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ΕΝΩΣΗ ΕΥΡΩΠΑΪΚΟ
ΤΑΜΕΙΟ



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ΕΡΓΟ

«Ακρωνύμιο»: RETOUR

Τίτλος Έργου: Θεραπευτικός Τουρισμός στην Θεσσαλία (Remedial and
Rehabilitation Tourism in Thessaly)

Κωδικός Έργου: 1289

**ΣΥΝΟΨΗ ΕΚΘΕΣΗΣ ΠΡΟΟΔΟΥ ΦΥΣΙΚΟΥ
ΑΝΤΙΚΕΙΜΕΝΟΥ**

(Αγγλική Έκδοση)

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INTRODUCTION AND BASIC CONCEPTS

Remedial and Rehabilitation Tourism is currently limited to initiatives of hotel units and local communities who mainly offer accommodation in curative springs areas. There is a noted development of health Tourism services worldwide, since there is a substantial part of the generic population that has unique needs and may benefit from added value therapeutic services.

We design, develop and evaluate a prototype system that is based on the following two principles:

- the natural beauty can serve as a touristic attraction on its own merit,
- patient-specific exercise programs (i.e. for patients with cardiovascular disease, nephropathy, e.t.c.) serve as a cure.

The aim of our efforts is to design and develop a remedial and rehabilitation tourism platform, which will attract patients with specific needs and will be exercise focused. For example, a patient with chronic kidney disease who is under haemodialysis treatment is usually restrained because of the condition and may not be able to design an effective holiday plan. Through our system, that same patient may be able to use a smart web-based e-tourism platform to design his/her holidays. At the same time, a patient-centered assessment and exercise program will be offered during that period in order to improve his/her physical conditions that will lead to client satisfaction and revisit. In the core of our effort is the design of the e-tourism platform and exercise programs as well as for the service certification of third parties (i.e hotels, restaurants, taxi, e.t.c.).

Health tourism ('therapeutic tourism') has established itself as a form of holidays in conjunction with the provision of a wider range of medical services and wellness.

The main aspects of health tourism can be distinguished in

- 'medical tourism' which is addressed to tourists - patients that usually make use of specialized medical monitoring and treatment services, and
- 'wellness tourism' that appeals to tourists who wish to enrich their holiday with services improving or maintaining their health (spa, water-therapy, hydrotherapy).

There is significant variation in terms of therapeutic tourism growth by country. For example, a Harvard study [1] stated that 'therapeutic tourism' is promoted more in the UK than in the United States. In fact, patients initially were allowed to use only their country's hospitals and medical facilities to heal, these rules recently changed and were made more flexible. Patients are now allowed to use medical facilities also in other European countries. The most common treatments seem to be cardiovascular problems, issues related to the bones, such as hip replacements and general issues associated with age.

In summary, in this work we deal with the following issues:

1. Description and overview of the concept of Therapeutic Tourism
2. Study and analysis tools used for the best possible implementation
3. Design and implementation of a standard platform for e-Tourism and its growth in Thessaly, Greece.

RELATED EFFORTS AND STATE OF THE ART

Although relatively unknown, remedial and rehabilitation tourism is one of the tourism industry's more advanced and recent segments, which has already succeeded in attracting an increased interest from various scientific and commercial sectors [2]. This success is partly due to the fact that the tourist industry has realised that individuals who suffer from different diseases not only require special arrangements for safe and enjoyable travelling, but that these individuals can also be benefited from tailor-made services aiming at improving their physical/medical condition, psychological status, emotional well-being, as well as their social prominence¹. However, the concept of travelling for remedial and rehabilitation purposes is known

since ancient years, with the Hippocrates' island of Kos and the Dead Sea being among the most popular destinations. These days, France, Cyprus², Turkey³ and Israel⁴ constitute successful examples of remedial and rehabilitation tourism in the Mediterranean region, with Greece having no such provisions in an organised manner attractive to international audiences. This is despite the fact that Greece has an excellent climate most

of the year, magnificent landscapes, unique archaeological venues and internationally established medical and scientific personnel, especially in the area of exercise and health which is regarded as the most valuable and cost-effective approach to health re-estatement. Most significantly, none of the existing remedial and rehabilitation tourism programs incorporates purpose designed physical exercise regimens for combating health-related issues.

Greece, who serves as a pilot case in our study, is primarily known for its glorious past and for its beautiful islands, which attract almost 90% of the visitors who arrive in the country every year. However, there are regions, which are less advertised but excellent places for one to visit. The region of Thessaly is a good example since it offers a unique natural beauty with a great combination of landscapes which always electrify overseas visitors; great beaches in Magnesia and Larissa, the Lake of Plastira, the natural springs of Smokovo, the monasteries in Meteora, many historical and worth-visiting mountains, prehistorical (archaeological) venues, rich museums, listed areas, a wealth of local delicacies, etc. In addition, Thessaly hosts private clinics, a university with its university hospital, and research establishments which are all willing to collaborate and transform the idea of remedial and rehabilitation tourism in Thessaly into reality. The target group in our pilot study principally includes renal patients, individuals with cardiometabolic and musculoskeletal disorders from both Greece and abroad.

This above are achieved through the following Main Scientific and Technological Objectives:

- Objective A: built a user-friendly e-tourism platform that effectively accommodates the project's requirements.
- Objective B: develop exercise programs specific for the needs of each group of patients aiming at improving their physical/medical condition.

- Objective C: organise and provide service certification of third parties (i.e. hotels, restaurants, taxi, haemodialysis centres, e.t.c.).
- Objective D: Test the platform in real life experiments
- Objective E: Perform an independent evaluation: experts from Greece and abroad look for weak elements in the e-tourism platform.

Certification is not commonly required in regular tourism. Nevertheless, each provider of medicine - travel services, who wishes a share of the therapeutic tourism market, has to be certified by international certification organizations (two of the most well-known organizations are JCI and TEMOS).

- Certification for health providers covers: Quality Assurance, proof of high quality services, Physical Security and Infrastructure management according to international quality standards (i.e. ISO 9001 standards), Safe Management of Medical Information and Medical Privacy, Evidence of clinical effectiveness and many others.
- Certification for hotels covers: Consideration of high level of cooperation with medical providers, Respect the principles of accessibility for persons with special needs and disabilities, Import Process (check in), Crisis management etc.

ELECTRONIC SERVICES IN THERAPEUTIC TOURISM INFORMATION SYSTEMS

A remedial and rehabilitation e-tourism platform should include or be interfaced with the following components:

Computer Reservation Systems (CRS) that support travel transactions conducted electronically. CRSs are databases that enable tourism businesses to easily and quickly manage their data and make them available to their partners. Airlines contributed to the development of CRS and hotels and other tourist services followed. CRSs also support online ticketing. The consumer via the CRS can make reservations quickly and reliably, while ensuring easy access to large volumes of information.

Global Distribution Systems (GDS) are essentially the middleman between the travel agency and tourism businesses (hotels, airline companies, etc.). Their significance lies in the fact that these systems ensure reservations in minimum time and accelerate the service time, while they are responsible for the best possible processing of travel transactions. The consumer often has direct access to the GDS, using new technologies such as mobile phones and the web. These features have resulted in bypassing intermediaries. Amadeus, Galileo International, Sabre and Worldspan are examples of GDS.

Geographic Information System (GIS) manages, stores and presents information related to a geographical destination. The online geographic information systems support tourism platforms for gathering tourism

information on the natural environment, conditions and the position of a destination. They are developing a system based on Internet access services that allow tourists to utilize the map [2]. Each visitor has the opportunity to focus in a location that she is interested to visit and gain access to useful information such as the distance of attractions, restaurants, hotels, or the path to be followed to reach them. This specific application of GIS, has advantages for tourism authorities. It provides useful information on tourist destinations, visualization of tourist sites through digital images or video, interactive maps to serve tourists, and the ability to design a route, find accommodation and locate landmarks.

Mobile and wireless technology applications (m-tourism) the feature of mobile activities, that "anyone can ask for help at any time and in any place, as long as he/she has access to the internet", will help develop online e-tourism platforms. With the popularization of intelligent mobile devices, a revolution in lifestyle is taking place and therefore the mobile consulting applications attract providers of tourist services. It has an obvious importance when it comes to crisis or other health related emergencies that are commonly involved in rehabilitation and remedial tourism [6].

PLATFORM ARCHITECTURE AND PROTOTYPE IMPLEMENTATION

Our aim is the creation of a platform for therapeutic tourism in Greece focused on specific groups of patients in which besides other known services the role of exercise will be starring. For example, a kidney patient in a dialysis program is trapped and has to make a series of actions in order to go on vacation. Through the program, the patient can use a smart web e-tourism platform to make customized tourist choices in Greece.

The first key element of our project is the portal. In our portal, among other key facts, we provide information about the work and the services offered, various news regarding the development and expansion of therapeutic tourism in Greece, an illustrative video which presents some examples of using the platform and contact information for platform administrators for any questions on the use. The portal must be attached to a Content Management System (CMS), to allow the publication, editing and modification of content, and maintenance through a central control panel.

Inside this portal various services that help the user to make the best medical and travel choice are incorporated, always based on the needs and financial capabilities. Such services are the online booking of hotels and airline tickets, search of hospitals, clinics, rehabilitation centers, food suitable for diabetics and many other services offered in the area of interest. Our platform is essentially responsible for the

dynamic composition of such travel packages and additionally it provides supportive assistance to any problem or question the user has.

Platform administrators are responsible for the best possible management of content, and have full control over the services offered. The platform users are able to search and buy the right services that fit their needs. Also very important are the functionalities of comments, score and proposals on the part of users for each service offered by the platform. This allows the users to have the full picture of the services offered and know whether the description of the services offered by providers reflect reality. It is worth to note that tourist and medical services to be offered are grouped and categorized based on user attributes. Users of the platform are essentially of two kinds: (1) Providers of travel and medical services and 2) ravelers – patients

Equally important is the design and implementation of a mobile application [4] which are linked to the web portal of our system and mainly contain information on bookings made and travel packages created and purchased by each user. In addition our mobile app are able to create personalized tourist / medical recommendations, depending on preferences, needs, and the active state of the user [5]. The principle governing the creation of these proposals, including the input of the system (in terms of medical and tourist services registered in our platform), user preference model, personalized recommendations [3] for each individual, and a storage system for recording user behavior and be able to predict their preferences based on their history, which is provided as additional input to the application.

Furthermore, the current environment of the user is provided as input to the mobile system through a specific mobile device equipped with sensors, and demographics of the area the user is located. The user preference model is multidimensional and based on a Bayesian network. The greatest potential of the Bayesian network it is proposed travel pack for the user.

Another essential element of the platform is the support of a geographic information system (GIS). GIS is a software system designed for the import, storage, processing, retrieval, analysis and production of geographic data, i.e. data that fit into known points on the Earth's surface. The GIS are valuable tools for tourist services, because the products offered in this type of market are usually parts that can be found on a map, including accommodation, restaurants, hospitals, clinics etc. In our geographical system, providers can declare the travel / medical service in the area of the map located and report what they offer to travelers who would like to use it. On the other hand, ordinary users will be able to see the services that have been declared in the region they want to visit.

Finally there exist a system of common questions and answers (Q&A), where the user can send his\her question, related to the therapeutic tourism in Greece, and expect portal's personel or other users of the

platform to respond. Then, according to a rating system, the first answer shown will be the best and thus more relevant response from all those given (i.e. the one that has received the most positive votes from the users of the system).

In Figure 1 we see the architecture of the system, including all of its components as described above. The specific technologies used for the implementation of our system are following: HTML, CSS, JQuery, Javascript, XML, PHP, MySql. The portal and the Q&A system have been implemented through the Wordpress CMS system, while the implementation of the GIS system is based on Google Maps API.

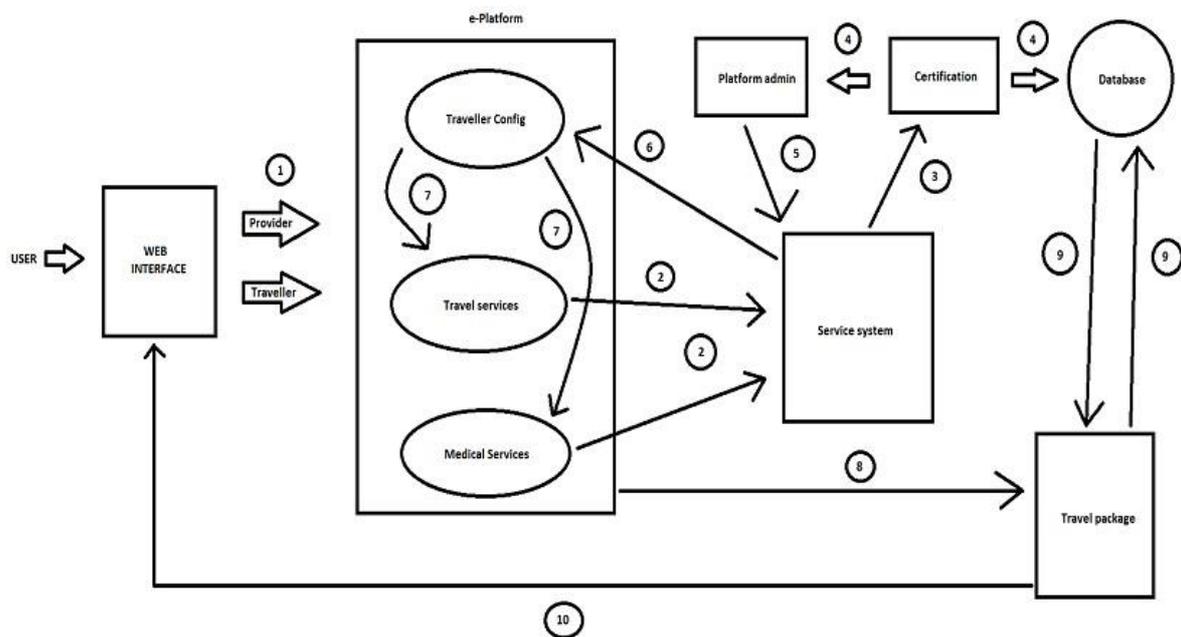


Figure 1 - Overall system architecture

RETOUR SYSTEM IN ACTION

In the following Figures 2-6 we briefly present elements of the functionality of our system whose public beta version is available at <http://retour.e-ce.uth.gr/>.

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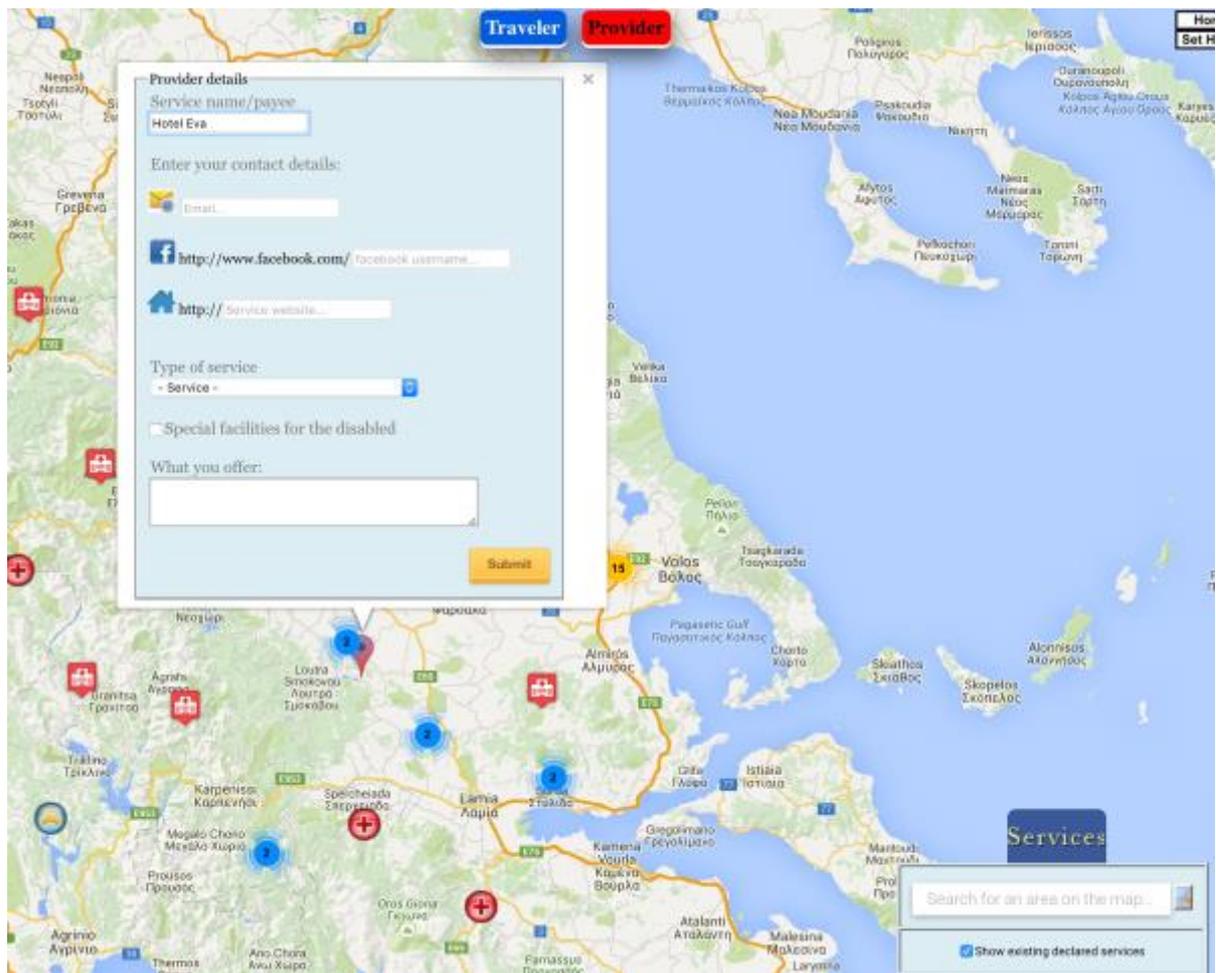


Figure 2 – traveler's view point of the system

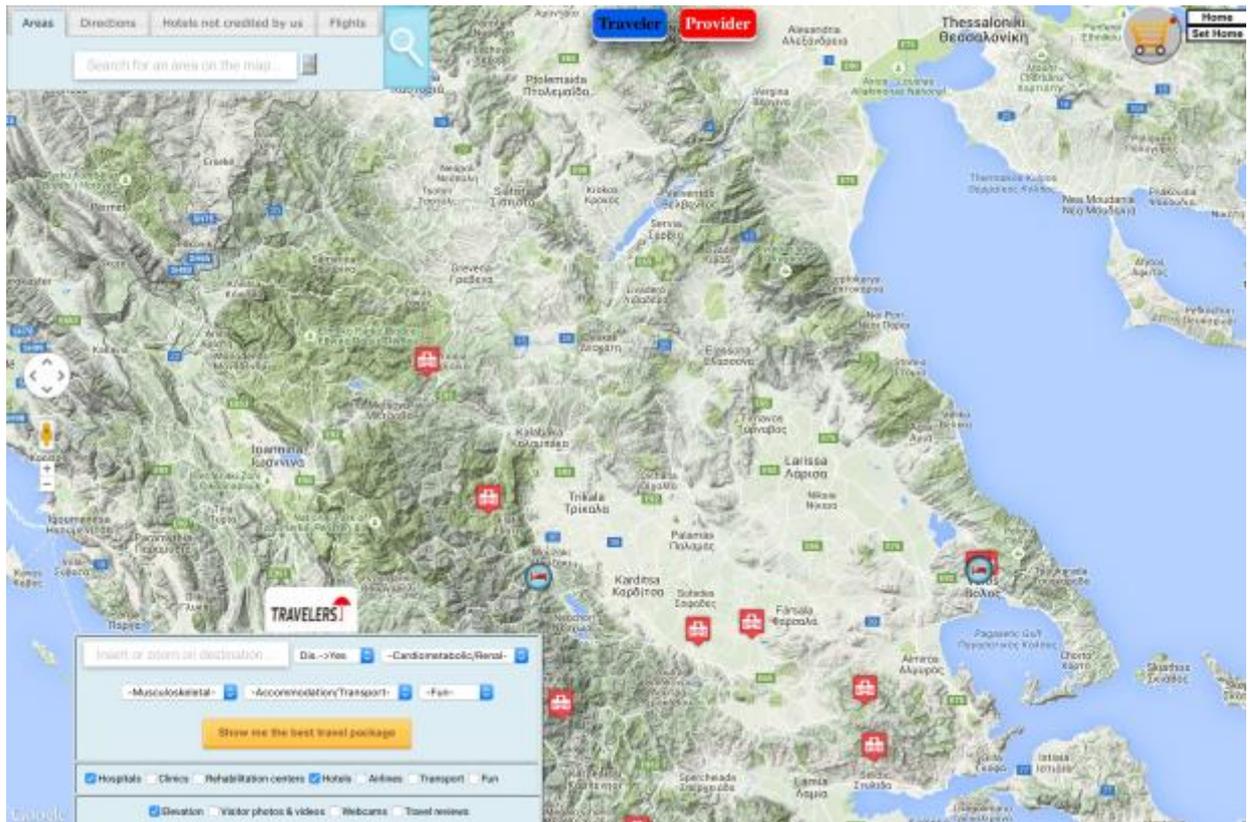


Figure 3 - provider's view point of the system

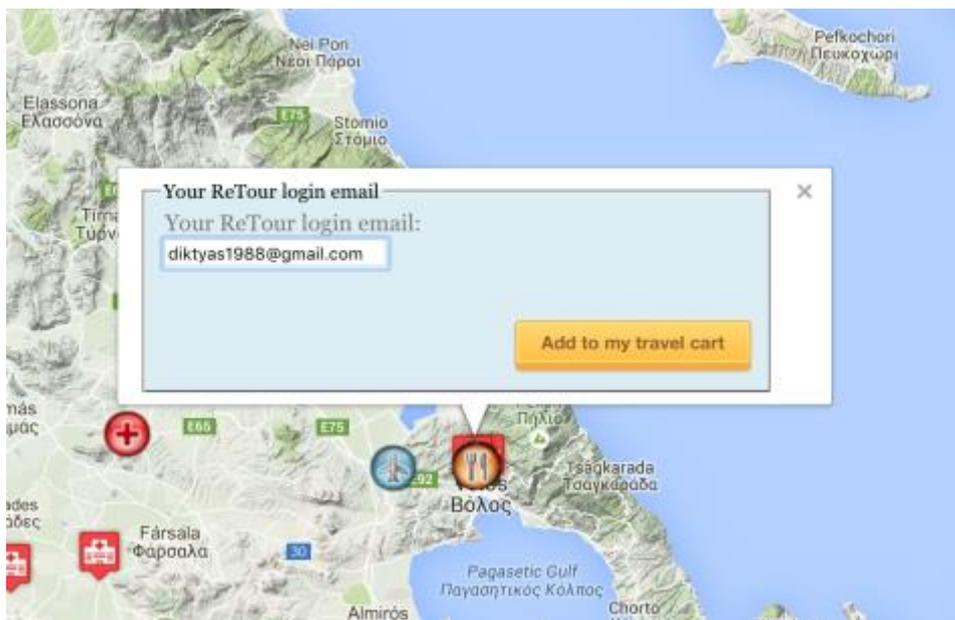


Figure 4 - a traveler logs in to add a service to her package

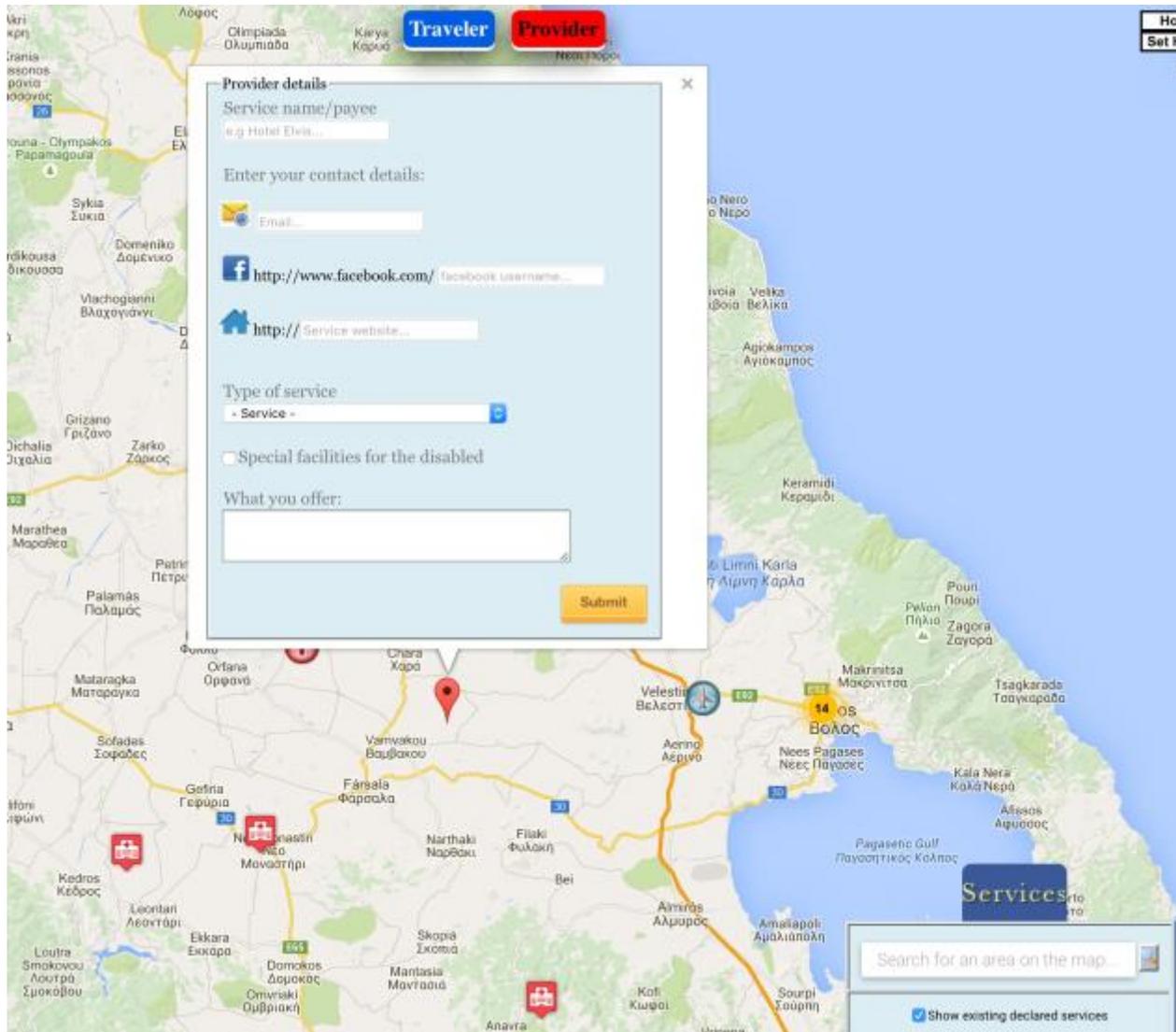


Figure 5 - a provider offers a service