

Sejong Creative Village & Smart Farm

2015. 9. 16



1. Sejong Creative Village

2. SKT Solutions

- Solar Power Generation, Smart Local Food, Intelligent CCTV, Smart Learning, Test bed

3. Plans of Sejong Creative Village

4. Plans of Sejong Creative Economy Center

5. Epilogue

Sejong Creative Village



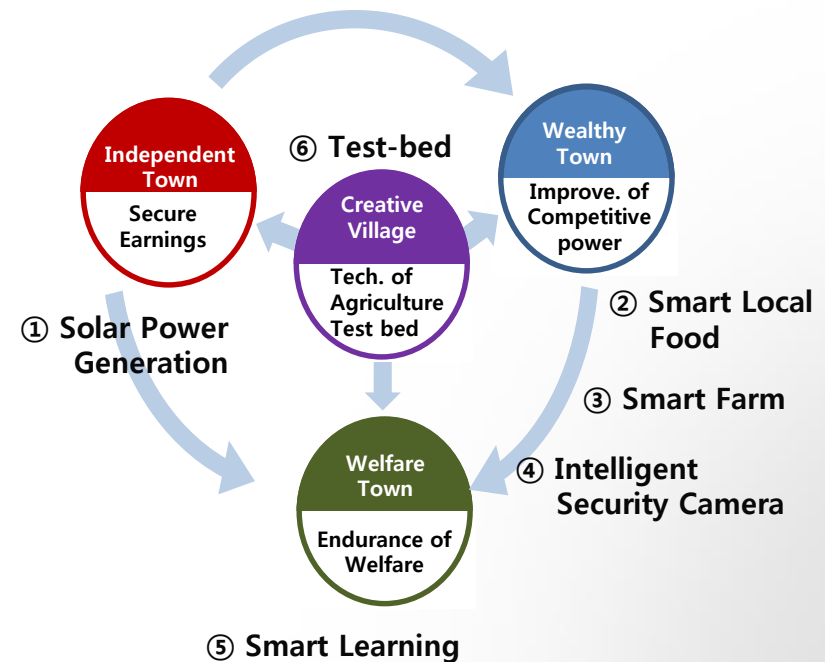
Future growth industry through innovation in

Farming '14.10.10

"Complexity city Sejong is relatively focus on alienated problems of Farming to provide innovation through Creative (Economy) Village "

Sejong Creative Village

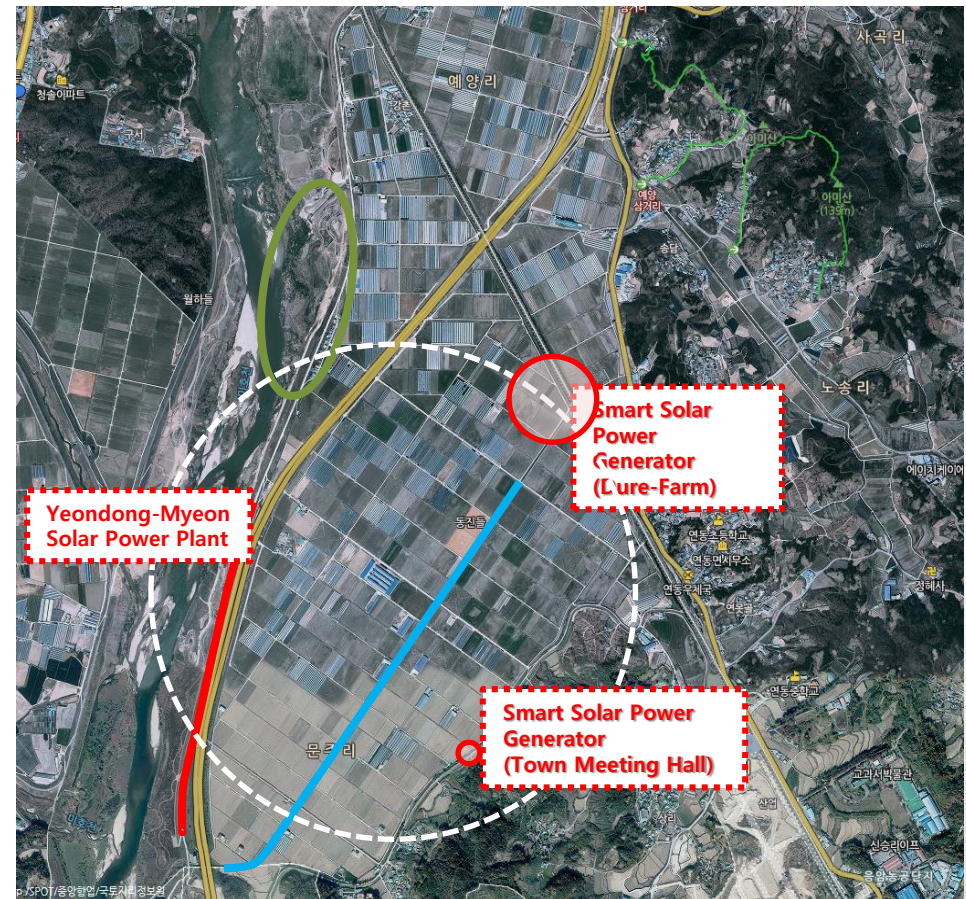
Village creatively endures other industries such as ICT, Energy to collaborate Agriculture



Solar Power Generation in Village

Solar Power Energy for residents daily life and make profits by selling the left over energies in Advanced Creative Village

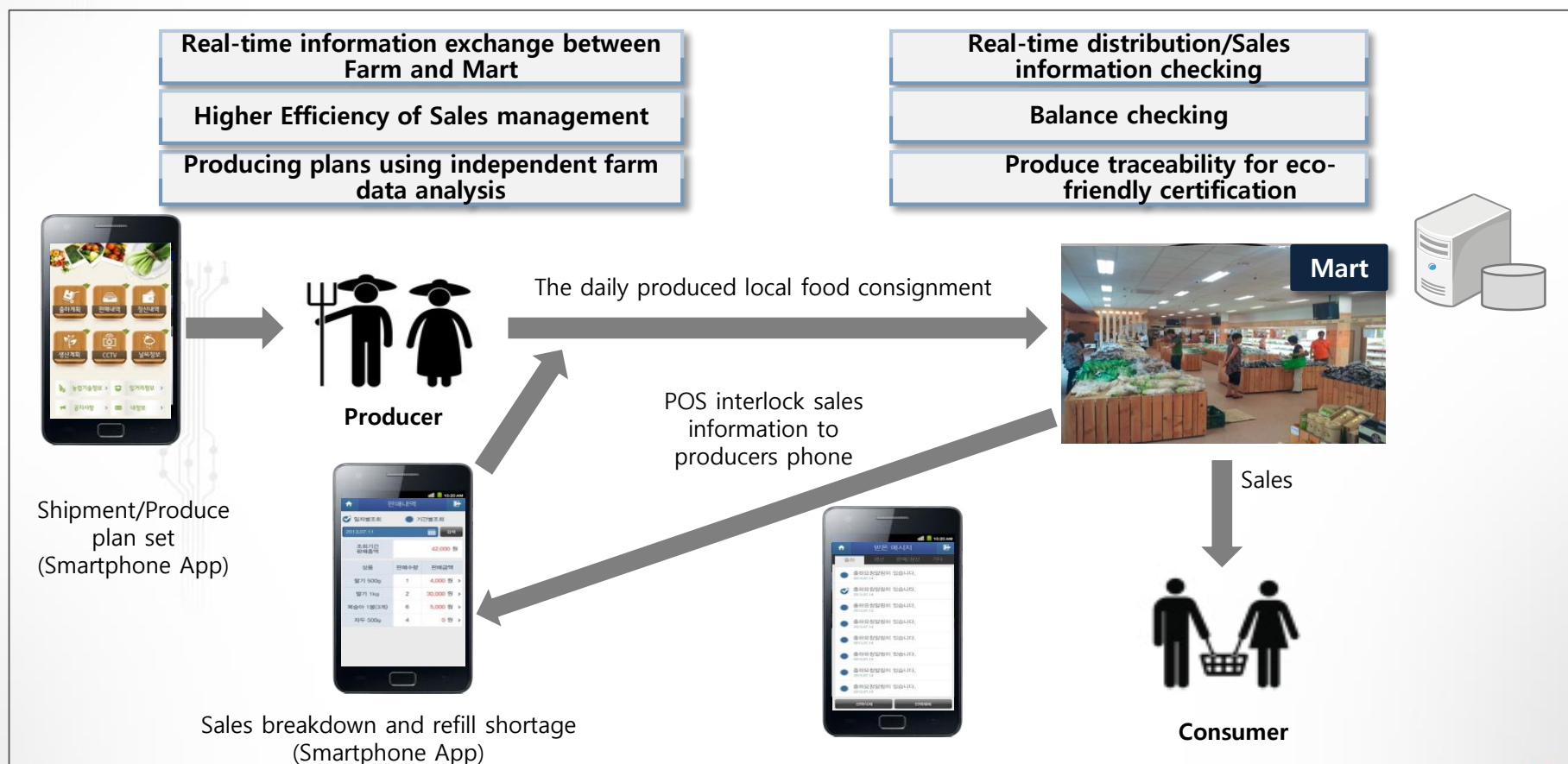
- Built 300kW Solar Power Plant on Yeondong-Myeon
 - : Electricity and New renewable Energy to create profits for town development fund
- Smart Solar/ESS development completed('15.6)
 - : Yeondong-Myeon 17 Town Meeting Hall
 - : Efficiency of Energy and Expecting to Lower Electricity Bills



Smart Local Food in Village

Smart Local Food? ➡ Use ICT to Revitalize Local Farm's Producing and Distribution

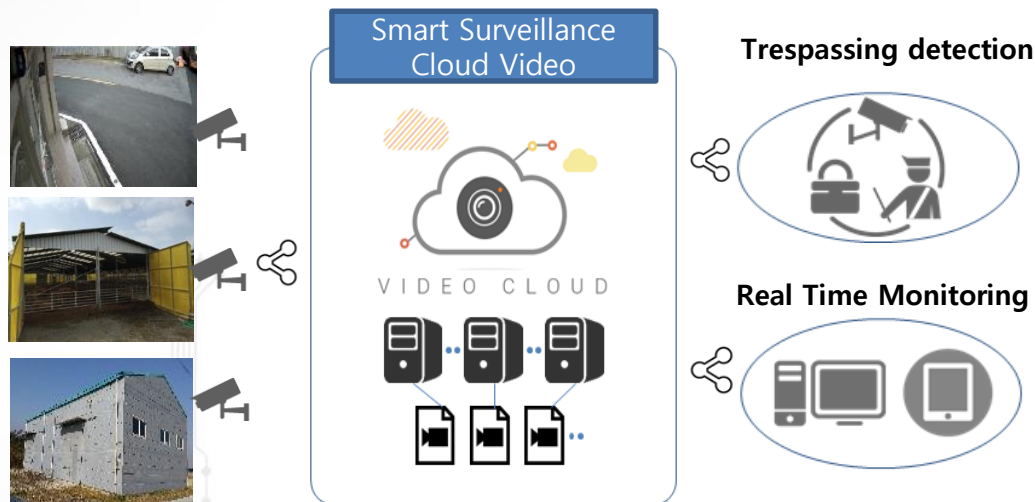
- Agriculture/Resource(1st level) and Reproduce/Distribution/Restaurant/Travel/Leisure/etc 2-3rd level business create new goods and markets to add values and job opportunities. Moreover it develops organic circulation of Local Food – Local consuming



Intelligent CCTV in Village

Intelligent CCTV Service

- Installing Internet connected Smart CCTV saves videos on SKT's secured server, and real time monitoring including analysis solutions such as trespassing detection



Real Time Monitoring

- ✓ No limitation on time/place check over internet and monitor multiple high definition camera

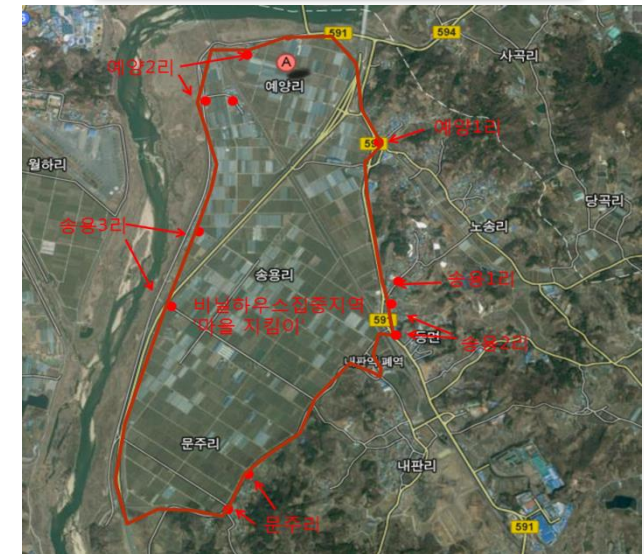
Recorded video play and Summarize events

- ✓ Shift times on user demand and play video
- ✓ Timeline events and Play video/timeline on demand

Event Notification

- ✓ As user demand, real time events are provided

Smart Village Protect Cluster



Smart Learning in Village

Smart Learning?

- Using Smart ICT technology and solutions 1) Students can learn through various contents without hassle of time and location, 2) Teachers can show interactive class to provide study effectively and efficiently.

【 Status of Smart Learning 】

○ Example application Specialized Contents Operation

- Targeted Yeondong Elementary specialized Contents (Robot Coding) Education trial('15.3~6, first half 17th)
Yeondong Elementary (3rd grade 15 students, 5th grade 15 students) targeted Education trial ('15.8~12, first half 17th)
- Teacher targeted Robot Coding class trial (Each Session 20 teachers, Total 2 Session, 8.6~7/8.13~14)

○ Operating contents

- After School class on Robot Learning Curriculum open class operation.
- Smart robot ATTI/ALBERT to achieve class goals
: Understanding ATTI/ALBERT Robot, Robot Instruction, Robot coding class/experience



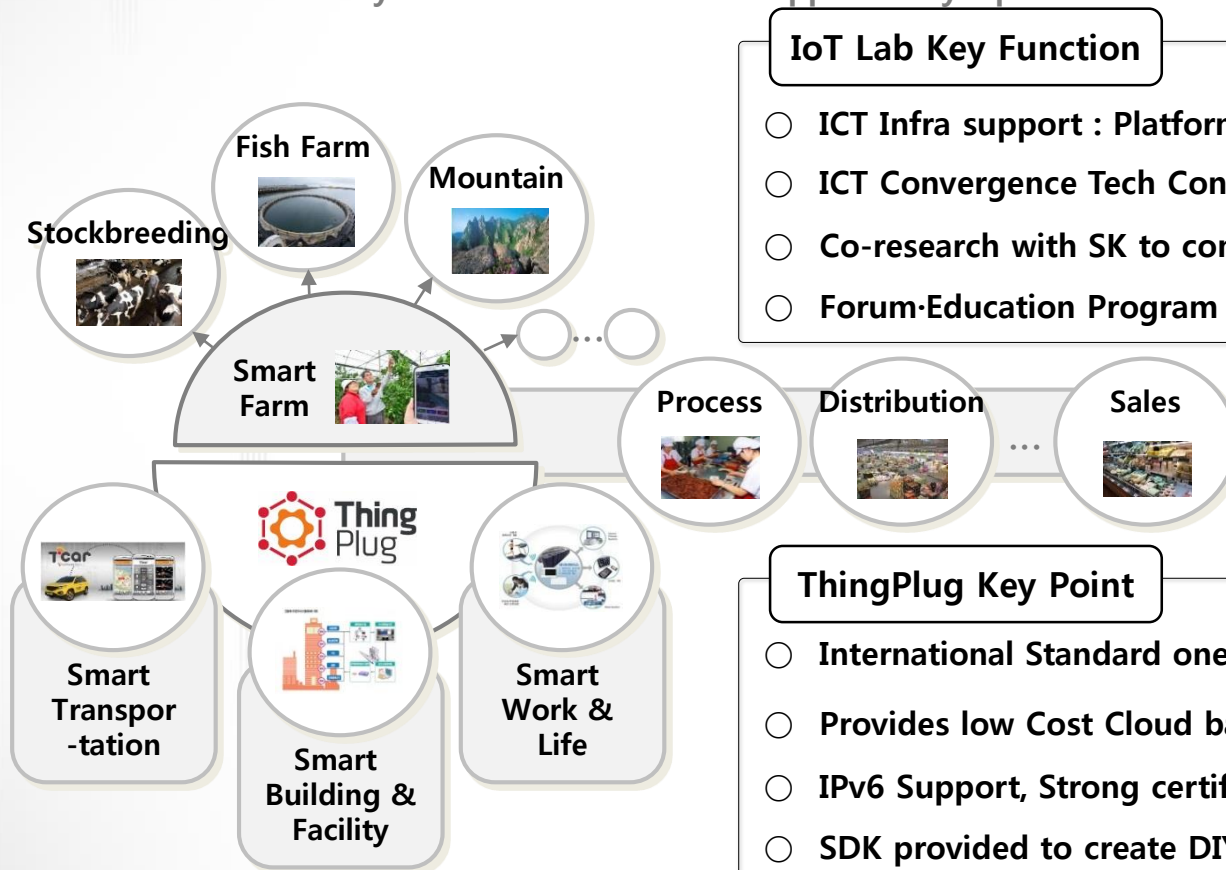
○ Education Office MoU (Expected '15.4) to spread program to all Sejong elementary schools

Test-bed in Village

Agriculture's ICT convergence technology development and certification is supported through Test-bed

: In the beginning, facilities will focus on developing a Smart Farm specializing on technology. Then stockbreeding, fish farming to expand its support.

: Various territory Platform is needed → Supported by Open IoT Platform called 'ThingPlug'.



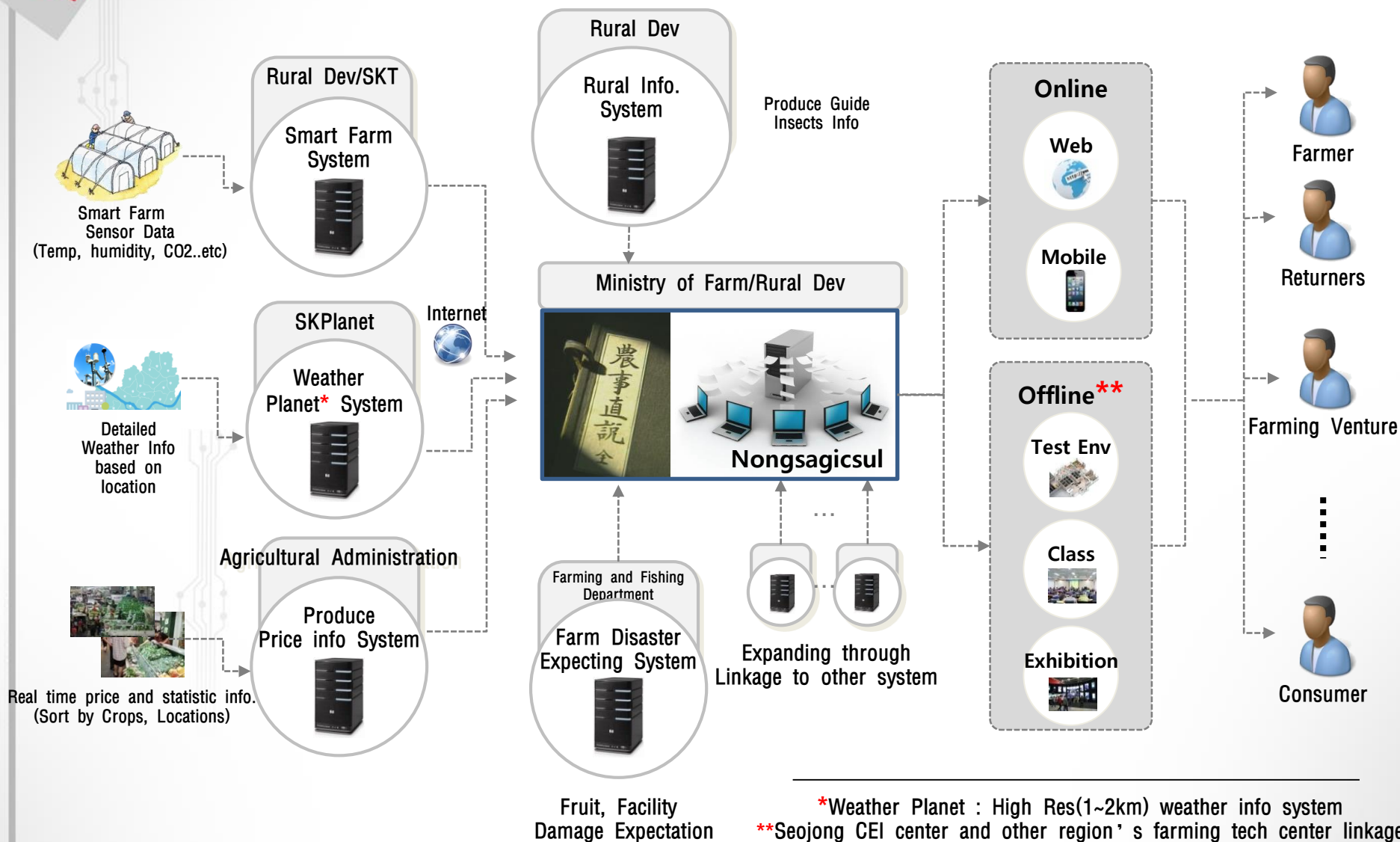
IoT Lab Key Function

- ICT Infra support : Platform, Network, Vinyl House*, Sensors
- ICT Convergence Tech Consulting Support : On/Offline expert
- Co-research with SK to commercialize and support
- Forum·Education Program Operation

ThingPlug Key Point

- International Standard oneM2M(release 1) based Open IoT Platform
- Provides low Cost Cloud based reliable development and service
- IPv6 Support, Strong certification and security provided
- SDK provided to create DIY IoT service

New Nongsagicsul in Village



Smart Farm Service

- Install IoT devices in Vinyl House(Green House), check its status by CCTV and control remotely through Smart Phones



Wireless Service

- ✓ Install anywhere using Mobile network
- ✓ Use anywhere by Mobile App



Remote open and control

- ✓ Smart Phone to Control on Thermal cover, ceiling, Curtain, Fan, Springcooler, Nutrient solution, Heat



Remote monitoring and watch

- ✓ Multiple CCTV to monitor open/close process
- ✓ Facility in and out remote watch
(Ex: Save function)



Real time notification

- ✓ Blackout / Break-in (With motion sensor installed)
- ✓ Notify Pre-defined info.(Ex: Temp. change)
- ✓ Data usage checking service



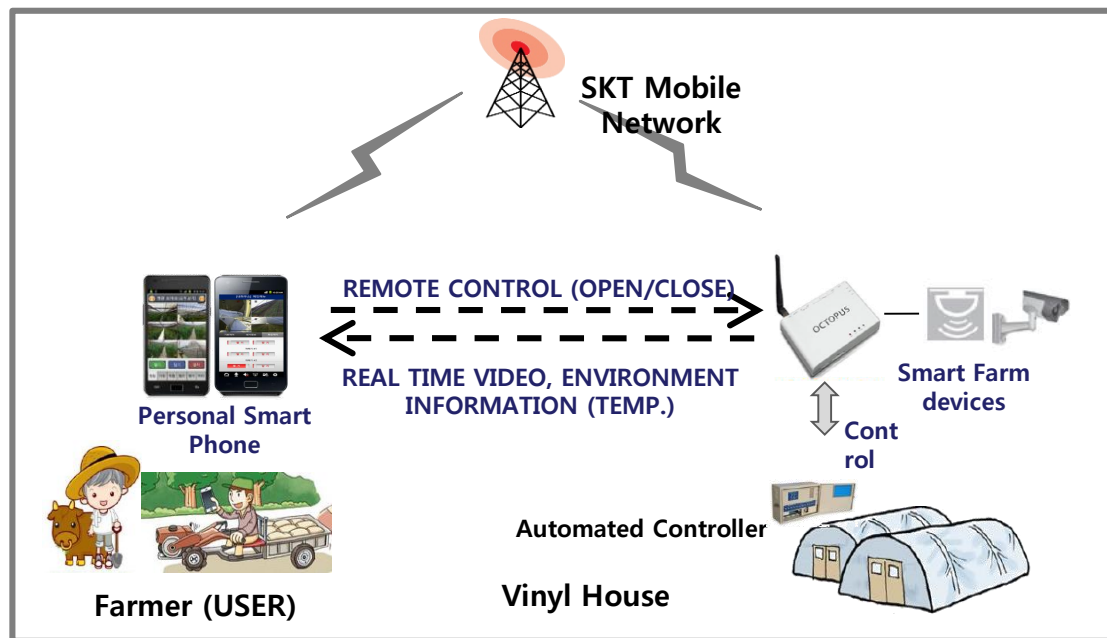
Various Sensor Connectivity

- ✓ Real time connectivity for Smart Phone for
Temp+Humidity/Rain/CO2/Light
Sensor information
- ✓ Stats for Sensors



ETC PROS&CONS

- ✓ Parallel with current system
- ✓ Compatible with current hardware
- ✓ Easy to install due to small and lightning proof.



Building a Sejong Creative Town, hundreds of green house in Yeondong-Myeon are established early, will advertise changes of farming area after Smart Farm service

【 Early established of Yeondong-Myeon's Smart Farm.】

○ Current Progress

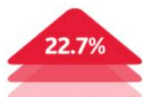
- '14. 10. 10 : Sejong Creative Town Inauguration Ceremony (President reported)
- '14. 11. 01 : SK CEI and Sejong Project team organized.
- ~ '14. 11. 30 : Village Boss and Gardening Facilities distribute business introduction and application forms.
- ~ '14. 12. 26 : Hundreds of Smart farm installed in Yeondong-Myeon, Sejong-si
- '14. 12. 29 : Building dedication ceremony and held town harmony celebration

To all Villages (Unit: Myeon) applied

Nation's first example of Smart Farm operation

Outcomes

- Education & Tech. supports improve efficiency of agriculture business



Productivity
Increase

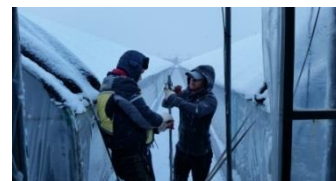


Labor
Decrease



Operation Cost
Decrease

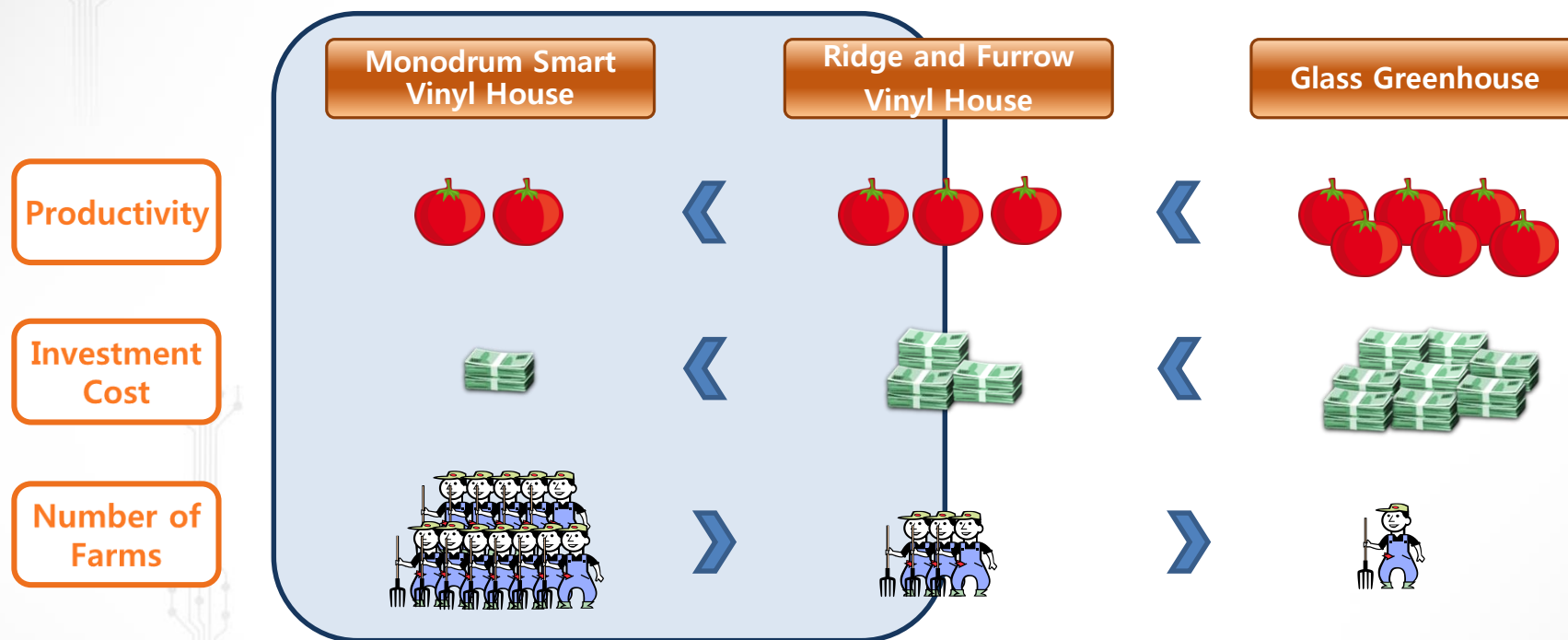
【 Main Photos】



Elders and returning young man can enjoy
Comfortable farming.

Smart Farm in Village

Provide Essential features to supply many farmers



- Many Farmers are petty farmers and small/medium size
- Minimize feature to rapid progress on innovation
- Aggressive supply and spread business (Satisfy Demand-Size)

Though National level R&D to sophisticate/localize, Purchasing state of mind becomes high when quality is assured.

Plans of Sejong Creative Village

Based on Sejong Creative Economy Innovation Center "ICT-Agriculture and Stockbreeding fusion" outputs early, with success stories of local society and village unit complexity to build autonomous creative village.

【 Short : ~ '14】

【 Mid : ~ '15】

【 Long : '16~ 】

【 Vision 】

✓ **SK**

- Business unit early outcome
- Possibility and propulsion power

✓ **Sejong-Si**

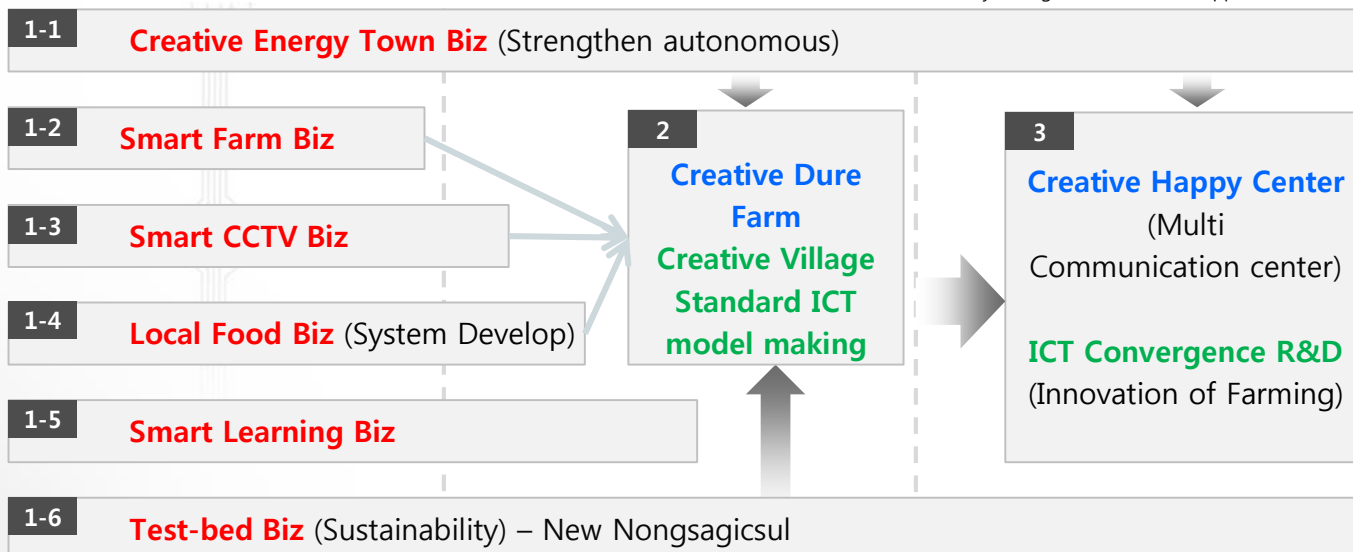
- Secure autonomous
- Strengthen citizen participation and level

✓ **Ministry of AFRA**

- Creative Vill, Smart farm expand
- Creative Economy(Young farmer Venture support)

In/outbound First/Best
Creative Village
Secure Reference Model

Creative Village
+
6th industries
+
Saemaul 3.0

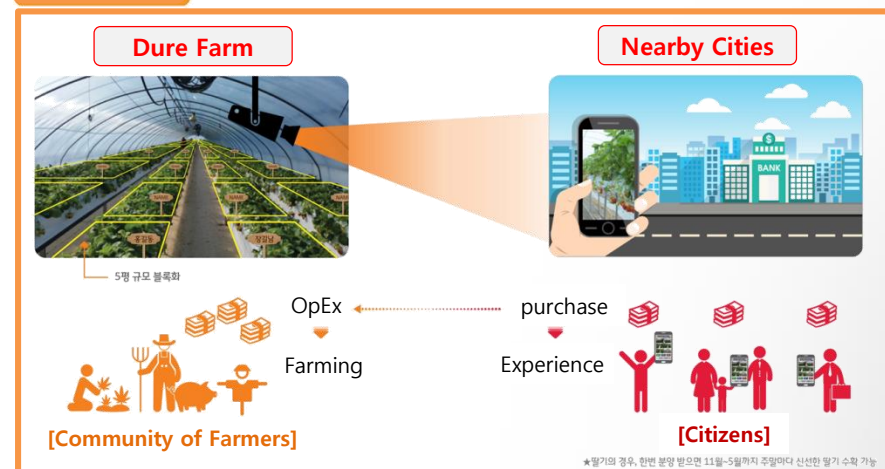


Plans of Sejong Creative Village – Dure Farm

Community of Farmers lead common workshop style house by installing high-tech ICT System for differentiation : Smart Farm, Smart Local Food, Smart CCTV.



- Model that no incomer(elders without facilities) can participate Productive welfare-Creative work
- Citizens can participate by returning to farms to maximize City-Farm exchange



Plans of Sejong Creative Economy Center

Farming with ICT creates 「Creative Village」 sophisticate

- ▶ **Exercise on SK's ICT Energy capability 「Smart Farm」 model's standardization, extensive diffusion**
 - : IoT/Cloud/Big-data/Mobile Convergence to advance agriculture
 - : Linkage of Industry Academia to technical development/Standardization, Supply·Expand, advance propel.
- ▶ **Crop, Produce, Management : Smart Platform Development** (「New Nongsagicsul」 Test operation)
 - : Scattered Crops Producing, developed customized prototype application for distributing information
 - : Cooperation with Department of Agrifood for efficient information ecosystem development

Farm and City co-wealth 「farm & city synergy」 realization

- ▶ **Smartly Connect Producer and Consumer with 「Local Food App」 Developed·Operating**
(「15.9, DoDam-Dong store」)
- ▶ **Smart Farm+Smart Local Food+Test Bed Linkage 「Dure Farm」 Developed·Operation**
 - : Yeondong-Myeon Yeyang-Ri 842-9~10 / 2,500 Pyeong
 - : Green House (5 Complex), Farm sell in lots (1 Building), Advertising.Education halls

Daedeok Science Complex collaboration 「Smart Farm Venture」 promotion

- ▶ **Smart Farm Venture promotion program, collaborate with Daedeok Science Complex**
- ▶ **Smart Farm Venture acquired Twenty Billion Won investment fund**



99.9°C



Thank you.