

## Digital Mapping, a Solution on Business Management in Albania

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**Abstract:** *This paper presents a detailed study of a new category of potential businessman's in Albania representing the class of returned emigrants due to economic crisis in the neighbor countries mainly Greece and Italy. The scope of this presentation is to bring to the Albanian market this new trend of investments which could lead to an undisputed growth of the overall Albanian economy. We are introducing a set of models regarding specific sector categories explaining how integration of GIS technology can result a perfect liaison bridge between this group of businessmen's and their new terrain of investment, mitigating their hesitancy due to the lack of information and recognition. GIS technology serves as a mirror to evaluate options, opportunities and probabilities. Through GIS tools they can get involved into the economic situation in the country by tracking customers and competitive businesses. Geographic data must be considered as the basic framework of entire organizations.*

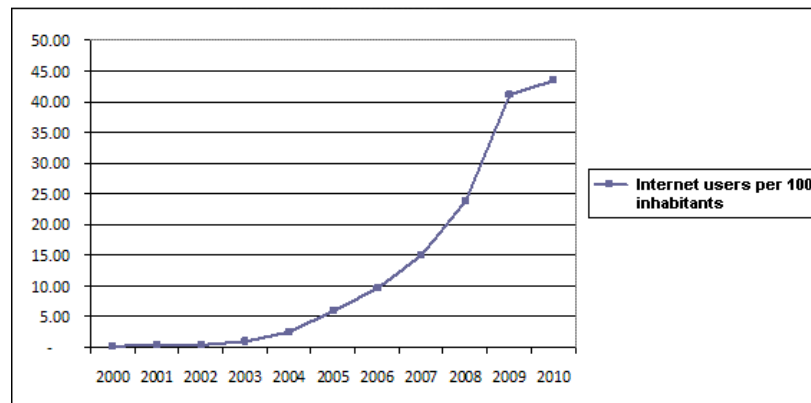
**Keywords:** *GIS, analyze, business, organization, information, database*

### 1. INTRODUCTION

Albanian economy is very sensitive to the European market fluctuations. Since 1991 with the fall of the regime Italy and Greece have become the main partners in Albanian developing economy. Without going into deep approach in the investments these countries have made, must be mentioned a considerable number of Albanian citizens working in these countries around 1.2 million which is considerable data compared to the total number of population. It is obvious that the economic crisis that affected these countries will have an inevitable effect on the Albanian economy, not only in the investments but also in the number of Albanian emigrants forced to interrupt their working arrangements or business activities due to the lack of market demand, causing this way a constrained return in the country. According to statistics more than 66% of the emigrants declared a possible return in Albania in case they found suitable conditions to develop an economic activity. This mass of population will make efforts to integrate into the Albanian market primarily through establishing small businesses. In this case information is of vital importance for succeeding. The long period away from the country creates a great handicap to understand and organize the way to manage their activity. We will concentrate our presentation in this category which we are going to call “new” potential businessmen's and their possible approach to the Albanian market.

GIS technology brings every business one step forward towards the others. This group of “new” businessmen which could possibly share a considerable part of the Albanian market may turn in the near future unvalued with their investments and experience. Most of them after several efforts to perform any research about the potentialities of the mart still remain in great disadvantage due to the lack of digital information compared to analogue business competitors which compensate this handicap with years of active terrain experience.

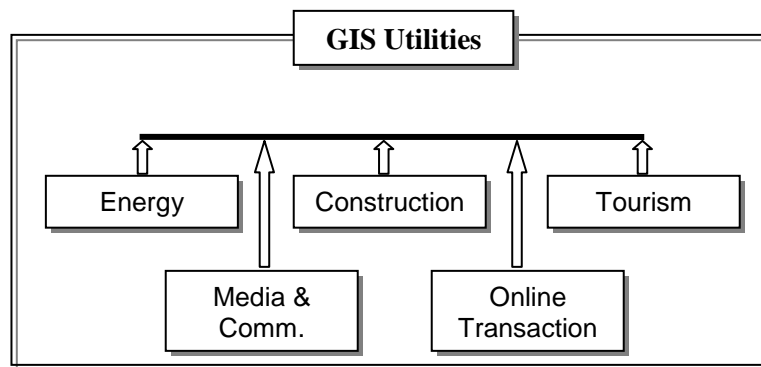
Integration of GIS technology into E-commerce in Albania is strictly connected to the basic problematics the economy situation is facing. Still remains determinant the increasing role the government is playing through substantial reforms which aim to develop internet utilities in a large scale environment in Albania. According to statistics (figure 1) the last five years have been followed by a substantial increase of internet usage in Albania. During 2005 for the first time more than 5% of the population was using internet. Now after 5 years we have reached over 43.5% of the population which is a sustainable and rapid increase. Now we have the necessary tools to aim at developing GIS image in the market and institutional levels. Terrain for GIS technology expansion in the Albanian mart is already in a mature point.



**Figure 1 – Internet Users, (2000-2010)**

(Key factor toward technology (GIS) development)

Important sectors in Albania like construction, tourism, energy, media, agriculture, transport are eager to benefit from GIS utilities (figure 2). Analyses due to several developed surveys lead to the creation of mapping forecast for different scenarios.

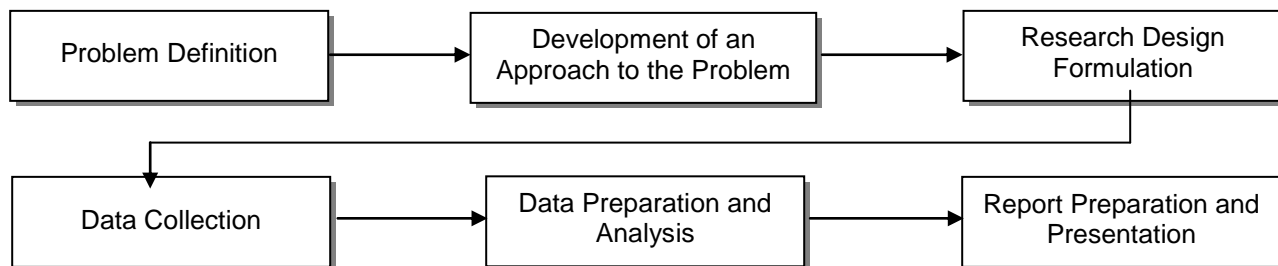


**Figure 2 - Basic Development Fields (Technology Integration)**

A guidance through offered possibilities or indexed evaluations is the missing step for a successful business policy. Through management of updated data with mapping layout this new category will be able not only to catch the integration process but also start a new cycle giving a strong development to the economic procedures in Albania.

## 2. ONLINE TRANSACTION

Shortening of distances, time saving, large scale control of the territory are among the basic columns the research market process requires. All of them are strictly connected to mapping. Every businessman is trying to retrieve the largest amount of data through the implementation of the above mentioned factors. Marketing research process is a set of six steps which defines the tasks to be accomplished in conducting a marketing research study (figure 3). These include problem definition, developing an approach to the problem, research design formulation, field work, data preparation and analysis, and report generation and presentation [6,7]. The market research process in Albania is in its initial phase of development based primarily through interviewer network.



**Figure 3 - Stage of the Market Research Process (SMRP)**

Due to the lack of dynamic mapping the last two steps, data analysis and presentation, require additional features to complete the cycle. These two categories strongly reflect the absence of updated data and most of all integration of these

data into geospatial softwares. Benefits from the statistical point of view will be partially perceived unless connected to geographic entities.

“Albania in the age of internet” is the latest reform the government is implementing, which aims to inform young people in rural areas, developing ICT infrastructure basically in public schools and state offices. After that the online transaction sector recognized an immediate development. In Albania there are more than 120 web pages acting as an informative product guidance including a vast range of products as terrains, houses, cars, etc. Still their database function tend to be more as a repository data rather than connected to a digital map which would complete the informative process. That’s why the next step consist in collecting these data, integrating them into a GIS software able to show not only the statistical point of the request but also the geographical connection. This way we benefit from the visual description of the query. Calculate distances, directions or implement comparisons, pan or zoom on the map to discover more information about the area are only some of the utilities we can take advantage.

### 3. ENERGY

Albania gets 95% of its electricity from hydroelectric plants, but has exploited only about a third of its potential hydro resources that means there are huge reserves of renewable energy in the country. The Albanian hydrographic territory is about 44,000 km<sup>2</sup>, that is about 57% more than the national country area [5]. Albania is considered a country with great potentialities in the investment of new energy infrastructure. One of the best examples is the Ashta hydropower plant which is Albania’s first major hydropower plant construction in 30 years and the Government’s first large public-private partnership in the energy sector [6]. Until now only 35% of Hydro-Energetic potential of the country has been utilized, this means that there is a considerable percentage of exploitation possibilities for new potentially hydropower areas (figure 4).

Using dynamic mapping and remote sensing technology able to analyse natural resources, physiographic characteristics and socio-economic indicators, and most of all the hydrographic network of a certain area will allow us to make a detailed analysis of which are the most appropriate areas to build the future hydropower plants in Albania. GIS plays an important role in every stage of planning, development and implementation. In Albania many of the conventional projects are characterized by an unclear structuring process where geospatial data is poorly managed, maps lack the updated information, data retrieval and sharing run into technical problematics. Using GIS, we can manage all variables with reference to location, and can provide a clear picture about the hydropower project area and its impact zone [7].

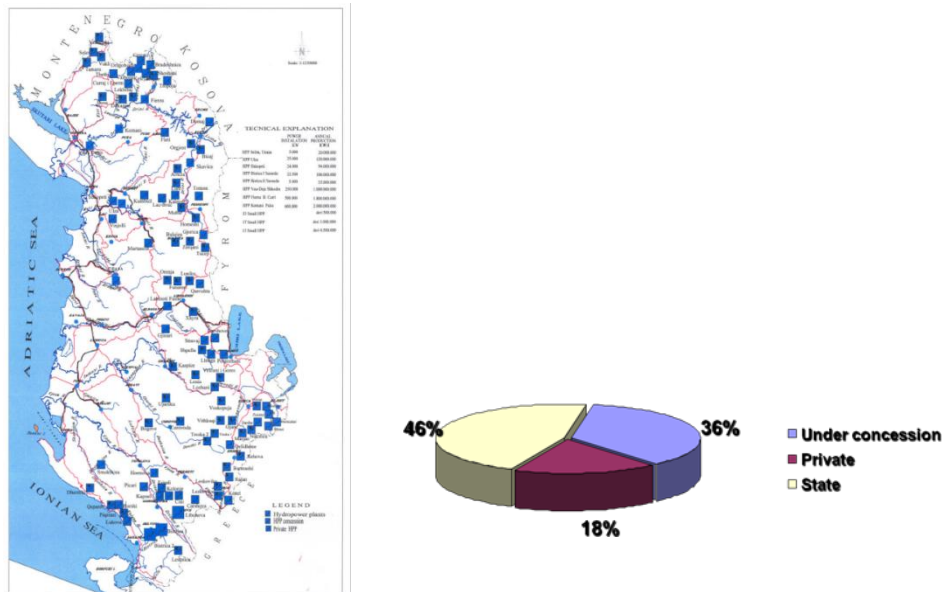
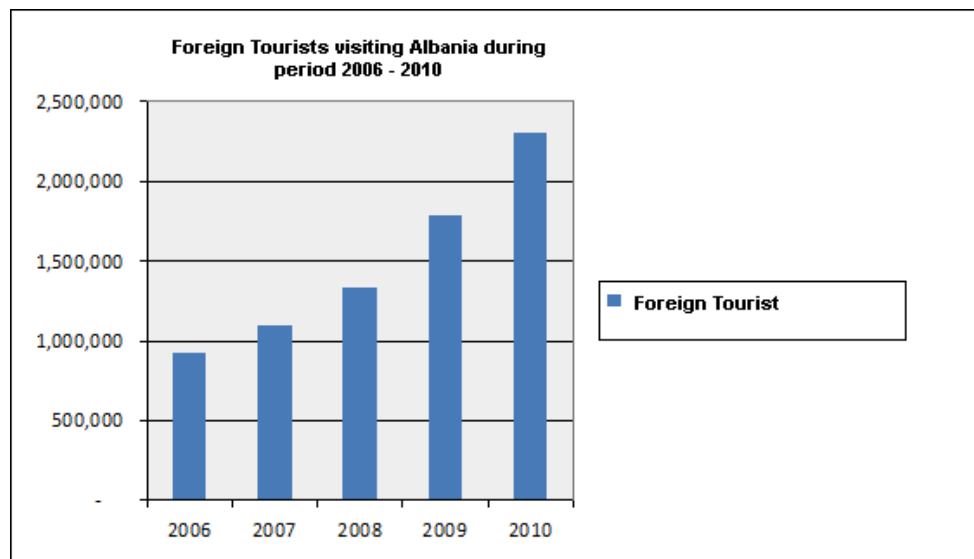


Figure 4 - Administrative status and geographical distribution of HPP in Albania, Developed Software ArcMap 10

### 4. TOURISM

In many countries of the world tourism activity is considered more important than manufacturing activity both economically and socially. Albania has a great potential in the sector of tourism. Especially the last years tourism in Albania has developed vigorously. According to statistics (figure 5) during the year 2010, more than 2.3 million tourists visited Albania which is quite significant compared to the 2.8 million [3] of the contry population.



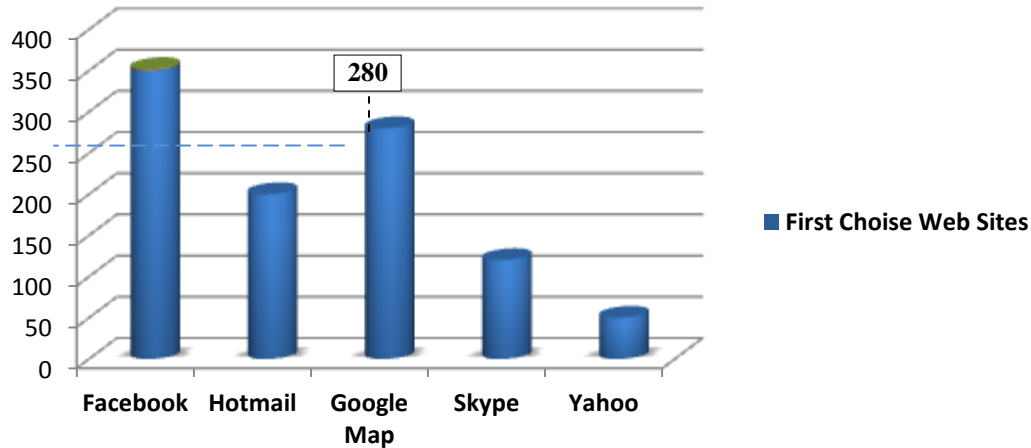
**Figure 5** - Tourism Performance, foreign visitors (2006-2011)  
Source: Open Data Albania

The hotel industry recognized a rapid development. The number of hotels increased by 19% from last year. Based on these data, the capacity of hotels in Albania are not adapted to the increasing influx of foreign visitors. For this reason it can be deduced that accommodation for part of the visitors is made in private homes in an unregistered way. This means that there is a high demand for a powerful development in the hotelier sector.

All this scenario shows us the great potential Albanian market reserves vigorous investments for the future. On the other hand due to the lack of a detailed study we miss the presence of a categorizing structure expressing an indexed list on dynamic maps according to the areas and their possible potential of development and investment. Detached data exist on formats like Excel, about visitors number, origin, destination, expenditure but not a real inventory database connected to a digital mapping system which will offer a detailed management plan of the territory's resources and capabilities. The most usual tactic relays on personal surveys and queries, collecting data and trying to support decision-making through inconsistent information. Due to this situation it is difficult to create an exact policy action. Mapping quering is missing and fast-logic actions delayed. Investing in tourism sector is as profitable as delicate because it requires detailed analysis of the territory, climate, distances and movements. Digital mapping is essential in performing all these tasks in the fastest and reliable way.

## 5. MEDIA AND COMMUNICATION

The fact that GIS communicates geographical information in digital form merely illustrates its consistency with contemporary media, which now make widespread use of digital encoding at various stages [8]. The fact is that geospatial technology must be considered as part of a communication process since we deduce our results from the presented paper or screen. On the other side there is a symbiotic connection since mass media relies potentially on GIS utilities. A survey involving 1000 students was made (figure 6).

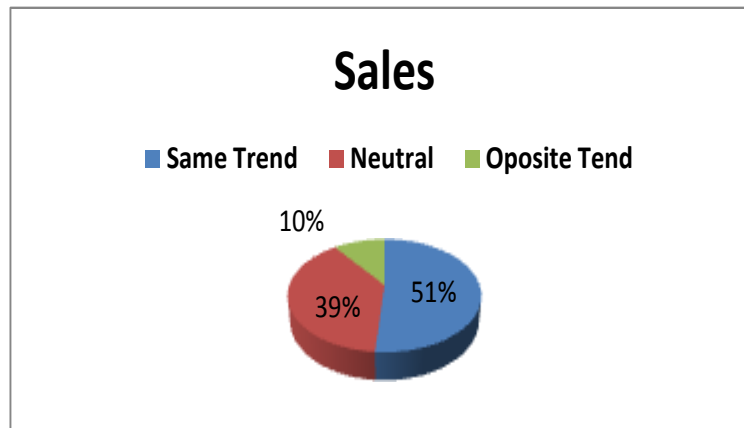


**Figure 6** - Survey, Approach toward GIS Technology

The outcome of this survey intended to define the relation between their approach toward GIS technology. Students were asked to mention their most interactive web sites in the sense of communication and learning opportunities. The top five were ranked. Interestingly “Google Map” is among these web sites. Which means that students are looking forward to interact with dynamic maps and not just navigate in the internet.

Albania is widely known as a country with a developed media sector compared to the total number of population, including a large number of newspapers, private television companies and radio stations. It is easily conceived the importance of geographic data in this case. Through surveys and queries we can benefit from GIS utilities to manage data related to the density of population, the average age for each of the districts and the trends for the type of media chosen. The population behaviour incline in reflecting vigorously their political views toward their everyday habits and actions.

Statistics show up that the factor of impact that specific media have related to specific districts varies to a large extend. Due to this phenomenon their sales data are geo-dependent. Through mapping surveys we can combine the political trends of the population with their density producing indexed mapping showing the possible potential market of a specific media in that district. As a descriptive example of the situation we can utilize data retrieved from one of the newspapers (figure 7) which has the highest printing copies in the market. We present interesting data showing the strong relation between sales inventory and the political trend of a specific area.



**Figure 7** - Impact factor (political) influence toward newspaper sales (GIS management Issue)

## 6. CONSTRUCTION

Perhaps one of the most interesting aspects of GIS is its ability to integrate diverse data sets, databases, and applications, also it's an appropriate technology for many engineering related projects [9]. Construction sector is one of the most important pillar of the Albanian economy. During communism more than 80% of the population lived in the rural areas. After 1991 Albania faced a demographic boom of population settlement living in remote areas of the country, to more developed areas of the country, and the trend of abandonment of rural areas to move into central developed urban areas, a process which was associated with economic and social consequences. Construction in the urban areas developed rapidly.

The last decade has faced a vigorous increment of the statistics regarding construction. In Albania in 2010 were given 1.845 building permissions, or 21% more than the previous year.

Another important issue is the Albanian population and Housing census closed on October 2011 which has been held after ten years from the last one (2001). The overall objective of the project is to contribute to the strengthening of the Albanian statistical system with the implementation of a Population and Housing Census. In Albania the need for a census is perhaps greater than anywhere else calculating dynamic changes that characterized Albania in the recent years. The outcome of the census will answer many important questions the category of “new” businessman's have, regarding the construction sector. Updated information about demographic movements, population density, tendency are only some of the reference points for business developing. All these data combined with statistics showing the construction trend during period of times or districts are of great importance to delineate the right policy to follow. Through satellite images we can benefit updated maps which combined with the above mentioned information will show us the areas with the highest potentiality in the construction sector. Businessmen can define which are the most suitable zones to invest their money according to the profile of construction. Cadastral maps also can vastly benefit from the usage of GIS utilities presenting updated data, increasing this way the effectiveness of the information.

## 7. CONCLUSIONS

The economic crisis that has affected the world in recent years has made it possible for many organizations to restructure their operating practices. Many of these businesses are aware of finding new ways to develop their activities, primarily through internal sources. Now is the time to invest in geographic information systems, a solution that has helped many organizations to overcome their operational challenges and increase profits. Retailers, insurers, asset managers (property), and others who seek to properly interpret market movements have come to realize that GIS can help in many ways. A well organized GIS platform can analyze any business assets (employees, customers, and facilities they have at their disposal, the whole supply chain network, etc).

Due to the economic crisis the Albanian market risk to handle a whole category of “new” businessman, if managed properly, they can become a powerful incentive for a future economic development otherwise it will further aggravate the actual situation increasing significantly the number of unemployment. GIS is a complex platform able to analyse and manage geospatial information. In this paper GIS technology is presented as a potential tool to surmount the handicap created by the long period of absence in their country which causes serious concerns during their integration attempts in the Albanian market. The lack of information shows to be a great disadvantage toward terrain experience gained by competitive businesses. Without a detailed analysis of the situation every manager is “blind” and doesn't have the necessary tools to overcome the problem, regardless of how easy it looks at first sight.

Experience has told that businesses that relied their strategy on GIS usage have been much more successful than their similar. Through GIS utilities they can recover turning into potential candidates for a successful business management. The material is focused presenting a list of exploited sectors that need a detailed analysis of the actual conditions and possible future investment. Their importance is a matter of fact, but the issue is to delineate the right strategy in creating the right approach to this new category of businessmen. The world is growing fast and “information is power”, and this is what GIS does best “analyse information in order to improve decision-making” [1].

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