast construction

•The construction and operation cost of three networks integration Digital TV network is much lower than other networks (including cable TV network, cable internet)

less than 1/2 of 3G and 4G internet and wireless internet

•Information to households in a province: the construction and operation cost of wireless construction and maintenance can be limited within 500 million RMB and the construction and maintenance of cable network is about 10 billion RMB.

Information terminal for popularization and promotion-Intelligent TV

TV display operation

TV as terminal can greatly facilitate popularity and shorten rural ICT for at least 10 years.

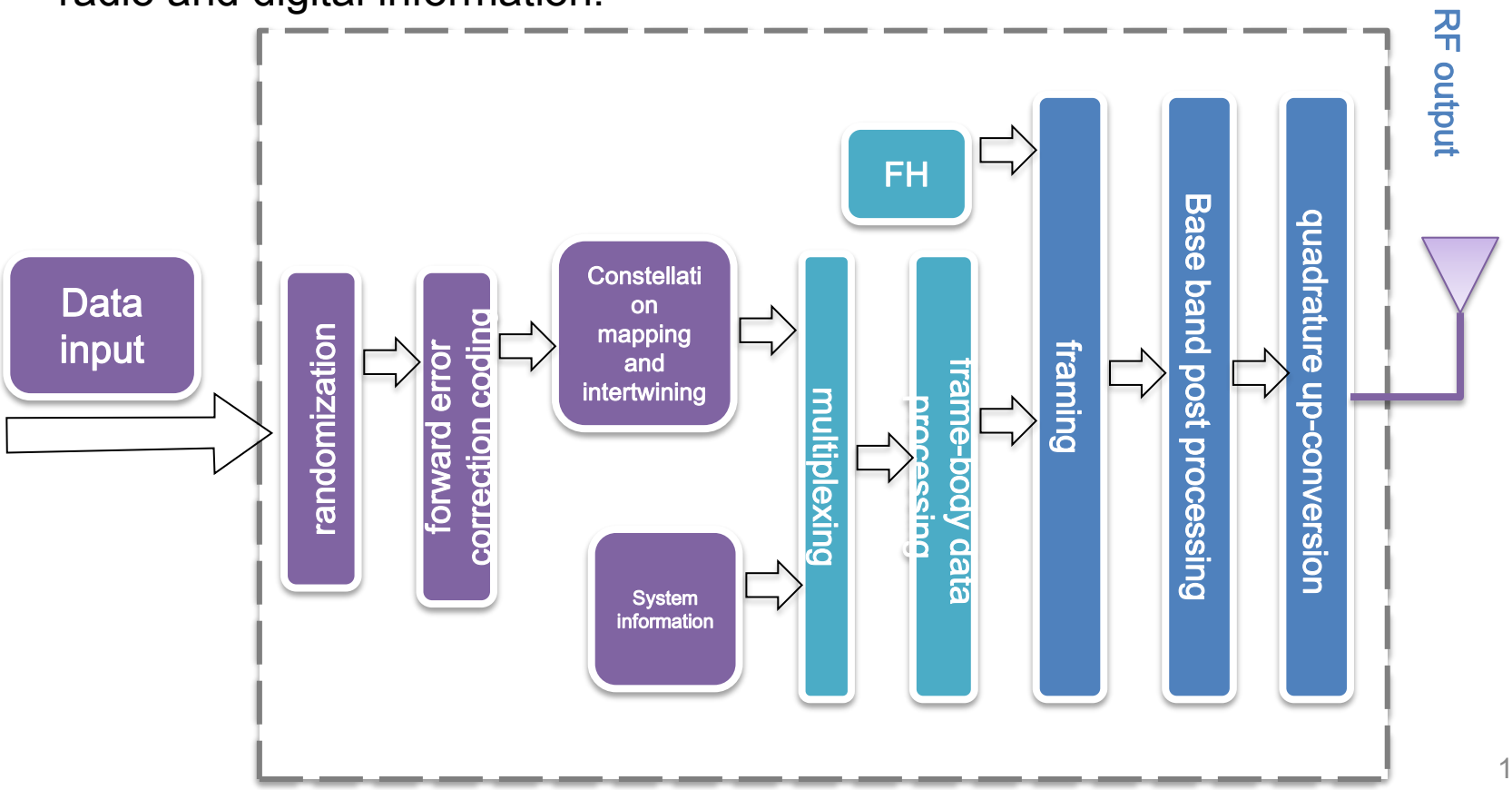
Watching TV

Using TV

- Telephone
- TV
- Information
- Distance education
- E-commerce
- Other

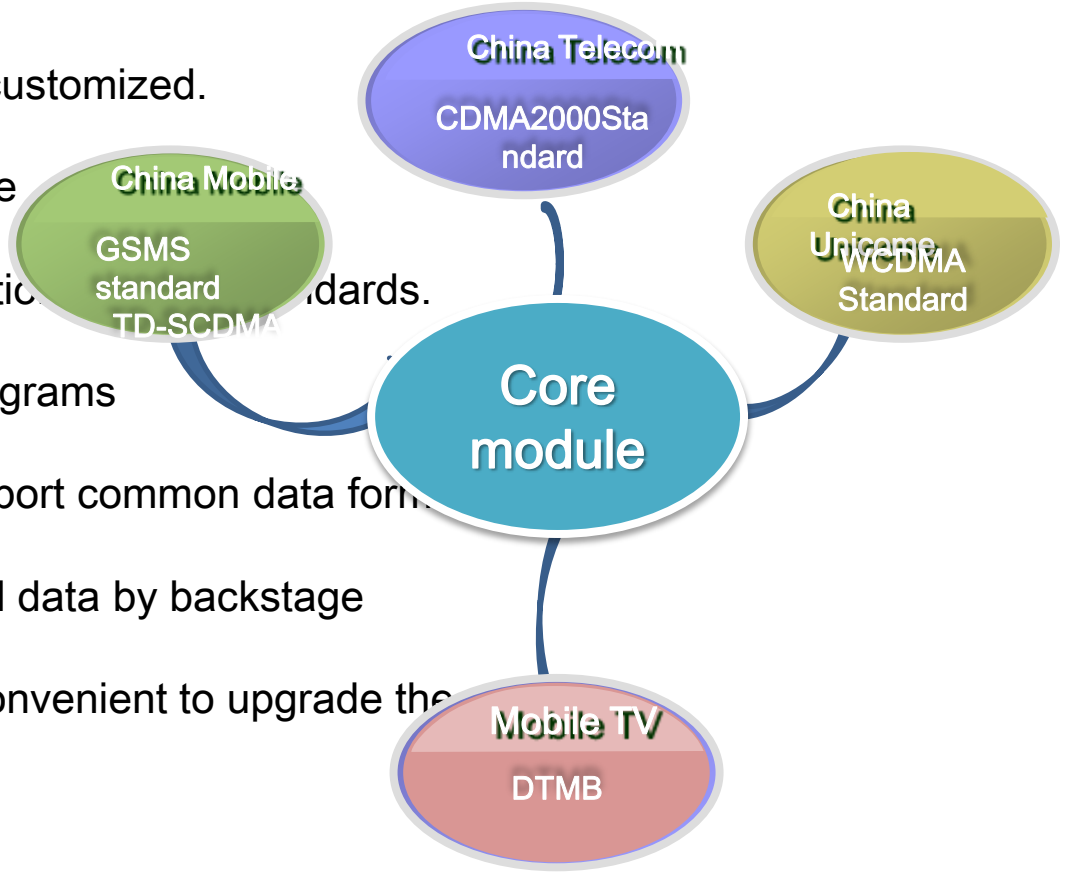
DTMB (Terrestrial Digital TV national standard)

DTMB, DVB –T (Europe) ATSC (USA) ISDB-T (Japan) are four international standards, which can provide services such as Digital TV, digital radio and digital information.



Terminal core module

1. Contents of interface can be customized.
2. Application driven core module
3. Support three telecommunicatio dards.
4. Compatible of HD and SD programs
5. The built-in web browser, support common data for
6. Automatic receiving of pushed data by backstage
7. Standard storage interface, convenient to upgrade the

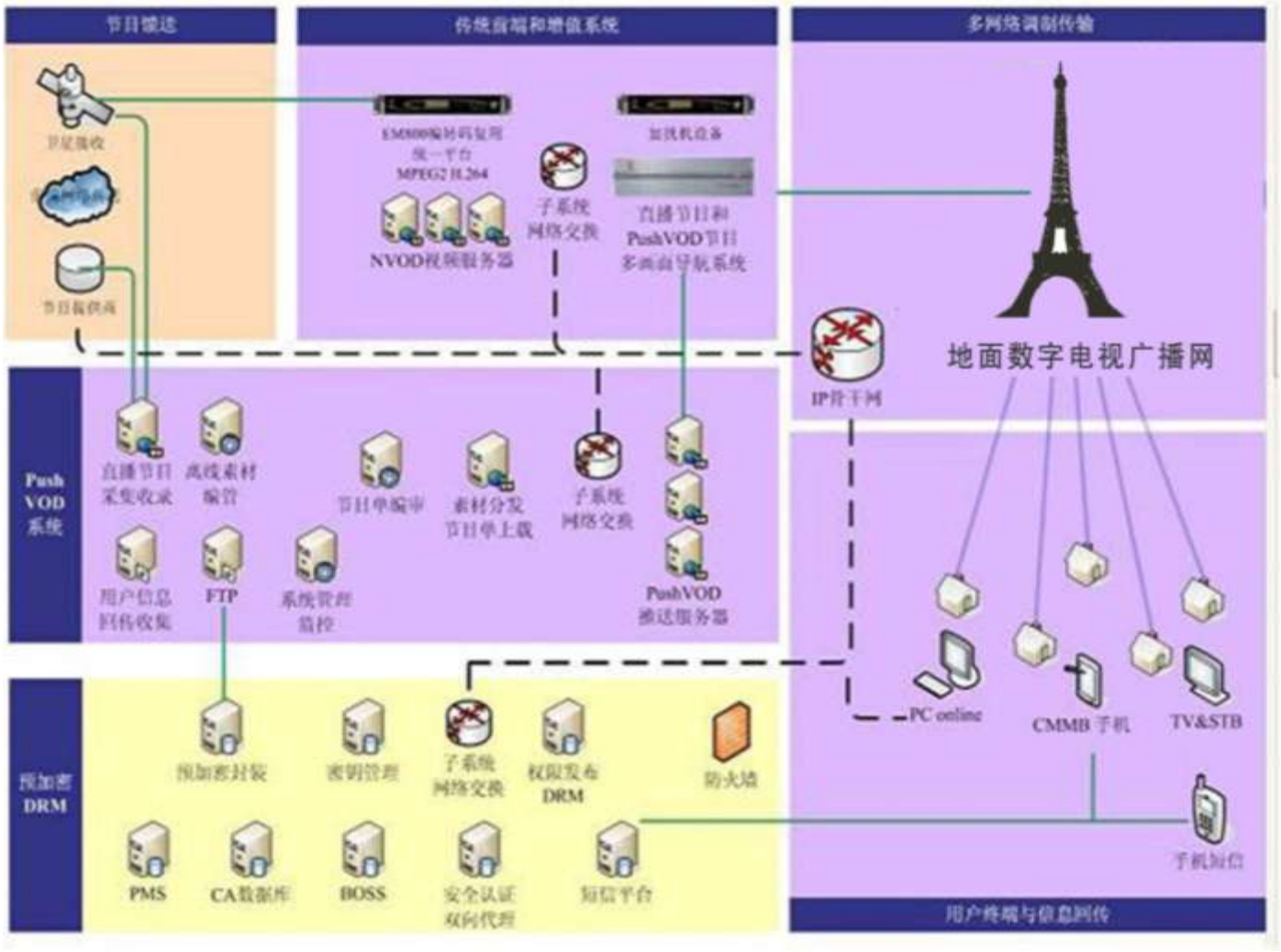


兆华世纪 sinera

Autonomous and controllable key technology with independent property rights owned by China, safeguarding national information safety

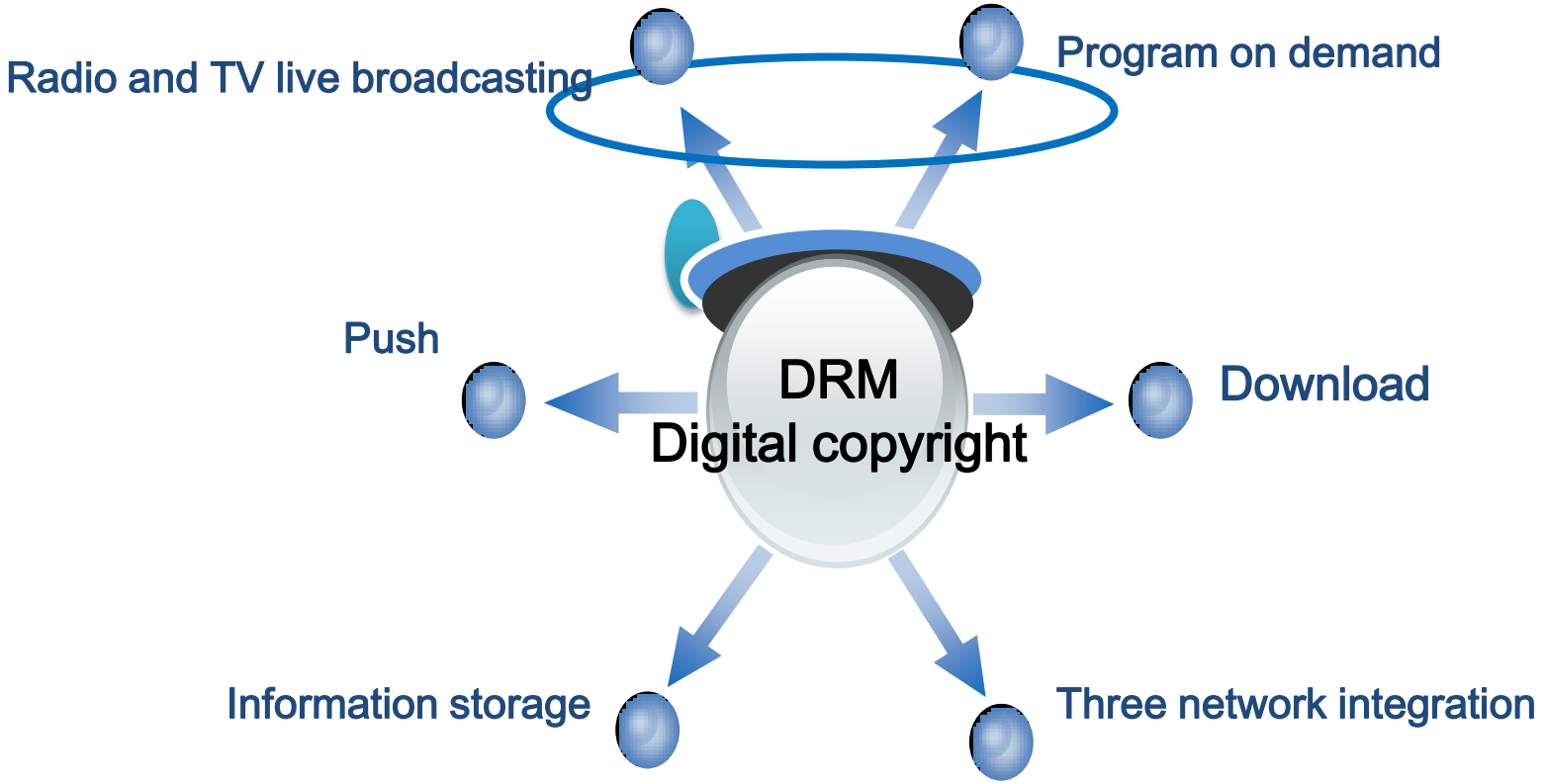
Push technology (broad spectrum, addressable)

Schematic diagram of push service system



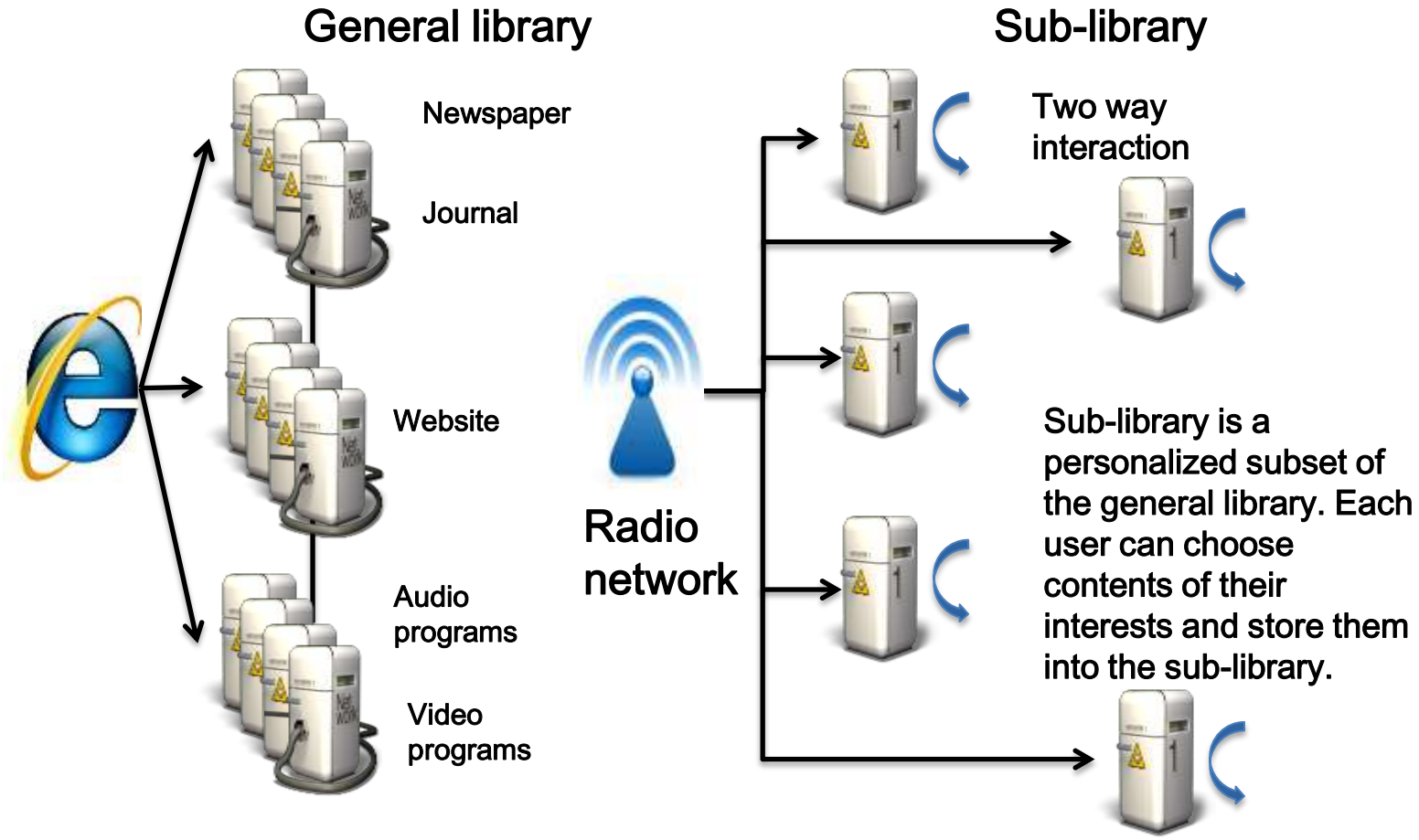
DRM

Providing safer contents protection for radio and television live broadcasting, on-demand service, push service and video storage service, especially suitable for the development of new information services under digitalization and three-network integration.



Autonomous and controllable key technology with independent property rights owned by China, safeguarding national information safety

Library



Interconnection → integration of cultural resources → radio → ubiquitous

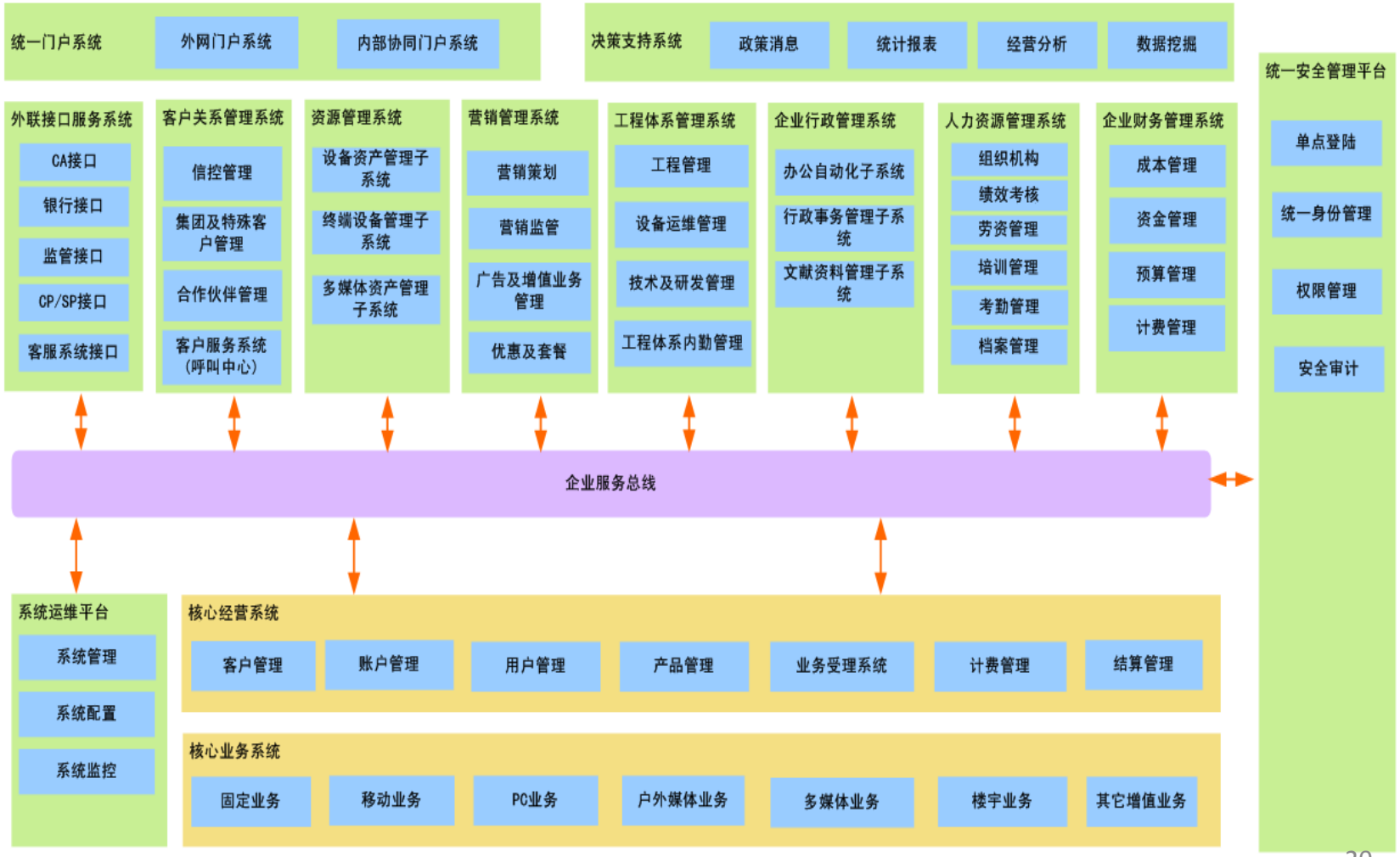
cultural resources

兆华世纪 sinera

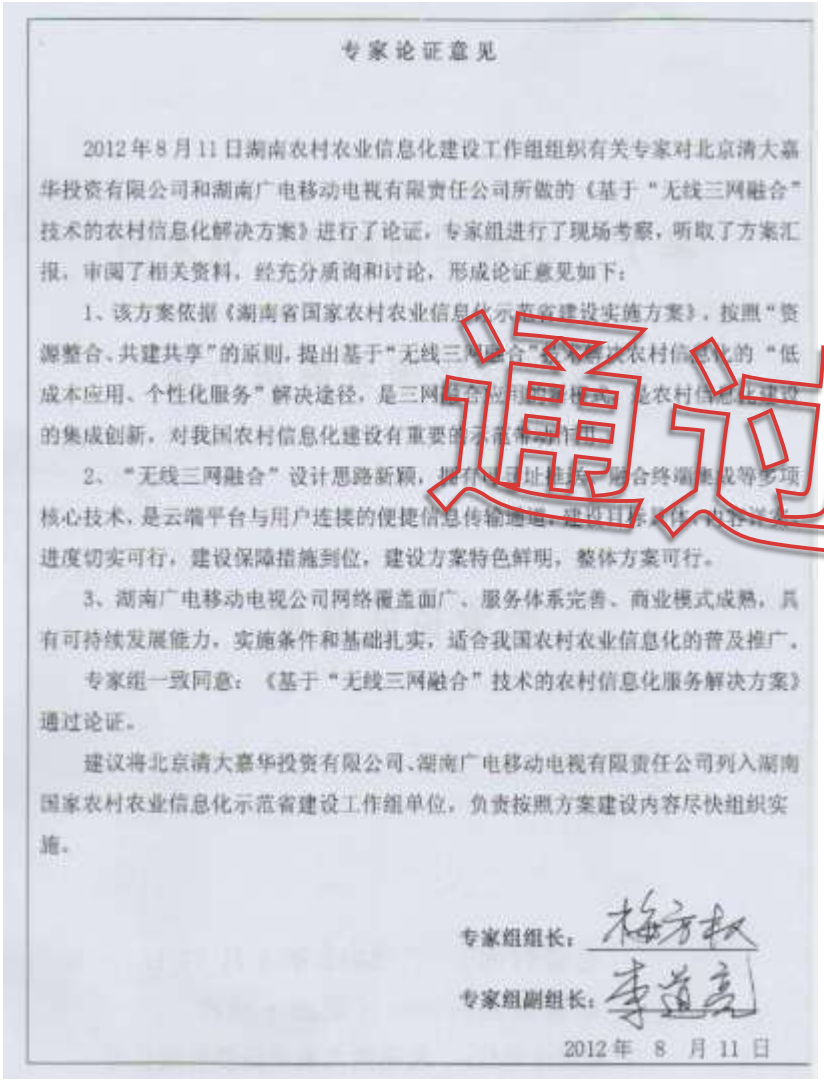
Autonomous and controllable key technology with independent property rights owned by China, safeguarding national information safety

BOSS system

Logical framework



Experts' opinions



专家论证意见

2012年8月11日湖南农村农业信息化建设工作组组织有关专家对北京清大嘉华投资有限公司和湖南广电移动电视有限责任公司所做的《基于“无线三网融合”技术的农村信息化解决方案》进行了论证，专家组进行了现场考察，听取了方案汇报，审阅了相关资料，经充分质询和讨论，形成论证意见如下：

1、该方案依据《湖南省国家农村农业信息化示范省建设实施方案》，按照“资源整合、共建共享”的原则，提出基于“无线三网融合”[illegible]农村信息化的“低成本应用、个性化服务”解决途径，是三网[illegible]农村信息化建设的集成创新，对我国农村信息化建设有重要的示范作用。

2、“无线三网融合”设计思路新颖，[illegible]融合终端集成等多项核心技术，是云端平台与用户连接的便捷信息传输通道，建设目标[illegible]进度切实可行，建设保障措施到位，建设方案特色鲜明，整体方案可行。

3、湖南广电移动电视公司网络覆盖面广、服务体系完善、商业模式成熟，具有可持续发展能力，实施条件和基础扎实，适合我国农村农业信息化的普及推广。

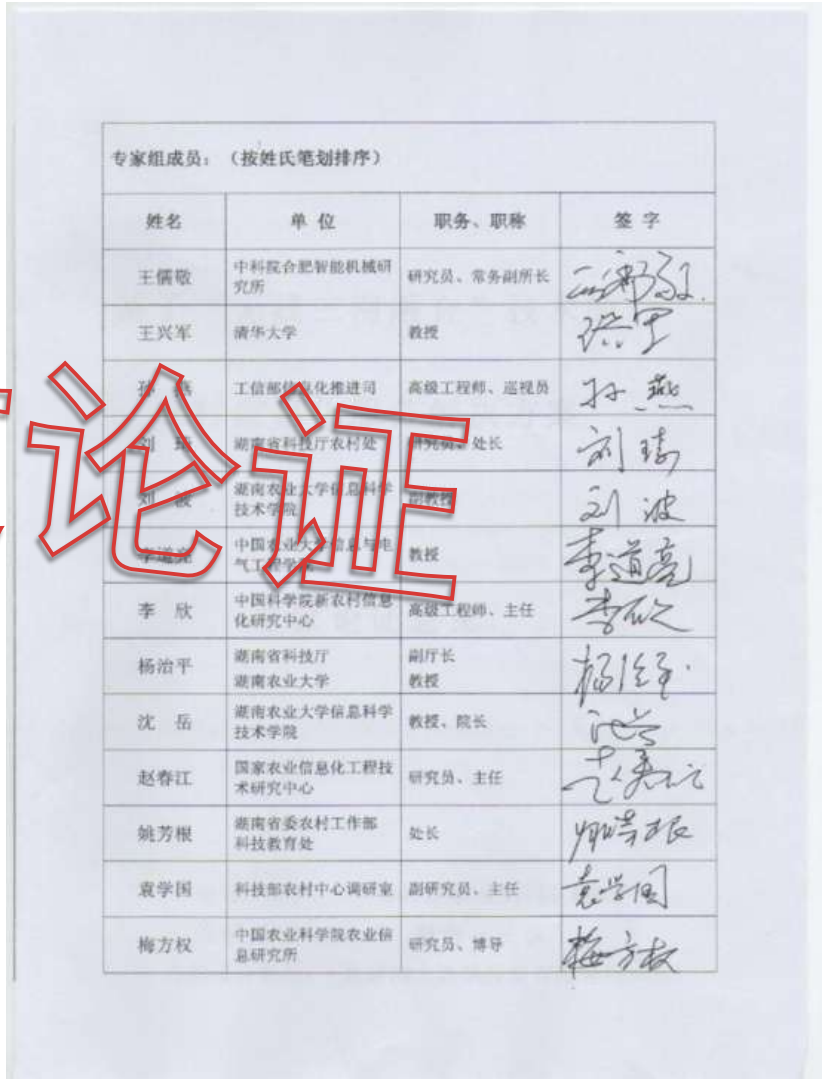
专家组一致同意：《基于“无线三网融合”技术的农村信息化服务解决方案》通过论证。

建议将北京清大嘉华投资有限公司、湖南广电移动电视有限责任公司列入湖南国家农村农业信息化示范省建设工作组单位，负责按照方案建设内容尽快组织实施。

专家组组长：梅方权

专家组副组长：李道亮

2012年 8 月 11 日



专家组成员：（按姓氏笔划排序）

姓名	单位	职务、职称	签字
王儒敬	中科院合肥智能机械研究所	研究员、常务副所长	
王兴军	清华大学	教授	
[illegible]	工信部信息化推进司	高级工程师、巡视员	
[illegible]	湖南省科技厅农村处	[illegible]处长	
[illegible]	湖南农业大学信息科学技术学院	[illegible]教授	
[illegible]	中国农业大学信息与电气工程学院	教授	
李 欣	中国科学院新农村信息化研究中心	高级工程师、主任	
杨治平	湖南省科技厅 湖南农业大学	副厅长 教授	
沈 岳	湖南农业大学信息科学技术学院	教授、院长	
赵春江	国家农业信息化工程技术研究中心	研究员、主任	
姚芳根	湖南省委农村工作部科技教育处	处长	
袁学国	科技部农村中心调研室	副研究员、主任	
梅方权	中国农业科学院农业信息研究所	研究员、博导	

Characteristics and advantages

- Low construction investment and maintenance cost
- TV terminal, easy to promote and popularize
- low cost personalized services
- Effective integration of resources
- Authoritative push, safe broadcasting
- Sustainable development and operation

Outline

- Introduction to Sinera and Practice Review
- Understanding and value proposition of rural ICT
- Wireless three networks convergence based

——Rural ICT technical solutions

——New rural convergence service system plan

- Schedule: demonstration of system product (The first generation of engineering prototype)

New countryside integration service system positioni

Government perspective

•Platform and channels for Government a tion and rural serv
•Flat, from the source, low cost, refined, promo nt administration ability
•Serving farmers and agriculture, transformation from to activeness
•Breaking off separation, integration of services, active ncing the equalization of public services
•Peaceful times and war time in mind, in co y, a strategic backup network during wartime
•Main channel to support modern agricultu benefits to farmers.

IT industry perspective

•Service platform for intelligent new countryside
•Wireless three network integration technical in
•Integration of TV, smart card payment and offl
•Combination of cloud computation, internet, m
•Integration of industrial china, and huge inform

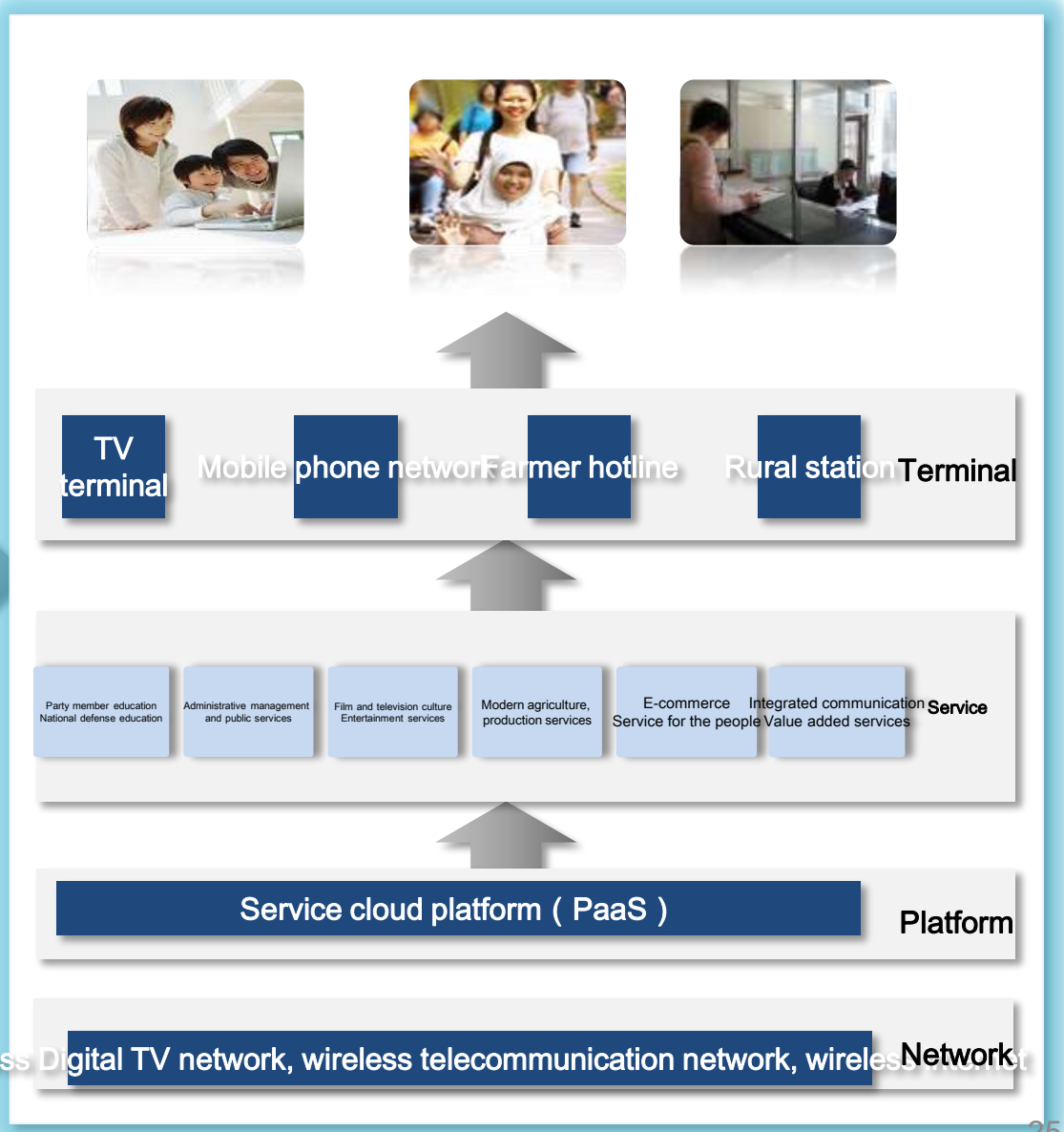
Farmers perspective

•New experience of government intelligent services
•Personalized, 7x24 hours, one stop services
•Interaction between the government and the people, harmonious joint construction
•Useful life and production information and consumption new mode
•Practical, convenient, and can increase income

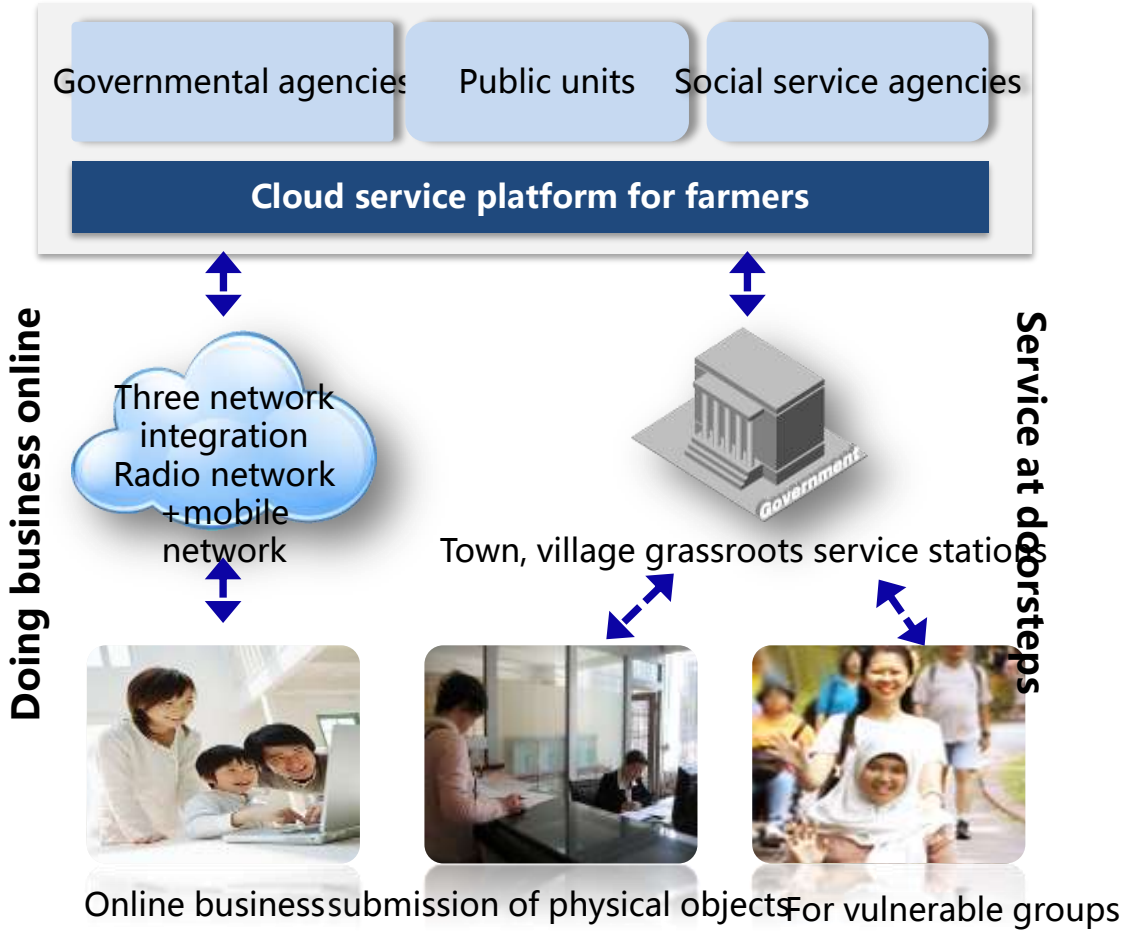
Commercial model perspective

•Two-way wireless Digital TV radio network
•TV cloud platform launch and operation
•Rural online comprehensive value added ap
•Rural offline village-village information hut
•Rural financial service system operation

New countryside integrated service system technology framework

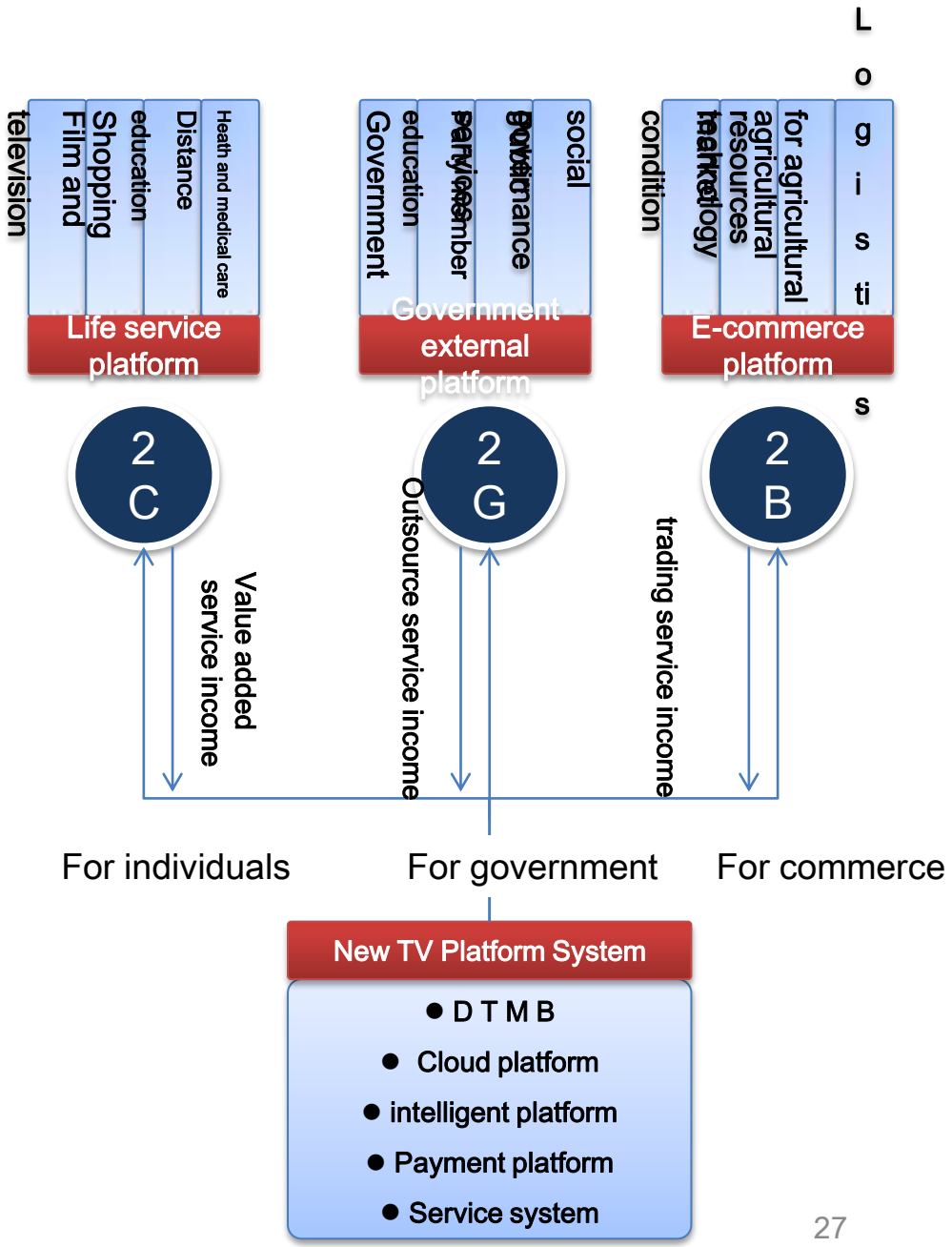


Entity Framework of New Countryside Integrated Service System



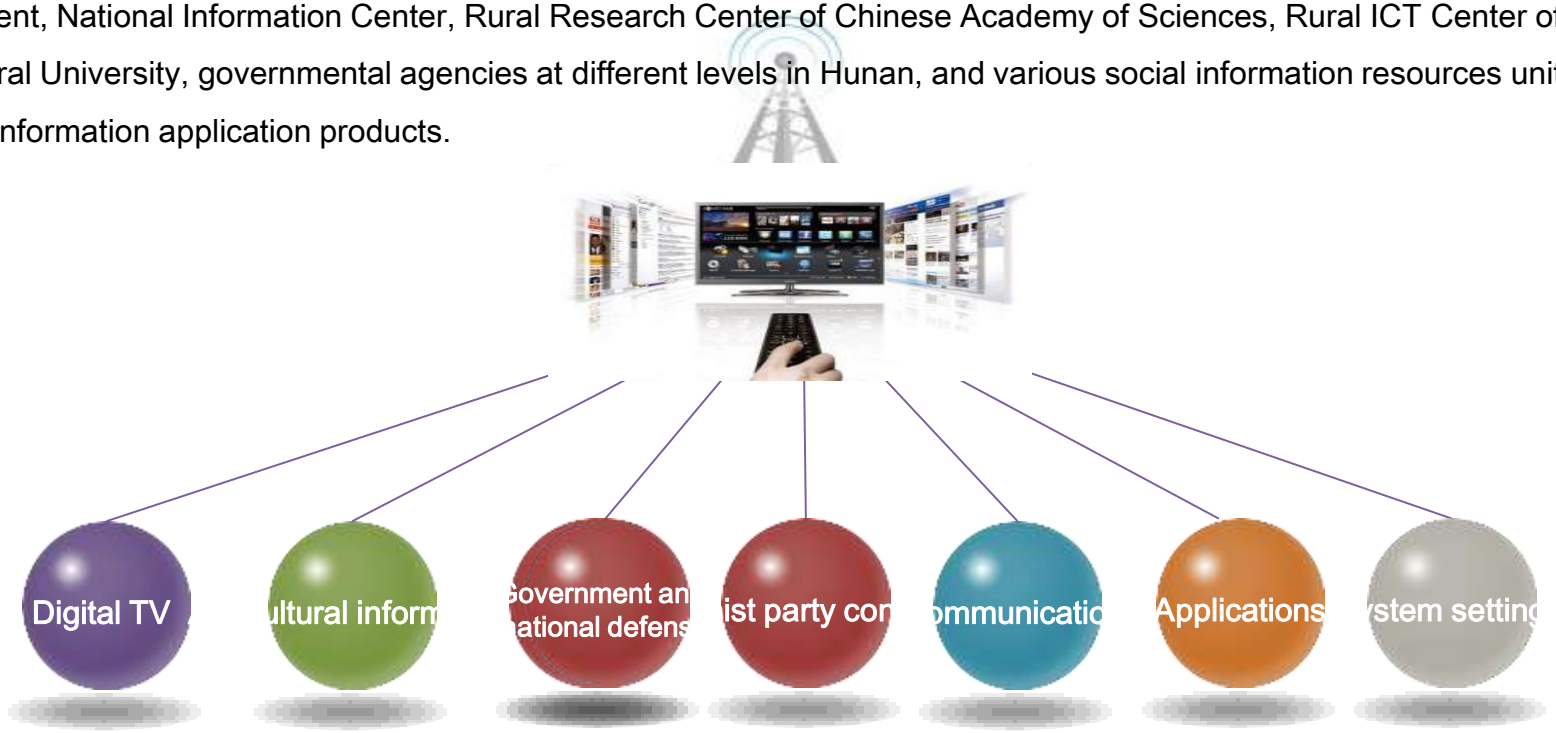
Business and service composition of new country integration service system

- **Business strategic positioning**
- Based on “national leading advantages of the company accumulated in the terrestrial Digital TV radio network in the past 10 years”
- Integrating “wireless three-network” integration technology, IT technology, internet operation ability, and intelligent terminal technology”
- Building “the new generation DTMB network, new TV service platform, payment service platform, intelligent terminal and landing service support system”
- Facing “rural areas and cities as target markets, and carrying out 2C, 2G and 2B operation service business”
- Developing “sustainable profitable operational application service products, including cultural entertainment services, shopping services, distance education, e-commerce, modern agriculture, administration and party affairs, health and medical care services etc.”



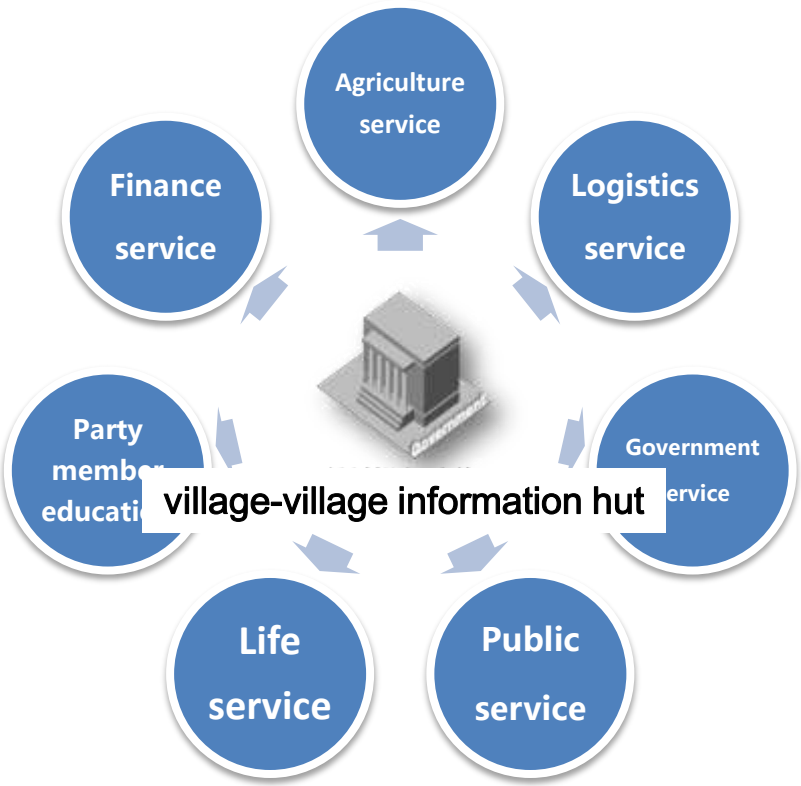
The first batch of application products based on openness and integration of application resources in the industry

The company actively cooperates with the information center of MOA, Party Member Education Center of the CPC's Organization Department, National Information Center, Rural Research Center of Chinese Academy of Sciences, Rural ICT Center of China Agricultural University, governmental agencies at different levels in Hunan, and various social information resources units to develop information application products.



• Live •HD cinema •Favorites	•Market condition •Products chosen •Supply and demand •My supply and demand •Agricultural technology •Guidance from experts •Scientific Fertilization •My business circle	•National defense education •Disclosure of party affairs •Disclosure of finance •Disclosure of birth control •Disclosure of work •Work Guide •Employment information	•News •Courseware •Outstanding party members •Models of party construction •Models of acquiring wealth •Laws and regulations •Agricultural	•Telephone book •Call records •Dialer •Inbox	•Reading •Finance •Education •Transportation •Life •Entertainment •Downloaded	•Program management •Network setting •Audio and video setting •Authorized information •File management

Offline System of New Countryside Integrated Service Value of “village-village information hut”



A system using joint-stock economic cooperative

Establishing rural ICT autonomous operation team

- Cheap production materials
- Cheap life materials
- Extension of financial services
- Equalization of public services
- Refined social management
- Professional operation of information

village-village information hut
(Rural comprehensive information service platform)

- Equalization of public services
- Refined social management
- Professional operation of information
- New countryside offline system supported by internet and IT techno ogy
- Submerged carrier and support beneath government administration and public services
- Intensified service extension platform of modern agricultural production and public service
- Rural e-commerce and last mile service for farmers
- New finance service products highly combined with agricultural production and operation
- Main force of sustainable implementation and operation of rural ICT

Coverage and user characteristics of services in the 1st Phase of the Project

兆华世纪 sinera

Service type	Service form	Service contents	Target population	Demands
Basic TV service	Online service	Live	Rural residents	Watching traditional TV programs
Comprehensive service	Online service	Film and TV	Rural residents	Watching requested programs
		Rural government information service	All rural users	Social administration by local governments, specific services including public opinion survey, party member education, and disclosure of government affairs.
		Agricultural production information service	Organizations and individuals such as large family farms/ rural cooperatives	Information service to agricultural producers and operators on market and technical guidance
		Life information service for farmers	Rural residents	Health and medical care, employment, skill training, entertainment, TV mall
	Offline service	Government service	All rural users	Commission of government services, collection of information on village affairs
		Social public service	All rural users	Health, physical check, education etc.
		Agricultural production service	Agricultural producer and operator	Sales of agricultural materials and technical guidance

Practice experience

Challenges

1. Unsound rural network infrastructure- low internet popularizing rate
2. Suitability of information terminals- low PC popularizing rate, mobile phones have small screens and do not fit the use habit of “staying-at-home” population.
3. Localization/ personalized demands of rural information resources
4. Farmers are usually bewildered by the massive amounts of information.
5. Unsound information service system
6. Innovation of rural social management
7. Lack of talents in rural areas.

Solutions

Internet into household

Main information terminals are low cost and wide coverage two way wireless Digital TV network and highly popularized TV.

Simple information interface with industry alliance+ TV cloud platform technology+ directional push technology

Service system into towns and villages

Establishing offline service system and solving the last mile issue

Physical resources into household

Logistics solution suiting rural actual environment

Precise design of application service

Online demand survey and offline feedback from messenger

Rural talents cultivation

Cooperative mechanism+ veteran training program---- “rural affairs taken care of by farmers”

Effective implementation of interaction between the government and the people

Various interactions such as disclosure of government information+ online survey+ online interaction + office service commission

Sustainable development and operation mechanism

Guided by the government, operated by enterprises, participated by various parties based on market operation

兆华世纪
sinera

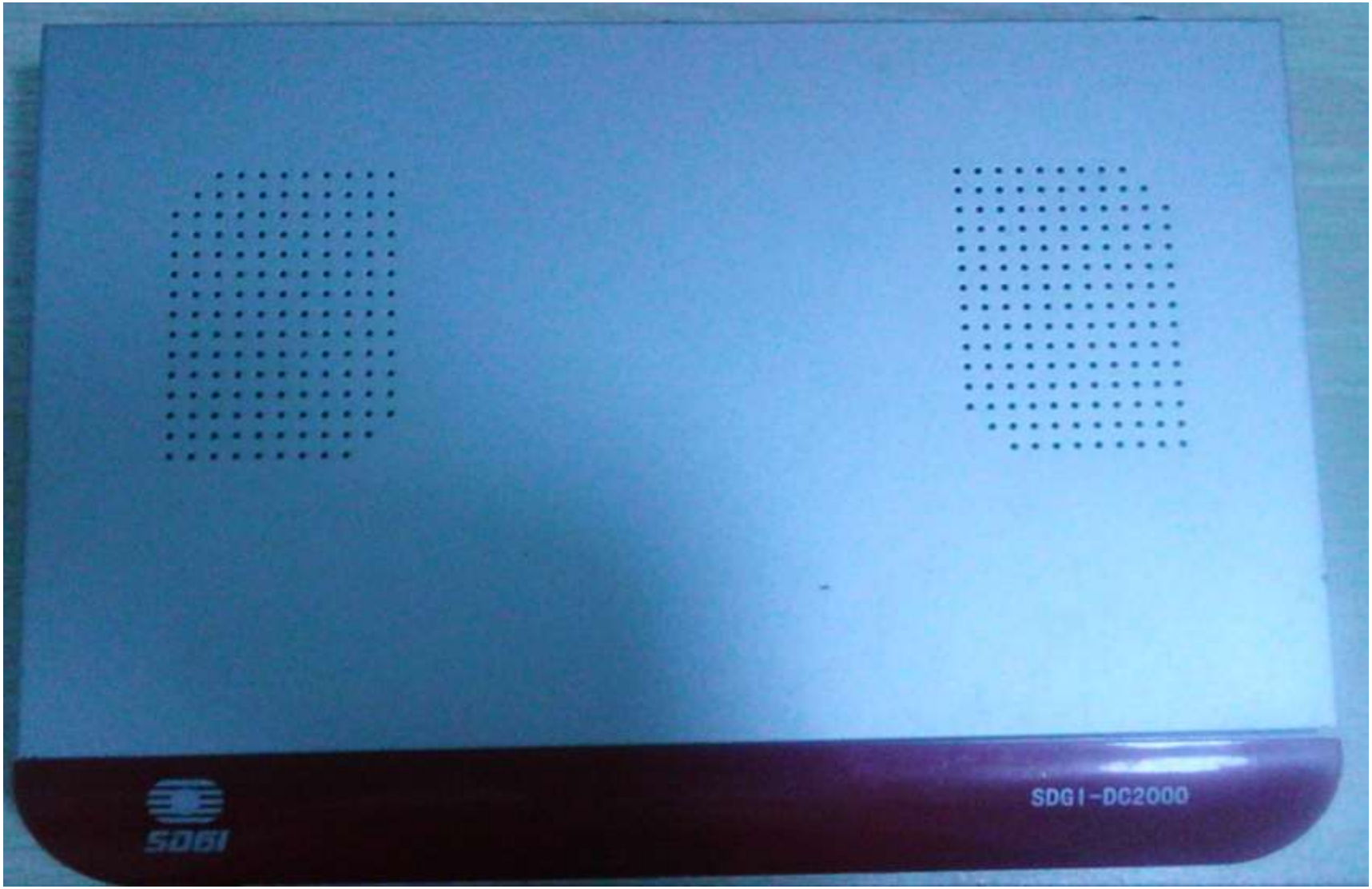
Outline

- Introduction to Sinera and Practice Review
- Understanding and value proposition of rural ICT
- Wireless three networks convergence based

  ——Rural ICT technical solutions

  ——New rural convergence service system plan
- Schedule: demonstration of system product (The first generation of engineering prototype)

Appearance of set-top box



Digital TV


2013/9/16 星期一
21:15
数字电视
直播电视
高清影院
收藏
数字电视
农业信息
政务应用
红星党建
互联通信
应用之家
系统设置

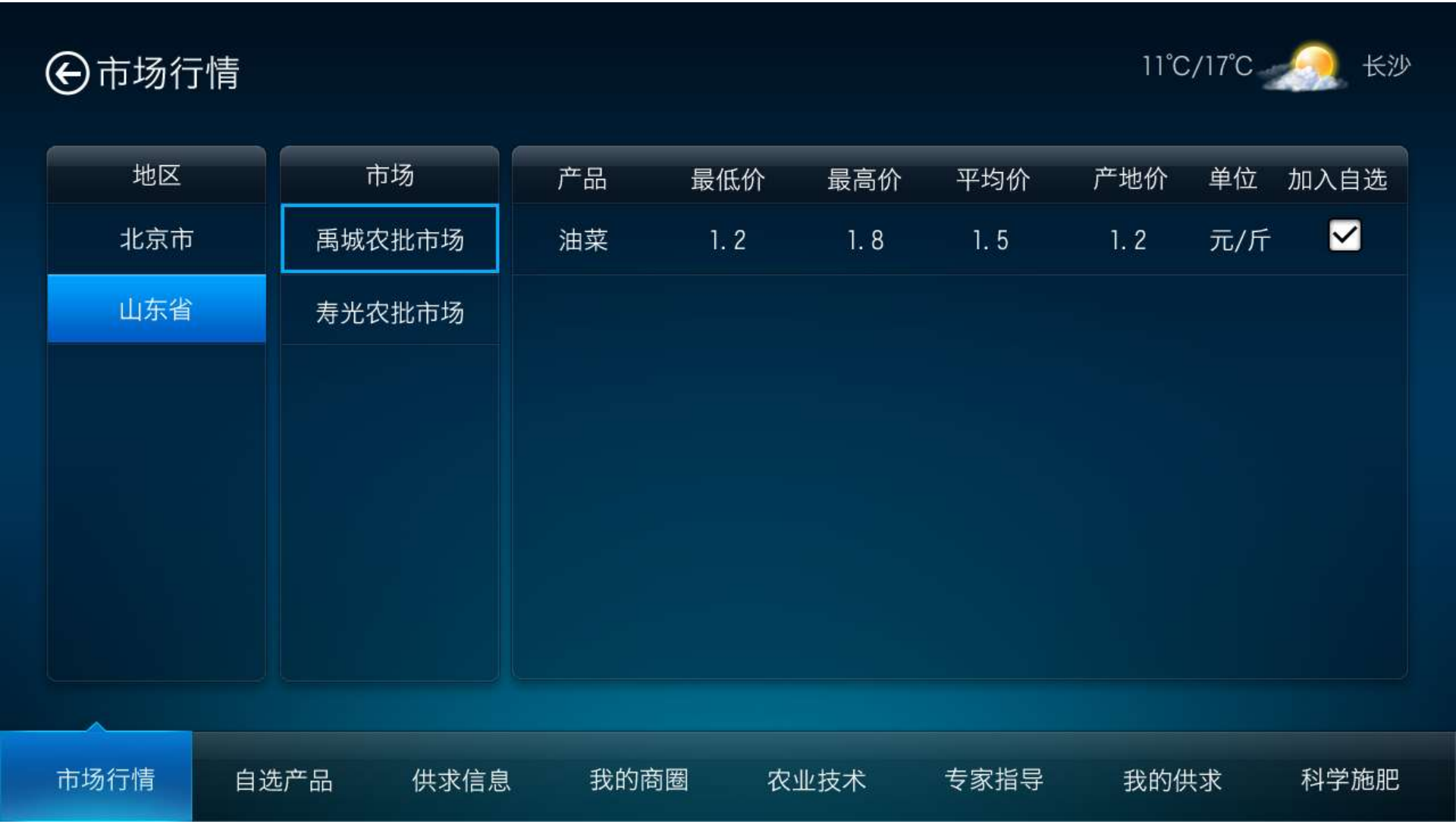
Digital TV--Live

Digital TV –live 2

Digital TV –HD cinema

Agricultural information

Agricultural information—Market condition



Agricultural information—Products chosen

自选产品

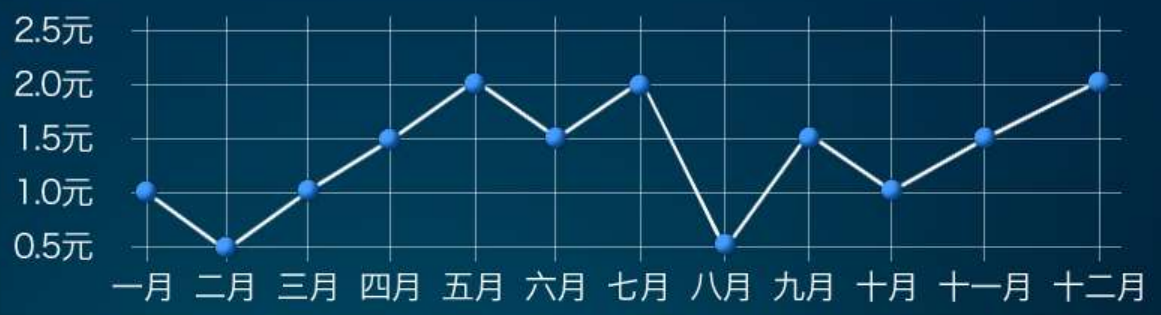
11℃/17℃ 长沙

自选商品

白菜 取消

油菜 取消

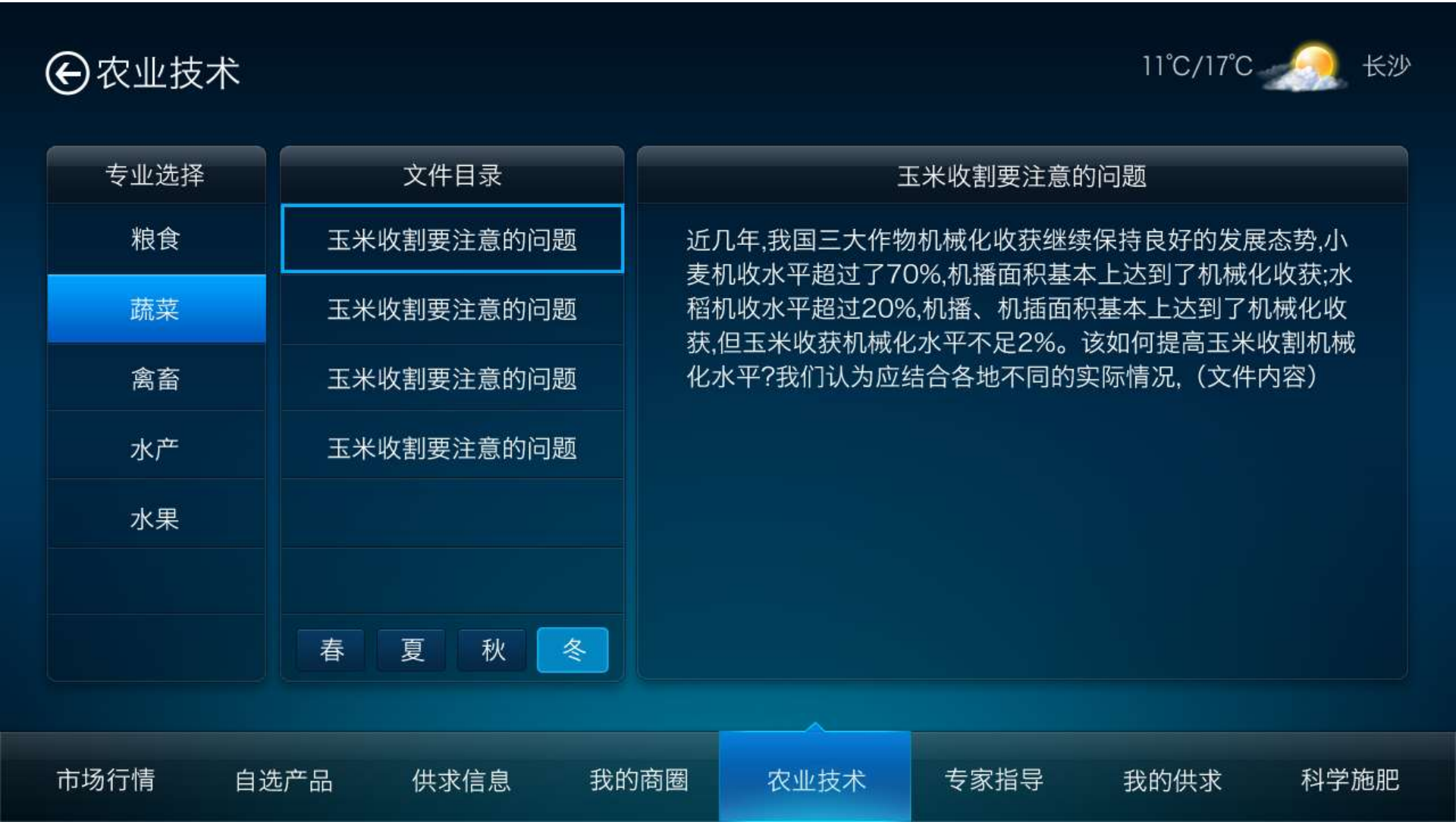
市场名称	最低价	最高价	平均价	产地价	单位
禹城农副产品	1.2	1.8	1.5	1.2	元/斤
山东寿光批发	1.2	1.8	1.5	1.2	元/斤
山东寿光批发	1.2	1.8	1.5	1.2	元/斤



市场行情 | 自选产品 | 供求信息 | 我的商圈 | 农业技术 | 专家指导 | 我的供求 | 科学施肥

Agricultural information—My business circle

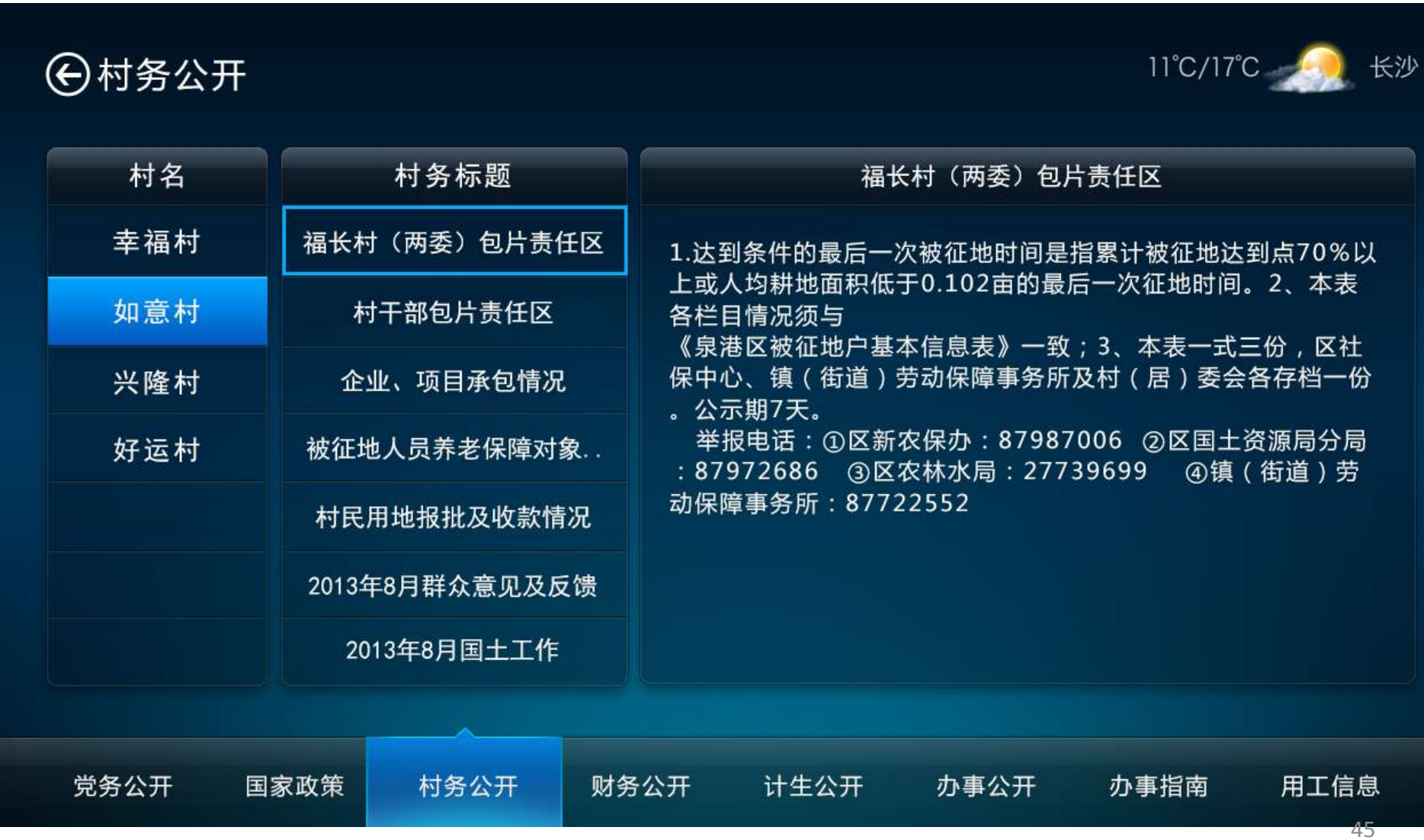
Agricultural information—agricultural technology



Agricultural information—scientific fertilization

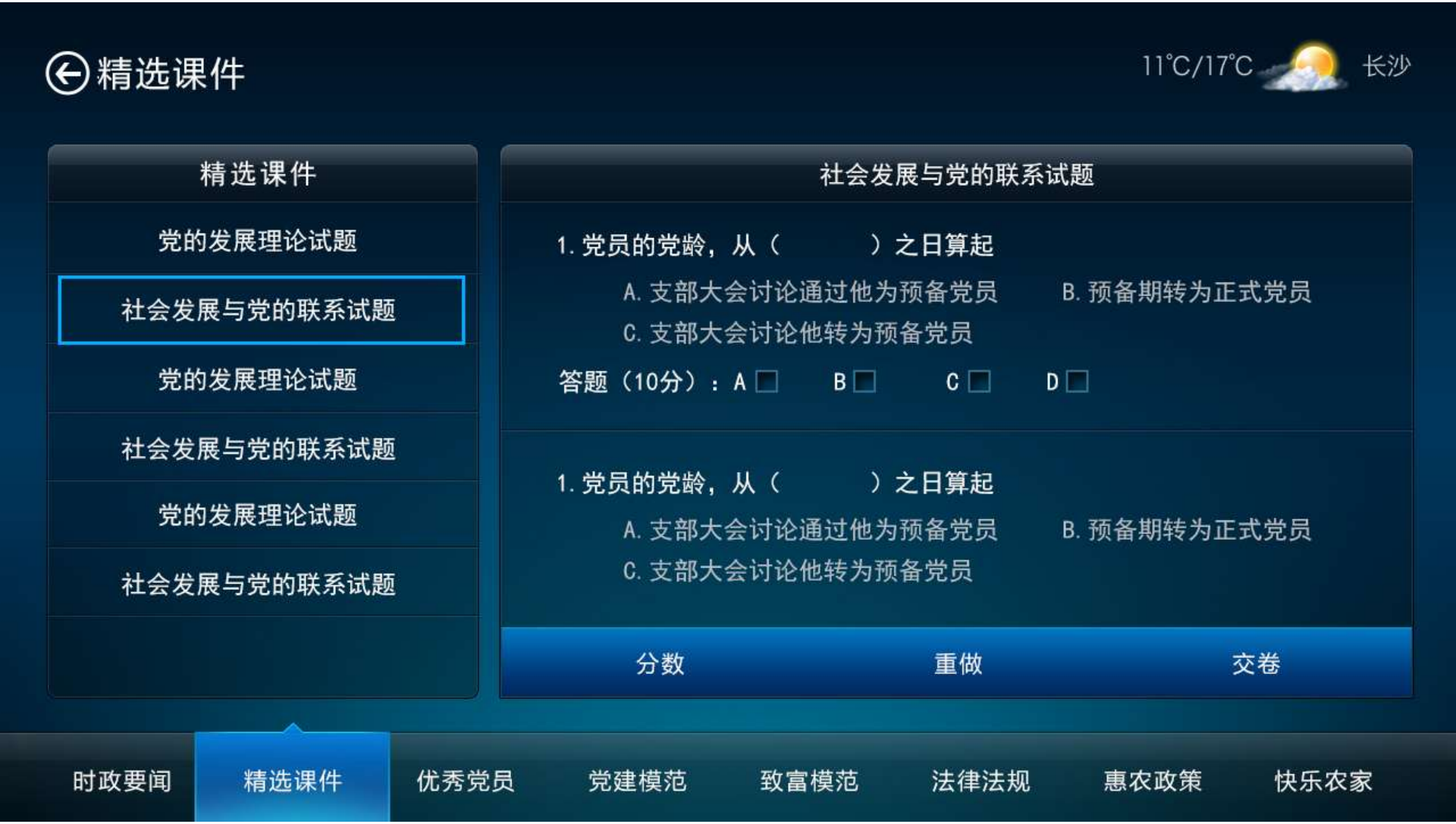
Government applications

Government applications—Disclosure of Village affairs



Communist party construction

Communist party construction—selected coursewares



Communist party construction—Models

致富模范

11°C/17°C 长沙

致富模范
刘老根
王振兴
刘建军
李爱国
黄家兴
李明家

王振兴

崔建娟，女，1973.12出生，1991.8参加工作，江苏教育学院汉语言文学专业自考本科毕业，中学高级教师，现在灌云实验小学任教。2008年被评为市“十百千”教学骨干，2008年因带毕业班成绩突出，受县政府的嘉奖，2009年被评为市“师德模

时政要闻 | 精选课件 | 优秀党员 | 党建模范 | 致富模范 | 法律法规 | 惠农政策 | 快乐农家

Telecommunication

Applications

System setting

Thank you!