

PLANNING THROUGH A CLOUD-BASED SOFTWARE PLATFORM

Borislav Borisov^{1*}

¹University of National and World Economy, Bulgaria, e-mail: b.borisov@unwe.bg



Abstract: The purpose of the research is to identify the main challenges to the development of planning science, to emphasize how the development of information and communication technologies can help planners to develop quality planning documents, to review existing planning software applications and to present the possibilities of the Bulgarian prototype of a cloud-based platform for planning and budgeting - CPPB. The methods of comparative analysis and visualization were used. The article discusses the advantages and disadvantages of popular autonomous and cloud-based software solutions and argues that planning software should enable the development of strategic and business plans as an integrated and interrelated process. It also defines the benefits of introducing specialized cloud-based planning software for businesses, public administrations, credit institutions and the society as a whole.

Keywords: *strategic planning, business planning, planning software.*

1. INTRODUCTION

Planning science is constantly evolving, offering new concepts, models and solutions that are approved and applied or rejected in practice, which selects the most feasible of them. As the economic environment becomes increasingly dynamic, planning strives to be adequate to these challenges and meet the requirements to achieve competitive advantages. Planning, in fact, has its critics. Some economists from economically developed countries doubt that planning can respond to rapid changes in a turbulent economic environment and some of their colleagues from the former socialist countries believe that the centrally planned economy is to blame for the economic backwardness of this group of countries compared to their economically developed counterparts. They all probably have their reasons to be disappointed with planning, but a deeper insight into the specific problems can suggest that the reason for them is not the essence of planning as a management tool but its application in different countries and by different governance bodies. For example, Zach Taylor from the University of Toronto, points out that scholars of planning have long grappled with the dilemma of how to explain variation among places' traditions, modes or styles of planning practice (Taylor, 2013) and introduces the concept of 'planning culture'. Newman and Thornley, in their 1996 book *Urban Planning in Europe*, also attempt to explain the differences in planning patterns across countries, identifying five European families of planning which they defines as British, Napoleonic, Germanic, Nordic and East European (Newman & Thornley, 1996), which differ as to whether control is directive or regulatory, whether authorities are centralized or decentralized, to what extent public-private partnership is conflictual or cooperative, and whether land use is integrated or separated.

Planning models can be classified in terms of various criteria. Scientific literature abounds with different classification schemes, which categorize planning as directive, adaptive, synoptic, incremental and situational planning, goal-based planning also known as Strategic Planning System (SPS), problem-oriented planning known as Strategic Issue Management System (SIMS), planning based on of principles, scenario planning, etc., but it seems that the most significant difference between the types of planning and the planning documents created is that some of them are strategic and aim to determine the long-term policy of an organization in order to provide it with competitive advantages while others are focused on its day-to-day activities that must ensure the achievement of its short-term and long-term goals. This is the difference between strategic planning, the outputs of which are concepts, strategies, strategic plans and programs, and operational planning, the outputs of which are business plans, work plans, road maps, scenarios, timelines, projects, etc.

*Corresponding author: b.borisov@unwe.bg



2. PLANNING METHODS AND SOFTWARE APPLICATIONS

Although the differences between strategic and operational planning are obvious, in many methodologies and scientific works in the field of planning they are mixed in an unacceptable way. Thirty years ago Camillus and Datta (Camllus & Datta, 1991) proposed a model, which considered the process of developing strategic and operational plans as a whole but with a clear distinction between the stages of strategic and operational planning. The model was entitled Integrated Planning Systems Framework (IPSF) and includes the following steps (stages):

- environmental analysis;
- defining goals and objectives;
- internal analysis (evaluating strengths and weaknesses);
- formulation and evaluation of alternative strategies;
- strategy selection;
- operational plans and implementation;
- performance evaluation and feedback.

In other words, one of the constant challenges for planning science has always been to specify what content to put into the understanding of the individual concepts related to planning science and what planning methodologies to propose as most appropriate. However, this is a rhetorical question, since the content of planning documents, methodologies and techniques is constantly modified and supplemented according to changes in the environment and circumstances.

Another important aspect of the requirement for planning effectiveness is the way planning documents are made. Long gone are the days when plans were developed for months and were valid for years - in the turbulent and dynamic environment such a "luxury" is impossible. Practice needs quick solutions to specific problems, which, however, must be consistent with the general policy and goals of the organization. The development of ICT provides an opportunity to support planning specialists. Planning has always been based on collecting and processing certain information, but now it is possible to handle a large amount of data and search for optimal solutions. It can be said that "information-based planning" is moving to "database planning". It is a fact that data provides information, but the idea here is that planning solutions would be more adequate when based on the processing of large databases. This means that new planning systems must be built on the principle of Database management systems (DBMS).

Recently, Internet sites which provide strategic analyses and forecasts and solve planning tasks have become very popular. Such an application for developing business plans is the Business Plan Maker Professional (see the site <http://www.individualsoftware.com/?product=business-planmaker-professional-12>). LivePlan (<https://www.liveplan.com>) is another WEB-based application that provides over 500 sample business plans. BizPlanBuilder, on the other hand, contains plan templates for construction, service, manufacturing, non-governmental, and other organisations (<http://www.toptenreviews.com/business/software/best-business-plan-software/bizplan-builder-review/>) It has a "what-if" feature that allows you to experiment with different options for plan solutions, such as the final result tracking. There is a Cloud version and a Windows App version. Business Plan Pro is a business plan development program designed for budding entrepreneurs. The application comes with detailed instructions on what information is needed and why. (http://www.paloalto.com/business_plan_software/features/premier). Business Resource Software, Inc. offer online business plan development, marketing plans, sales plans, internet business plans, pricing strategies, etc. through Plan Write for Businesses cloud-based technology. Another program - Business in a Box - offers 1800 document templates for developing business plans for different types of business. There are versions for Windows XP, Vista, 7, 8 and 10, as well as Mac OS X 10.5 and later versions. The application is updated via the Internet. (http://www.paloalto.com/business_plan_software/features/premier).

A closer look at the electronic and software solutions intended to support the development of business plans shows that they all fall in in of the following categories:

- Sites with descriptions and methodological guidelines of the steps to be followed to develop plans;
- Business plan template sites with fillable forms with tables, forms and various applications;
- Video lessons on planning;
- Scheduling applications;
- Spreadsheet solutions for various planning tasks;
- Software applications for planning scenarios;
- WEB-based software solutions for strategic analyses and business plan development.

The available software products and web platforms for developing strategic and business plans

could be used in our country as well but there are some limitations that make them convenient for solving individual planning tasks rather than for developing complete strategic and business plans. Another limitation is that they do not allow for drawing up plans in different languages and, with few exceptions, are only in English (we found one application that has a Spanish language pack), which is why they are not fully applicable to Bulgarian conditions and requirements. Although some of them have what-if functions, there are no true optimization models. More importantly, most software products, while assisting professionals in applying any of the popular strategic analysis techniques such as SWOT, PEST and other similar methods, or in making forecasts and various calculations, do not have functions to bind the strategic decisions with the technical calculations of the business plans. Software applications would be more useful if they offered guidance on the most appropriate strategies to determine the strategic and operational objectives and sequentially solve interrelated planning tasks in order to reach the desired end result by means of optimization models.

Therefore, it is clear that there are some software products that assist planners in developing simple business plans but none that are suitable for developing comprehensive strategic plans. This is due mainly to the fact that, unlike business plans, which are generally reduced to solving tasks related to solving technical, personnel and financial operational issues and the expected performance, strategic plans are oriented towards development goals and are components of the company's policy based on its senior management expertise. Strategic planning is a creative activity that cannot be reduced to pushing buttons to get results. The challenge of creating such a product adapted to the Bulgarian conditions was answered by creating a prototype of a cloud-based platform for strategic planning. It was developed by a team led by the author under the project "Prototype of a cloud-based software application for planning and budgeting", in implementation of the Project Financing Agreement under the Tenth Session of the National Innovation Fund No. 10IF-02-21/28.11.2019 The prototype software application has the working title of Cloud Platform for Planning and Budgeting (CPPB).

3. PLANNING VIA A CLOUD-BASED PLATFORM

The pilot application Cloud Platform for Planning and Budgeting (CPPB) developed by a Bulgarian team of specialists largely meets the requirements for a dynamic relationship between strategic analysis, strategy development and goal setting and business planning. The idea of cloud-based software with a web interface is not to offer a software product that users will have to buy a license for but a service accessible at an affordable price.

The screenshot displays the start screen of the CPPB application. At the top, the title "ДАННИ ЗА ОРГАНИЗАЦИЯТА" (Organization Data) is centered. Below it is a form with the following fields:

Наименование на организацията:	
Адрес на организацията:	
Правен статут на организацията:	
КИД на организацията:	
Стартова дата на плана:	
Продължителност на плана (в години):	0

Below the form are three blue buttons with white text and icons:

- Стратегически анализ (Strategic analysis) with a brain icon.
- Целеполагане (Goal setting) with a target icon.
- Бизнес планиране (Business planning) with a dollar sign icon.

Figure 1. CPPB's Start Screen

The application suggests development strategies based on the results of analyses:



Figure 2. Recommended Development Strategies screen

Next is the development of the so-called “objective tree” incorporating the vision, mission, strategic and operational objectives of the recommended strategies:

		Име на оперативната цел	Сума на планираните разхо...	Сума на очакваните приходи	Собствен
Стратегическа цел 2	Цели, свързани с УЧР		0,00	0,00	
	Вътрешни бизнес процеси		0,00	0,00	
Стратегическа цел 3	Финансови цели		0,00	0,00	
	Клиенти и пазари		0,00	0,00	
	Цели, свързани с УЧР		0,00	66,00	
4	Вътрешни бизнес процеси		0,00	0,00	
	Финансови цели		0,00	0,00	
	Клиенти и пазари		0,00	0,00	
	Цели, свързани с УЧР		0,00	0,00	
Стратегическа цел 4	Вътрешни бизнес процеси		0,00	0,00	
	Финансови цели		0,00	0,00	
	Клиенти и пазари		0,00	0,00	
	Цели, свързани с УЧР		0,00	0,00	
	Вътрешни бизнес процеси		0,00	0,00	
	Вътрешни бизнес процеси		0,00	0,00	

Figure 3.

The Business Planning module includes several sections related to the phases of the business planning process:



Figure 4. Business Planning Steps screen

Sales revenue is projected using several methods for greater reliability. On this basis, a production program and the necessary costs are determined.

ПРОГНОЗА ЗА ПРОДАЖБИТЕ ЗА СЛЕДВАЩАТА ГОДИНА ПО МЕСЕЦИ

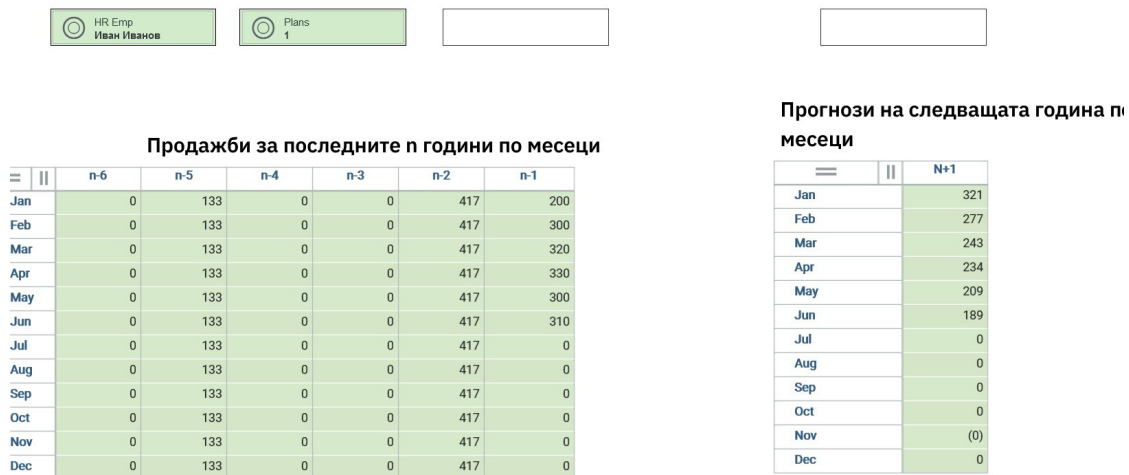


Figure 5. Sales Forecast screen

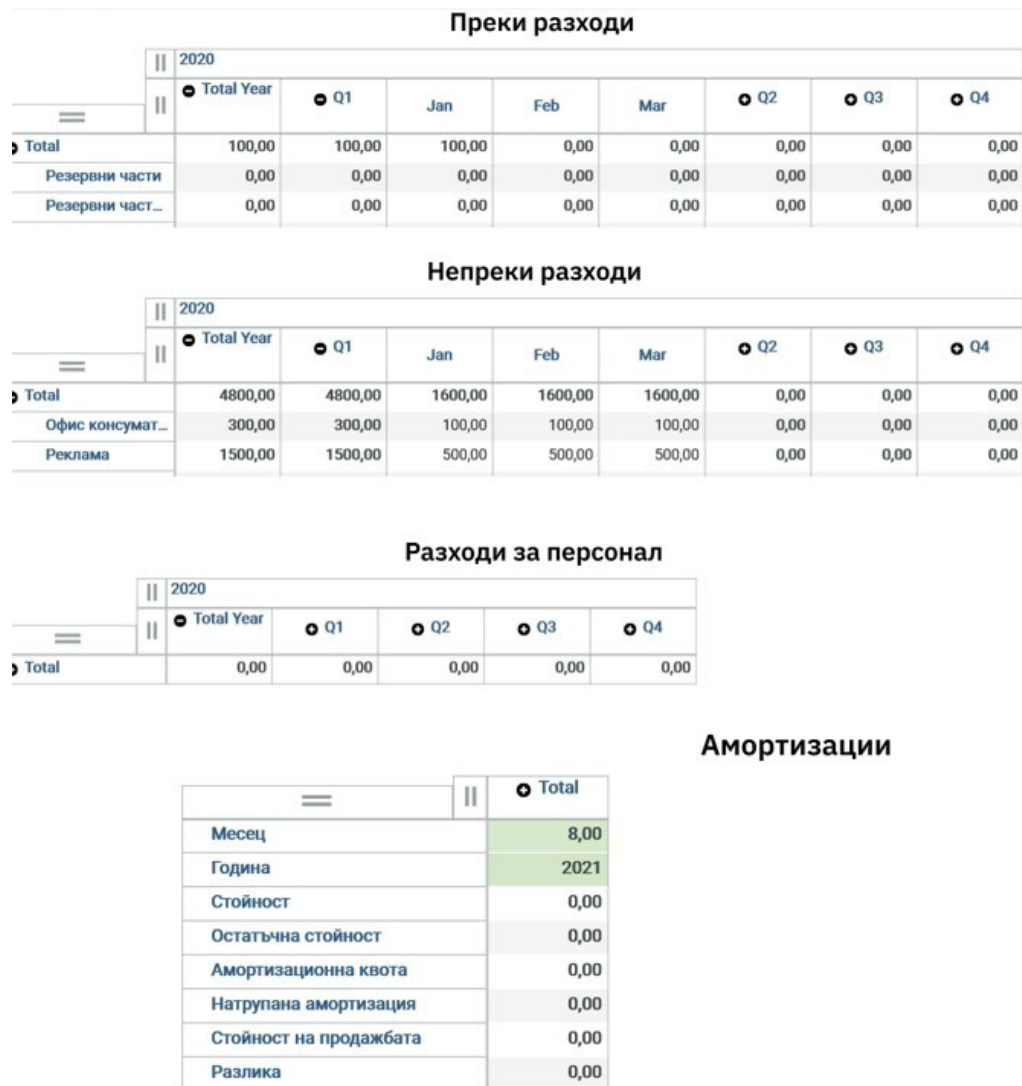


Figure 6. Production Costing screen

Обобщени стойности

	2020							
	Total Year	Q1	Jan	Feb	Mar	Q2	Q3	Q4
Брутна печалба	808 400,00	376 100,00	98 300,00	135 400,00	142 400,00	432 300,00	0,00	0,00
Лихви	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
ДДС	1650,00	1650,00	1650,00	0,00	0,00	0,00	0,00	0,00
Амортизация	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Печалба/Загуба от продажба на акти...	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Общо разходи	6550,00	6550,00	3350,00	1600,00	1600,00	0,00	0,00	0,00
Нетна печалба преди корп. данък	806750,00	374450,00	96650,00	135400,00	142400,00	432300,00	0,00	0,00
Корпоративен данък	9665,00	9665,00	9665,00	0,00	0,00	0,00	0,00	0,00
Нетна печалба след Корп. данък	797085,00	364785,00	86985,00	135400,00	142400,00	432300,00	0,00	0,00

Figure 7. Total Income and Expenses Table

The automated income and expenses calculation provides a projected accounting balance as well as a forecast of the net cash flows and the net present value of the investment, which is indicative for the overall economic effect of the investment.

	Прогнозен баланс									
	2021									
	02	03	Q2	04	05	06	Q3	07	08	09
Активи	366566,11	410022,50	1421665,83	441895,55	473215,28	506555,00	1803423,33	534394,72	601034,45	667994,17
Краткотрайни активи	436899,44	515522,50	1949165,83	582562,22	649048,61	717555,00	2647423,33	780561,39	882367,78	984494,17
Парични средства	436899,44	515522,50	1949165,83	582562,22	649048,61	717555,00	2647423,33	780561,39	882367,78	984494,17
Краткосрочни вземания	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Текущи активи	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Материални запаси	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Дълготрайни активи	-70333,33	-105500,00	-527500,00	-140666,67	-175833,33	-211000,00	-844000,00	-246166,67	-281333,33	-316500,00
ДМА	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Амортизации с натрупване	-70333,33	-105500,00	-527500,00	-140666,67	-175833,33	-211000,00	-844000,00	-246166,67	-281333,33	-316500,00
Пасиви	173791,11	118927,78	298125,67	103214,44	98521,11	96390,11	325579,33	86728,11	121357,11	117494,11
Краткосрочни задължения	64289,86	69081,53	186221,92	64693,19	61559,86	59968,86	142155,58	54806,86	45785,86	41562,86
Задължения към доставч...	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Данъчни задължения (КПО)	-12166,81	-5538,47	-12433,75	-4280,14	-4106,81	-4046,81	-20380,42	-3546,81	-8396,81	-8436,81
Данъчни разлики (ДДС)	30566,67	32850,00	98166,67	31333,33	32166,67	34666,67	99500,00	33166,67	33166,67	33166,67
Задължения към финансо...	45890,00	41770,00	100489,00	37640,00	33500,00	29349,00	63036,00	25187,00	21016,00	16833,00
Дългосрочни пасиви	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Дългосрочни кредити	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Собствен капитал	109501,25	49846,25	111903,75	38521,25	36961,25	36421,25	183423,75	31921,25	75571,25	75931,25
Неразпределена печалба/...	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Figure 8. Projected Financial Position screen

4. CONCLUSIONS

The development of ICT affects all aspects of our life - from our individual workplaces and pastimes to the general culture and public education. Planning systems follow this trend as well. Today there is a plethora of software products to aid planners in developing quality strategies, plans and programs. In Bulgaria, there is already a prototype of such a product developed by Bulgarian specialists, which has some advantages that other known products do not possess. One of these advantages is that it is cloud-based and easily accessible. Another one is that it combines the development of strategic and business plans into one continuous process.

The specialized Bulgarian software application for automated business planning provides various benefits to:

1. Businesses - they will be able to independently, without the help of external experts, develop better, realistic and justified business plans;
2. Public sector organizations - the managing bodies of the operational programs can be sure that their business plans (which are an integral part of most project proposals) are justified in terms of finance, staff and resource allocation, and the expected effects are realistic;

3. Credit institutions – banks will be able to compare the results of business plans with their estimates with greater confidence and thus mitigate their credit risk exposure;

4. The general public or society – the application raises the public awareness of ICT advantages and is a step towards popularization of electronic services.

REFERENCES

- Борисов, Б. и др. (2020). Нови парадигми в планирането. Колективна монография. Русе, 2020.
- МРРБ. (2020). Методически указания за разработване и прилагане на плановете за интегрирано развитие на общините (ПИРО) за периода 2021-2027 г.
- Newman, P., & Thornley, A. (1996). *Urban Planning in Europe: International Competition, National Systems, and Planning Projects*. Routledge Camllus & Datta, 1991
- Taylor, Z. (2013). Rethinking Planning Culture: A New Institutional Approach. *Town Planning Review*, 2013, 84(6). *Town Planning Review*, 2013, 84(6).
- Camllus, J. C., & Datta, D. K. (1991). Managing Strategic Issues in a Turbulent Environment. *Long Range Planning* 24, 67– 74.