# ENHANCEMENT OF BUSINESS INFORMATION AVAILABILITY. THE CASE OF LATVIA

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## Abstract

Up-to-date information is one of the main business resources for companies. This has brought about the creation of a number of government supported bodies assisting businesses in their legal operation. Nevertheless, the lack of information is still recognized as the key problem for businesses. To minimize the gap in B2G communication, the European Union (EU) member states, in cooperation with the European Commission, have created so called Points of Single Contacts (PSCs) – portals providing access to exhaustive information on existing administrative requirements for businesses. Unfortunately, the quality of the mentioned PSCs differs considerably from country to country. In the paper with a help of Classification and Regression Decision Tree method there is provided the evaluation of the efficiency of the Latvian PSC. Based on the analysis of the current flaws of the Latvian PSC, an improved model of the PSC was elaborated. The efficiency of the current and the improved PSC is determined with the help of entropy coefficient.

*Keywords*: information, points of single contact, efficiency.

## Introduction

Information plays a crucial role for a successful operation of a business. Nowadays, the amount of available information on the Internet is enormous, which makes it more complicated to select the necessary for a business data. This has brought about the creation of a number of various agencies, chambers, associations and other bodies, which help to solve the problems of companies: institutions, facilitating activities in particular sphere, for example, construction association, structures, assisting entrepreneurship in a certain region, e.g. representatives of states and municipalities, or standing up the interests of companies with common features – small and medium-sized business confederation. But still, on the Internet numerous web sites provide information of different quality – usable and useless, cutting-edge and obsolete. Consequently, the vagueness stuns the users; they are not ready to waste time, money and other resources for getting inappropriate information. Even more dramatic situation is with cross-border entrepreneurship. As a result, companies mean the lack of information as a problem number one for starting business in a foreign or even a local market (SIA Analītisko pētījumu un stratēģiju laboratorija, 2008). Therewith, there is a logical needed for the reliable centralised information system, and government should take the helm for its creation.

The goal of the present paper is to provide a solution for enhancing business information availability by optimization of already existing B2G communication supporting tools.

To foster the development of one of the most bureaucracy-tied business fields in the European Union (EU) – the services sector, the European Commission has initiated and the EU member states have adopted so called the Services directive (123/2006/EC). The Services Directive is designed to approach the EU Single market imperfections and rid of discriminatory practices in free movement of services. In-between all other benefits, the Services directive requires member states to create web-based centralised business supporting systems – Points of Single Contacts (PSCs), thereby ensuring an access to information on the requirements for business performance in a certain member state. As the Directive does not determine many nuances, it is absolutely up to each member state to decide how the PSCs will be organised. There are just few obligatory basic criteria for a PSC: it should ensure an access through a single gate to exhaustive information on the requirements for service provision applicable in a selected member state; in PSC any service provider should be able to easily complete all procedures and formalities necessary for access to and exercise of his activities by electronic means, etc. (European Communities, 2006). The created systems could be designed not only for the services sector, but for any information related to entrepreneurship.

By the end of 2009, all the EU member states have provided their solutions of the PSCs; however, not all of them are equally efficient and satisfy the need of businesses for relevant information. Creation of an effective model of PSC plays a crucial role in ensuring a fertile business environment for companies. Therewith, it is highly important to make the PSCs work properly not only de jure, but also in practice.

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**Analysis of the Latvian model of the PSC**

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In the article the efficiency of the Latvian PSC – its ability to help entrepreneurs to commence and exercise a certain business activity – have been analysed, as well as identifying the main drawbacks of the portal.

The Latvian PSC has been created on the basis of already existing society-oriented portal www.latvia.lv, which has been fitted to the needs of the Services directive.

For the analysis the Latvian version of the Portal was chosen, as the English version is currently under elaboration and does not have all the information covered by the Latvian version.

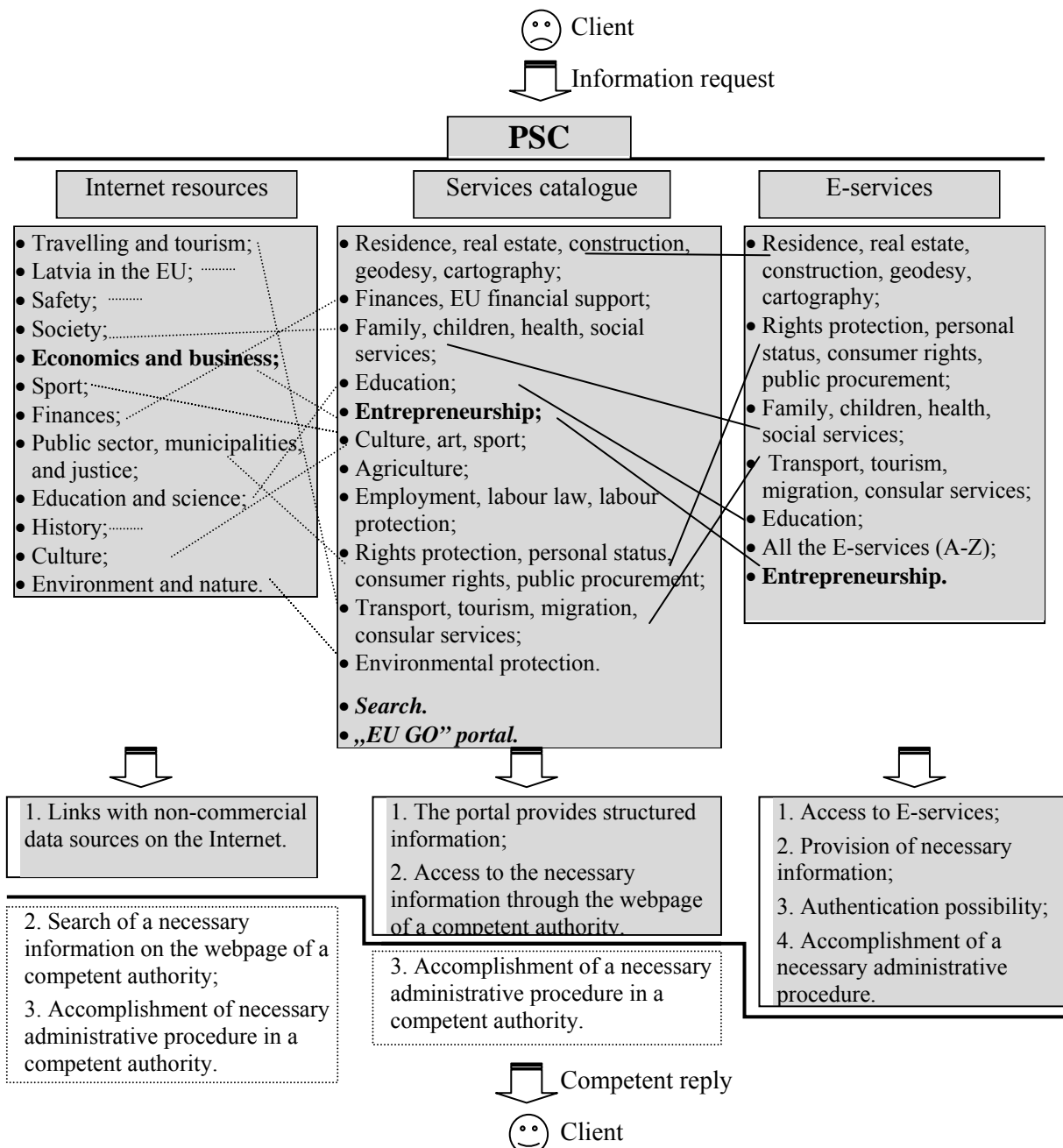Fig.1. demonstrates the current operative model of the Latvian PSC portal www.latvija.lv.



**Figure 1.** The operational model of the current Latvian PSC portal

Fig.1 shows, that when entering the www.latvija.lv portal, its visitor has the three possibilities for further activities: Internet resources, Services catalogue and E-services. Each of the divisions offers to continue the search of the necessary information according to the provided themes. So, the Internet resources

direction invites you to continue with the following topics: travelling and tourism, Latvia in the EU, safety, society, economics and business**,** **s**port, finances, etc. Each of the topics provides a number of links to the related non-commercial data sources on the Internet. Through the link a user goes to the main page of an accordant competent authority, where he or she continues to manually search for the necessary information. Finally, a user contacts the competent authority to accomplish a necessary administrative procedure.

The Services catalogue has a wider basic menu, offering the following topics: Residence, real estate, construction, geodesy, cartography; finances, EU financial support, Family, children, health, social services; Education; Entrepreneurship, etc., as well as providing a possibility to use a search function and to visit the PSC of other EU member states through the " *EU GO" portal.* In this case the Latvian PSC portal provides structured information on administrative procedures (requirements, fee, legislation, terms, forms, contacts, etc.), as well as ensuring direct access to the necessary information from the PSC portal to a webpage of a competent body. It is here that the principle of the single gate for information availability is applied, and, a person has only to fulfil the necessary administrative procedure in a competent authority.

The E-services division provides its visitors the possibility to continue with the following themes: Residence, real estate, construction, geodesy, cartography; Rights protection, personal status, consumer rights, public procurement; Family, children, health, social services; Transport, tourism, migration, consular services; Education; All the E-services (A-Z); Entrepreneurship**.** With the help of the portal its users can access e-services or get the necessary information, have an authentication possibility, as well as being able to electronically accomplish a necessary administrative procedure without visual leaving of the portal.

However, the presented model of the PSC has a range of drawbacks. The author has summarised the main ones:

1.  The menus of all the three divisions of the portal are not synchronized. Some of the topics of the "Internet resources" and "Services catalogue" divisions have the same or similar meanings, nevertheless, the formulation of the topics differ (for example, Fig.1 demonstrates, that the "Travelling and tourism" topic of the first column is formulated as "Transport, tourism, migration, consular services" in the second column, or "Society" could find its analogy with the "Family, children, health, social services", but "Economics and business" with "Entrepreneurship", etc.).
2.  The order of the topics in the menus of all the three divisions of the PSC differs as well. Even in the case, when the topics of the third division are absolutely equal with the topics of the second division, their sequence does not coincide.
3.  The three divisions of the PSC do not have the principle peculiarity for a user of a portal. If a PSC visitor is interested in particular information, he or she would rather be sure in which division to continue the search.
4.  The gate to the PSCs of the other EU member states is "hidden" under the Services catalogue division, which basically includes information on national requirements, etc.

The Classification and Regression Decision Tree (CART) method was used in evaluating the effectiveness of the PSC, as it is a widely used method for data mining, evaluating and providing solutions for classification and regression tasks. For the analysis a real-life business situation was used: a potential entrepreneur plans to provide tourism services and is looking for the current administrative requirements for the mentioned business sphere in Latvia. The EU is one of the most attractive places for tourists in the world – about 40% of tourists visit Europe (Eiropas Savienības Reģionu Komiteja, 2010), so the tourism sector is particularly lucrative for entrepreneurship. The decision tree demonstrates the set of possible actions (steps) during the searching process of a potential entrepreneur.

The related data on decisions during the searching process comes in records of the form:

$$(x,Y) = (x_1, x_2, x_3,...,x_n, Y) \qquad (1),$$

Where:

Y – the dependent target variable (the necessary information for a tourism business commence);

x – the necessary steps x1, x2, x3 etc. taken to achieve the goal Y.

The decision tree demonstrates the set of decision nodes or steps (represented by squares) and chance nodes (represented by circles) (see Fig.2). The taken decisions (x) could lead or lead not to the desired goal (Y) (Berry & Browne, 2006).

When entering the Latvian PSC portal, a visitor is offered the menu of the three divisions: Internet resources (1), Services catalogue (2) and E-services (3). As none of the titles of the three divisions suggests the desirable direction, there is a similar probability for continuing with each of them.
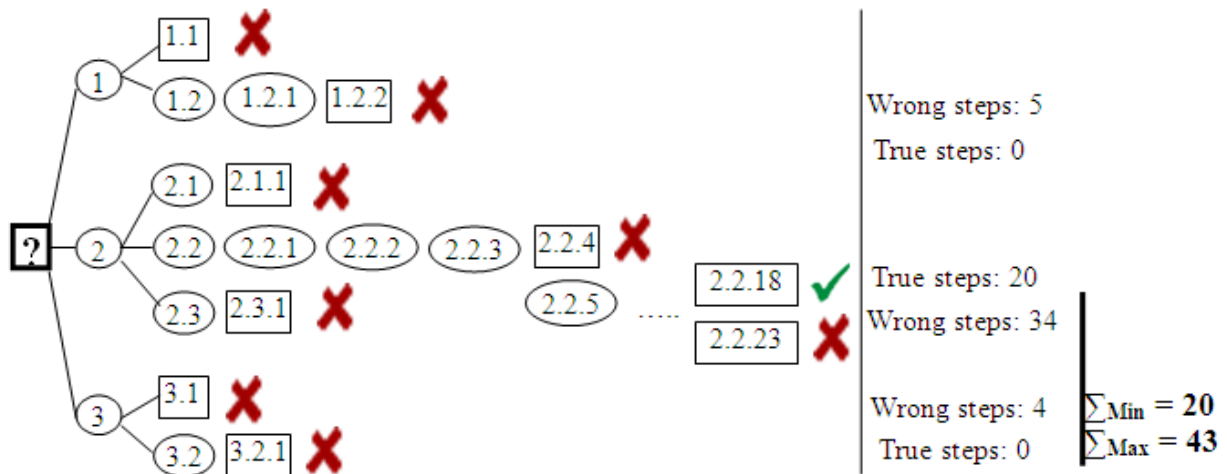


**Figure 2.** The decision tree of a potential tourism services provider. The current model.

In opting for the first direction, a visitor finds out that one of the topics offered by the Internet resources is "Travelling and tourism" (1.1), however there is no further information on starting the tourism business and corresponding requirements.

Another topic offered by the Internet resources, which theoretically could contain the necessary information, is "Economics and Business" (1.2). Selecting the topic "Entrepreneurship" (1.2.1), the visitor has a possibility to proceed with "Authorisations provided by governmental institutions" (1.2.2). Unfortunately, the portal contains just a link to external resources, so the visitor does not get the required information within the portal, and has to continue searching on other web pages.

The Services catalogue offers its visitors to use the Search function (2.1). Unfortunately, the portal finds no results for the word "tourism" (2.1.1).

Therewith, the visitor has to continue with the manual search (2.2), selecting from the menu "Entrepreneurship" (2.2.1), going on with "authorisations" (2.2.2), the alphabetical catalogue (2.2.3), checking for the word "tourism" at the "T" page (2.2.4), getting not a positive result. As information in the alphabetical catalogue (2.2.5) is not systemized and each of the topics has a free form (the title can begin either from a name of a business sphere, or a name of an administrative procedure), it is impossible to predict which of the available 18 pages contains the necessary information. Consequently, the visitor has to look through all the offered pages, containing 209 different topics. The desired information finds itself at the 13 page: "Registration of tourist agents and tourist operators in a database". In the optimistic scenario, the visitor follows all the pages one after another and notices the interested topic at the 13.page (2.2.18), in the pessimistic scenario the visitor checks all the 18 pages (2.2.23).

The third possibility provided by the Services catalogue is to select from a list of topics "Transport, tourism, migration, consular services" (2.3), and proceed with "tourism services" (2.3.1); however there is no information on starting the tourism business.

The E-services division invites the visitor to go on with "Transport, tourism, migration, consular services" (3.1), however the link does not contain the necessary information. Therewith, the visitor can select the "Entrepreneurship" topic (3.2), nevertheless, there is no desired information among the further offered 4 topics (3.2.1).

To numerically evaluate the functionality of the PSC in the described above situation, it is possible to calculate entropy criteria. The entropy demonstrates the amount of supererogatory elements hindering the achievement of a target in a decision tree during searching process. The entropy could be defined as a sum of suspended logarithmic meanings for the each decision class $i$, and could be calculated with a help of the following formula:

$$Entropy(Y) = \sum_{i=1}^{n} x_{i-} \log_2 x_{i+} \quad (2),$$

Where:

Entropy (Y) – is the entropy criteria of a decision tree;

$x_{i-}$ - the number of wrong decisions in a class i;

$y_{i+}$ - the number of true decisions in a class i;

n – number of decision classes (Шампандар, 2007; BaseGroup Labs, 2010).

A decision tree has the most optimal structure if entropy is equal to 0.  In case it is possible to take the right decision following descriptions (titles) of branches of the decision tree. If the formulation of the titles of branches could be misunderstand in relation 50% / 50%, the entropy is equal to 1. However, if the decision tree invites its visitors to guess the right direction even more often, the entropy coefficient exceeds 1.

The entropy coefficient for the Latvian model of the PSC portal could be calculated in the following way:

$$Entropy(Y) = 5 * \log_2 0 + 14 * \log_2 20 + 4 * \log_2 0 = 27.21$$

The value 27.21 demonstrates a significant flaw of the portal, and a considerable risk, that a visitor of the portal will not succeed in searching the necessary information. The high entropy criteria shows, that the Latvian PSC does not fulfil its task to simplify the life of entrepreneurs, and there is a particular necessity for its improvement.

## Efficiency enhancement model of the Latvian PSC

As a result of thorough analysis of the drawbacks of the Latvian PSC, the model of an advanced PSC was elaborated, fixing the current flaws (see Fig.3).

For the advanced model of the Latvian PSC, first of all, the good practice of the Spanish social portal was applied (www.060.es), which initially was planned as the Spanish PSC for the needs of the Services Directive (later the portal was used as a basis for a newly created Spanish PSC). So, all the information in the PSC was split into the two main divisions: for the purposes of private and legal bodies.

Secondly, the search function has been created in the both divisions of the PSC – for private and legal persons. People mostly prefer to use the search function, rather than manually searching for a required data.

Thirdly, the menu contains just the most relevant topics, offering to continue the search after choosing an appropriate title. It makes it much easier to find the necessary information if a menu has a transparent and logical structure. Next, the sectors catalogue is organized according to the NACE classification (classification of Economic Activities in the European Community), which minimizes the risk of misunderstanding the formulation of a title.

Moreover, if visitors of a portal are interested in information available trough PSCs of other EU member states, they are offered not to waste time by surfing in local e-resources, but to directly move to the specialized EUGO portal.

In addition, the PSC portal was supplemented also with information on institutions, which can provide general practical information or to ensure professional juridical consultations. Some of the mentioned assistance is a paid service, but some is free of charge – visitors of the portal have all the contacts and are free to decide which kind of assistance (if any) to request. Here is also applied the good practice of the United Kingdom, when businesses are offered to pay some commission and to have a qualitative public service, in case if a certain activity is not financed from the governmental budget.
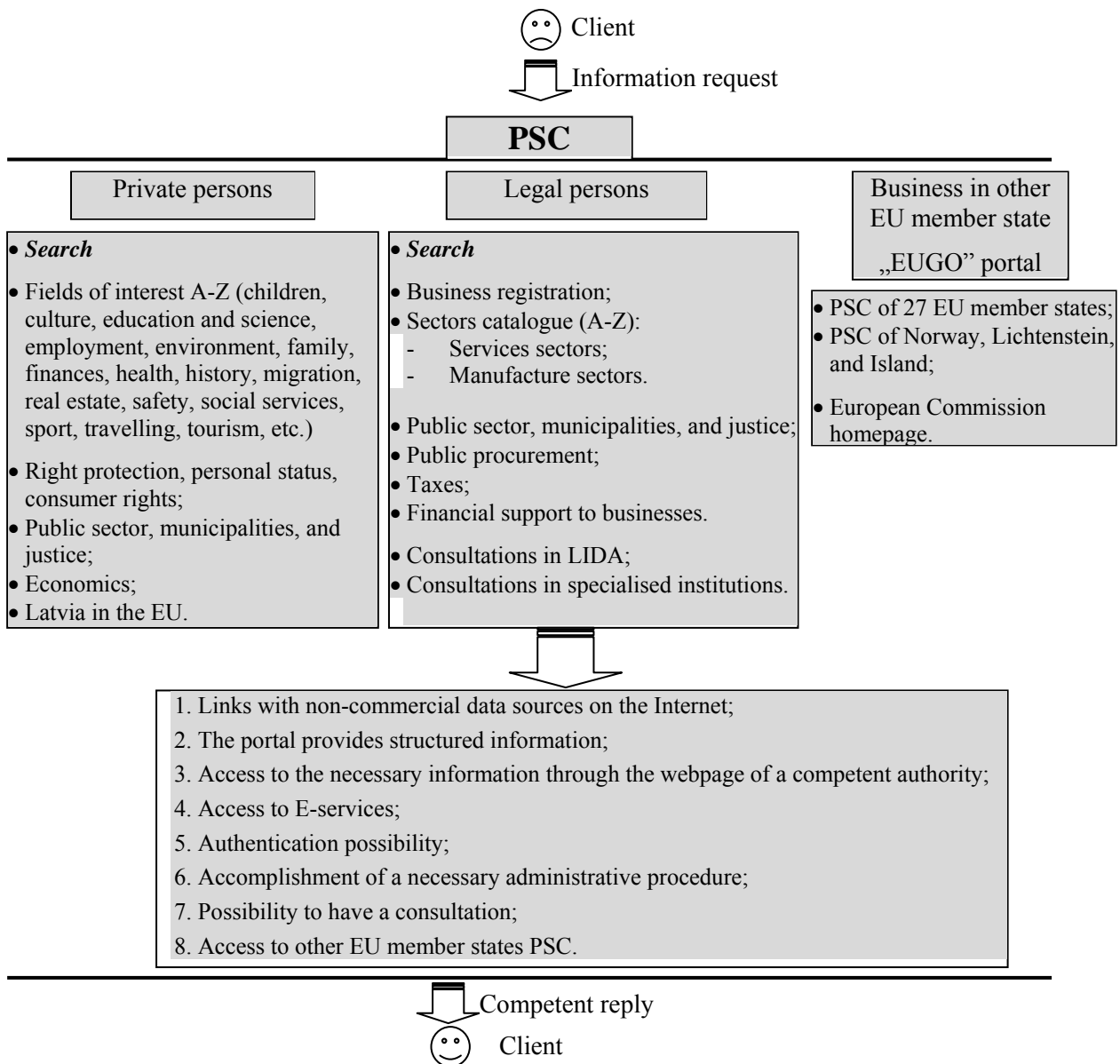
☹ Client

Information request

**PSC**

| Private persons | Legal persons | Business in other EU member state „EUGO" portal |
|---|---|---|
| • *Search* <br><br> • Fields of interest A-Z (children, culture, education and science, employment, environment, family, finances, health, history, migration, real estate, safety, social services, sport, travelling, tourism, etc.) <br><br> • Right protection, personal status, consumer rights; <br> • Public sector, municipalities, and justice; <br> • Economics; <br> • Latvia in the EU. | • *Search* <br><br> • Business registration; <br> • Sectors catalogue (A-Z): <br>   - Services sectors; <br>   - Manufacture sectors. <br><br> • Public sector, municipalities, and justice; <br> • Public procurement; <br> • Taxes; <br> • Financial support to businesses. <br><br> • Consultations in LIDA; <br> • Consultations in specialised institutions. | • PSC of 27 EU member states; <br> • PSC of Norway, Lichtenstein, and Island; <br><br> • European Commission homepage. |

1. Links with non-commercial data sources on the Internet;

2. The portal provides structured information;

3. Access to the necessary information through the webpage of a competent authority;

4. Access to E-services;

5. Authentication possibility;

6. Accomplishment of a necessary administrative procedure;

7. Possibility to have a consultation;

8. Access to other EU member states PSC.

Competent reply

☺ Client

**Figure 3.** The operational model of the improved Latvian PSC portal

The decision tree in the case of a potential tourism services business, searching for the administrative requirements with a help of the advanced Latvian PSC, looks much shorter than in the case of the current Latvian PSC (see Fig.4).
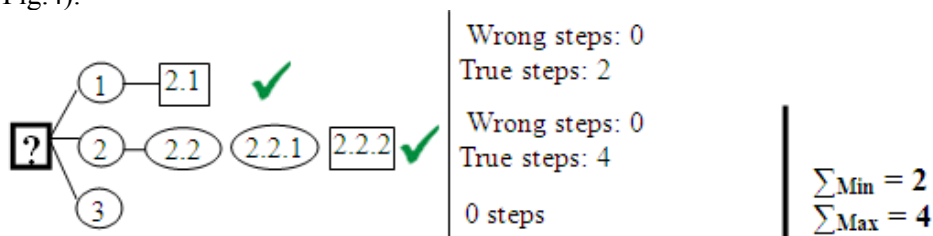


**Figure 4.** The decision tree of a potential tourism services provider. The improved model.

The unnecessary branches and leafs of the initial decision tree were stripped away, in turn making the decision process unambiguous and time-efficient.

Fig.4 demonstrates, that when entering the improved PSC portal, the visitor is offered to study the menu with the three directions: Private persons (1), Legal persons (2), and EUGO portal (3). After selecting the "Legal persons", the visitor has a possibility either to use the search function (2.1) or to find the information on requirements manually in the alphabetical sectors catalogue, activating the "Services sectors" (2.2.1), and going on with the search in the page "T" for the key word "Tourism" (2.2.2).

The entropy coefficient of the improved PSC model has the zero value:

$$Entropy(Y) = 0*\log_2 2 + 0*\log_2 4 + 0*\log_2 0 = 0$$

It means that the visitor of the portal can inerrably take decisions when searching for the necessary information. Consequently, the model of the PSC could be characterised as an effective one.

The described methodology for the evaluation of a sagacity of a decision tree, splitting the decisions into right and wrong, and the subsequent removal of unnecessary variations could be also successfully applied to the PSC models of the other EU member states.

## Conclusions

In her research the author concluded that if a business assistant tool does not fulfil its desired function, it loses its value. It is important not only to de jure provide the necessary information to companies, but also to make the B2G communication process as simple and transparent as possible.

The current model of the Latvian PSC possesses huge potential in terms of fostering local and cross border entrepreneurship, but the portal's lack of organized structure and ill-designed interface are factors significantly limiting the application of its benefits. The solution provided for the optimization of the PSC increases significantly the efficiency of the portal, yet does not require vast capital investment. It could well be implemented within the internal budget of the Ministry of Regional Development, which is the responsible institution for supervision of the portal in Latvia. The author opines that a well-organized business-supporting portal should be considered an excellent tool for enhancing business information availability and stimulating a country's general economic activity.

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