China Telecom's View on Automotive Connected Service and Capabilities

Trend and Opportunities

Positioning and Capabilities

Practice and Prospects

Development Trend of Telematics Service

Technology

- Mobile clouding service
- Mobile phone integrated portal
- HMI

Service

- TSP is just beginning
- LBS
- Integrating Offline Resource Service

Market

- Monopoly of foreign technology
- Access mechanism
- Aftermarket will be developed more rapidly.

Opportunities of Telecom Operators in Industrial Chain

In the market of factory installation, the automotive factories must respond to the demands of car owners, so they naturally become the integrator of the whole industrial chain to lead the development of industrial chain currently.

Operator currently stays in an indispensible but passive position of the industrial chain.

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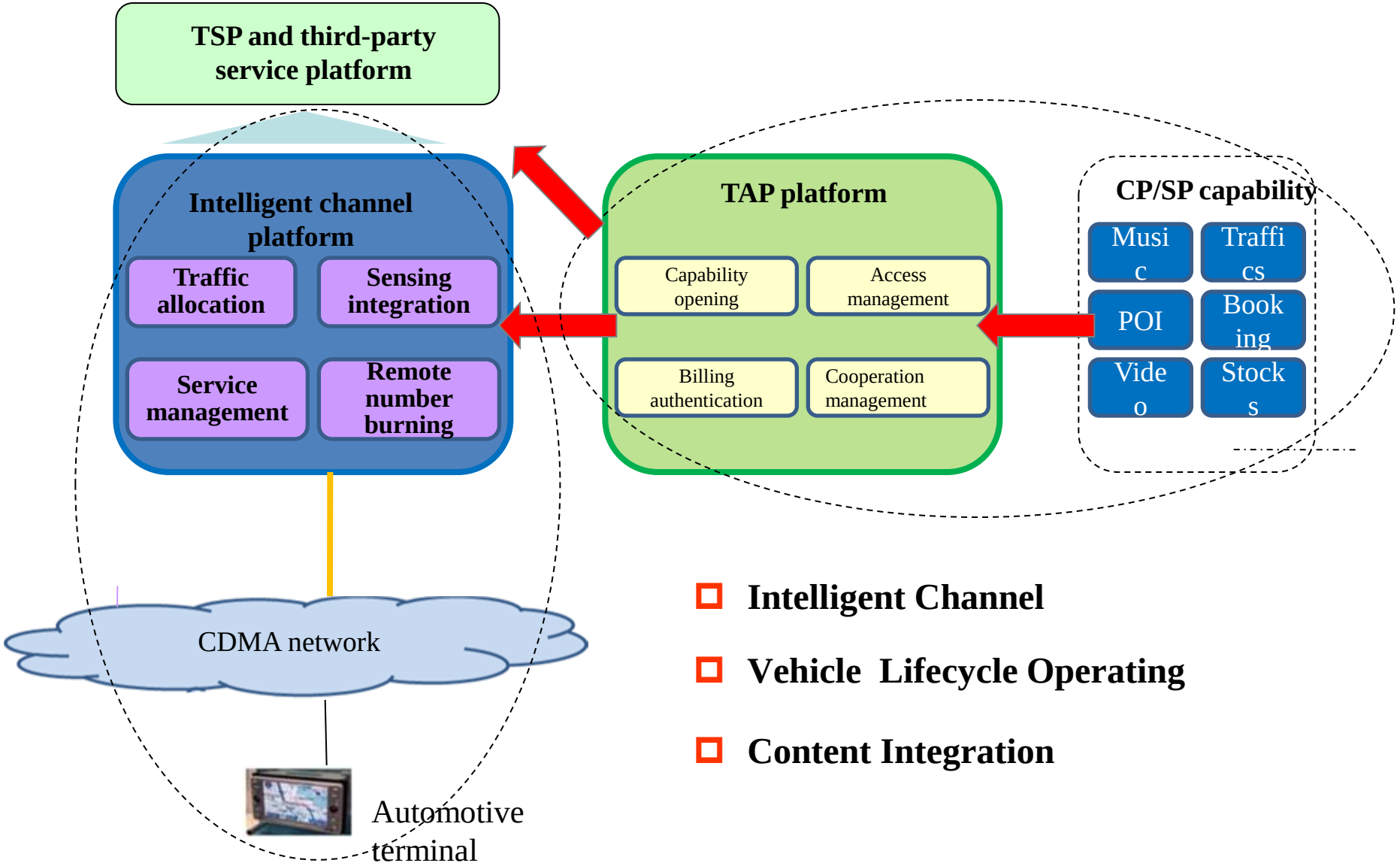
Positioning of China Telecom's Telematics Industry



- **Intelligent Channel**
- **Vehicle Lifecycle Operating**
- **Content Integration**

Intelligent Channel

- **APN Classification**
  - **Segmentation**
  - **Activation/Inactivation**
- **Content Charging**
  - **Identify and control the traffic by url, IP address, and port)**

Telematics service		Transmission content	Recommended transmission means	Recommend channel
Security	Accident emergency assistance	Vehicle location, accident alarm	DOV	APN1
	Failure assistance	Vehicle condition and location	DOV	
	Anti-theft tracking	Vehicle location and control	CDMA 1X/EVDO	
	Simple vehicle diagnosis	Vehicle condition information	DOV CDMA 1X/EVDO	
	Vehicle status monitoring(such as new-energy automobiles)	Regularly obtaining vehicle data information	CDMA 1X/EVDO	
	Vehicle control	Vehicle control information	DOV、SMS	APN2
Convenience	Artificial navigation	Destination location	Voice, SMS	APN3
	Real-time traffics	Real-time traffic data	CDMA 1X/EVDO	
	Map update	Map and POI data	EVDO	
Entertainment	News/Weather/Stocks	Information data	EVDO	
	Online music/video	Streaming media data	EVDO	
	WIFI service	Information data	EVDO	APN4

Vehicle Lifecycle Operating

	Traditional code number and UIM card management	Telematics business requirements
UIM card life cycle management	• The UIM card data of common mobile phones only includes three statuses of inactive, active and disassembled in HLR, which can't be reused after disassembled.	• The life cycle of in-vehicle UIM card is very complicated, including production, test, sales, using, disabling, transferring , scrapping, etc.
Charging	• For the current UIM card management means, the charging will be started from service enabling to disabling.	• The business test/demo of in-vehicle UIM card before sold(in automotive factory/4S store) should be free

Key Features

OTA

- **Sending SMS in a specified format from personnel of automotive factory/4S store**

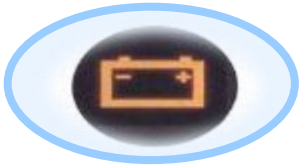
Number life cycle management

- **Processes of production, test, sales, using, disabling, transferring , scrapping, etc.**

Content Integration

- TAP platform ,Integrates the CT's and external resource.
- Reducing the costs and complexity of TSP

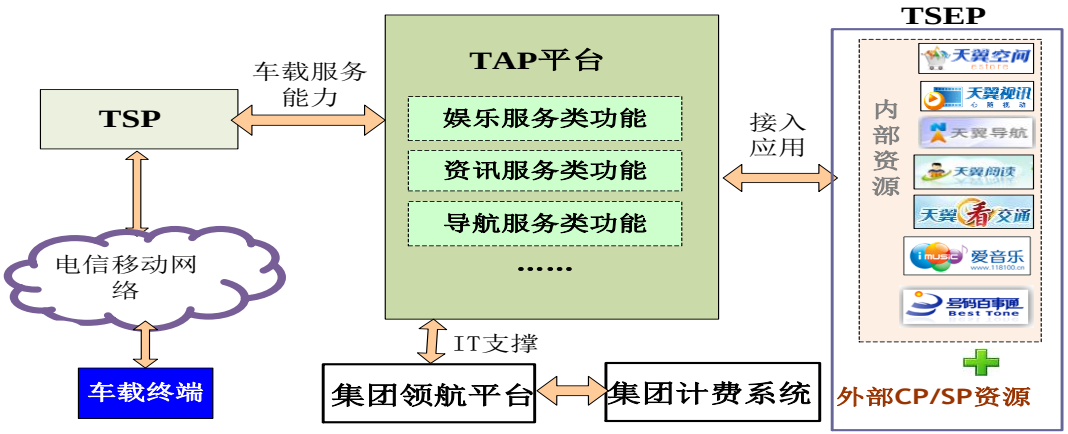
Vehicle business agency



Maintenance

Auto offline service

Customized service of images, texts, audios and videos



Traffic Live Video Monitoring

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China Telecom's Telematics Business Practice

■On August 8th, 2012, President Wang Xiaochu of the Group Company and Hanzheng, Mayor of Shanghai City, together with the president of group company Wang Xiaochu launched the "Shanghai Base for China Telecom's Telematics".

■8 industrial application bases for service within the whole network are built, and Shanghai and Nanjing become the first bases for transportation industry.

■IT industrial management genes are introduced to gradually improve the company operation system for the bases.

	Before market	After market
Shanghai	GM, Saicmaxus	
Beijing	Benz, Hyundai, Toyota	
Hubei	HawTai Motor	Navigation, information entertainment, safety and vehicle diagnosis service.
Shenzhen	BYD	Navigation, safety/security, information service.
Jiangsu	Chang'an Mazda	Navigation, information
Jilin	FAW	
Anhui	JAC Motors	
Shandong		Navigation, information
Fujian	Soueast-Motor	Voice identification, navigation, real-time traffics, safety diagnosis

China Telecom has operated more than 80% of the total Telematics service users of domestic automotive factories.

Trend 1：In-vehicle and handy terminal are the major Telematics service forms in the future.

•Establish interactive bridge between mobile phones and vehicles by using Telecom operator's charging channel, application impact channel and service integration capability for Smartphone.

Charging channel for Smartphone

Application implant channel for Smartphone

Mobile Internet service integration capability

Share the communication network of mobile phones with the vehicles

Map the applications of mobile phones on the vehicles

Integrate the in-vehicle application software service

- **Miracast based on WIFI Display**
- **HSML**
- ***USB-based pure software solution**
- ***MHL+BT**

Trend 2: Mobile signaling based big data applications have bright future.

Telecom operators have large amount of status information data for mobile terminals.

Use the big-data information assets of mobile signaling, to strengthen the integrated platform capability

Big data era

Industrial applications

Traffic data gathering is the first step for intelligent transportation construction

Proactive push based on individual location information

▪Major application occasion	▪Feasibility	▪Application scenario
Express Way	➢ Slight inter-cell interference on express way ➢ Focused cell coverage ➢ Single-sample collected ➢ Easy to correct the gathered samples	

Thanks