

## ONLINE PERSONAL FINANCE MANAGEMENT APPLICATIONS

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The paper is devoted to internet applications supporting personal finance management (PFM). The main aim of the paper is to describe presumptions for development of PFM applications and to compare – from the user’s point of view – selected PFM websites in Polish, taking into consideration two categories: credibility and functionality. Within each category several factors were considered. The factors’ assessment has resulted in the creation of websites positioning.

Keywords: personal finance management, PFM websites, PFM internet applications, household budget

### 1. Introduction

Personal finance is a term that is increasingly appearing on radio, television, internet, etc. Also, various aspects of personal finance are increasingly becoming the subject of scientific research.

In the literature one can find different definitions of personal finance (called also household finance), for example, according to Business Dictionary [1] it is “Use of the principles and techniques of corporate finance in an individual’s money affairs, especially the methods of allocation of financial resources. Its objective is financial security and independence so that an individual or a family can meet expected expenses and withstand monetary emergencies. It involves making prudent

financial decisions, budgeting, saving, investing, insurance, tax planning, retirement planning, and estate planning.”

In the work [2, p.139] household finance is understood as economic phenomena occurring within a household that are directly associated with the collection and disbursement of money funds. In turn, the household’s financial management is interpreted as all household activities for the acquisition of funds and spending them in accordance with established household objectives. Some other definitions of personal finance are presented, for example, in the book [3, p.32].

Personal finance, therefore, includes a wide range of issues, inter alia, liquidity management, budgeting, capital raising, investing, saving, short-term and long-term planning, insurance and retirement security. Along with a dynamic development and internationalization of financial markets, increasing complexity and multiplicity of financial products, the development of information and communication technologies, the uncertainty in the labor market and pension reforms, personal finance management has become increasingly complex.

Examples of recent financial crises show that a lot of people cannot deal with their finances, which manifests itself, for example, as excessive indebtedness or investing in inappropriate, undiversified financial instruments.

The problem of insufficient financial literacy refers to people of many countries, including Poland, which is confirmed by results of studies. For example, the study "The Map of Financial and Insurance Education" [4, p.3], organized by the Polish Bank Association and the Polish Chamber of Insurance, says that many people do not understand simple economic phenomena and relationships between them, and hence, among others, they are not able to find themselves in an environment of free market economics. In the economic practice, a particular barrier is unsatisfactory financial education affecting the low level of people’s financial competence and the large area of exclusion in access to financial services.

Financial education as well as facilitation and assistance in the daily personal finance management is important for the proper functioning of people in the society. In the Western Europe and the United States of America this has been recognized for a long time. In Poland, young people get the basic financial and economic education in schools, though in a limited scope, as schools lack modern teaching tools and qualified teachers [4, p.4]. It is necessary to disseminate knowledge by other entities, among which the main role is played by central institutions such as the National Bank of Poland, the Polish Financial Supervision Authority, the Polish Bank Association, the Credit Information Bureau, foundations (the Kronenberg Foundation, Foundation for Youth Entrepreneurship), banks and credit unions. Specialized PFM tools for facilitating the daily personal finance management are offered by some banks and some non-financial companies.

The major purpose of this paper is to review and assess online PFM applications offered by non-banking companies and available for Polish-speaking users.

## 2. The cradle of PFM tools

Financial record keeping itself requires no special tools – a pencil and paper is enough. In the times of universal access to personal computers and the internet, the tedious tracking of income and expenses can be eased.

The most straightforward way to use computer would be working with spreadsheets. The advantage of such solutions is flexibility – a user himself determines a spreadsheet form, classifies data into categories, decides on the degree of detail, selects key performance indicators automatically updated, etc. The disadvantage of this approach is the necessity of possessing skills required for spreadsheets, the need to devote time to the template construction, to fill it with data and to adapt it for new purposes.

Keeping the household budget may be supported by specialized tools – so called PFM tools. These tools provide users with the information on the condition of their finances, the structure of expenditure and revenues, help create budgets, financial plans in the short and long term perspectives, categorize expenses, have extensive graphics and they also often allow the aggregation of financial information from various sources.

Personal finance desktop products emerged in the US in the 80s of the last century. They initially took the form of applications installed on the user's computer and the information had to be manually entered into the program. Then the applications have been enhanced by the possibility to import a bank transactions history using internet banking files. Currently, web applications which are delivered primarily by non-financial institutions, but also by the banks themselves as a separate module in the online banking or mobile banking, become increasingly popular.

Internet analogues of PFM desktop products also have first appeared in the USA, where they become rather popular and where users can choose from a wide variety of these tools. US website Mint.com is considered an American benchmark. It also has inspired creators of similar applications in other countries. Mint.com was launched in September 2007 and quickly attracted more users than any other online solution. Over half a million people opened Mint.com accounts in its first year—making Mint.com the leading and fastest growing service of its kind. In 2009, Mint.com was acquired by Intuit for 170 million dollars. Currently, the service has more than 10 million users [5].

Mint.com cooperates with several thousands of financial institutions in the US and Canada. The user may see the real picture of his accounts: credit cards, investment, savings and credit accounts. Using the secure transfer of payment information, PFM systems have comprehensive data on user's financial flows. Analytical modules of the system divide the stream of all transactions into categories, specifying the items of expenditure and summarizing them, specifying how much was spent on rent, transportation, food, clothing, restaurants, etc. Furthermore, they

show the outstanding balance of all loans and investments and interest both paid and received.

Advanced technology of Mint.com categorization was patented by the company. Mint.com slogans, not without reason, indicate saving money by users: the service reviews all expenditure and shows what money can be saved, doing it in a personalized manner. The system shows all expenses already made, recalls the need not to exceed budget, proposes efficient variants of the transaction – such messages come via e-mail. Also, reminders for payments due, information on a shrinkage of available funds and unusual expenses are sent by e-mail or SMS.

Particular attention is paid to safety. After all, users entrust to the system Mint.com not only information on their budget, but also on bank accounts passwords. Mint.com uses the same methods of cryptographic protection and physical security of information, as the leading US banks. The company has successfully passed the banking certification process.

Security is a key problem in the functioning of PFM website. Site Wesabe, one of the main competitors of Mint.com, which also required passwords for bank account access, ceased its activities in 2010, because of financial constraints – it was not able to provide its customers with an appropriate level of security.

Most PFM websites are free for users. Services make money on fees and commissions from banks, insurance companies, loan companies and other financial institutions, which are recommended to users. This is the American favorite business relations model, so called “win-win model” – all parties win.

A few years ago it seemed that PFM tools would become increasingly popular and would have rapidly growing number of users. Although in the United States, there is a number of PFM websites that have caught users’ attention and have achieved financial success, e.g. Mint.com, PageOnce (later Check and now Mint Bills) or Money Desktop, the consumer interest is not as high as expected. According to Aite Group’s 2012 survey [6] 58% of US consumers have not used and don’t plan to use a PFM platform. Only 27% of customers use PFM tools provided by banks or non-banking companies. Growth of PFM services is inhibited by a few factors, among them factors of cultural nature. The survey of Aite Group shows that only four in ten customers manage a household budget, categorize spending or forecast spending at least once a month. Only 13% of consumers want the help of financial institutions in their money management. So, what is the current state of PFM tools? The answer to this question might be the statement of Mr. Ryan Caldwell, chief executive officer of MoneyDesktop “We see PFMs as helping someone fully understand and manage finance. This is a progressive game in its early stages” [7].

### 3. The overview of Polish language PFM applications

In Poland, personal finance management applications are offered by some banks and some companies, other than banks.

Several banks provide PFM applications (e.g. BPH, ING, Meritum, Millennium, T-Mobile Usługi Bankowe – former AliorSync). The main minus of the bank applications is that customers can manage only accounts maintained by the given bank, while the main plus is that banks are able to ensure the appropriate level of security. On the other hand, PFM applications offered by non-banking companies, can be supplied by different institutions' accounts. Among offered services are: online applications (mostly free) and programs downloaded from the internet to be executed on a PC, free of charge or paid (e.g. Skarbnik, Menedżer Finansów, e-Portfel, ShuCash), some of them can be purchased also in a box version as well.

This section analyzes selected online PFM tools in Polish offered by non-banking companies. Due to the volume of the paper, only the short characteristics of websites, which include these tools, are provided below.

- Budżet domowy [8]

Budżet domowy is the first PFM tool in Polish, created in 2005. The website owner is residing in London. Both the site and the application are protected by the copyright law of the UK and international agreements. The homepage is interesting, with the dynamic movable design, though it seems overloaded with the information. The website contains tips for saving money in different areas and the information on basic banking products. A demo version of the application is available.

There are three ways of downloading data into application: manually, importing internet banking files (several banks, formats CSF, OFX, QIF), automatic access to online user's banking accounts (two banks mBank, PKO BP). Expense and income categories are predefined with the possibility to create users' own categories. Budżet domowy enables the budgeting in categories and provides the basic graphical presentation of the budget execution. The export of data in CSV format is possible, but this function is for pay, while all other functions of the application are free. According to the information on the site, all communication is encrypted in the same way that communication with the bank is, but more detailed information is not provided.

- e-Grosik.eu [9]

Using the service is free. The home page is moderately attractive. It contains a link to the Open Finance, which enables to compare mortgage offers from over 20 banks. The main page contains also non-financial advertisements, e.g. about medical cosmetics, which lowers the professionalism of this website.

Once the account is created, a user can manually enter his expenses and incomes (this is the only possibility to provide data). The application proposes its own categories and subcategories of incomes and expenses, but a user may create his own categories and subcategories. It also creates several kinds of reports for selected period in the tabular form, and some of them also in the graphical form.

- Figgy.pl [10]

The owner of the website is Devesoft Software Development. The home page is encouraging, although there is the information, that the site is in the beta version. A user defines his own income and expense categories. Transactions are downloaded manually and may be exported into CSV or PDF files on the daily basis. A user may define a list of standing orders and a list of user's favourite stores. The application offers a simple graphics. All communication with the site is performed using a secure 128 bit encryption (Thawte certificate). The service is free.

- Kontomierz [11]

The website was created in 2008. The site owner is the company Kontomierz, Ltd. The design of home page is attractive, inviting and the space is used efficiently. The demo version is available. Currently all application functions are free. The company plans to provide paid accounts with additional elements, in the future. However, the basic functionality will be free. Kontomierz possesses security certificate of Verisign Trusted Seal, the most reputable company issuing certificates for web applications.

At present, Kontomierz imports current account transactions from over 30 banks, either by automatic import or by means of transactions files from internet banking accounts. The manual import of data is available. It was mainly intended for cash payments, which can be also entered to the application by sending SMS to the special phone number. Export of data in the CSV form is available.

Predefined expense and income categories are built into the application. A user may define monthly budget limits for any expense category. The application follows these limits and informs a user about exceeding them. Results are presented also in the graphical form. The application sends automatically e-mail reminders, e.g. about lack of the activity on the Kontomierz account or about suspiciously large transactions. A mobile version of the application is also offered.

- MojeGrosze.pl [12]

The website was created in 2008. The main page is well organized and easy to use. A demo version is available.

The data can be imputed manually or by the import of transactions from the internet accounts. A user defines his own categories. A simple graphics is available. The website has not been developed for some time: the representative of the company confirmed unofficially that work on this website had stopped for the time being.

- MoneyZoom [13]

The main page of the website is elegant, spacious, well organized and therefore user friendly. The website contains a financial guide with advices concerning money management in different categories. The price comparison tool of the Comperia.pl, the strategic partner of MoneyZoom, is available from the site.

The manual introduction of data is the only possible way. The tool proposes its own income and expense categories and subcategories. A user can also create his own categories and subcategories. It is possible to introduce spending limits and plan future expenses. A graphical analysis is possible. MoneyZoom.pl has implemented the latest data encryption standard used for banking sites. It created in 2010 the first Polish PFM application on the iPhone. This allows users to control their budget, wherever they are.

- Payzzer [14]

Payzzer is a new service – it was created in 2014 and replaced the service Finser which was created in 2010. The home page is attractive and inviting, with a demo version. The website is accessible in Polish and English and includes the extensive FAQ section. Only the manual data entering is possible. A user creates his own categories. A graphical analysis is available. Payzzer has its mobile version and the application operates on Android platform as well.

#### **4. Positioning of PFM websites**

Websites were assessed from two points of view: credibility and functionality, considering several factors. Factors were evaluated by means of experts' estimates on a few points scale. Then estimates were summed up to obtain a composite estimate of the given website – on this base, websites positioning was performed.

##### 4.1. Factors taken into account in assessing credibility

- Security

Security issues must be treated very seriously as websites have access to users' financial data. Data security requirements should be at a level comparable to the requirements of banks. Security was assessed on the basis of the information disclosed on the website pages as follows: 2 points – for the highest quality security certificate (displays green padlock and website owner's company name in the green address bar, https:// at the beginning of the domain name - signs that a site can be trusted); 0 point – for lack of information on the manner of data encryption, 1 point – in other cases.

- Website owner

Basic information on the owner should be placed on pages of the website – this is the easiest way to show that there is a legitimate and real company behind the website. Users trust the site that is owned by a firm with a good reputation. Coordinates of the company enable a user to check further information on company's activities which he is interested in. As a quoted joint stock company should provide most detailed information on its business activities, evaluation was the following: 2 points - quoted joint stock company; 1 point –other company registered in Poland; 0,5 point – other company registered abroad; 0 point - lack of information on the owner.

- Contact data

Users should be helped to solve their problems while using a service on a website as quickly as possible, therefore: 2 points - contact by phone and e-mail, 1 point - contact by e-mail only, 0 point -no contact.

- Design

Websites that are more attractive create a greater feeling of trustworthiness and professionalism in customers. Two cases were taken into consideration: an attractive website (2 points) and not very attractive, modest website (1 point).

- Updating

People assign more credibility to sites that show they have been recently updated or reviewed. The information on the site should be current and well maintained, hence: 2 points if the information on the site is updated regularly; 1 point - if the site information is basically updated; 0 point - if the website contains the information which has not been updated for several years.

- User's responsibility

Information on the extent of users' responsibility should be precise, detailed and easy to understand, consequently: 2 points for clear and comprehensive information on user's responsibility, 1 point for general information, 0 point for no or very limited information. The results of websites credibility assessment are presented in the Table 1.



**Table 1.** Websites positioning according to their credibility

Website	Assessed factors						Results	
	Security	Website owner	Contact data	Design	User's responsibility	Updating	Composite estimate	Ranking
Budżet domowy	1	0,5	2	2	2	0	7,5	3
eGrosik.eu	0	0	1	1	1	1	4	6
Figgy.pl	1	1	2	2	0	0	6	4
Kontomierz	2	1	2	2	2	2	11	1
MojeGrosze.pl	0	1	1	2	1	0	5	5
MoneyZoom	2	2	1	2	2	2	11	1
Payzzer	1	2	1	2	2	2	10	2

#### 4.2. Factors taken into account in assessing functionality

- Data downloading

Basically, there are three ways to load data into an application. The first way is to load data manually (1 point). The second possibility is to load data by importing a file of transactions from internet banking accounts, e.g. a .xls, .csv, .tsv file (2 points). It might be a good solution for consumers that are not comfortable entering all of their bank information into PFM website. The third way is to import data by means of automatic access to online user's banking records – to take advantage of this possibility a user needs to enter his banking ID and banking password. In the third situation, 1 point if an application can connect less than 10 banks or 2 points if the automatic import from more than 10 banks is possible. So, if an application offers all three possibilities of the data downloading, points are summed up.

- Data export

In certain situations, the possibility to export data from PFM application to other program that has an import facility (e.g. Excel or Access) may be useful for a user: 0 point in case of a lack of such possibility, 1 point if import facility is available in the limited range, 2 points if an application has the data export facility.

- Income and expense categorization

Tracking user's expenses requires breaking down all expenses into appropriate categories. It helps user to learn about his spending tendencies and to control them. Depending on the manner of categorization of income and expenses, the scores are the following: 0 point if the application doesn't propose a categorization, 1 point – a simple categorization, 2 points – a more advanced classification.

- Graphical visualization

Graphical visualization of the analysis results is efficient, it helps users to look at large amount of data quickly. It helps also to achieve deeper insight into user's

spending and to discover better understanding of spending. Points were assigned depending on the complexity level of the graphical display: 0 point for the lack of graphics, 1 point for the simple graphics, 2 points for the more advanced graphics.

- **Budget planner**

An application should have the possibility to budget expenses and income and then to monitor and control spending in order to keep it in line with planned budget limits. Points were determined in the following manner: 0 point for no possibility of budgeting, 1 point for the simple budgeting and 2 points for the advanced budgeting, with reminders sent automatically to a user, for example in the case of exceeding limits.

- **Financial guide and price comparison tool**

Some websites contain a financial guide where a user can find advices concerning money management in different categories such as “house”, “car”, “education”, “savings”, “food”, “entertainment”, etc. A price comparison tool, in turn, enables to compare prices of different financial products. The points are the following: 0 point for lack of such facilities, 1 point for a financial guide, 1 point for a price comparison tool. So, if there are both facilities available on the site, points are summed up.

**Table 2.** Websites positioning according to their functionality

Website	Assessed factors							Results	
	Data downloading	Data export	Income/expense categorization	Graphical visualization	Budget planner	Financial guide and price comparison	Mobile PFM solution	Composite estimate	Ranking
Budzet domowy	4	1	1	1	1	1	0	9	3
eGrosik.eu	1	0	1	1	0	1	0	4	4
Figgy.pl	1	1	0	1	0	0	0	3	5
Kontomierz	5	2	2	2	2	1	1	15	1
MojeGrosze.pl	3	0	0	1	0	0	0	4	4
MoneyZoom	1	0	2	2	2	2	1	10	2
Payzzer	1	0	0	2	0	0	1	4	4

- **Mobile PFM solution**

Some applications have versions on i-Phones or operate on Android platform. This allows users to track their financial data, wherever they are. If an application has a mobile version – 1 point, 0 point in the opposite case. Table 2 shows the websites positioning according to their functionality.

### 4.3. Final ranking

Summing up the estimates for the credibility and functionality, the final ranking of the investigated websites was obtained:

**Table 3.** Websites final ranking

Website	Kontomierz	MoneyZoom	Budżet domowy	Payzzer	Figgy.pl	MojeGrosze.pl	eGrosik.eu
Total estimate	26	21	16,5	14	9	9	8
Ranking	1	2	3	4	5	5	6

The research has shown that the current offer of online PFM applications in Polish is rather modest and until now customers are moderately interested in them – for example, MoneyZoom informs that it has 30 000 users.

The investigation has revealed that only two of the investigated websites (Kontomierz, MoneyZoom) provide the highest level of security, which is the basic condition for winning the confidence of the clients. These two sites remain – in our opinion - the key players on the Polish market. Some websites have stopped to develop or appear not to care about users (e.g. MojeGrosze.pl, Budżetdomowy.pl), as indicated –among others – by information on the site that has not been updated for a long time, posts on the discussion forum that are several years old or the lack of interest in solving users problems: our experience shows that receiving answers to user’s questions requires several e-mails and number of phone calls. Figgy.pl and e-Grosik propose the simple PFM tools and moreover Figgy.pl has functioned in so called beta-version for quite long time. Payzzer was created in the last year, so the time will verify its functioning.

## 5. Conclusions

Polish online PFM tools began to appear mainly in 2007-2009. Since that time the market has changed considerably: PFM websites which remain on the market develop at different rates, some have ceased their activities (for example 5groszy.pl, Benefi.pl and more recently, in December 2014, iFin24.pl), some have changed their original purpose (Moje.oszczędności.pl, domain currently listed for sale) and some new have arisen (e.g. Payzzer).

In the beginnings of online PFM tools in Poland, it seemed that some of them would repeat the success of American PFM web tools, naturally at a scale appropriate to Poland. Time has verified these expectations. There are many reasons for this – below we list a few of them.

The first group of reasons is connected with the economic performance of companies offering PFM tools. The first Polish PFM applications were mostly

created as a result of small firms work. Taking into consideration all costs, while applications were supposed to be free for customers, it was rather difficult to raise funds for further development and for ensuring the appropriate level of security.

The second group of reasons is related to the different financial behavior of consumers in the US and Poland, influenced by tradition and the different economic situation of both countries. Below are some differences.

In the United States using non-cash payments (checks, cards, money orders) has been common for many years, and then the expenses control is more difficult than in the case of using cash. The share of cash payments in the total volume of payments was 26,8% in 2012 [15, p.26], while cash remains the most popular payment method of consumers in Poland – 64 % of the total volume of payments, and 82 % of the total number of payments [16, p.257]. Further, US banks charge high penalty fees for overdraft or non-sufficient funds on accounts. The average fees of this kind, on accounts that had one or more overdraft transactions in 2011, amounted to \$225 [17, p.5]. Related charges vary widely, depending on the bank. For example, the fee for overdraft at Bank of America is \$35 in accordance with the current tariff of fees and charges. To avoid costly overdraft charges, Americans were used to keep track of their spending already before the era of PFM applications.

PFM services help not only to track expenses, but also help to save money. A habit of saving money, avoiding unnecessary spending and maximizing profit seem to be features typical for Americans. Also, results of studies confirm the propensity for savings: consumer ownership of saving accounts was 75,8 % in 2012 [15, p.40]. In Poland, only 40,8% of households have savings, from which 66,6% in the form of saving deposits in PLN (data for 2013, [18, pp. 76-77]). In addition, the report on economic knowledge of Poles, published jointly by the Institute of Freedom and Raiffeisen Polbank [19, p.36], indicates that Polish people do not attach much importance to financial matters, do not strive to maximize their individual profits and are reluctant to make calculations.

The third group of reasons is related to the long US tradition regarding all personal finance issues. Personal finances are under investigation for almost 100 years (since the 30s of the last century, when the US financial market had been created), and the American experience with the personal finance management tools lasted now 20-30 years. Personal finance is separate, full-fledged scientific research direction. It is taught at American universities as a separate course, or as a part of general finance courses. Academic curriculum of personal finance is supported by adequate textbooks. Theoretical foundations of this field of finance and its development perspectives are discussed in the renowned scientific journals.

In Poland, the personal finance has been subject of the scientific research for about two decades and personal finance management courses appeared at universities only in the recent years.

Along with the increasing globalization of world markets and the further socio-economic development of Poland, above mentioned differences should be decreased gradually over time.

To sum up, PFM online tools are currently in their beginning stadium of development. The further progress of IT technology, the increasing consumers' financial literacy and the expansion of the range of users by the new generation for whom the internet is the natural environment, will lead to the improvement and perfection of PFM tools and to their more common usage.

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