



VALUE - Validation of Location based User Services in China

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Exploitation Strategy



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Abbreviations

AM	Aftermarket
ARPU	Average Revenue per User
BE	Back-end
B2A	Business-to-Authority
B2B	Business-to-Business
B2C	Business-to-Consumer
CDMA	Code Division Multiple Access, a 2G technology that allows re-use of scarce radio resource in adjacent areas.
DM	Digital Map
FE	Front-end
GPRS	General Packed Radio Service
GSM	Global System for Mobile Communication
LBS	Location Based Services
OEM	Original Equipment Manufacturer
SBSM	State Bureau of Surveying and Mapping, the national authority responsible for civil surveying and mapping for the Ministry of Lands and Resources
TD-SCDMA	Time Division Synchronous Code Division Access. A separate version of the 3G standard developed for the Chinese market.
UMTS	Universal Mobile Telecommunication System, the third-generation mobile standard
VIP	VALUE Integrated Platform

1 Executive Summary (public version)

This document presents the basics of the joint exploitation strategy as agreed upon by the European technology providers involved in the VALUE project (Tele Atlas, PTV and BPV). It is based on a marketing analysis performed in the course of the project, and on a Joint Business Plan, that will provide the basis for a further investigation of the effective exploitation of VALUE results beyond the life of the Project. This public edition of the Exploitation Strategy does not include information that can be considered as confidential of which the public distribution might harm the competitive interests of the VALUE partnership.

The VALUE Integrated Platform (VIP) was created for the provision of consumer oriented LBS in China. It is a modular system composed of three main modules: the digital map (DM), the front-end (FE) and the back-end (BE).

These modules may be combined together and marketed as five different solutions. The VIP consists of all three modules integrated as for the VALUE field trial prototype. This solution provides the full added value of a flexible, reliable, high quality LBS platform. The marketing analysis and exploitation strategy that was elaborated by the VALUE consortium therefore deliberately focus on the VIP as a turnkey solution, rather than on other combinations of its component modules.

The target market for commercialisation of the VIP is the whole of China, while the position of the European technology providers as potential suppliers to that market is considered from a global viewpoint, i.e. including competitors from anywhere in the world. Key competitive advantages for the VIP are: the consortium's knowledge and experience of European LBS, experience also in China, use of legal, standardised map data bases, coverage of a large variety of LBS services, use of standard technologies in web development, favourable prices for licences and software, flexible, modular, good quality solutions, use of Unicode. The field trials have demonstrated that the VALUE project has successfully localised European technology to meet the needs of the Chinese market.

The VALUE Integrated Platform would thus be offered as a modular solution for setting up, maintaining and operating an open service network, to which various content and service providers could link up, for the provision of reliable consumer oriented LBS based on standardised map data.

2 Introduction

2.1 Context

The VALUE Project has created an integrated LBS platform for the provision of consumer oriented LBS in China. The mobile traveller LBS are provided via a dedicated server through wireless communication technologies to a mobile platform (GPS/GSM enabled PDA), based on existing European digital mapping and LBS technologies.

The VALUE Integrated Platform (hereinafter called VIP) consists of a service platform based on the J2EE standard. The physical separation of the platform from the back-end servers and the front-end clients enables the service provider to react flexibly to different market conditions as content and back-end servers can be replaced without affecting the business logic of the service platform. The communication between the platform and any connected B2B client is based on SOAP/XML Web Services, which enable the customer to connect easily to the platform in order to use single-domain content, such as traffic information or weather, or multiple domain services, such as those implemented for the VALUE project.

In addition VALUE has applied existing mapping standards to the Chinese context through the co-operation of a leading European and Chinese map provider, enabling the provision of a standard digital map for the project trial area in Beijing.

The project has also developed a front-end for the platform using Chinese as the default language and taking account of local end user interaction requirements. The project has therefore succeeded in localising leading European technology to the Chinese context. In the framework of the VALUE project, the European technology providers have investigated the possibility to build on the work completed during the project through the execution of a joint exploitation strategy that specifically aims at the commercialisation of the VIP within China. The joint exploitation strategy is described in this deliverable.

2.2 Scope of the Marketing Analysis

The joint exploitation strategy is based on a marketing analysis that was performed in the course of the VALUE project.

The VIP is a modular system composed of three main modules:

- Digital Map (DM);
- Front-end (FE);
- Back-end (BE).

Together they provide the full added-value of a flexible, reliable, high quality LBS platform. The marketing analysis and its consequent exploitation strategy therefore deliberately focus on the VIP as the integration of these three modules. The target market examined in the document is the whole of China, while the position of the European technology suppliers as potential suppliers to that market is considered from a global viewpoint, i.e. including competitors from anywhere in the world. The analysis and strategy focus on the scope for consumer oriented LBS applications.

3 VALUE Products

3.1 Exploitable products

The VALUE project has developed a suite of products that have commercial exploitation potential. The suite has the following components:

- Digital Map (DM);
- Front-end (FE);
- Back-end (BE).

The Exploitation Plan developed by the VALUE Consortium foresees the commercial exploitation of these components in five possible combinations as illustrated in Figure 1.

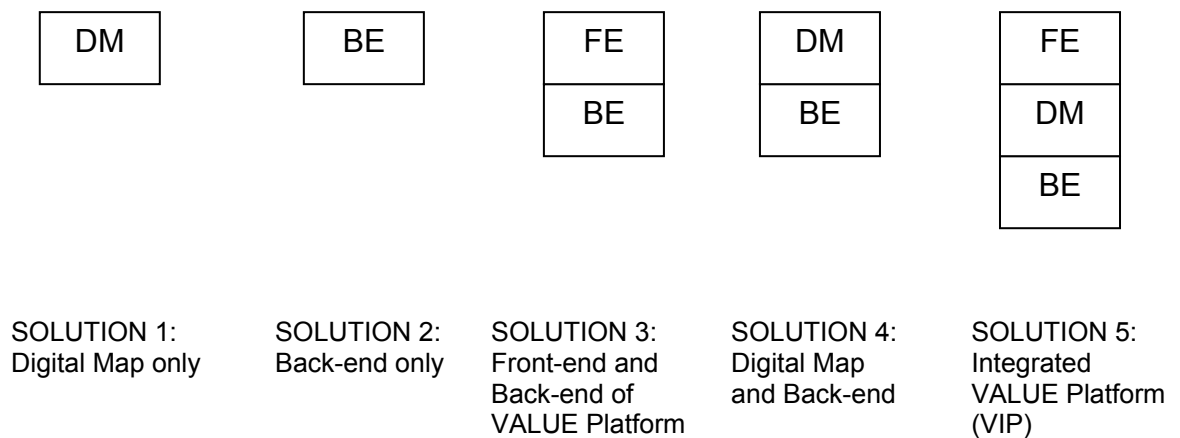


Figure 1: Possible combinations of VALUE products as exploitable packages

Prospective customers may therefore be presented with the range of solutions illustrated in the above figure. The key features of each solution (from a customer viewpoint) can be summarised as follows:

SOLUTION 1

The geographic database of the city centre of Beijing created in the framework of VALUE is a GDF compliant, fully navigable map, which offers a comprehensive set of street and cartographic information on different levels to enable a wide range of location-based applications, including in-car navigation, Geographic Information Systems and LBS. It is evident that the concerned database is only a prototype product. For commercial purposes, the coverage should be significantly extended.

SOLUTION 2

The back-end is the business logic of the VALUE portal. All requests and logical operations are controlled and co-ordinated by this platform, which is directly linked to the VALUE front-end server. The business logic consists of integrated and stand-alone modules, such as the eServers for mapping and routing. The modular architecture allows the back-end platform to be easily adapted to the requirements of potential Chinese customers. J2EE compliance and XML interfaces guarantee interoperability with other systems.

SOLUTION 3

In this case, the solution consists of both the back-end (Solution 2) and front-end modules that have been specially developed for the Chinese market on the basis of technology tried and tested in Europe. Any (GDF-compatible) digital map can be integrated with the platform.

SOLUTION 4

The back-end of the VALUE portal (Solution 2) integrated with a geographic database (Solution 1).

SOLUTION 5

A complete mobility platform for the implementation of LBS applications using digital maps developed and maintained by Tele Atlas. The platform consists of back-end, front-end and digital map modules, that have been specially developed for the Chinese market on the basis of technology tried and tested in Europe.

The five solutions identified reflect the modularity of the VALUE system. Hence, viable business cases can be identified for marketing the digital map and system back-end as single units or in combination with other modules. The system front-end, on the other hand, has been developed in the project exclusively as a value-added component of the system and it will not be marketed as a single unit but in combination with the other modules.

3.2 Business models

The type of business model adopted for the commercial exploitation of the products will be determined by the choice of business partner (authority, service provider or end user).

Potential users of VALUE products were identified in Deliverable D2.3, when considering the various user profiles the VALUE system would need to cater for. They are described in Table 1 below.

Target users	Profile
Private Business	For example, fleet owners, emergency services, tourist agencies and traveller services. Private business users have varying requirements concerning usability and costs. They normally invest in large systems and open interfaces. As customisation is one of their major goals, they need open interfaces in order to be able to adapt their company IT environment.
Business Traveller	Travelling between two or more locations with mainly fixed habits.
Commuter	Mainly travelling between home and work place every day. The route is well known to the commuter.
Tourist	Travelling between two or more locations, usually without being familiar with the route or surroundings, depending on the type of tourist.
Youngster	Behaviour is difficult to predict. Usually young people are so-called pioneer users: a very attractive user group for the introduction of new technologies.
Public Authorities	Public authorities are the decision makers in the public sector. Especially public transport related services, but also private transport is very often funded and controlled by local authorities.

Table 1: User profiles

It is important to recognise that, while a business case could rest on the attractiveness of a service for one or more of the above user groups, this may not necessarily determine the business *model* chosen for commercial exploitation. This will be chosen on the basis of the viability of the **business partnership**, in particular taking into consideration issues of financing, necessary investments and existing distribution channels.

On the basis of these considerations, the types of business model proposed for each solution are shown in the following table.

SOLUTION	TYPE OF BUSINESS MODEL		
	B2A	B2B	B2C
Solution 1 Digital Map	✓	✓	
Solution 2 Back-end	✓	✓	
Solution 3 Back-end plus front-end		✓	
Solution 4 Digital Map plus back-end	✓	✓	
Solution 5 Integrated Value Platform		✓	✓

Table 2: Types of Business Model foreseen for the Exploitation of VALUE Products

The following matrix (see table Table 3 on next page) provides an overview of the approaches to commercial exploitation of the five solutions.

SOLUTION	BUSINESS MODEL	VALUE PARTNERS INVOLVED	POTENTIAL PARTNERS	INNOVATION/COMPETITIVE ADVANTAGE
Solution 1 Digital Map	B2A	Tele Atlas NGCC	Local authorities Public service providers	<ul style="list-style-type: none"> Map coverage (seamless) Content Maintainability: at least 2 updates a year High positional accuracy Quality guarantee Richness and detail Compatibility, availability in major formats
	B2B	Tele Atlas NGCC	Automobile companies and Telecom operators Private service providers Technology partners (HW and SW developers) Suppliers of additional static and dynamic information	
Solution 2 Back-end	B2A	PTV	Local authorities Public service providers	<ul style="list-style-type: none"> Processing of UNICODE UTF8 Maps and route lists in Chinese Modular architecture Portfolio and range of functions Support of any kind of client Standard based (XML, J2EE, SOAP)
	B2B	PTV	Private service providers Telecom operators	
Solution 3 Back-end plus front-end	B2B	BPV PTV	Private service providers Telecom operators	<p>As for Solution 2 plus:</p> <ul style="list-style-type: none"> Front-end offers City Map, POI search, Route Service and Traffic Service applications for Chinese users Front-end applications based on Microsoft.NET HTML page views Standard based (service requests to backend server via SOAP/Web Service call)
Solution 4 Digital map and back-end	B2A	PTV Tele Atlas	Local authorities Public service providers	Sum of advantages for Solutions 1 and 2
	B2B	PTV Tele Atlas	Automotive companies Telecom operators Private service providers Technology partners (HW and SW developers) Suppliers of additional static and dynamic information	
Solution 5 Integrated Value Platform	B2B	BPV PTV Tele Atlas	Private service providers Telecom operators Private transport groups	Technologies for complete service delivery chain offered as turnkey solution for Chinese market VALUE may also be offered as a complementary service to Business Partner's core business (e.g. transport)
	B2C	BPV PTV Tele Atlas	Business travellers Commuters Tourists Youngsters	Transparency of service responsibilities and liabilities throughout delivery chain Quality, reliable, customised service etc.

Table 3: Overview of Approaches to Commercial Exploitation of VALUE Products

4 Joint Business Plan

4.1 Aims

In order to continue the operation of VALUE LBS services in China beyond the lifetime of VALUE, the VALUE partners have developed a business plan, specifying the market potential, the business model and profit and loss analysis. The Business Plan provides a potential basis for an effective exploitation of VALUE results beyond the life of the Project.

4.2 The business idea

4.2.1 Focus on consumer oriented LBS

Location Based Services deliver relevant position related information to a recipient. These services rely upon accurate data, comprehensive content, and consistent coverage. Efficient data retrieval also plays a role as these transactions are typically high in volume and often made in real time.

In principle, the VIP (digital map, back-end and front-end) is suitable to serve a wide range of LBS markets, including:

- Fleet and Asset Management: businesses and applications that use location based information to manage assets, including vehicles and other resources, workforce deployment and management;
- Consumer oriented LBS (Positional Services): businesses that transmit information to/from an end user based on the position of that end user – e.g. driving or turn-by-turn directions, locating the nearest point of interest, etc. Positional Services may be integrated in off-board navigation and/or Telematics services (the latter application transmits information to/from a vehicle considering the position of that vehicle). In the framework of the specific VALUE trial, the platform has been used for this kind of service;
- Emergency Services: applications that use positional information to enable monitoring, routing and deployment of emergency resources;
- Geographical Personal Productivity: software/hardware solutions that integrate a map database or application into a device that provides location-sensitive information for personal use.

The VALUE joint business plan focuses on the commercial exploitation of the integrated platform for consumer oriented LBS, which covers all electronic (digital) consumer navigation products and/or services based on digital maps, that are not considered as "In-car" navigation, where we define In-car navigation as "all applications for devices that are built specifically to be installed in a car (OEM or AM) and cannot be detached from the car for other use".

Basically, consumer oriented LBS can be delivered to the end-user in two different ways:

- Client-based consumer oriented LBS: in this case, the map data and the navigation software are delivered on a data-carrier like CD, DVD, Memory Card, Hard Drive etc., or they are downloaded, and installed on the memory of a mobile device. All calculations are carried out at the mobile device that is used by the consumer. The license to the service is “sold” to the consumer, without possibilities to update, except by buying a new version of the service.
- Server-based consumer oriented LBS: the map data is not installed on the mobile device but requested through the mobile network (GSM, GPRS, UMTS, TD-SCDMA, CDMA, etc.) from a central server. Map services are usually charged either by “subscription” (this assumes that the access to data is limited in time and/or in quantity of data transferred, and it could be paid for either by a monthly fee or a flat rate) or by “transaction”, where the user is charged for the amount of data transferred to his mobile device, or per service request. In both cases, consumers have access to updated map data at all times.

The VALUE Integrated Platform has been designed specifically for the delivery of *server-based* LBS, and the project trials aimed to assess the viability and potential of this service delivery mode. The trials highlighted the current major weakness of providing server-based LBS: slow response times from the telecommunications network¹. Despite this result, however, VALUE consortium members are convinced there is good potential for server-based LBS delivery. Third generation networks will permit much faster response times and, moreover, the consortium has identified ways in which it can introduce functional and performance improvements to server-based service delivery. These are outlined in Chapter 5 of this report.

In the framework of this document, focus is put on the **server-based delivery** methods although client-based delivery methods should also be considered for the exploitation strategy (see further).

4.2.2 Viable business models

In principle, LBS are offered to the consumer by a team of market players. The group of organisations who formed the VALUE consortium, for example, were able to bring various areas of competence together and combine them within the co-operation model illustrated in Figure 2.

Wider-scale exploitation of the VALUE Integrated Platform will require a similar team of players to be formed. The technology providers (Tele Atlas, PTV and BPV) will form the heart of the team. They would however have to join with local organisations in China with a view to providing the best possible mix of content combined with the best localised technology.

¹ Reference: VALUE Deliverable D5.1/D6.2 “Evaluation and Mobile Traveller LBS Trials Report”.

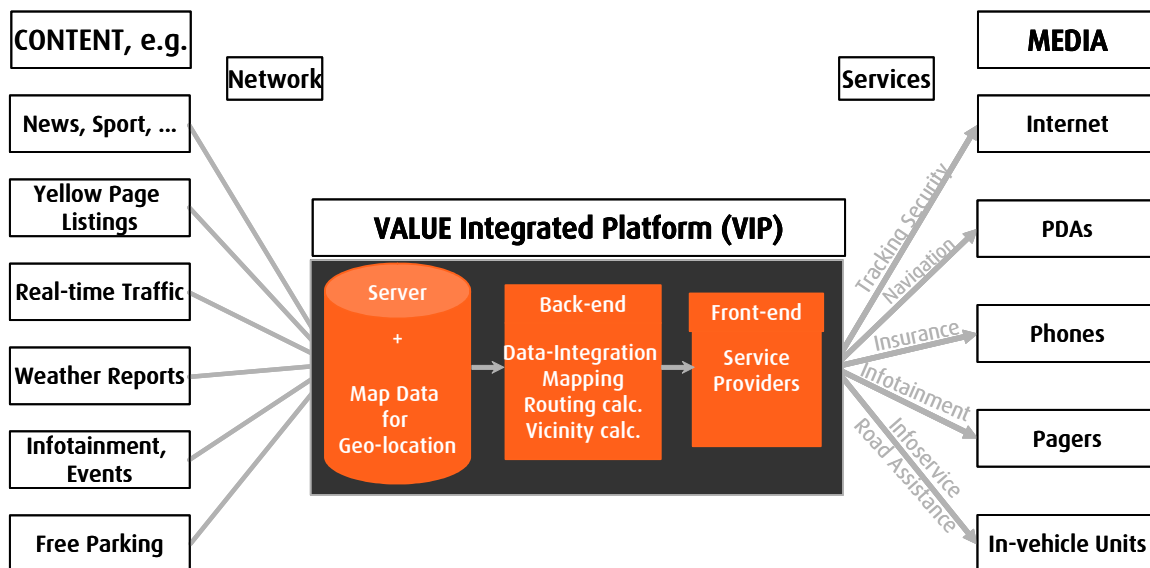


Figure 2: Illustration of the co-operation model used in the VALUE project

Basically the commercialisation of the VALUE Integrated Platform could occur on the basis of the following business models:

Option 1: B2C: the VIP operates its own portal through which it sets up contractual relationships with end users (i.e. consumers).

Option 2: B2B (or B2A): the VIP is sold or licensed to a business partner (a private organisation or the agent for a governmental authority), and the latter is responsible for setting up contractual relationships with end users (i.e. consumers) through its portal.

The choice of which model should be implemented rests on whether the role of the portal operator (and consequent responsibilities towards the consumer) is assumed by the implementers of the platform or by an appropriate business partner. In general, the success of a portal operator rests on a) its ability to attract high revenues and b) its ability to minimise costs. The revenues of a portal operator are proportionate to its customer base; while the costs incurred per consumer can be minimised by operating over a very broad customer base. In other words, the predominant business strategies for a successful portal operator must strictly adhere to the principles of economy of scale. Typically the higher proportion of their investments will be in areas towards the end of the value chain (marketing, sales, distribution and customer service) that are closer to the consumer.

This approach to business is in stark contrast to that of typical technology providers, who invest heavily in research, design and development, specialise in the production of innovative products and cater for a restricted number of customers.

Market development during the past years in Europe has shown that it is rather difficult for a service provider to implement B2C models and survive the strong competition.

One serious, cost intensive problem for service providers in the LBS market is the issue of clearing and billing. In Europe co-operations with companies that can obtain a large customer base (automobile companies or telecom operators) and thus also the environment for clearing and billing are essential.

There are therefore strong commercial reasons for choosing Option 2 (the B2B model) as the most appropriate route for commercialising the VALUE Platform in China. There are also legal reasons: the Chinese government imposes limits on foreign equity participation in joint ventures providing telecom services. Moreover, any business relationship with the mobile telecommunication operators in China must be obtained via an “approved” Chinese service provider.

Another possible business partner could be the automobile companies. However, our investigations of this possible avenue have shown that, for the moment, automobile manufacturers are investing heavily in in-car navigation, and are less interested in systems based on portable devices (the same is true for the European market).

One of the first steps towards exploitation for the kernel group of VALUE technology providers is therefore to approach Chinese companies that could provide the necessary link to the mobile operators.

The B2B package could therefore be summarised in the following way:

- The VIP would provide a modular solution for setting up, maintaining and operating an open service network, to which various content and service providers could link up, for the provision of reliable consumer oriented LBS based on standardised map data.

The technology providers of the Platform (Tele Atlas, PTV and BPV) could enter into partnership with one or more of the local Chinese service providers with a view to licensing the VIP to the Chinese mobile telecommunication operators. (At this moment only two companies are allowed to provide mobile services: China Mobile and China Unicom).

Thus, on the one hand, the VALUE partnership would offer:

- Knowledge and experience of European LBS, which is at a further stage than its Chinese counterpart;
- Use of standardised map data bases through the participation of one of the two biggest global map providers;
- Coverage of a large variety of LBS services, thus being able to react flexibly on market changes;
- Use of standard technologies in Web development, making it easy to adapt to B2B customer needs;
- Respect for legal requirements on mapping data;
- High quality data and service;
- Favourable pricing arrangements for licences and software;
- Use of UNICODE, which is an advantage compared to European competitors (but not compared to local and Japanese competition)

And, on the other hand, the B2B customers (probably the mobile operators) would operate their own portal for service delivery, thus providing the broad customer base necessary to make the venture financially viable. The B2B customer would take care of customer relations and would provide their own resources for marketing, sales and distribution.

4.3 Business and legal conditions for LBS China

Investigating the Chinese legal framework is a complex process particularly in the field of mapping and its applications, as this field is still considered as “sensitive”. Current regulations do not reflect the changing environment and are therefore confusing. It remains unknown whether the revised versions could provide a clearer picture. General laws are often very ambiguous and do not specifically cover surveying and mapping. Table 4 provides a summary of the business and legal conditions that would apply to each component of the LBS value chain illustrated in below.

For each player involved in the value chain, it is important to be aware of the major business and legal conditions related to its respective field of business. This list of key business/technical and legal conditions is based on our current understanding of the Chinese legal framework and business environment and has been checked during interviews with key Chinese market players and authorities.

Value chain component	Business conditions (what is currently available)	Legal conditions
Content Provider Navigable Digital Map	<p>High-scale source material (high-scale digital map data) is available. However, this source material is to be acquired from a “legal player” (see column legal conditions). Additional source material (topographic maps, satellite imagery, etc.), which is widely available, can be used as reference material.</p> <p>As far as we can judge, the technical capacities of these legal players are of a good to excellent level. Effort has to be put in the conversion of local source map data into GDF compliant product formats.</p>	<p>Companies that want to create navigable maps of China need to be in the possession of a so-called pilot licence issued by SBSM. At this moment (status July 2004), only a limited number of local Chinese mapping companies have received such pilot licence. The issuance of pilot licences is the first step into the gradual liberalisation of the market/industry. Foreign companies will not be able to obtain the licence under the current legal framework</p> <p>Besides this pilot license, a set of specific laws and regulations controls and restricts activities as well as the distribution, publication and intellectual property rights of map data do occur. Companies also require a licence from the SBSM to conduct survey and mapping activities. A detailed overview of the relevant surveying and mapping framework is provided in Annex D.</p> <p><i>A European mapping company needs a local partner with the required licence and authorisations in order to be able to operate in the Chinese market.</i></p>

Value chain component	Business conditions (what is currently available)	Legal conditions
Content provider Dynamic Traffic Information	Dynamic traffic information is not available in a uniform format (differs from city to city) and comes in different quality levels. The Chinese responsible authorities still have to decide which protocol/standard shall be implemented on a nation-wide basis.	We are not aware of any specific laws and regulations in this field. In general, dynamic traffic information is owned by the local government (e.g. the local traffic police), which is not always willing or allowed to provide this information for external (commercial) purposes.
Content Provider Additional Static Information	Additional static information is widely available (e.g. POI information, editorial information, etc.). This information does not come in uniform formats and quality levels. Geo-coding is a challenge for European companies in view of the particular Chinese addressing structure.	No specific legal constraints. No specific licences or authorisations are required for the collection of non-classified information.
Service Provider Service Operator Mobile Operator	Very much similar to European conditions in terms of wireless communication networks (incl. roaming capacities), positioning technologies (GPS, cell ID, etc.), availability of infrastructure for hosting platforms and services.	<p>According to the Chinese Telecom Regulation promulgated by the State Council (date of approval 20/9/2000) Chinese domestic organisations and Sino-foreign JV companies are allowed to operate value-added telecom services provided that they have obtained all required permissions. These services may include “online information database storage and searching”, “electronic data exchange”, “online data treatment and transaction treatment”, “Internet information services”, etc.</p> <p>In general, we notice that the legislative framework related to LBS in the broadest sense will not restrict the successful deployment of such services. More detailed information is provided in Annex E and F.</p> <p><i>In practice, any business relationship with the mobile telecommunication operators in China must be obtained via an “approved” Chinese service provider.</i></p>

Table 4: Business and legal conditions for the Chinese LBS market

4.4 Market analysis and forecast for server-based LBS in China

The figure below provides our view on the wireless LBS market size till the end of the decade, based on some assumptions we made related to the number of mobile subscribers, the data ARPU and the share that LBS would take in the data communication market. The revenue is the revenue that would be generated via end-users (mobile subscribers), to be distributed among the players involved in the value chain.

Wireless LBS revenues in China 2004-2010

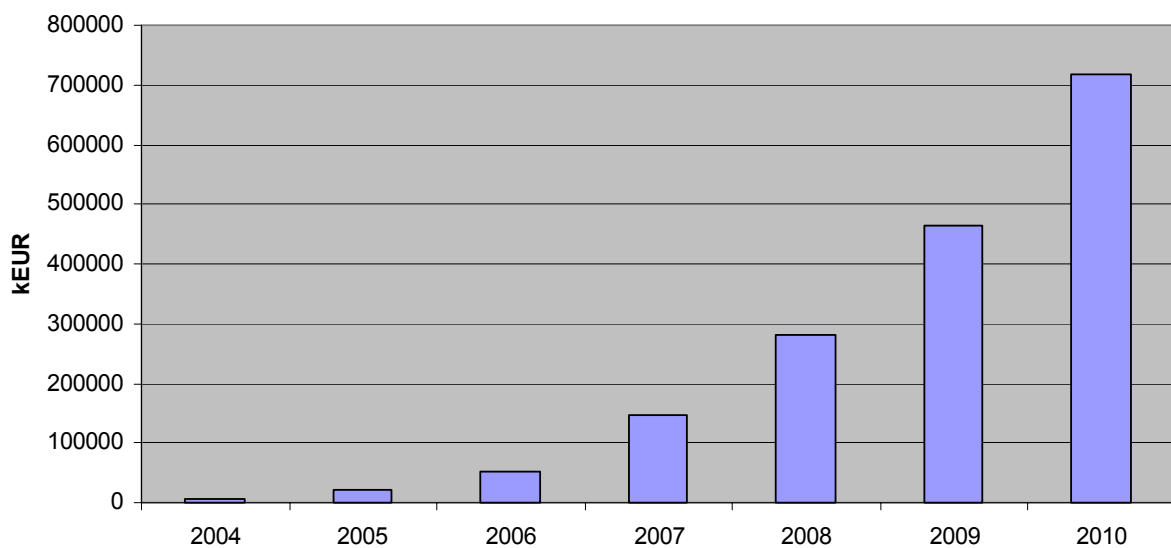


Figure 3: Estimated wireless LBS revenue in China (consumer oriented)

ANNEX A: TARGETED AREAS IN THE CHINESE MARKET

Not included in this public version

ANNEX B: PARTNERS OF CHINA MOBILE AND CHINA UNICOM (EXAMPLES)

Not included in this public version

ANNEX C: FOREIGN INVESTMENT VEHICLES

Not included in this public version

ANNEX D: THE CHINESE LEGAL FRAMEWORK ON SURVEYING AND MAPPING

Note: more detailed information is available at the official website of SBSM (<http://www.nsd.gov.cn>)

Level 1: National law enacted by National Congress

National law on surveying and mapping, 8/29/2002

This law provides general guidelines and principles that guide activities related to surveying and mapping in China. It constitutes the basis for administrative, departmental and local laws and regulations on surveying and mapping.

Content summary: general principles, basic standards and system, basic surveying and mapping, qualification and certificate, results of surveying and mapping, protection of landmarks and symbols, legal responsibility.

Level 2: Administrative laws and regulations stipulated by State Council

Regulation on use of surveying and mapping achievements, 3/21/1989.

Content summary: guideline and principle for using, classifying and maintaining results of surveying and mapping.

Regulation on surveying and mapping publication, 7/10/1995.

Content summary: guideline and principle in surveying and mapping publication.

Regulation on protecting landmarks of surveying and mapping, 9/4/1996

Content summary: guideline and principle for protecting signs and symbols of surveying and mapping

Level 3: Departmental regulations stipulated by National Bureau of Surveying and Mapping

Regulation on inspection and verification of surveying and mapping certificate, 9/1/2000

Content summary: general principles, basic standards and system, qualification and certificate procedure, legal responsibility.

Interim regulation on surveying and mapping market, 6/6/1995.

Content summary: general principles and guideline, basic standards and system, right and responsibility.

Interim regulation on surveying and mapping measurement, 5/22/1995

Content summary: principles and standards related to technical issues.

Regulation on inspection and verification of maps, 12/24/1996

Content summary: principles and standards, procedure of inspection and verification.

Regulation on quality of surveying and mapping activities, 7/22/1997

Content summary: principles and standards for quality control in surveying and mapping.

Regulation on quality supervision on surveying and mapping activities, 8/6/1997

Content summary: principles and standards, administrative systems, procedure.

Regulation on the use permission of national geographical information data, 12/22/1999

Content summary: principles and standards, qualification, administrative procedure for use permission.

Regulation on administrative procedure of punishment on illegal surveying and mapping activities, 1/4/2000/Content summary: definition, principles, administrative procedure.

Surveying and mapping contract version, 3/21/2000

Content summary: content and formalities of surveying and mapping contract.

Level 4: Local laws and regulations stipulated by provinces, municipalities and autonomous regions

Every province, municipality or autonomous region has stipulated regulations for implementation in compliance with the laws above.

ANNEX E: THE CHINESE LEGAL FRAMEWORK ON TELECOM SERVICES

Level 1: National law enacted by National Congress

National law on post service, 1/1/1987

The law provides general guidelines and principles that guide activities related to post services in China. It constitutes the basis for administrative, departmental and local laws and regulations on post services.

Content summary: The post law does not cover the telecom sector

Level 2: Administrative laws and regulations stipulated by State Council

Regulation on telecommunication industry, 9/25/2000.

Content summary: general principles, telecom market, telecom services (basic telecom services and value-added services), telecom project construction, telecom service security, and legal responsibility and administrative punishment procedure.

Level 3: Departmental regulations stipulated by Ministry of Information Industry

Regulation on telecom service operating permit, 1/1/2002

Content summary: general principles, application procedures for operating permit, approval procedures of the operating permit, use of operating permit, change and cancellation of the operating permit, annual inspection on the operating permit, punishment clauses, other clauses.

Two important attachments with the regulation

Basic telecom service operating permit, 1/1/2002

Content summary: formality of the operating permit, the use of basic telecom services operating permit, right and responsibility of telecom operator, special clauses

Value-added telecom service operating permit, 1/1/2002.

Content summary: formality of the operating permit, the use of value-added telecom service operating permit, right and responsibility of telecom operator (value-added telecom service telecom market, security, service fee, construction and use of telecom facilities), special clauses

In addition, The Ministry of Information Industry is considering formulating detailed regulation to guide telecom value-added services.

Level 4: Local laws and regulations stipulated by provinces, municipalities and autonomous regions

ANNEX F: VALUE-ADDED TELECOM BUSINESS PERMIT

Date of approval: 09/20/2000, date of enforcement: 09/25/2000

The regulation addresses the following issues related to telecom sector in China.

- General provisions: definition and target of the regulation, responsibility of relevant Chinese authorities at national and provincial level, general principles that telecom supervisors and telecom companies should follow;
- Telecom market: telecom service permission (categorization of telecom business, prerequisites and qualification for basic telecom business operator, prerequisites and qualification for value-add business provider, procedure of application for basic telecom business permit, procedure of application for value-added telecom business permit), connection between telecom network, telecom service fee, telecom resources;
- Telecom service: principles and guidelines that telecom operators should follow;
- Telecom project construction: telecom facility construction, network in-let of telecom equipment;
- Telecom service security: definition of illegal telecom activities;
- Punitive clauses: administrative procedures for punishment;
- Additional clauses:

According to this regulation, the competent department of telecom business administration under State Council is Ministry of Information Industry (MII) who shall be in charge of telecom service nationwide; The department of telecom business administration of a province (local subsidiary of MII) will be in charge of telecom service within its administrative region. Telecom business catalogue

Basic telecom business:

- domestic long distance and local phone call of fixed network;
- mobile phone and data services;
- satellite communication and satellite mobile communication services;
- internet and other public data exchanging services;
- rent or sale services of microwave, broadband, optical, cable, channel and other network elements;
- network load, in-let, and outsourcing services;
- international communication basic facility and international telecom services;
- paging services;
- basic telecom services re-sale.

Value-added telecom business:

- e-mail service;
- voice mailbox;
- online information database storage and searching;
- electronic data exchange;
- online data treatment and transaction treatment;
- value-added fax;
- internet inlet service;
- internet information service;
- video conference service.

A Chinese domestic organization may undertake basic telecom business if the following conditions are fulfilled:

- It must be legal company specializing in basic telecom business with at least 51% of its share owned by Chinese shareholders;
- It must have feasibility research report and network technical plan;
- It must employ technical personnel, and possess capital, equipment and facilities compatible with the activities they are engaged in;
- It must have operating office and resources
- It must have creditability to provide long-term service to customers;
- It must comply with other relevant laws and regulations.

A Chinese domestic organization may undertake value-added telecom business if the following conditions are fulfilled:

- It must be legal company;
- It must employ professional personnel, and possess capital compatible with the activities they are engaged in;
- It must have creditability to provide long-term service to customers;
- It must comply with other relevant laws and regulations.

Carrying out telecom business in China by a foreign organization or individual, either alone or in co-operation with a Chinese domestic organization, shall be subject to the approval by the government of the People's Republic of China or by the department authorized by it. A foreign organization or individual that, with due approval, carry out telecom business in China, must comply with all relevant laws administrative rules and regulations of China.