

APPLICATION OF AHP METHOD FOR THE SELECTION OF BUSINESS PLAN SOFTWARE

Marko Hell

Faculty of Economics, University of Split,
21000 Split, Cvite Fiskovića 5, Croatia
E-mail: marko.hell@efst.hr

Mira Krneta

Croatian Bank for Reconstruction and Development,
10000 Zagreb, Trg J.J.Strossmayera 9, Croatia
E-mail: mkrneta@hbor.hr

Petar Krneta

Faculty of Economics, University of Split,
21000 Split, Cvite Fiskovića 5, Croatia
E-mail: petar.krneta@efst.hr

Abstract

This study seeks to determine the importance of tools that are offered within the software (simplicity, help, etc.) and sort them according to your preferences. The results are intended for novice users in business planning. The study was carried out among students who are familiar with the possibilities of five programs for business planning. The students conducted the evaluation in accordance with each of the presented programs that were selected by experts from the problem areas. The practical importance of the results of this research is seen as a recommendation of faculties of economics in procurement of software for business planning for educational purposes. It is possible to apply the already appointed multi criteria (AHP) model to the target group with extensive entrepreneurial experience, with a change to the set of criteria weights.

Key words: *Planning, Multi-criteria, Business planning software*

1. INTRODUCTION

Business planning is a process of defining goals, strategies and activities that a business entity realizes within the stipulated time frame. It is usually focused on making profits and managing risk that could have negative impact on the business¹.

Various aspects of planning in a broad sense have been the subject of special interest to researchers and managers for more than three decades. Results of numerous studies indicate the relationship between planning and business performance, measured by different sets of indicators. Planning is also considered as one of the key elements of leadership. Dynamic, complex and uncertain environment, including internationalization and globalization of business, makes the planning process an important activity for sustainable growth and development. Similar to many other areas, the growing development of information technology has influenced on the development and application of IT to business planning. Today there are numerous programs for business planning. Used by independent business owners, managers and professional advisers. The paper analyzes the possibility of applying the AHP method to choose the appropriate software package to create a business plan. The study was conducted on a sample of student population of final year of graduate studies. Knowledge acquired from education is considered relevant to assess the importance of each criterion in the selected set of SW to create a business plan, which is currently one of the ten most commonly used SW². Furthermore, this is a population of students who will be business owners or professionals involved in the planning process.

The paper briefly presents the relevant results of research on the relationship of business planning and business performance, particularly with regard to small and medium-sized businesses that have an important role in the economies of developed and developing countries. We defined the criteria for the evaluation of the program and compared the selected program using a software package *Expert Choice*³.

2. BUSINESS PLANNING AND PERFORMANCE

There are many researches related to the type, content, scope of planning process and performance. The following questions are of particular concern to the research: (1) whether the planning and

¹ See Web page: <http://www.businessdictionary.com/definition/business-planning.html>

² See Web page: <http://business-plan-software-review.toptenreviews.com/>

³ See *Expert Choice software*, <http://www.expertchoice.com>.

development of business plans are important for the success of the business, especially in the start-up projects, and (2) whether the application of tools for business planning in the form of software to create a business plan would generally be helpful to entrepreneurs.

Empirical research suggests that planning is more important for businesses in the category of small and medium-sized enterprises than for larger ones (*Rue Ibrahim, 1998*). Also, they are suggesting a better financial performance of business units that generate formal practice plans, especially applying sophisticated techniques of planning, compared to those who have no such practice (*Berman, Gordon Sussman, 1997*). Lack of planning, in the stage of preparation for the implementation of business intentions, or before starting an independent business, is one of the reasons for failure of small and medium enterprises and low survival rate of start-up (*Boyd, 1991; Birley, Niktari, 1995; Castrogiovanni, 1996*).

Research of nascent and start-up entrepreneurs demonstrate the usefulness of planning and prepared business plans in the starting phase of the initial period of the project, including independent business (*Karlsson, Honig, 2007*). Start-up entrepreneurs, who are preparing a business plan, are generally more persistent in entrepreneurial activity (*Perry, 2001; Delmar, Shane, 2003; Liao, Honig, Karlsson, 2004; Gartner, 2006; Brickman, Grichnik, Kaps, 2010*). There is a suspicion, however, whether the persistence of entrepreneurial activity is the measure of success, especially in relation to the efficient use of resources (*Honig, Samuelsson, 2012*).

However, planning and preparing a business plan does not necessarily mean a successful business (*Mintzberg, 1994*). The results of extensive research on a sample of 2956 small businesses in the five-year period in Australia show that formal planning does not necessarily mean higher business performance (*Gibson, Cassar, 2005*). In a study conducted in 2002 on the sample of the 500 fastest growing U.S. companies, with operations not older than 10 years, the founders responded to an inquiry about whether the business plan they prepared was written before they started a business venture (*Bartlett, 2002*). Less than half (40%) answered affirmatively. Among those 40%, more than half (65%) said that they have changed the original conception of their business plan, in a process of implementing business enterprise. Data gained from members of Babson College alumni, graduated between 1985 and 2003, who started an entrepreneurial venture, shows that there is no difference in performance between the business enterprise operations running with and without a prepared business plan (*Lange, Bygrave, Mollov, and Pearlmutter Singh 2007*). Results of research conducted on a

sample of 400 small and medium-sized businesses in Great Britain show that more than half (54%) of entrepreneurs approach business planning spontaneously, without making a business plan⁴.

The importance of planning in the preparation of a business venture was formalized in the form of a business plan that can be important considering several aspects. (1) Proponents of making a business plan usually compare the realization of business intentions with a trip to an unfamiliar area. Therefore, a travel plan prevents wandering as well as, loss of time and money. In the process of preparing and implementing a business venture a documented business plan can help primarily in assessing the sustainability of the enterprise market, feasibility and financial aspects. (2) It is generally very difficult to obtain the necessary funding for business intention, especially from the external sources of financing, without presenting relevant documentation to potential investors or creditors. (3) Professionally prepared business plan can be a very useful tool in managing a business in terms of recognition of key stakeholders, business risk and defining risk management activities.

The development of IT, especially personal computers, has made information and data relevant to planning more available. In particular it refers to the possibility of performing an analysis of the impact of external factors on the operations of small and medium enterprises. Also, the conditions have been created for using tools such as mathematical models to support decision-making and risk reduction in business enterprises (*Georgeoff, Murdick, 1986; Ansoff, 1986*). In relation to the planning process and in particular to the tools and techniques used in planning, it has been shown that more than one third (39%) of small and medium entrepreneurs who prepare business plans regularly use a computer or mathematical models in planning and trend analysis, sales projections and other financial projections (*Ibrahim, Angelidis, Parsa, 2004*). In recent years, a number of programs aimed at business planning and in particular the preparation of business plans, have been developed and are available on the market. Nearly half a million references on Google relating to the business plan software, and about 160 000 to writing business plans with templates are making the preparation of business plans easier than ever before. Assessment of the effectiveness of planning by using specialized software (Business Plan Pro) on a sample of 2877 users of the program, shows a significant impact on business performance (*Ding, Hursey, 2010*). Use of the program as a tool for planning is often associated with: (1) adaptability to different activities, (2) structuring and ensuring the implementation of the planning process step-by-step, (3) numerous possibilities of financial

⁴ See Web page: [SimplifyBusiness.co.uk](http://www.simplifybusiness.co.uk): *Most SMEs have no business plan*; <http://www.smallbusiness.co.uk/channels/start-a-business/news/1281878/most-smes-have-no-business-plan.shtml>; available: 29.08.2012.

projections and graphic representations, and (4) generating a financial model, the possibility of making a what-if analysis and risk analysis of a business⁵.

3. MULTICRITERIA CHOICE FOR BUSINESS PLAN SOFTWARE

Analytic Hierarchy Process (AHP) was originally introduced by Saaty (Saaty, 1980) as an excellent multi criteria decision making tool. One of the many advantages of Saaty's AHP is the simplicity it exercises in comparing two previously used decision support methods.

AHP method is based on comparing pairs of alternatives, each with each, where the decision-maker expresses the intensity, weight preference of one alternative over another, within the relevant criteria. In the same way, it compares the criteria according to their own preferences and their intensity. Decision making is a process of evaluating alternatives that meets a specific set of goals and criteria. The problem is to choose the alternative that best meets the complete set of goals.

Solving complex decision problems using this method is based on their decomposition into components; objective, criteria (sub-criteria) and alternatives. These elements are then linked into a model with a multi-level (hierarchical structure) where at the top there are the goals and the first level are the main criteria. Criteria can be broken down into sub-criteria, and at the lowest level given are the alternatives. Another important component of the AHP method is the mathematical model that calculates the priorities of the elements that are at the same level of the hierarchical structure.

Application of AHP method involves four basic steps (Forman, Selly, 2002): (1) selecting a hierarchical decision making model that includes objectives, criteria and sub criteria at lower levels, and alternatives, (2) at each level of the hierarchical structure, the elements are compared using a scale of relative importance, (3) based on the assessment of the relative importance of the elements of a certain level of structures problems arranged hierarchically, using a mathematical model, priority criteria, sub-criteria and alternatives are calculated. Overall priority of each alternative is calculated as the sum of weighted priorities with weights higher levels, (4) analysis of the sensitivity of the model. In the ranking of SW for Business Planning (Writing a business plan) there are a number of criteria that may affect buying decision SW. Potentially customer can select multiple criteria and assign them different importance.

⁵ See Web page: *Why Use Software for UK Business Plans?*; http://www.businesstalent.co.uk/business_plan_software_65.html; available: 31.08.2012.

3.1. DEFINING THE SET OF CRITERIA AND SUBCRITERIA FOR EVALUATION OF THE BUSINESS PLAN SOFTWARE

The first step is to determine what has to be obtained as the research output, i.e. in what direction the changes should be made. Indicators are then defined in accordance with it. The factors selected from the empirical material are those that best coincide with the following basic dimensions⁶.

Research Tools: appropriate business plans incorporate financial data and solid explanations of strategy and development into graphs, charts and reports. To ensure the best information and most successful presentation the users must do their research.

- **Market Analysis** is the process of collecting, analyzing and interpreting information about the market. This means, collecting and analyzing the data on past, current and potential customers, their characteristics, spending habits, their needs etc.
- **Business Publication Resources** are a vital part of business for managers, as business people need to rely on relevant and most updated information. Costs of obtaining publications and books can be expensive, but the Internet connection and a list of virtual, business websites can solve the problem.
- **Organizational Chart Builder** is a useful business tool that shows the structure of the organization, helps its visualization; it provides help in identifying the role of an individual in the organization, number of employees by department and in the company hierarchy.
- **Statistical Database Resources** plays an important role in business. It is therefore important to have access to the necessary statistics which provide an insight into the market situation and in business.

Forecasting Tools: one of the most difficult elements of business planning for beginners are the complex calculations needed in order to provide forecast data that show how expenses and income will expand or contract over time.

- **Graphics, reports and chart** represent the business intelligence tools through which information can be presented in a clear and meaningful way. In other words, information and data are easier to understand and interpret which makes the entire business reporting process simpler and more meaningful.

⁶ See Web page: <http://business-plan-software-review.toptenreviews.com>; available: 29.08.2012.

- **Automatic Projection tools** provide a basis for planning of various processes throughout the organization, such as demand forecasting, budgeting, sales quotas, marketing campaigns and procurement activities.
- **Budget/Feasibility Plans** provide an analysis and assessment to determine if the project is technically feasible, if it is feasible within the estimated cost and if it will ultimately be profitable. The criteria that most influence the judgment of the feasibility are cost and values that have to be achieved.
- **Business Valuation Tools** include financial analysis relating to the assessment of liquidity, rate of return, profitability, trend analysis and comparative analysis with other companies in the same industry. These analyses help in assessing risk, determining the discount rate and market share.

Import and Export Options: end users often have financial data that they would like to import into a business plan. Import options may include allowing the user to incorporate Microsoft Excel data, or even data from bookkeeping software.

- **Import; Printing & Publishing options** offer the possibility of using relevant data from other programs, which ultimately saves time and effort.

Help and Support is especially important for the beginner but can also be useful for the advanced user. Sample plans and recommendations for wording and phrases are some significant support features.

- **Custom Plan Templates** implies the creation of a single plan for a specific type of business, i.e. the possibility of using a custom plan for a specific organization or for specific users.
- **Help and Support feature** is especially important for users who are only acquainted with the capabilities and use of the software. This is a quick and easy way to get help at every step of making a business plan. Users are given instructions for each topic of the program, on how to use each tool which is included in the program.
- **Additional Versions & Options** provide the user a guarantee for a refund, if it fails or if the user is not satisfied with the software. It also enables the possibility of fast downloads of an online program, formatting the drive and reinstalling the operating system.

3.2. SURVEYING THE STUDENT POPULATION ON THE IMPORTANCE OF INDICATORS AND RESULTS

In the analytical part of the study, main criteria and sub-choices of the appropriate software programs are set out as the business plan rating scale for evaluation of the importance of individual indicators (per Saaty, with a scale of 1 to 9).

The evaluation was conducted in two steps, by the students of the final year of graduate studies that had “Business Planning” as an elective subject, where they acquired theoretical and practical knowledge in the areas of business planning. One group of students analyzed the possibility of using the following software programs for creating a business plan: *Capital Business Plan*, *Business in a Box*, *PlanMagic Business*, *Planware* and *Plan2biz*.

The SWs used in developing business plans were selected from the top ten best rated SWs. Furthermore, we selected those that were available to students as a free download, or a free trial version. Students were able to analyze the SWs considering the criteria and opportunities presented by each SW. Below are the main highlighted features of all five SW.

Business-in-a-Box SW according to all its features is intended for beginners in starting independent businesses in various industries of, manufacturing and service type. There is a possibility of extension of certain functions, but without access to statistical databases.

PlanMagic Business is designed for start-up projects as well as for business planning growth and development. There are several developed versions of the software program for individual activities (restaurants, hotels, retail, etc.). An integral part of the SW is a guide for business planning. It also includes the ability to analyze the previous operating period (up to 3 years).

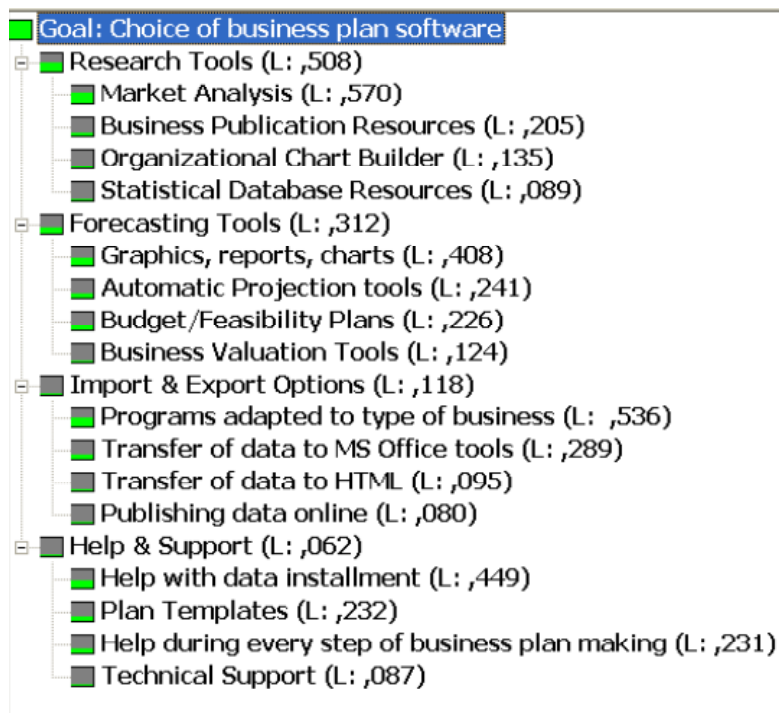
PlanWare, with a complete business plan template, is generally a good tool for beginners in planning and operating independently. Numerous examples of business plans allow users of this SW to select appropriate content and adapt it to its business purpose, whose economic viability is assessed.

Plan2Biz SW supports development projects of varying complexity, and offers a choice when SW is activated (classic version, simplified, specific). Templates of these business plans are also very structured. In fact, they contain all the usual components of a business plan (market analysis, customers, competitors, SWOT analysis, financial analysis, etc.).

Capital Business Plan is designed for beginners in developing business plans. Specifically, it offers the possibility of developing a business plan stage by stage, a detailed explanation of the content of each stage and what the user expects.

There are differences in the ranking of selected software program for business planning by students in relation to how the SWs were ranked by professionals. Differences in rankings certainly result from the level of knowledge and skills of the population of students participating in the survey. Specifically, the professional knowledge and experience in planning and the skills for using appropriate SW tools for planning affect user attitudes about the value of individual programs as well as specific solutions that these planning programs provide.

Involving students in their final year of studies in the analysis of the applicability of certain business planning programs has demonstrated their ability to apply the acquired theoretical knowledge about planning and understanding of the process of business planning in the context of using SW for business plans. We are talking about the population of students who will, after leaving school, be involved in the world of business. Therefore it is possible to develop a positive attitude towards the success of these and similar tools for business planning in business processes. It can also be seen as a positive openness of students toward the use of such tools in the educational process.



Capital Business Plan	.255
Business in a Box	.264
PlanMagic Business	.272
Planware	.155
Plan2biz	.055

4. CONCLUSION

AHP approach helps decision makers (managers, entrepreneurs, professionals) to rank alternative business plan software based on the decision maker's subjective judgments regarding the importance of the software attributes.

The study was conducted in three steps:

- Different approaches to business planning have been analyzed, including the formalization of the process of planning and building a business plan as a document.
- Models of criteria and sub-criteria of choosing the appropriate business plan SW have been defined and presented.
- Validity of the model for selecting a software program for creating a business plan has been established.

The importance of selecting a business plan software is related not only to the cost aspect of decision making (the cost of individual programs on the market), but the acceptability of content and coverage, and other features of software according to specific business purpose and business plan. The objective of the evaluation and selection of software for planning is to reduce the cost (not only for the purchase of SW but for the overall business planning process), and ensure adequate planning tools.

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