IT SOLUTIONS FOR THE MANAGEMENT OF GEO-BUSINESS

Mareş Marius Daniel
SPIRU HARET University Faculty of Management, Finance and Accounting str. Ion Ghica, nr 13, sector 3, Bucharest, Romania maresmariusdaniel@yahoo.com 0722704696
Mareş Valerica
Economic Studies Academy of Bucharest Faculty of Accounting and Management Information Systems Piaţa Romană nr.6, sector 1, Bucharest, Romania maresvalerica@yahoo.com 0721906108
Ilincuţă Lucian - Dorel
SPIRU HARET University Faculty of Management, Finance and Accounting str. Ion Ghica, nr 13, sector 3, Bucharest, Romania lucian_ilincuta@yahoo.co.uk 0745552551

In the current economic and socio-demographic context, the pressure exerted over the informatic departments by the top management in order to have them offer a high volume of information in a short time, efficient for maintaining and developing the business, can lead to migrations to geo-business informatic systems through which to adopt the indicators that would justify the costs. European integration demands that societies access performant informatic and telecommunications solutions for modernizing the economic and ecologic environment which supposes a rapid assimilation of geo-informatic technologies specialized on the management of geo-spatial data. The concept of high quality real time spatial data reprezents key theory for minimizing the risk of busing data in a certain context during the process of decision taking. Geoinformatics is more and more incorporated in the business community, reprezenting a ey aspect in the development of the business, in the management of distributed equipments, in geomarketing and also in organizing the web space.

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Introduction*:*

The multitude of new concepts that appeared in recent years (e-management, neuro-management, neuro-marketing, neuroeconomics, e-business, e-commerce, e-marketing, geomreting etc) have generated, on their turn, more and more complex informational technologies as a result of the necesity of finding solutions so that the comercial message could get to the new type of consumer.

The Geographical Informatic Systems(GIS) are software solutions for presenting data with a spatial component. The GIS transpose data refering to clients, market and corporate data in informative maps that are easy to understand and use.

Starting from the real world of business and IT, *Geo-business* shows how should a business develop spatially with the aid of IT solutions that offer a unique advantage for fighting the competition on the market, for wining and eeping clients, for developing the business and for taing good decisions, for developing new products and services and for optimizing the work space. The IT solutions use databases on the basis of which are made two types of analysis:

public statistical data and *proprietary data* of the companies about the clients and the distribution network.

In general, the IT solutions offered to the Geo-business provide answers to questions like: Where are the clients located? How large is the are covered by the company? Where should a new shop, branch be opened? Where should the advertising campaign be directed in order to obtain the highest efficiency? Such informatic applications for selling and marketing use informaton about clients from databases, but there are also functions that are specific to this system:

-establishing a list of potential clients;
-eliminating overlapping and verifying the addresses;
-modeling motivation and behavioral propensities;
-market segmenting;
-the complete history of the clients;
-reporting – offering information about clients, sales, marketing activities and the market.

Geoinformatic analysis based on statistical data, maps and didgital databases help monitoring the spacial development in time of the clients, and the coverage area of the company.

1. Geomarketing through geoinformatic solutions

Geomarketing is a new technique for identifying where are the points where a company will have the maximum impact, representing a spacial segmenting of a market based on studying the characteristics of the comercial areas and of the population that lives in a certain area of the market, in order to ajust the asortment and the mechandising of the points of sales corresponding to the needs of the clients. This technique is based on processing information offered by classical management system based on databases of the companies and their marets, as well as the

systems of geographic informing that have data for characterizinf in details the studied areas. The geomarketing envisages three components: software, data and digital maps.
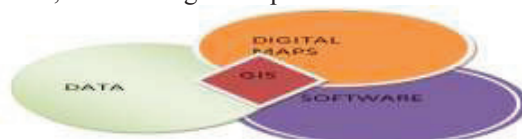
GISs refer to collecting, extracting all data in the territory and grouping them in models thar describe the way the market works, representing an important resource for an efficient marketing and business and a basis for the further strategic targeting.

Approapching a strategic global marketing which executes at the locl level creates new challanges in the analysis and the maketing decisions that the management has to take. Besides, the available resources, which are always limited and in many cases almost insufficient, require decisions of identification of the best opportunities, such as: How can be identified the areas that deserve a significant investment effort and those that have to be avoided? The demographical information often helps , but in many situations these are hard to access and moreover hard to corelate and process. The geo-informatic solutions for geomarketing focus on the following aspects:

The marketing on the Internet and the geo-marketing emphasise on the marketing that appeals to specific behaviors and interests, rather than an undefined marketing from geographical point of view. The online marketing as well as the classicl one segment the targets function of age, sex, geopraphical location and other general factors, including the activity and the geolocation of the websites. (eg. a company that sells bicycles can display of the websites having as topic motocylces and light motocycles, so that the audience of these websites becomes interested in the products of the company).

2. Geomarketing budgets management

The geomarketing budget management is usualy the most unpleasant activity for the marketing people, because creativity and the capacity of quantitative and qualitative analysis are key points, very demanded and a must.

The necesities of business require keeping under control the most concrete aspect of the correct way, that is the quantitative aspect of the budget. At the intersection of these two qualitative and quantitative needs stays a *business intelligence* solution that allows a rapid access to structured financial information on a project basis and other relevalt dimensions such as:

a) *Product position* compared to the competitors which means a good visibility ensured by a good position in the way of the potential clients.

b) *Following advertising* campaigns (the TV audience levels) in detail, but also in a multi-year perspective. The management og advertising campaigns supposed correlating some activities that depend on more departments, among which can be found the Information technologies(IT) department. Marketing is the one that manages the concept and then the advertising campaign, the press releases, broadcasting the TV spots, the location of advertising. Next in line come the sales and merchandising that execute the campaign at the points of sales level, with a certain logistic that ensure dsitributing the products in the promotion to the points of sale.

c) *Following the relationship* with the media, the articles that appeared supposes using multidimensional analysis instruments, because monitoring the press releases is for many agencies that offer PR services the biggest consumer of its main resource: the time of the PR team. The monitoring solutions, for the employees as well as for the company are represented by the instanteneous and in detail analysis possibilities (up to article and/or keyword level) or by searching and measuring on random criteria.

d) *The instanteneous access* to the current sales results of the company (achieved versus budgeted and/or planned) as well as coordinating the sales activity supposes IT capabilities for sales directors. Spread-sheet applications (MS Excel) represent a convenient solution for many of the necesities of a sales coordinator, but as the number and structural variety of the sales team increases, these analysis become more and more bulky.

3. The comparative management of budgets

The structural variety, the internal and external manipulation stimuli for large volumes of information come from various sources, internal and external, with the purpose of elaborating models of the market segments or of the

comercial behavior, often suppose comparative approaches and analysis for following the rapid expansion that rises problems such as:

a) ***Simulation and forseeing*** is ensures through IT for extrapolating and predicting results before the currently planed period is over, ensuring the sales management with additional means, of great value, for obtaining and overtaking planned results.

b) ***Complex analysis*** based on answers to quantitative market researches, including following the evolution in time. The results of the market analysis, especially the quantitative ones, can bring information of a new quality, besides the expertise of the research agents, if the structured information obtained are re-analysed by the client with Business Intelligence(BI) tools.

c) ***Following a comparative analysis*** of competitors, their adevertising movements on a daily basis, given that there is a strong correlation betwee the allocated budgets and the obtained results, and the careful monitoring of the activities of the competition is mandatory for BI solutions especially for ready-to-run applications.

d) ***Monitoring market prices***. The price is a key factor in any buying decision and the politics and te success can depend on the dynamics of the prices of an entity compared to those of the competitors. To achieve this a collecting and market prices analysis instrument is used, that can be in the same time flexible and intuitive, as for example diagrams based on tables.

4. Informatic solutions for e-management

Identifying development opportunities for businesses has moved in the virtual world. The management and marketing priciples in the real world find correspondent in *Cyberspace*. Thus the optimal sales locations suppose a good visibility. For achieving this goal one of the options is *localizing/hosting* on a proprietary server or using a service provider for hosting. For using service providers that host on a e-commerce platform, the interested companies in implementing a virtual shop can choose one of the following options:

-*Availability of a unique Web site*, when the client owns a site and can have a unique Uniform Resource Location (URL). In this case, the transactions are off-line, but there is also the possibility of using the electronic email (e-mail).

-The *existence of a unique page for presenting the virtual shop*, when the client holds a single virtual shop on a single server of the host. The presentation page of the virtual shop has a unique URL and databases.

-*Mall*, is the option corresponding to which the client has a couple of pages for presenting the virtual shops in a mall environment at the same URL address and databases.

-*Multihome*, localizes several presentation pages for virtual shops on a server, each having its own URL address, databases and forms necessary for transactions etc.

-On-site and server *product presentations* is characterized by the fact that the presentation pages for the virtual shops without databases are hosted in a multihome configuration with the transactions made on the host server of the trader. For transmitting information necessary for transactions in the same environment, but to separate servers of the host, creating these sites is achieved through a buy button.

-*Presenting off-site and server products for on-site transactions* which hosts presentation pages for virtual shops without databases, which are outside the service provider, the transactions being done by a remote server of the host. These sites have a buy button that allows the product and the transaction information to be sent to the remote server of the host.

The actual management is confronted with a consumer that is more and more demanding and better informed (in this respect the forums, blogs, Linked-In networks etc, become to be more and more influent) which prefer communicating through a keyboard to other ways of interraction and which has developed a behavior of ignoring the huge number of new marketing messages with which he is daily bombarded and that is why the creation of new strategies for multiplying the interaction channels is required, that would include a complete solution of Customer Relationship management (CRM) type, with a strong means of Marketing Automation. Finding the „right channel", the one through which maximum results can be obtained from a certain category of potential clients, is very important. Identifying the optimal interaction means is a continuous „fine tunning" process, achieved on the basis of the colected feedback. The cost of using different communication channels (telephone calls, e-mails, promotional offers, SMSs, agencies, direct email etc) and the way in which the current or potential client is answering, are important parameters of the efficiency of the management activity.

The consumers have different needs, and they have to be identified and analyzed before launching a new product. These needs are usually transposed over the requirements and objectives of the informatics systems that traditionally can be divided in two categories: *functional requirements*, that describe what should the system do, and *non-functional requirements*, that describe the restrictions, the constraints to which the system is subjected. For example, a functional requirement for a website is the fact that it has to have a well defined virtual identity. A non-functional requirement could be the fact that any visitor in the pages of the website should be capable of answering quickly to a couple of question, such as: Where should be the pages of the site? What information is on this page? How did I get here? Where can I go from here? How can I come back where I was a few minutes ago? How can I

give up? What is new or specific? The correct answers to these questions lead to a return to the website and to transforming the simple visitor in a client.

In the modern informational society, the marketing activities are strongly connected to the computing power, starting from the simple activity of communicating through e-mail, of research of the seondary resources of the market (electronic journals, reports of the marketing research companies etc) of consulting the practices specific to current activities documented in the Intranet or the Extranet of the organization (for example the advertising through Internet, promoting the sites of the organization through search engines, filling the reports about the daily activities, auditing the sales, etc). Thus for the target user that navigates on Internet the marketing messages get to him directly, and this approach is used for the marketing of searches, where the advertisings are adapted to the key-words introduced by the user for searching.

5. The characteristics of the e-location in the e-commerce

Studying the location of the comerce companies can be achieved also by adapting the principles of location of the traditional commerce units to the specificty of the electronic commerce.

The *principle of interception* refers to the potential of a location to attract users that move from one site to another. This process supposes locating on a frequently visited domain, popular for Internet surfers (for example yahoo.com). Intercepting is based on two distinct elements, a „source" zone, from which the consumers are coming and a „destination" zone to which they move, any point between these two elements having the potential of becoming an intercepting point. In this respect promotional techniques are used that are specific to the electronic commerce by publishing the web address on printed promotional materials (id cards, papers with header), subscribing to search engines, using afiliated programs, banner comapnies etc.

The *principle of accesibility* in the traditional commerce looks for eliminating from the way of the consumers of any obstacle that could limit the traffic and the sales in the shop. The accesibility on e-commerce refers exclusively to technical aspects related to navigation possibilities of any user no matter what browser it employs, the resolution or the dimensions of the screen, the settings and capacities of the computer and eye troubles.

The *principle of cumulative attraction* refers to attracting consumers as a consequence of influences exerted by oher commercial units located nearby the sales point. In the case of electronic commerce, the cumulative attraction can be done by grouping in a common site of a couple of sales points and using the variants of Mall and Multihome for implanting shops. The cumulative attraction is tightly connected to the principles of interception, a virtual shop benefiting from the attraction created by other shops, as a result of hiperlins from zones with intense traffic.

The *principle of compatibility* refers to the degree in which two entities can interchange clients, as a result of common factors such as the complementarity of the traded idems or of the prices practiced and of the competitivity of the points of sale of the same type. In the electronic commerce ths principle has in mind the compatibility of the suports and the technical systems used by the partnets at virtual transactions (seller – buyer).

Localized targeting (in the Internet marketing) and the geomarketing are methods for determining a geolocation (physical location) of visitors of a webside with the aid of the software for geolocation, and providing the content to visitors depending of their geographical location (country, region, state, city, postal code, organization, IP address, ISP, other criteria, as is done for example by the site FedEx.com). In the e-commerce the layout refers to design, to the formating of the web page, a process that unifies elements of content, graphic, links, navigation system and media elements, in whose design it is recommended to focus on the following principles:

-establishing the *theme* of the site and designing the entry page;

-*conveying marketing messages representativ*e for the company, products and their image, with an emphasis on *professionalism, ethics, credibility, quality, emphasizing the advantages of the offer – saving time, money and getting bonuses* etc.

-*personalizing* the site with *logos* and *graphical* elements specific to the choose theme, keeping in mind not to overload the site, which could annoy the user and stress his eyes;

-*maintaining the same style* of presentation in all pages of the site, of a representative color for the traded brand or a color that would be considered pleasant by the user;

-*avoidance overloading* with promotional messages, the optimum ratio between information content and advertising being 75/25;

-*emphasizing* the site, together with the hyperlinks with *words* written in small letters that provide information for facilitating the navigation;

-using a *pyramidal structure* of the contents: providing the principal aspects at the beginning and developing them;

-*organizing the contents* in well delimited sections.

Taking into account the formatting of the web page, there is a strong relation of interdependence in the electronic commerce between design and layout.

One can choose from the following types of design: *simple design*, not personalized, consisting in free graphical elements; *classical design* – personalized, specific to the beneficiary image and for whose design it is necessary to use specific technologies; *special design* – created by using technologies like Macromedia Flash, Corel Draw, Adobe etc.

The presentation of the products in the electronic commerce sites can be achieved in the following ways:
a) Developing a site in which are presented the products, without elaborating a large catalog, managed through a *database*, a situation in which *transactions* will have to be done *offline*.
b) supposed presenting a catalog of products/services including technical and commercial descriptions , for which is necessary an indexing of the catalogs of products and providing them with graphical elements (animated graphics, sounds and multimedia spots), as well as establishing a Databases Management System (DBMS) which will manage the online or offline transactions. The most usual form of exposing products is on a simple HTML (XML) page. When the number of products and the frequency of purchases is high, more complex solutions are needed, which could be:
-*JavaScript* or CGI (freeware or shareware), cheap solution, less dynamic, harder to install and maintain from the point of view of updates, with limited possibilities of displaying the products;
-*special packages* of application offered by providers of web hosting that can provide complex reports for the follow up of the clients.

6. Extending the CIG solutions
The GIS business services can be used not only for geomarketing or in a direct advertising campaign, but it also completes the business plans with cartographic material and are used for controlling and the development of the sales and distribution network, of the chans of shops and the optimization of the sales forces. The applicability of the GIS solutions can be also noted in:
-localization dynamic services (LDS – asisence in choosing the travel routes, following transporter routes and the safety of automobiles);
-insurances (during floods). Thus, of the majority of romanians would have an insurance for their goods, he insurance companies would use a specialized GIS for monitoring floods and for evaluating and adapting the payments of compensation of losses;
-financial (studies of coverage area for banking companies, for placing the ATMs, for opening new branches);
-geological – offering scientists a strong nalysis tool of the terrestrial environment;
-communications – becoming almost a routine extension of GIS and the web technologies in the mobile media and in various other domains such as metheorology, military, agriculture, urban planning or ecology etc.

Conclusions:
1.Geoinformatic solutions are offering practical information specific to each market (for example in the farmaceutics, medicare, real estate etc) as well as in multidimensional analysis.
2.Integration of GIS of a company can bring a multitude of beneficies that can lead to the development of a competitive strategy in the efficient and practical analysis of data.
3.The results of GIS integration in business generates new perspectives for strategic decisions, market niches, strategic and operational marketing and in the activities of development and sales.

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