

A-GPS, The Absolute Solution : A Carrier Perspective

September 28, 2006

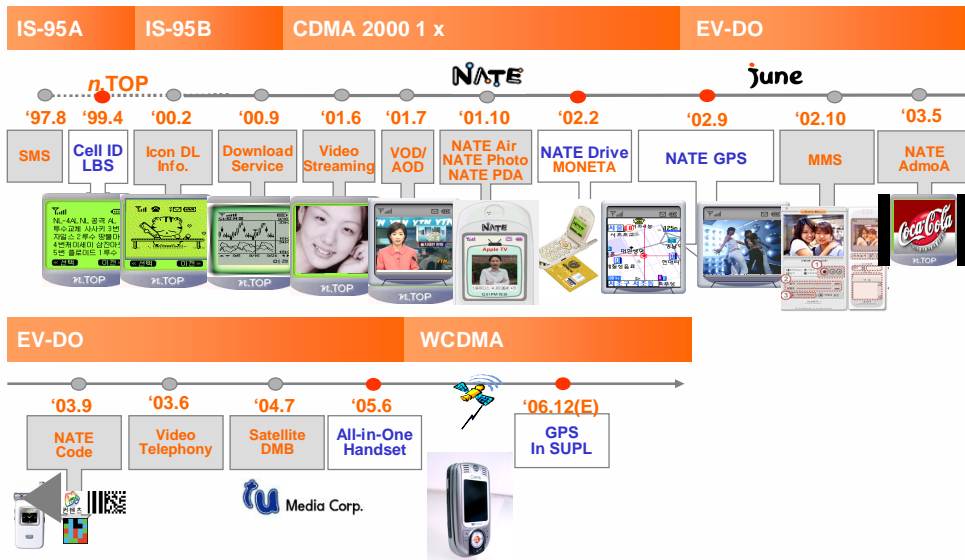


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I. Case Study: SK Telecom

1. Evolution History

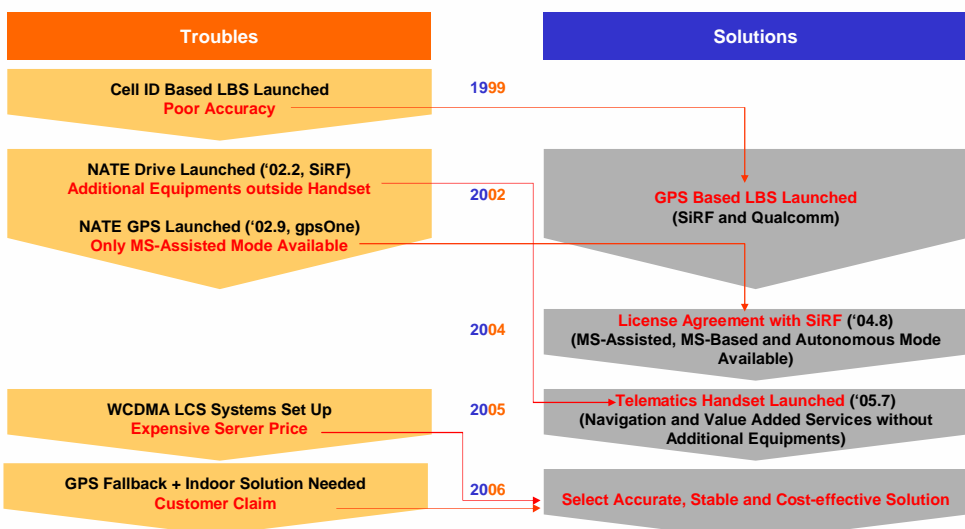


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I. Case Study: SK Telecom

2. Troubleshooting in Technologies

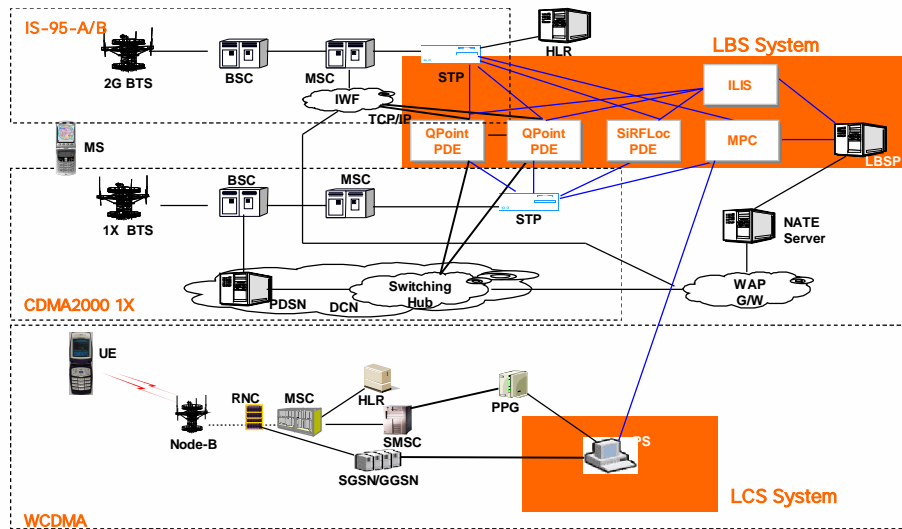


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I. Case Study: SK Telecom

3. LBS NW Configuration



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I. Case Study: SK Telecom

4. LBS Application Portfolio

NATE								
Bell/Music	Game Zone	Chat/Messaging	Securities/Bank	Picture/Photo	LBS	TV/Movie/News	Fortune/Shopping	Adult Club(+19)
GPS On	Buddy Finder	Safety	Highway	Metro Traffic	NATE Drive	Bus/Train/Aero	Map/Cafe	**114 Call
<ul style="list-style-type: none"> GPS Emergency Buddy Finder Fortune Telling Location Mail Where Am I? Map World Safety Return Location Chat Restaurant 	<ul style="list-style-type: none"> Buddy Finder Automatic Report Proximity Alert Couple Location Buddy Tracking Missing Phone 	<ul style="list-style-type: none"> GPS Emergency I-Kids Safe Return Couple Share CCTV HomePC Manager Location Reporter Missing Kids Find 	<ul style="list-style-type: none"> All the National Highways Traffic Map Gas Stations 	<ul style="list-style-type: none"> Major Streets CCTV Video Major Bridge Major Tunnel Busan Area Daegu Area Traffic SMS Shortcut Traffic Nearby Traffic News 	<ul style="list-style-type: none"> NATE Drive Navigation Safe Driving Entertainment 	<ul style="list-style-type: none"> Bus Information Flight Information Subway Info. Train Information Reservation 	<ul style="list-style-type: none"> Where Am I Location Mail M Invitation Send My Location Search Location Search Route Personal Nav. 	<ul style="list-style-type: none"> Café Movies Rent a Car Car Repair Internet Cafe SKT Shop Foods/Restaurant Health/Hospital Shopping/Fashion Wedding Arts/Leisure/Travel Home/Office Learning Finance/Insurance Engineering/Machine AdJ/Publish Communication Electronics Religion/Philosophy Public Office

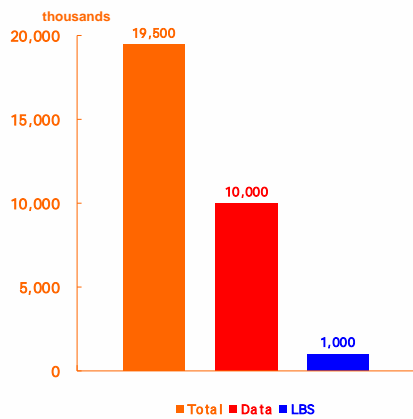
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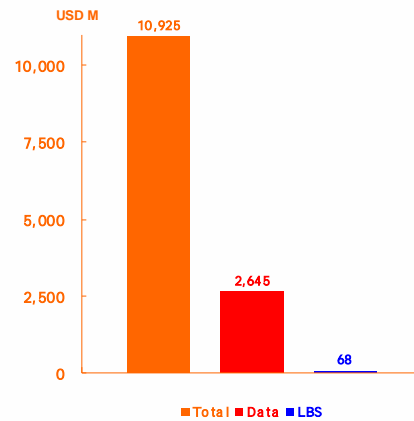
I. Case Study: SK Telecom

5. Subscribers & Revenues

Subscribers



Revenues



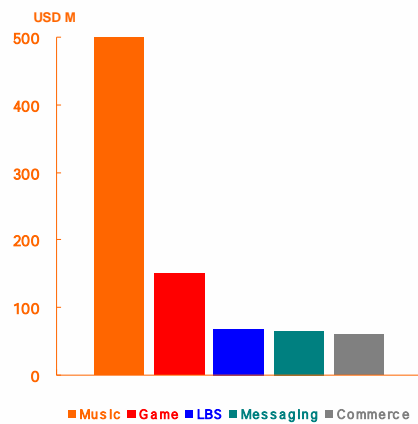
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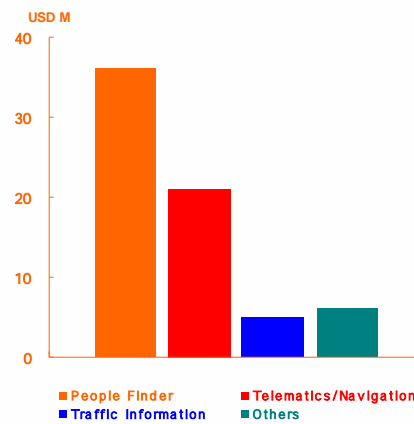
I. Case Study: SK Telecom

6. Data Services Standing

Data Services



LBS

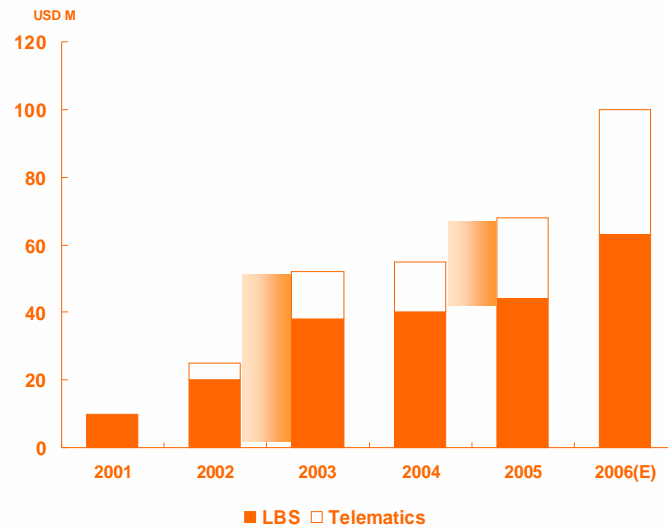


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II. GPS: Good and Bad

1. Impact on Market



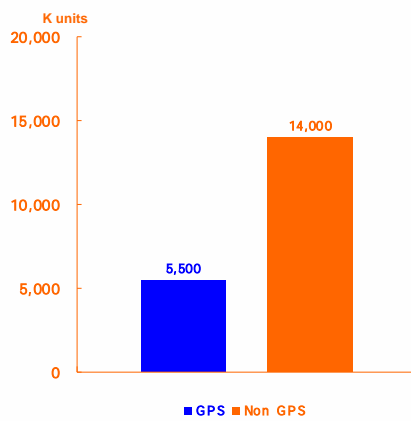
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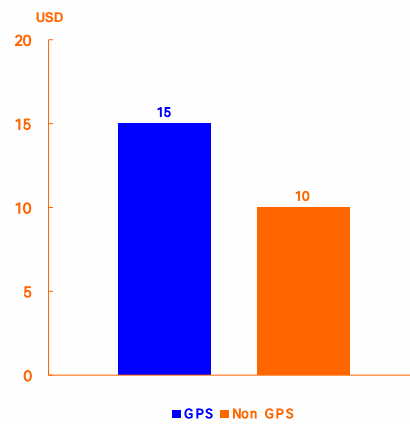
II. GPS: Good and Bad

2. GPS vs. Non-GPS

Handset Deployment



Data Services ARPU



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II. GPS: Good and Bad

3. Risks

▪ Large Scale Investments

- Millions dollars for initial system set up
- Need some(?) time to get to BEP/success

▪ Long Experiences in Fields

- LBS is very sensitive application
- Field optimization is indispensable
- Knowledge of how to manage and operate GPS systems in networks

▪ Complex Business Structure

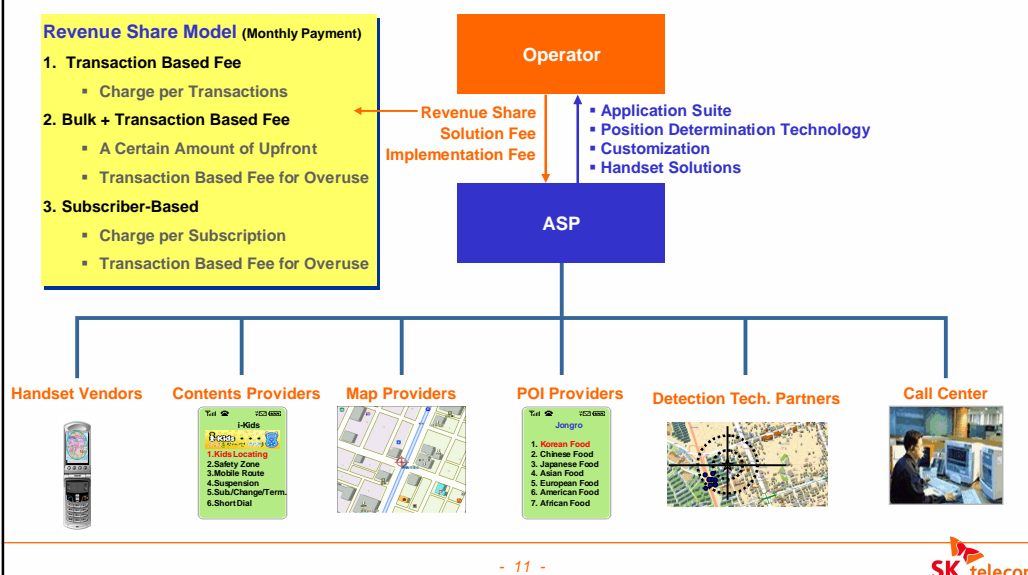
- Introducing new systems to current networks
- Coordination among biz partners of positioning, mapping, network interfacing, contents developing, etc

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III. The Answer: ASP

1. Business Structure



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III. The Answer: ASP

2. Risk Management

▪ Minimize Initial Capital Expenses

- ASP sets up all the infrastructures
- Carriers take charge of marketing and promoting

▪ Outsourcing from Professional Groups

- Utilize experiences of experts
- Having virtual external R&D/engineering center with specialists

▪ Make it Simple

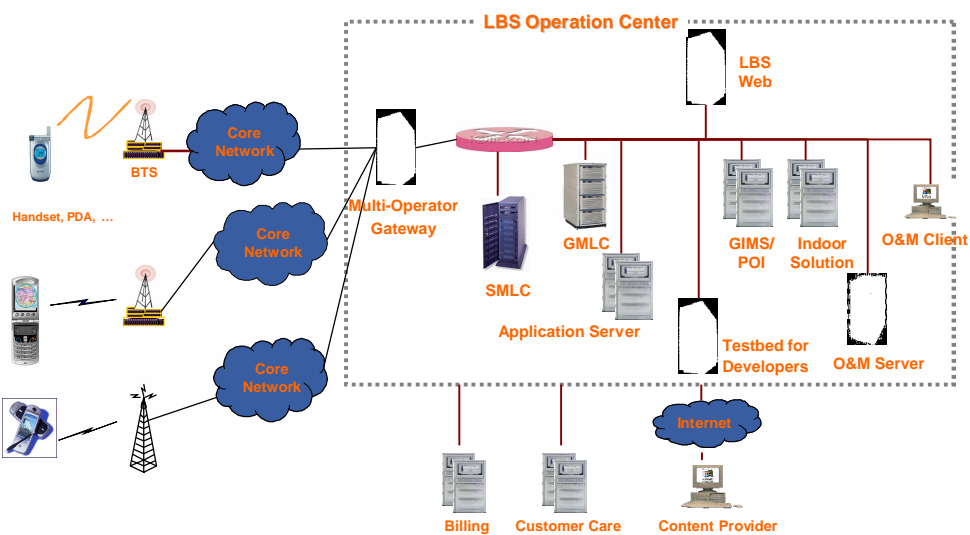
- Just contact ASP only
- ASP maintains all the business partner companies for harmony

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III. The Answer: ASP

3. ASP System Configuration

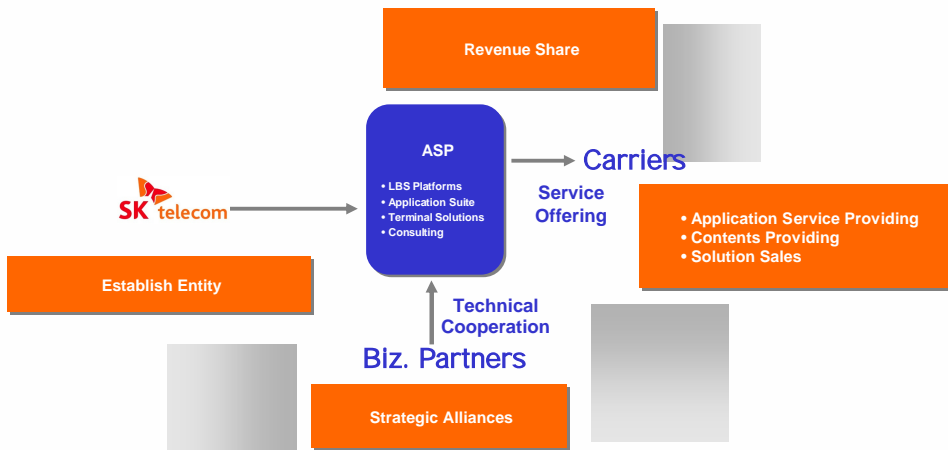


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IV. Business Proposal

1. Business Steps

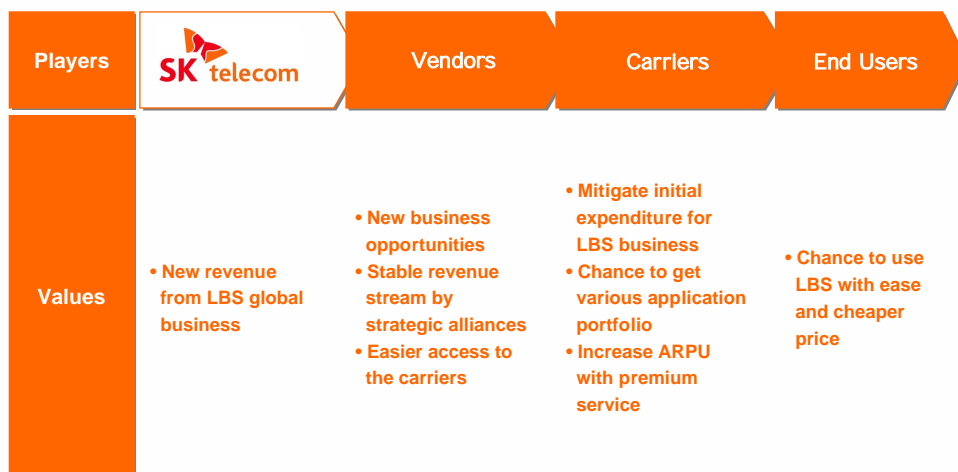


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III. Business Proposal: ASP

2. Value Proposition






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IV. Business Proposal

3. Holding Technologies and Products

Terminal	Platform	Application
 <ul style="list-style-type: none"> • GPS/AGPS Deployed '02.9 gpsOne '05.7 SIRF • Vector Map Viewer '03 Deployed 	 <ul style="list-style-type: none"> • Cell ID '99 Deployed • PDE '02.9 gpsOne '05.7 SIRF 	 <ul style="list-style-type: none"> • People Finder '01.11 Launched • Telematics '02.3 NATE Drive Launch
<ul style="list-style-type: none"> • Navigation Engine - SKT Standardization for NATE Drive - '05 Commercial Deployment of WIPI Standard • Position Determination Module - '05 SKT Standard • Digital Map and Heading Sensor Integration - '05 Deployed 	<ul style="list-style-type: none"> • MPC '02.9 Deployed • LBSP (LBS Platform) '02.9 Deployed • GIMS (Geography Information Management System) '03.12 Deployed • LD (Location Detector) '04.5 Deployed • LSS (Location Sensing System) '06 Scheduled • Hybrid Solution '06 Launched 	<ul style="list-style-type: none"> • Personal Safety '03.8 Launched • Kids Locator '04.7 H-Kids Launched • Location Trigger '04.5 Launched • Zone Based Service '04 Launched • Convergence Application '06 Scheduled

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IV. Business Proposal

4. Experiences of Benchmark

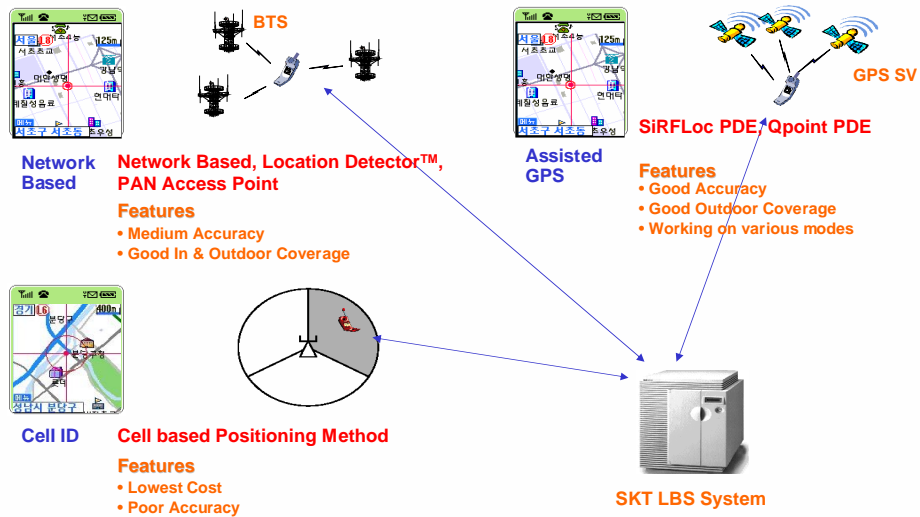
Companies	Technologies	Product Availabilities	Overall Performances	Deployment References
	EOTD	Handset SW + Server SW	Good	Yes
	Hybrid	Handset HW,SW + Server SW	NA	NA
	AGPS	Handset SW + Server SW	Excellent	No
	GPS/AGPS	Handset HW,SW + Server SW	Good	NA
	AGPS	Handset HW,SW + Server SW	Good	NA
	AGPS	Handset HW,SW	Good	NA
	TDOA	Server SW	Good	Yes
	RF Pattern Matching	Handset SW + Server SW	Excellent	NA
	EOTD-like TV signal	Handset SW + Server SW	Good	NA
	GPS/AGPS	Handset HW,SW + Server SW	Excellent	Yes
	AGPS	Handset HW,SW + Server SW	Excellent	Yes
	GPS	Handset HW,SW	Good	Yes
	UTODA/AOA	Server SW	Good	Yes
	AGPS	Handset HW,SW	Good	Yes

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IV. Business Proposal

5. Quality of Services



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V. Conclusion

- **GPS provides variety**
 - Various application to meet customer's taste
 - High-end solution provides higher ARPU
- **ASP can be a solution**
 - Save budget on products and reduce the risk by outsourcing
 - Taylor-made business model fits your request
 - Choose attractive things in the application buffet
 - Communicate only with ASP, not with dozens of business partners
- **LBS in SK Telecom**
 - Keep wonderful ROI and evolve every year
 - Not application level, but infrastructure level

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Thank You !

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