SK telecom’s Approach
to Creative Economy Innovation

Kang-Won Lee, Ph.D.
SVP of R&D
New Innovation Paradigm

- The 4th Industrial Revolution is around the corner.
  - Mass production → Mass customization
  - Value-driven industry

1st
Water and steam power is used to create mechanical production facilities.

2nd
Electricity lets us create a division of labor and mass production.

3rd
IT systems automate production lines further.

4th
IoT and cloud technologies automate complex tasks.
SITUATION 02

Social Trend

- Korea’s productive population is decreasing, while the youth unemployment rate is increasing.

1. Decreasing productive population

72.9% 37 million 2016
56.5% 28.8 million 2040

2. Growth without employment

Source: Statistics Korea, Ministry of Employment and Labor
Start-up Ecosystem

- Only 0.03% of small business manage to become midsize business in Korea

1. Low percentage of high value-added industry start-up

- Knowledge-Intensive Industry Start-up: 15%
- High-Tech Manufacturing Start-up: 13%

2. Most start-ups only last less than 3 years

- >10 years: 8.2%
- 3-10 years: 33.2%
- <3 years: 58.6%

Source: Hyundai Research Institute
Creative Economy Innovation in Korea

- In the past, the economy policies are led by the government
- Now, the government drives the creative economy together with the private sector

1. CCEI (Center for Creative Economy Innovation in Korea)
   - led by various economic agents

   CCEI is a nationwide and regional business creation environment, provided with resources from conglomerates, local governments, and regional organizations

   - Started in September 2014
   - 18 centers in major cities and provinces
   - SK, Samsung, Hyundai, LG, etc.

2. New Growth Engines & Platforms to enhance the competency of the private sector

   14 New Growth Engines
   - 5G mobile communications
   - Smart cars
   - Marine plants at the seabed
   - Vertical takeoff and landing unmanned aerial vehicles
   - Intelligent robot production
   - Wearable smart device
   - Tangible/Immersive Contents
   - Smart bio-production systems
   - Virtual training system
   - Customized care and wellness
   - Disaster safety management system
   - Hybrid renewable energy
   - DC transmission and distribution
   - Supercritical CO2 generation

   5 New Growth Platforms
   - Intelligent semiconductor
   - Convergence materials
   - Intelligent Internet of Things
   - Big data
   - Advanced materials processing system
SK telecom’s Approaches

Value Creation
- DAEJEON CCEI
- SEJONG CCEI

Ecosystem Cultivation
- 5G Global Innovation Center
- T developers
- T open lab

Test Bed
- BUSAN Open Smart City
Value Creation

**CCEI** (Center for Creative Economy Innovation in Korea)

**DAEJEON CCEI**
- Specialized services and resources to **ICT and S/W related startups**
- Incubation and globalization support

**SEJONG CCEI**
- Revitalization of **local farms by ICT**
- Enhancement of productivity and distribution
Success Stories of CCEI

1. Awarded 2015 Grand Prix at UNESCO Netexplo with ‘TEGWAY’ (Flexible thermo-electric element)

2. Entered Silicon Valley in 2015 with mobile video SNS platform ‘Sero’ (Video making & sharing platform)

3. Support for global entry of 12 start-ups in MWC Shanghai 2016
Wisejet and Ezbelle funded by China Unicom
Ecosystem Cultivation

5G Global Innovation Center

- 5G Innovation = 5G Technology + Future Services + Ecosystem

Virtual Experience Room
Future service development for the innovation of new experiences (VR/AR, Table Top Display, Robot, etc.)

5G Testbed
R&D foundation for 5G core technology & future service development (mmWave, Massive MIMO, etc.)
Ecosystem Cultivation

T developers

- SK telecom Online Center for Developers
- Sharing SK telecom’s technologies, products, services
- [https://developers.sktelecom.com](https://developers.sktelecom.com)

Technologies & Products

- **SONA (SDDC Network Virtualization)**
  This is a technology to virtualize data center network, and thus to enable virtual exclusive network configuration between virtual machines for every cloud using customer.

- **T-ROSS (SDDC Operation Platform)**
  This is a data center management platform offering the functions necessary in data center management, such as integrated resource management, automatic software distribution, operation automation and resource monitoring.

- **AFMedia**
  - System architecture optimized for media service
  - Utilizes high performance with efficient storage and I/O
  - Utilizes I/O performance enhancements for Media

- **AFCeph**
  - Real-time, high-speed storage system
  - Utilizes high-performance
  - Operator-friendly and easy to use management tool

- **NVDrive**
  - Optimal performance for network storage
  - Fully compatible with NVMe
  - Features: 2.39MB/s Read, 1.15MB/s Write, 590K IOPS Read, 200K IOPS Write

Services

- T-API
  API services of SK telecom’s core assets (geo-fence, billing, etc.)

- BaaS
  Backend cloud service for mobile application development and operation

- Tools
  Provides various development tools for web/mobile service (user behavior analytics)
Ecosystem Cultivation

T open lab

- New cooperation model for Open R&D
- Opened in June 2012 at SK Telecom Bundang office

- Business Development Program
- R&D Infrastructure (Test Room, LTE Devices, Spectrum Analyzer, etc.)
- Community for Developers
  - T dev forum
  - T hackathon
Global Smart City Testbed in Haeundae, Busan

- Open platform test bed for new technology
- SK telecom and City of Busan leads the consortium with Ministry of Science, ICT and Future Planning
Nationwide IoT Network

- Word-first IoT Dedicated Network
- Playground for start-ups, personal developers, SMB

LoRa antenna
LoRa GW
LoRa Chipset
LoRa Basestation (Wi-Fi AP like)

Automatic Metering
Bike Tracking
Child Safety & Prevention
Car Sharing
Partner for New Possibilities

This is SK telecom’s vision for new paradigm