



**ANALYSIS OF BUSINESS SYSTEMS AND AUTOMATION; THE APPLICATION OF THE ORIGINAL WEB PLATFORM FOR START-UP ENTREPRENEURIAL ENDEAVORS**

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**ABSTRACT**

Ensuring a good position on the market is risked in start-up entrepreneurial endeavors, in which there is an evident funding problem and which have a small amount of the initial capital at their disposal. For that reason, with the help of knowledge and information technologies, entrepreneurial endeavors oriented towards the provision of consulting services for other companies and institutions, or for the personal needs of business decision-making, can ensure a good competitive position by conducting the automation of their services with the help of the original web platform presented in the paper.



Thanks to the said automation and web platform, start-up entrepreneurial firms are provided with a strong tool within the framework of their field of work, at a low price, which enables them to be cost-competitive. As the young are increasingly involved in the field of information technologies irrespective of the job they do and as learning programming is increasingly more available within the framework of formal education, non-formal education, i.e. courses, as well as free of charge, via the content on the Internet through diverse tutorials and programs, start-up companies are enabled to utilize their employees' skills in multiple ways with minimal investments in order to establish the platform, whereas when the professional segment within the field of management and economics, i.e. the managerial segment, are concerned, they may utilize the available knowledge funds and consultants.

**Keywords:** entrepreneurial endeavors, start-up enterprises, reporting, automation, web platform, information technologies

## 1. INTRODUCTION

The application enabling the analysis of a business system as per certain spatial fields. The application works based on surveying employees electronically without disclosing and recording their respective identities, but by confirming the identity through their business email. The application has been created with the help of the Google Forms services in integration with the local database on the server so as to make data available for processing. With the aim of ensuring changes and managing the application itself, the CMS environment was created in the WordPress, whereas the back-end segment of the website is run by the PHP.

In designing the solution, the Google applications such as Forms and Sheets were also used so as to enable communication between them and the database; Google Scripts is needed as the Java server-side script language responsible for the transfer of responses from Google Sheets to MySQL base on the server.

## 2. LITERATURE REVIEW

In the 21st century, companies will replace job descriptions with the competence models such as (RANKOVIĆ; ILIĆ, 2018): Scientific/technical know-how, leadership skills and processing skills. This is exactly what the concept of organizational design which managers have begun to pay increasing attention to is about. Organizational design reflects in the techniques of designing an organization and its structure. Traditional forms of organizations are still present, and new ones actually combine the advantages of the already existing forms

and minor modifications for the purpose of the flexibility and easier scalability of an organization (BURTON; OBEL; DESANCTIS, 2011).

The difference between the classical and contemporary business organizations is only visible in the focus – which side of the two extreme points characteristic of all organizational principles it is on (SAJFET, 2006), namely whether the focus is directed towards traditional values and a hierarchy or towards the needs of the market and buyers.

Every information system is used as support in decision-making, facilitating a certain work process by its use. Each information system for itself, however, is used for a different structure of a problem and the nature of a decision. The schematic presentation of the types of decisions in the form of a framework for decision-making support (according to GORRY; MORTON, 1971)

There are several ways how to plan and implement automation. Some organizations choose to first implement the interconnected and needed systems, then to analyze their usual problems and identify the events that may be utilized as the trigger of an automated action. Other organizations, however, decide to automate processes simultaneously while working on analyzing the problem(s) of interconnected systems (ZOHURI; MOGHADDAM, 2017).

Information and communications technologies develop very fast, significantly changing the approach to all the spheres of the economy (POPKOVA; OSTROVSKAYA, 2019), which implies that automation has been playing an increasingly more significant role in the global economy and everyday business operations.

The data that makes a piece of information has a great value. Work tempo has changed a lot with the development of information-communications technologies. Today, in order for us to be successful we must also be prepared to work extra hours, which affects our activities, the activities of the whole human society, its development, as well as the quality of life, in many aspects (POKORNI; RADIĆ, 2013)

The process of the analysis of an organization itself is not simple and requires a lot of time, depending on the scope of the analysis and the professional qualifications of the person carrying out the analysis. The analysis process is defined as a careful study of an object with the aim of gaining knowledge of its parts, of the purpose they serve and how they are interconnected (WEBSTER, 2015; MEISEN, 2016).

### **3. WEB PLATFORM**



The article should be done on an A4 paper size (ISO 210 x 297 mm), 1,5 line spacing, wide margins and Arial font, 12, justified. Articles should have within 4,000 and 8,000 words in length (papers below or exceeding this limit will not be considered for reviewing). The following sequence for the paper structure is suggested: title; abstract; keywords; introduction; main body; conclusions; acknowledgements when applicable; and references.

### **3.1. Web platform presentation**

In order to know the current condition of a business organization, one can do it in the two following manners:

- 1) by engaging an organization providing consulting services in the field of the analysis of business systems
- 2) by engaging the employees inside the firm, who are trained to analyze business systems.

The first option demands funds for services rendered and may vary depending on the size of our organization and its complexity, as well as the complexity of the work procedures. Depending on the nature of the work and the size of the entrusted tasks, a consultant needs to spend an appropriate time in the firm, which usually ranges between 10 and 30 days, during which stay he/she will monitor the work of every sector in the organization.

All the conclusions he/she has come to are recorded by him/her on an appropriate form, and also gives the employees specially prepared questions which, in the majority of the cases, they answer anonymously. After he/she has collected data, an analysis is conducted, which results in a report in a paper or electronic form on the condition of the organization and changes are proposed for the improvement of that condition.

Here, there is also the trust factor, as well as an agreement and the execution of the document on the confidentiality of the data the consultant becomes aware of while providing the service; then, there are the quality of the services rendered and the time spent for the implementation.

The second option also requires funds, but the same may be more cost-effective if a company has the employees who may be trained to analyze the organization. The employees may be sent to an external training or that may be done internally. Once they have successfully passed the training, they are capable of analyzing the organization and, in the long run, they can perform an analysis more frequently, thus making savings with respect to frequent payments for the consulting services rendered externally.

Most importantly, the person making an analysis must be absolutely objective, deprived of subjectivity, in order to obtain relevant results. Pursuant to that, the goal is exactly to process data in such a manner that it is impossible to recognize which employee is exactly in question. If such analysis is conducted on paper, it is absolutely possible that the person doing the analysis will be able to recognize who is in question based on the handwriting. Analysis in the electronic form implies filling out a survey without any annotation about the user during the completion of the form and preventing a simple insight into who filled out the survey, when he/she did it and which answers he/she gave.

When all the foregoing is taken into consideration, the idea about the automation of the whole process of the analysis of a single business system and the generation of reports electronically has emerged. It is possible to do with the help of the application that can be designed in several ways, and for the needs of this paper, a web application (platform) has been done on the Internet address [www.its-consult.cf](http://www.its-consult.cf) (PAVLOVIĆ, 2019).

The application enables the analysis of a business system according to certain spatial fields, the different modules uniting several spatial fields and the whole organization into one. The principle of the operation of the application itself is based on surveying employees electronically, anonymously, but with a confirmation of the identity through their business email. The application itself was designed with the help of the Google Forms services in integration with the local database on the server for the purpose of the availability of data for processing.

In order to enable changes and the management of the application itself, application was designed in the WordPress CMS environment, whereas the back-end segment of the website is run by the PHP. As Google applications such as Forms and Sheets were also used in its development, it was necessary that Google Scripts be used in order to enable communication between them and the database. Google Scripts is the Java server-side script language and it is responsible for the transfer of responses from Google Sheets to the MySQL base on the server.

### **3.2. Platform Functionalities**

In the continuation of the paper, the functionalities of the platform and the way how the services were used in its development will be described.

The application is accessed via the already mentioned address [www.its-consult.cf](http://www.its-consult.cf), and the Admin Panel for Reports and Surveys Management is accessed via the standard link for



accessing the WordPress Admin Panel for the purpose of simplicity – [www.its-consult.cf/wp-admin](http://www.its-consult.cf/wp-admin). After logging in via an appropriate user account, the window as in Figure 1 appears.

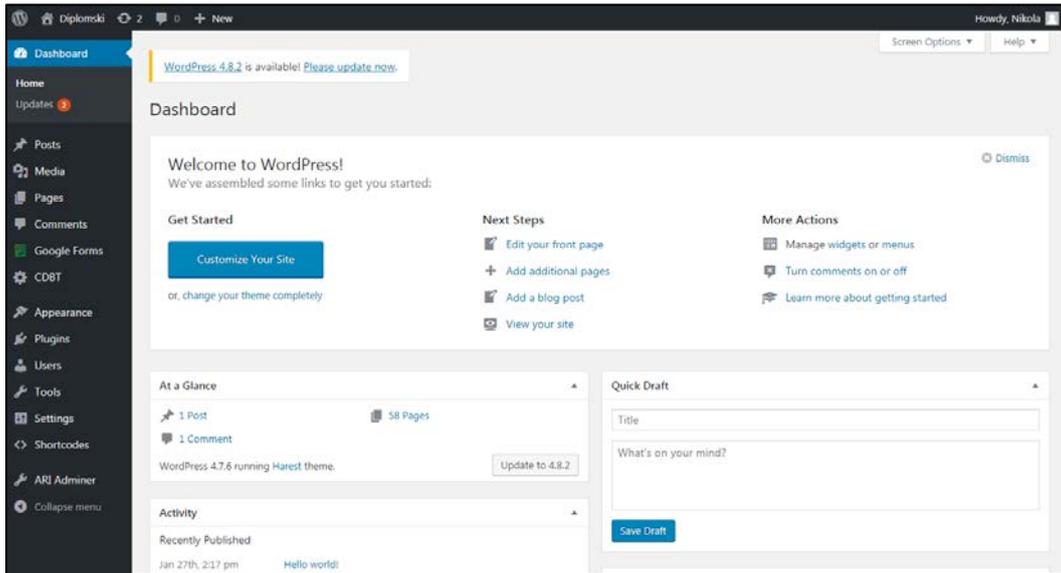


Figure 1: Admin Panel

In the Admin Panel, it is possible to add new surveys from the employee's Google account, analyze the responses, add such survey's generic results and also send email reports with research results.

Figure 2 enables us to perceive several different wholes, as well as the selection options, in the application's Admin Panel itself:

1. **Main Window:** where all the options for setting, reviewing and creating webpages, forms etc. are listed
2. **Dashboard:** A summary account of the condition of the web application which can be set as the user wishes for the purpose of reviewing certain information as fast as possible.
3. **Media:** The option for entering multimedia content such as pictures, video materials, and documents.
4. **Pages:** Reviewing, creating new and changing the existing webpages.
5. **Google Forms:** Uploading new surveys and changing the existing ones.
6. **CDBT:** The addition that was subsequently uploaded as the option for the connection with the database and the operations on the data in the same.

7. **Appearance:** The adjustment of the visual appearance of the platform and the stylization of the visual appearance of the menu.
8. **Plugins:** The additions that enable additional options on the platform without coding.
9. **Users:** A user review and role assignment.
10. **ARI Adminer:** The addition that was subsequently uploaded for performing work on the data in the database.

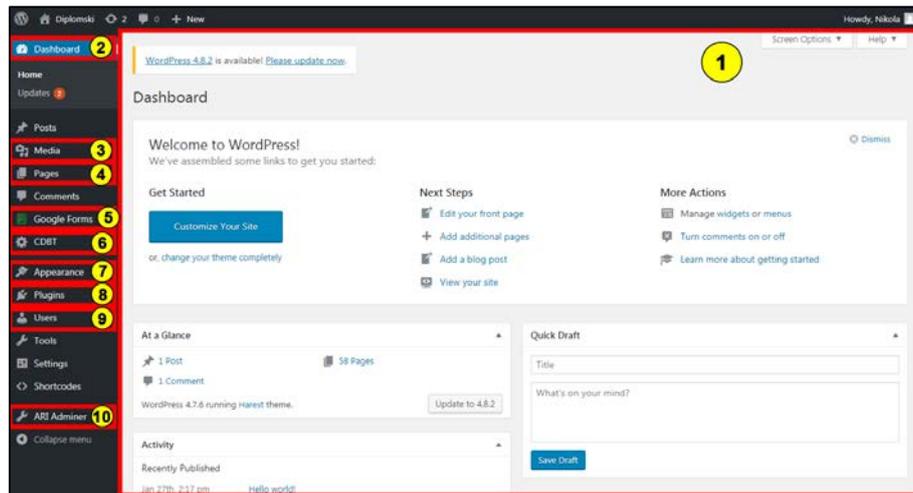


Figure 2: The parts of the Admin Panel

The Admin Panel itself is easy to customize due to the very nature of the WordPress Platform by means of the so-called plugins<sup>1</sup> which add a certain functionality to the application. With the help of such plugins it is possible to make a modular platform for different needs with minimal programming knowledge.

The plugins used in the development of the application are as follows:

- ARI Adminer,
- Custom DataBase Tables,
- Google Forms,
- Page Links To,
- PHP Everywhere,
- Shortcodes Ultimate, and

<sup>1</sup> Plugin – a ready software solution (module) which is possible to integrate in a certain CMS system.

- WP User Manager,

and they are shown in the below figure.

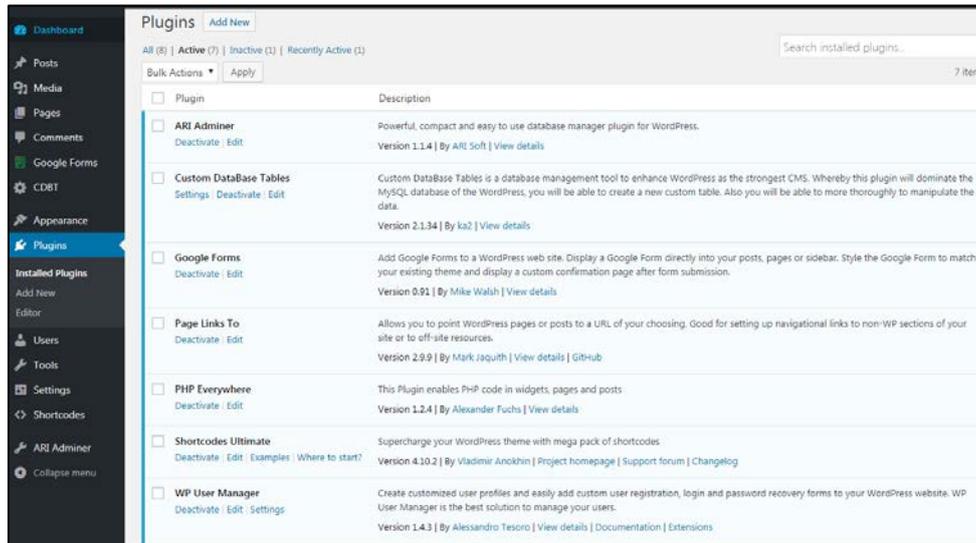


Figure 3: The plugins used for the development of the application

**ARI Adminer** and **CDBT** (*Custom DataBase Tables*) are, in fact, two identical plugins. They are intended for the same purpose, namely for the operations on the data in the database. It is up to the user to choose which one of these two plugins he/she is going to use.

Both plugins have an interface similar to that of the **PhpMyAdmin<sup>2</sup>** Panel used as the standard program for operations on the database on the server. The visual appearance of the **ARI Adminer** Interface is presented in Figure 4.

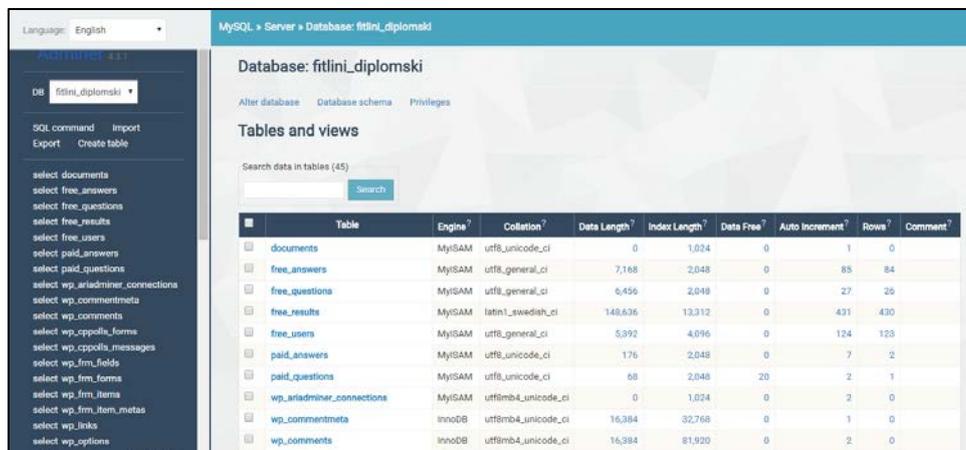


Figure 4: ARI Adminer

<sup>2</sup> PhpMyAdmin – a software solution for operations on databases.

In order for a database to have a sense and to really be in use, the same must contain tables in itself. Actually, tables are logical wholes of a database and they serve to sort data more easily, and to manipulate them more easily, too.

The tables created for the needs of the analysis conducted in this project are as follows:

- **The *Documents* table** implies the recorded paths to the files for the users who opted for a paid consulting service. This table serves to enable that a file is available online on our servers and ready to be downloaded by the client at any time in the day via the appropriate link sent to him/her in an email.
- **The *Free\_Users* table** serves to record the visit of the users who came to the platform as visitors and who want to test how the analysis is carried out. This is intended so if a solution has been commercialized and publicly displayed on the Internet. It is a free-of-charge tool for a quick assessment of the condition, but the accuracy of the model is not precisely defined.
- **The *Free\_Questions* and *Free\_Answers* tables** are intended for entering questions and answers by the visitors of the web platform as a commercial solution. Based on the recorded data, an automated calculation of the results is obtained at the end of the filled-out form.
- **The *Paid\_Questions* and *Paid\_Answers* tables** – identically to the two tables mentioned previously, except for the fact that these are used for paid services and a detailed analysis. The *Paid\_Questions* table is entered manually, whereas the *Paid\_Answers* is completed automatically while solving the form.
- **The *Free\_results* table** contains the automated and generated results displayed to the users who come to the platform as visitors.

**Google Forms** is used for the integration of the Google Questionnaire onto the website. The questionnaires are specially created on a certain corporate account of the employee. Figures 5 and 6 show the options this addition has.

Figure 5: Google Forms – Part 1

Picture 6: Google Forms – Part 2

Not all fields are mandatory when entering a certain survey on the website. A part of them serve to additionally stylize the form and enable its better visual appearance within the framework of the platform, and also to prevent the automated entering of answers via a certain piece of software. Figure 7 shows the desirable fields for entries, of which the first two are mandatory.

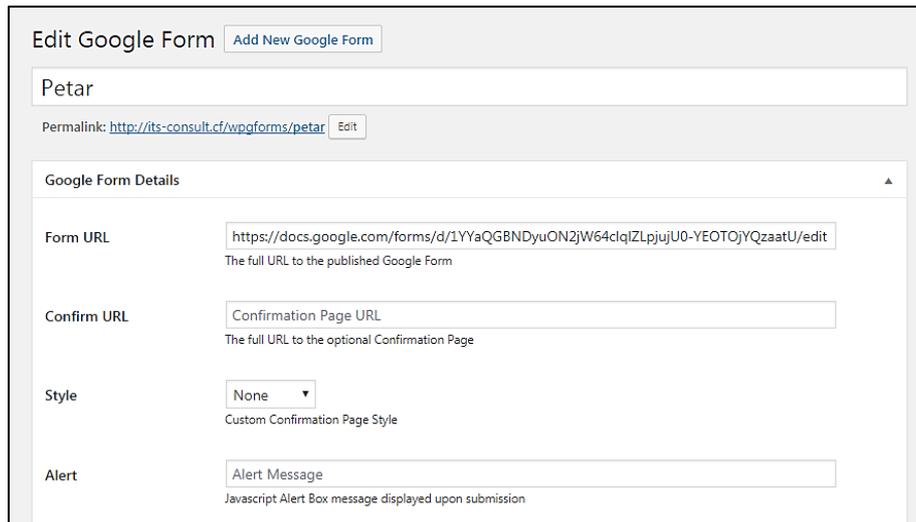
The image shows a screenshot of the 'Edit Google Form' interface. At the top, there is a title 'Edit Google Form' and a button 'Add New Google Form'. Below this is a text input field containing the name 'Petar'. Underneath is a 'Permalink' field with the URL 'http://its-consult.cf/wpgforms/petar' and an 'Edit' button. A section titled 'Google Form Details' contains several fields: 'Form URL' with a long URL and a subtext 'The full URL to the published Google Form'; 'Confirm URL' with a placeholder 'Confirmation Page URL' and subtext 'The full URL to the optional Confirmation Page'; 'Style' with a dropdown menu set to 'None' and subtext 'Custom Confirmation Page Style'; and 'Alert' with a placeholder 'Alert Message' and subtext 'Javascript Alert Box message displayed upon submission'.

Figure 7: Google Forms – the mandatory fields

In Figure 7, there are 5 fields to fill out:

1. **Page name.** All Google Forms have their own separate page for the user which should be different, if not by the name then by the URL address which is right under and which is automatically generated by the WordPress.
2. **Form URL.** The URL address leading to the form we want to display to a certain user.
3. **Confirm URL.** This option is optional, and is used if we want the user not to stay on the same page after the finished survey, and if we want him/her to only see Google's "Thanks" message after completing the form. It is here that we write the URL of our page to which the user will be redirected after he/she has finished completing his/her form.
4. **Style.** This option is not strictly mandatory, but it continues onto the previous. It determines the way in which the user will be redirected to the next page. There are three options in the dropdown menu for this option, and these are as follows:
  - *None* – No redirecting.
  - *Redirect*<sup>3</sup> – Redirect with the reloading of the complete page.

<sup>3</sup> Redirect – Redirecting the user from the current webpage to some other webpage.

- **AJAX<sup>4</sup>** – Redirect without the reloading of the complete page, but only of the frame.

5. **Alert message** – This serves to enable us to launch a popup message to the user, if we want to, via the JavaScript<sup>5</sup> language once the user has successfully completed his/her survey.

In order for the platform to function as the Google Forms addition does, we must have already prepared surveys on an employee's account. The Google Forms creating process is simple and intuitive. The visual appearance of the window for creating Google Forms is presented in Figure 8.

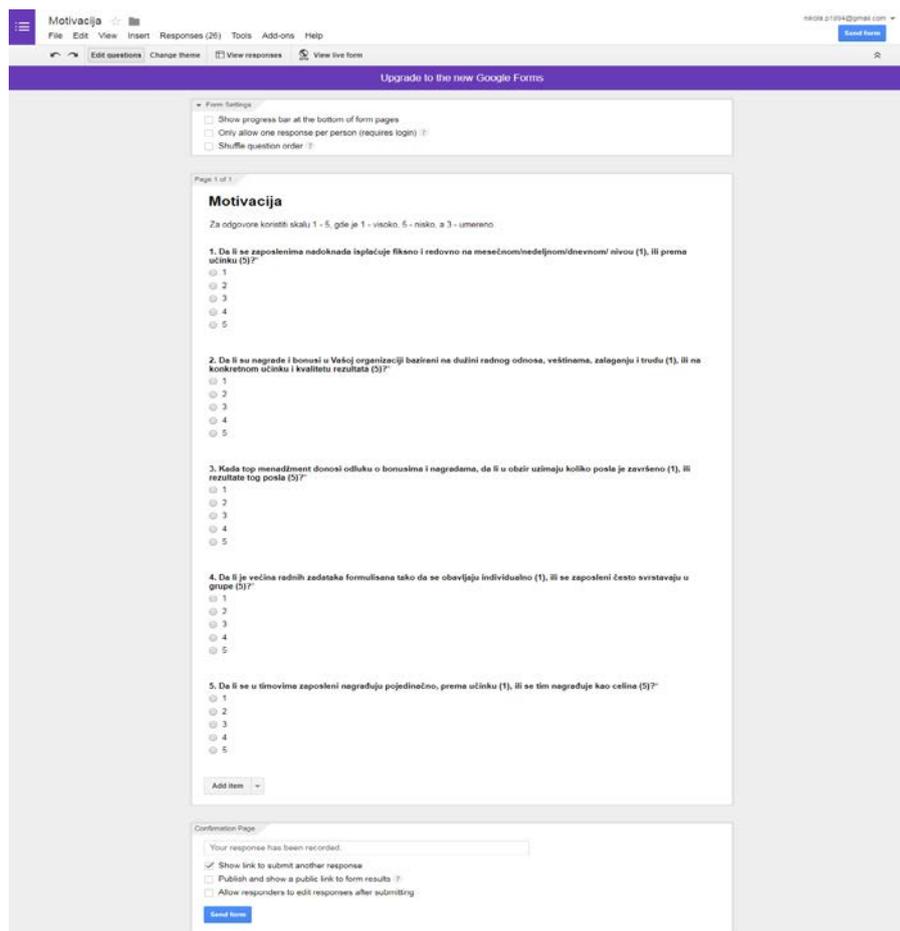


Figure 8: Google Forms – Creation

<sup>4</sup> **AJAX** – **A**synchronous **J**avaScript **A**nd **X**ML, the web-application development technique enabling us to only show new data on the webpage without having to reload the whole webpage. That process accelerates the response time and increases user satisfaction.

<sup>5</sup> **JavaScript** – a script program language, most frequently used on webpages for the purpose of interactivity (action-reaction)

The questions may be of different types: open-ended, close-ended, with one or several correct answers, and they may also contain additional multimedia content, such as pictures, video materials, or choice lists. It is also possible to create what will be displayed on the confirmation page, the welcome message, and additional options, such as mixing questions and fill-out restrictions to users only one after another.

All the answers in the form are recorded in an appropriate Google Sheets table. In order for us to be able to perform data manipulation in a safe environment, a script was written by means of the Google Script language enabling a transfer of recorded data from the Google Sheets table to the database on our server. The script was applied to each Google Sheets table connected with an appropriate form.

Once data are recorded in the local database, it is possible to write additional scripts for checking answers and generating an automatic report, as well as checking the user who is accessing the survey in the paid version.

**Page Links to Plugin** is the addition enabling the simple redirection of pages to another address. As concretely used in this project, it serves to redirect certain pages to the additional PHP scripts<sup>6</sup> written for the purpose of the additional validation of users and in order to enable the selection of an appropriate questionnaire for the logged-in user.

The additional PHP scripts are necessary in the process of the platform building. Although the WordPress CMS is a modular platform, and although there are a large number of the predefined plugins which can be used to create diverse solutions, certain operations are impossible to predict and generically make in order for them to be applicable in every situation.

The concrete scripts written for this platform, which are enclosed to the paper, are as follows:

1. *connect.php* – This script was invoked for the purpose of being used within the framework of the other scripts in order for them to have access to the database. It contains the data about the name of the database, the address it is located on, as well as the user name and the code used for accessing the database.
2. *GetInfoAndForm.php* – This script is used in a fast free-of-charge assessment of the condition of the analysis after the user has selected a desired field of analysis. After

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<sup>6</sup> PHP scripts – the scripts, or more precisely the code, in the php language which is run on the server side.

selecting the field, the script searches appropriate surveys and chooses one of several such surveys by the random method, after which it stores the information about the selection in the base and forwards the users to the survey page.

3. *GetUserAndLogIn.php* – This script serves to reauthenticate the user during logging in or a longer period of inactivity in order to confirm the identity. It is used for the paid segment of the platform, which will be discussed in greater detail later in the paper.
4. *GoToForm.php* – After the user has successfully logged in in the paid version, this script searches the bases for a certain user-intended survey. After a successful search, it redirects the user to the page for the preparation of a survey, and in case the user who the survey from the previously submitted link is not intended to tries to log in, he/she receives the information that he/she is denied access. In case there are no active surveys to solve, an adequate message is inscribed.
5. *GetResults.php* – The script has been written for the needs of calculating the automatic analysis of answers. It functions in the following manner: it connects to the database after the data about the answers of the current user are entered in the base. It takes the data about the user's answers, as well as the data about the survey which was done, and results are calculated according to the formula for a particular survey. After that, the result is forwarded to the results display page.

The **PHP Everywhere Plugin** enables the execution of the PHP code within the framework of the defined page of the platform. Should the platform itself not have some concrete function of the dynamic generation of content, this addition may be utilized to write an own script for that purpose. After that, it is only enough to insert a certain tag in the desired place on the page, and the function will be performed during the loading of that page.

The plugin has a concrete use on the platform within the framework of the results page. With the help of appropriate short codes, the inscription of the dynamic content of the results is enabled.

**Shortcode Ultimate** is a powerful addition for each website and enables various functionalities by the insertion of an appropriate short code onto the page. It serves to enable a better display of content within the framework of the page with the help of columns and rows; it adds appropriate fields for multimedia content, animations, and so forth.

**WP User Manager** is the addition that determines the privileges users have on the platform. It was used for the purpose of demonstrating certain elements in the menu for the

logged-in users and for hiding the same from the users not logged in. It can be useful if the later development of the platform enables the user to review on his/her profile all the surveys he/she has done and the purpose for which he/she has done them so far.

### **3.3. Platform Operation Method**

After the manner in which the platform itself operates on the user side of the one who analyzes, how the application functions on the client side will be explained, too. In fact, the client receives a link via an email, which leads him/her to a survey or directly accesses the platform. As has already been mentioned, only the demo version of the application can be tested on the platform (a quick analysis with automatically generated answers) or some of the paid services can be done on the platform. When the user accesses his/her survey, he/she solves it and finally receives a goodbye message.

At first sight, everything seems to be easy and simple. However, what separates this platform from an ordinary Google Form for carrying out surveys is the fact that it relies on its own database and analysis mechanism iza questionnaire.

In the free-of-charge variant, after entering the email and the activity type, answers are first recorded in the database, after which the client is delivered the requested questionnaire for a particular analysis. Given the fact that there need be several different questions in the system in order for questions not to repeat, the client will be delivered a random combination of appropriate questions for the selected field of analysis. After the answer entry confirmation, they are again stored in the base for the pertaining user and based on automatic analysis a predefined report is generated and returned to the user as the result. That result is possible to download from the application and then print.

The client first contacts the agency and agrees upon the needed services he/she wants. After drafting an offer, the agency sends a proposal for the price and the implementation plan, after which the client confirms whether he/she consents to the proposed offer or not. The client receives a link on the email of every employee (in the form *www.its-consult.cf/Php/getinfoandlogin/?user=korisnik*), via which he/she accesses the platform.

The link is unique and the given link is impossible to access as another person due to the account check and the confirmation of the user authentication. That means, if someone accesses the link, and the survey from the link is not intended for that user, he/she will not be allowed to complete it. Accounts for each and every employee who the client as the ordering party has designated as the respondent also need to be created in order to enable as objective



an analysis as possible and with fewer manipulations. The parameters pertaining to every employee are sent to the email of the employee, thus preventing a possible abuse implying that one person might become aware of the information of all the accounts, which could impair the regularity of the survey conducted.

After the completion of the survey by all employees, which can be monitored through the system, the analysis of answers is performed. The analysis is done on the computer by the designated employee, or a larger number of such employees, and the final conclusions and solutions are recorded in the unique document for the ordering client. After the drafting of the document, it is displayed on the agency's server and recorded in the database. The ordering client is informed about the completion of the analysis and he/she is emailed the link to access and download the report. The document cannot be accessed through the platform, but exclusively through the received link which will be time limited for the safety purposes.

In this manner, communication with and the submission of documents to the party ordering services are accelerated, especially if we take into consideration the distance between the set of the agency and the client's seat. If the report is sent by mail, that takes minimum two days. In the case of the delivery of the analysis documents in person, that incurs an additional transportation cost, accommodation (if needed), and the time spent.

As, nowadays, companies are showered with various information and time pressures with an accent on quick decision-making and making moves, submitting reports electronically is a more efficient method. This way, client is also enabled to consider the analysis when he/she can do it, without a time-limited meeting in the case of the delivery of documentation in person and the presentation of conclusions by the consultant.

#### **4. USE OF THE PLATFORM IN CONCRETE BUSINESS MODELS (Start-Ups)**

Every organization is a unique system with its components and it is not possible to analyze every organization in the same way. One of the differences is the type of business operations, i.e. if an organization is engaged in the service or production activity.

From the point of view of the engagement of resources, there are two ways to conduct the analysis of an organization:

1. internally, and
2. externally.



**Internal analysis** implies that the analysis of an organization is carried out inside the company and without the interference of a third party (organization) in the analysis.

**External analysis** implies that the analysis is carried out by a third party (organization) certified by the authorized body. It is usually one of the agencies for consulting services in the field of business systems analysis.

In both cases, it is possible to apply automation by applying an appropriate software solution, although it is much simpler within the framework of internal analysis. When the external analysis of a company is performed, in that case there is a smaller possibility of exerting an influence the process automation.

The main question is *why*? Why would an organization also additionally pay for a software solution to automation when it is already paying its employees or, in the case of external analysis, an agency? Why automate the analysis process when there is a need for all collected information to be processed by man, not by a computer, given the fact that no artificial intelligence software is in question? The answer is simple and first of all hides in the speed and time needed for decision-making.

As is known, making relevant decisions on the basis of received information is very important today, and all information is subject to change in a short time period. In the past, it was possible to, say, make a key decision based on the information collected within 7 days; today, it may be 1 day, or maybe 1 hour in the future. The fact is that there is very little time today and that it should be used as well as possible.

The application of the web platform for the purpose of automation in the analysis of a business system reflects in:

- faster and potentially more efficient decision-making;
- an ecologically acceptable solution due to the lesser consumption of paper;
- a greater control of the regularity of survey conducting; and
- availability at any time of the day.

This web platform may also be differently applied depending on the business model in which it is applied:

- analysis inside own organization;
- analysis of the partner organization;



- analysis of a competing organization;
- analysis of other organizations as the independent consulting activity.

**Analysis inside own organization** is most frequently performed externally by a certified agency providing the requested services. At the same time, this business model is the basic business model in which this platform would have great significance. Its efficiency reflects in saving time for analysis and savings in the resources (concretely the printing process, paper and time) needed for conducting it.

In case there are no adequately trained and qualified employees in the organization to analyze business systems, that requires an additional cost of training as well. After passing the training, the company can, in the long run, analyze its own system in shorter, i.e. more frequent intervals, thus monitoring the condition of the system and the satisfaction of its employees. Based on those pieces of information it is possible to improve the rewarding, praising and acknowledging systems, too, taking into account the employees' wishes, and also to bring plans into compliance with the goals.

In the case of engaging external consultants, there is also the problem of disclosing important data to a person outside the organization. In that case, it is mandatory that a data confidentiality document regulating the rights and obligations of both parties should be executed. Amongst other things, the external consultant undertakes that he/she shall keep the data he/she has become or becomes aware of in the course of rendering his/her services as a business secret and that he/she shall not abuse them for the purpose of deriving a material or some other kind of personal benefit.

If analysis is conducted with the internal forces, there is also a benefit reflecting in the development of the employees. Investing in their additional education results in our having more quality employees and also in a reduction in the costs which we would have had had we engaged an external consultant. The differences between analysis with the help of internal and external resources will be compared in the sixth chapter, which is dedicated to comparison and a cost-benefit analysis between them.

The employees engaged in entering questions and analyzing answers enter questions in the database and assign an appropriate survey to each of the employees. Every employee receives a link via email through which he/she accesses the platform and his/her appropriate form. In order to prevent abuse and a potential chance of an error regarding which user is in question, user reauthentication is required. The user enters his/her login parameters which are

subsequently compared with the data of the survey, and if they coincide, the employee may start completing the form. After the completed survey, they receive a “thank you” message and the message that they have successfully finished the survey.

**Analysis of the partner company** may serve as a help in our partner’s decision-making, who does not have an already existent system through which he could perform automated reporting. This procedure also contributes to mutual cooperation.

Simultaneously, the platform may also be utilized as a tool for promotion inside the partner company as a solution that may later be commercialized or retained exclusively for internal use. This model is most frequently operated internally by our employees. In the case of commercialization, a special department would be formed and, if needed, several more workers would be trained or employed. The technical team will also need to reinforce given the fact that the platform is based on partial coding.

**Analysis of a competing organization** may serve to analyze competitors and anticipate their further moves. This method may be used to analyze the condition in which our competitor is and, based on its future moves, see if the competitors will make a mistake in some decision. If they do make a mistake, the organization may step forward and preempt the competitor by giving a better offer, cooperation, or anything similar to it that may bring our organization advantage on the market in relation to the competitor. In order for this method to apply, there must be an insider in the competing organization and the benchmarking method with the accompanying SWOT and PEST(EL) analyses must be applied.

The analysis of the competing organization may also be carried out based on the publicly available data and pieces of information from the Business Registers Agency, publicly available financial reports on business operations, the examination of the public opinion, and by means of other methods and techniques.

**Analysis of other organizations as the independent consulting activity** can be used to establish a consulting organization out of a certain start-up or to establish yet another sector from the existing organization which will be dealing with consulting services. A model like this implies the transformation of the organizational structure in case it is used as a separate sector. First of all, this implies an additional number of employees, managers, and the financial expense incurred. On the occasion of establishing the sector, attention should also be paid to the sector the firm does business in. For example, whether the firm does business in the field



of information technologies (more narrowly defined – the development and implementation of business systems) or it operates in catering is not the same.

In the mentioned example, information technologies are tightly connected with the development of the business systems software; for that reason, they simultaneously have some foreknowledge of how a certain organization should function, which is not exactly the case with, for example, catering. The truth is that they know better their job in their activity, but if they want to establish a special sector and also deal with analysis apart from catering, it may cost them more, including training, than the profit they may generate. Here we come to marketing, which in that case turns to the benefit of the firm dealing with information technologies in the field of business systems rather than to the advantage of caterers.

As every organization that started from “nothing”, start-up companies cannot have sufficient funds to invest in all needed resources so as to start seriously on the market from the very beginning. For that reason, with the needed knowledge they have, the start-up companies that would be dealing with consulting services can distinguish themselves by means of the simple automation of consulting services through the application of this or a similar platform.

In that way, they receive a powerful tool in their field of work at a relatively affordable price, depending on the experience of the team and its composition. Given the fact that the young have increasingly been involved in the field of information technologies irrespective of the job they do and that learning how to program is increasingly more available on the Internet, they can take advantage of that with minimum investments to form a platform.

Innovative projects usually have the unwritten rule that they are highly risky. In the majority of the cases, investing in new companies (start-ups) falls within the prior definition, but when speaking about innovations which are nonexistent on the market and which are being used for the first time, even though they are highly risky, it is sometimes worth daring to fund them (POPKOVA; OSTROVSKAYA, 2019).

As the functioning of the platform has previously been described, it is also possible for a start-up organization to adapt the platform to a certain commercial solution it develops and publishes on the Internet, representing itself before all. The interested clients who visit the web platform may immediately test how the system itself functions by answering one of the offered surveys. They will receive the results immediately upon completion.

Such an analysis is general and does not necessarily represent accuracy. If an interested client likes the way in which the analysis has been made, i.e. if he/she likes the questions asked



for the purpose of the analysis, he/she may also contact the organization and negotiate a consultant's more detailed service via the web platform at an appropriate fee.

Yet another option available to start-ups might imply that the start-ups engaged in software development (programming) can manufacture the software type like this, which can be made by integrating the already ready solutions with much less coding. A solution could be very profitable with relatively small investments or the same could introduce a little more rational offer on the market by offering the solution at more affordable prices. That would rock the competition and they would have to accept automation as a daily life or risk their position on the market.

Of course, it does not seem too important currently, at this very moment, but in a nearer future it certainly will, and very much so.

## 5. CONCLUSION

A special benefit of the application of the presented web platform is that in start-up organizations. Given the fact that the cost of the development of the application is possible to reduce to the minimum, and due to the ever-increasing availability of a free-of-charge material for learning via the Internet, the team establishing a start-up can create a platform by themselves and adapt it to their own needs. Apart from the fact that by doing so they gain a competitive advantage, they also attract potential investors for the development of their solution and its broader application on the market. There is an additional "plus" for costs reduction if the company has a sufficient number of available employees and a team of programmers amongst which it is possible to reassign work tasks with an appropriate adjustment of salaries.

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