BEM

Russia, 603033 Nizhniy Novgorod, Larina Str. 22, off. 5
Phone: +7 (831) 414-74-53
Fax: +7 (831) 434-87-34
E-mail: smoli@mail.ru

Volume of investments required – $ 2 million.

Summary

1. **Production –** geoinformation system for collecting and processing aerial photography data for creating digital terrain maps.
2. **Trade marks –** none.
3. **Sales 2007 –** none.

Company profile

Date of establishment – 03.2007. Principal people are experienced engineers more than 10 years working in the field of digital image processing and pattern recognition and doing both research and development of industrial systems. The team has developed a digital planetarium system (the only digital planetarium in Russia), installed in Nizhniy Novgorod (2006), and released to the market a people counting system based on video-processing (2007).
Description and value of capital assets – none.
Previous rounds of investments – Since 2007, the company participates in the program "Start-2007". Funding at 750 ths rubles was allocated to perform research on the identification of vehicles.
Signs of public recognition – none.
Number of employees – 6 persons.

Structure of ownership

Natural persons (3)	100%
Aggregate share of government property	0%

Team

Molinov Sergey – Director, Co-founder, 31 y.o. Provides operational management of the company. He has great experience in setting up commercial software development projects.
Eruhimov Victor– Co-founder, 32 y.o. The generator of ideas, research adviser. He has over 20 publications in Western journals on pattern recognition, the author of three U.S. Patents.
Pisarevsky Vadim – Chief Engineer, 33 y.o. More than 15 years working in the field of digital image processing. The leader of the OpenCV project (open image processing library having more than 100 ths users).

Production

Geodetic information is necessary part of any construction project such as buildings in the city or development of oil fields. One of modern methods of obtaining such information – aerial photography, which provides a series of ultra-high resolution digital images of the earth's surface, as well as surface topography obtained with the help of a laser scanner (lidar). These data are used for generating an orthophotomap and its subsequent digitizing. The main consumers of such systems are companies producing natural resources, as well as municipalities. Currently on the Russian market there are two companies that can generate orthophotomap of 1:500 scale with the help of aerial photographs. In both companies the creation of orthophotomaps is a costly process with the substantial participation of operators, which takes months. Digitization of orthophotomaps, e.g. allocation of cartographic objects such as houses, trees, etc., is completely based on manual labour. For a big city this process takes more than a year. During this time the orthophotomap loses relevance. The budget of aerial photography process followed by orthophotomap generation and its digitization is more than $ 2 mln. The most expensive budget item is digitization, having high production costs due to usage of the highly skilled manual labour. Another reason for high prices is rapid market growth over the past few years with low enough competition.
Our team has developed an innovative way of digitizing orthophotomaps, which requires much less intervention of cartography specialists. Through our method of digitizing orthophotomaps the time can be reduced from year to one or two months, reducing the cost several times. Our method also allows to recover a three-dimensional model of objects that makes available several related markets, such as monitoring of the road surface, generating three-dimensional models of buildings and premises in automatic and semi-automatic mode.

Current state

The project «SkyPhoto» finished the proof of concept stage. The technology was tested on real aerial photography data and received the endorsement of cartography professionals.

Development strategy

Use of funds

1. R&D 15%
2. Acquisition of fixed assets (hardware for aerial photography) 75%
3. Marketing 12%

- The company's activity in the area of aerial photography will include:
- Taking aerial photographs and laser scanning from airplane. This requires the purchase of expensive equipment that is the main investment cost.
- Creating orthophotomaps and their automatic/semiautomatic digitization using developed SkyPhoto software. It is planned to spend approximately $ 160 ths (developers salary per year) for software development (R&D and productization).
- Marketing activities will include participation in professional exhibitions and conferences and implementation of the pilot project.

Prospective outcome of investment

As a result of investments there will be established infrastructure for conducting work on the creation of digital terrain models. The infrastructure will include:
1) equipment for aerial photography and laser scanning;
2) software for rapid processing of data and airborne laser scanning.

The method of processing data will be patented.
The necessary infrastructure will be created through 1 year after the start of work.
The expected capitalization of the company in 5 years after the investing is $ 50 mln.

Marketing & Markets

The volume of Russian market of geoinformatics in 2006 according to GIS Association information was more than $ 800 mln, the forecast for 2008 – more than $1 bln. Market growth over the past 5 years is around 25-30% per year and there is a trend towards increasing growth rate. At the current rate of growth the market by 2012 will be approximately $ 3 bln.
Customers of services on creating digital terrain models are natural resources extracting companies and the administrations of territorial entities (cities, regions etc.). Russian companies working in this market now perform jobs both in Russia and abroad. At the initial stage we plan to work mainly in Russia.
Company's efforts to move the company to market will include the following steps:
1) Participation in profile exhibitions, reporting information on the services provided to potential customers and partners.
2) Building partnerships with companies producing digitization of aerial photographs. We plan to use human resources of partner companies, substantial proportion of manual labour will be automated using technology offered by our company. This will automatically increase the customers base of our company.
3) Doing pilot project of creating a digital model of city district. The results of the pilot project will help potential customers to decide on ordering works.

It is expected that most of the customers on digitization of urban areas will become regular customers, thus ensuring a guaranteed demand for our services.
During the first year is planned to complete at least one project with an income of $1 mln. We expect doubling the number of projects every subsequent year. The company plans to take at least 10% of the Russian market in 5 years.

Interaction with investor

The share of the company offered to investor is 40%. Cost of the share of the investor in 5 years after the start of the project will be $ 20 mln

Financial characteristics, $ thousand

Data	Facts			Forecast	Forecast with the investment required			
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Sales	-	-	-	0	0	2 000	4 000	8 000
Operating income	-	-	-	0	0	1 000	2 000	4 000