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Volume of investments required – \$ 500 thousand.

Summary

1. **Production** – system for controlling municipal payments (SCMP) (to minimize losses in municipal networks of a micro district scale by per flat automatic calculation of consumed resources); the market of commercial lodgings, private real estate, real estate managing companies. As a result of investment, the product will be promoted on the market and also will be modified to be used on the market of automatic control systems in industry (the scale of the factory, subsystem of the data collection).
2. **Trade marks** – none.
3. **Sales 2007** – \$ 10 ths.

Company profile

Date of establishment – February 2007; the company was created on the basis of division of LBS Group LLC which was involved in development and commercialization of sensor network technologies. The company collaborates with Intel Research lab in Berkeley in the area of sensor network development. The team has experience in a number of areas starting from hardware design to end-user software.

Description and value of capital assets – \$ 20 ths.

Previous rounds of investments – February 2007, \$ 60 ths.

Signs of public recognition – diploma from the Nizhni Novgorod region Government.

Number of employees – 5 persons.

Structure of ownership

Legal entity (LBS Group LLC)	50%
Natural person	50%
Aggregate share of government property	0%

Team

Umnov A.L. – Director General, 50 y.o., PhD. The experience of successful technical projects, experienced manager, a number of successful business projects, the experience of the hi-tech products promotion.

Golovachev D.A. – Deputy Director, 28 y.o. Experience of team management; a number of successful technical projects; experience of client management.

Riabinin L.A. – Senior Engineer, 34 y.o. Experience of working in industry; experience of the mass production products development and of production management.

Production

The necessity of municipal reform is connected with the demand to save budget means, to improve services for inhabitants and to provide safety of municipal infrastructure objects. Quality improvement of services is often connected with raising prices of municipal services. Due to this, inhabitants and service companies are interested in billing of consumed services only. On the other side, municipal structures subsidizing municipal structures and inhabitants are also interested in strict calculation of consumed resources for finance budget planning. All these facts bring to creation in several Russian regions of the programs to automate accounting of water, gas, heat, electricity consuming and the systems for municipal infrastructure monitoring. Due to the municipal services price growth and due to the new laws, the number of flats with utility meters increases every year. Within mass installation of utility meters the problem of their reading appear: non regular payments, absence of true data provided by inhabitants, absence of the ability to get reading in flats by municipal and servicing companies. All these facts lead to financial losses of service providers. For mass monitoring of communal infrastructure and service consumption automatic value systems are demanded. These systems should be able to operate in complex urban environment.

The developed system is built with the use of wireless sensor network technology and consists of:

- a set of wireless sensor units with autonomous power supply including radio-transceiver, microprocessor and sensor. The units are embedded into water, gas, heat and electricity meters in flats, houses and other habitation or industrial objects. Self-contained time operation of these units is 8 years.
- a set of network nodes-controllers. The software part of the nodes provides self-organization features to create data collecting, storage network and to transfer data to the point of the information centre. The transmission is carried out node-by-node by chain. If any node failures other nodes automatically change network configuration to transfer data robustly.
- a receiving station (gateway) with the operating range of 1 km collecting data from the sensors. The gateway after collecting and packaging information transfers it via available communication channels to the accounting and other companies (or persons). The system can operate in complex conditions including sta-

tionary interferences (walls, etc.) and random jams such as humans, pets, home equipment, external sources etc.

Existing solutions

The most number of existing products for utility meters monitoring is based on creation of wired networks, collecting the information and transferring it to the collecting centre via GSM\GPRS channels. Such solutions can not be used for per-flat monitoring. Disadvantages of wired solutions are: sensors are usually placed in aggressive environment (electrical contacts, wires are not long-living or expensive), high price of system service, high risk of wire disconnection, dependency on stationary power source, higher risk for the users, necessity of network adapter, necessity to deploy wired network (2x price), possibility of system hacking, absence (or economically useless) of emergency communication channels.

Advantages of the product: low price (\$ 50 per flat for 4-6 sensors), low power, ability to work on batteries up to 8 years, self-organization feature, simple to install, small sizes of sensors (3-4 cm), jam resistance and physical security.

The system as a whole and its parts can be protected by patents.

Current state

At the moment the company has finished the development of the system, it is prepared for small series production, first agreement were signed with service companies and distributors, field testing was carried out.

Development strategy

Use of funds:

- | | |
|----------------------------------|-----|
| 1. R&D | 5% |
| 2. Marketing | 70% |
| 3. Acquisition of current assets | 25% |

Prospective outcome of investment

The product will be presented to the market, advertisement campaign will be carried out, sales on the territory of at least 4 regions will be organized, signed agreements with distributors.

Marketing & Markets

The market volume for the product is more than \$ 500 mln in Russia. The company is planning to acquire at least 30% of the market. The product will be distributed via existing channels, also agreements with main producers of meters will be signed to embed the system into their products. The company will participate in competitions being organized by both governmental and private structures.

Interaction with investor

Starting from 25% up to 50% depending on the conditions of investment agreement. The company value is expected to be \$ 15 mln after 5 years.

Financial characteristics, \$ thousand

Data	Facts			Forecast	Forecast with the investment required			
	2005	2006	2007	2008	2009	2010	2011	2012
Sales	-	-	10	15	45	150	500	800
Operating income	-	-	3	4	15	50	150	250