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Household and personal management. Being part of the new generation

Serban Popa*, Gabriela Prostean, Adrian Adam, Constantin Dumitrescu

“Politehnica University of Timisoara, No. 2, Pta Victoriei, 300006 Timisoara, Romania

Abstract

Managing time and expenses is important for our rapidly-growing daily life. Paying utilities and service suppliers takes time and money. Managing personal expenses and incomes shows the balance generated by the property of active and passive objects. This paper presents an original solution for paying utilities with the help of a newly-conceived online method. This is a web-based method which may also be used on Android and IOS devices. Additionally, it is transparent to users and involves zero time used for payments and smaller commission costs when compared to other existing payment methods.

Using recent statistics, the first part of this paper proves that lack of time, as well as stress on individuals is a real problem. There is also a lack of time in doing all kind of needed activities. The activities can be managed by an automated system presented in the last section of this paper. The system described allows individuals to handle non-urgent but important activities, which is the smarter alternative to manage time.

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* Corresponding author. Tel.: +40 722 847 554.
E-mail address: popaserban@yahoo.com
1. Introduction

The dynamism that surrounds us generates an acute lack of time. Everything goes so fast that there is no time for accomplishing all the roles and all the tasks in our life. The global market for producers has changed rapidly in recent years, defined as post-industrial era to become highly competitive, requiring more accelerated rates of evolution. In the context of this new economic environment, the development of various informatics media not only determines the individuals and companies evolution, but in many situations, even ensures their survival.

Because the individuals and companies concentration should straighten to the new constraints in world economy, the management of the other operations should be fully automated. These new constraints are:

- The increasing diversity of products, markets and technologies, achieving new and unknown sectors (egg computing and information technology)
- The increasing internationalization of firms, involving complex issues of merger, acquisition and multiculturalism
- The development of new savings and uncovering new poles that come to compete the western traditional industries
- The need of finance and positive cash flow, credit constraints for the young are binding at all times in all countries (Coeurdacier, Guibaud & Jin, 2013)
- Social changing

Different statistics show the context described above. The individuals are subject to greater pressure and stress shows the TNS Research, March 2010, for InterCall (http://www.keyorganization.com/time-management-statistics.php):

- Required to do more work with fewer resources: 48%
- Doing the work of two people because of recession: 39%
- Difficulty taking time off from work: 47%
- Feel the need to stay connected 24/7: 30%

Because of these, the individuals are not satisfied with their life and have no time for accomplishing the other roles in life: family and children, managing the house or hobbies. Harris Interactive for CareerBuilder, 11/2009 statistics shows the following (http://www.keyorganization.com/time-management-statistics.php):

- 23% of workers say they are dissatisfied with their work/life balance, up from 18% in 2008
- 9% are hoping to leave current jobs in 2010 for a new one. 9% plan to in 2011

Accenture survey 2009 (http://www.keyorganization.com/time-management-statistics.php) shows that 68% of men and 46% of women are available to family and children and 91% of men and 75% of women are taking the opportunity to work from home. Considering these, we ask when is there time for house and personal administration, utility invoice and other different taxes and bills administration.

Our approach is to automate the management of operations like finding, paying, keeping or storing bills, invoices and taxes.
2. The improved generation

In (Covey, Merril & Merril, 1994), Stephen Covey discusses about the existence of three generations and the need for a fourth generation. These generations refer to the individual time management and they represent a categorization scheme for the many time management approaches that are presented on the market today.

The first generation is composed of the individuals that keep lists, notes and reminders. The tasks that are not accomplished at the end of the day are moved to the task list of the next day. This approach is less stressful and can be easily adapted if important or urgent matters appear. The lack of this approach is the forgetting of certain tasks, less accomplishes and no definition of the priorities.

The second generation is based on planning and preparation. Individuals part of this generation use calendars and appointment books. As opposed to the first generation, the second generation plans and prepares, schedules future appointments, and sets goals. This in turn saves their time. The disadvantage of this approach is that individuals have what they want and not what they need. The thinking is independent and the bystanders are seen as instruments or barriers in the success path.

The third generation refers to planning, prioritizing and controlling. Individuals prioritize their activities daily. This approach implies spending some time in clarifying values and priorities. The major advantage if this approach is the accent on establishing objectives on short, medium and long term. The daily efficiency is increased by daily planning. The minus of this approach can be the appearance of the quilt feeling because of the excessive planning and ignoring other daily roles. It also reduces flexibility and spontaneity.

The fourth generation is the generation that sums all the pluses of the first three generations. Individuals devoted to this generation must be proactive and efficient. By being part of this generation, individuals are moving from the simple science of time administration at leading their own life. A clear difference between the urgent and important tasks must be underlined. This difference is presented in Table 1.

Table 1. The four quadrants (Covey, 1989)

<table>
<thead>
<tr>
<th>An example of a column heading</th>
<th>Urgent</th>
<th>Not urgent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Crises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Pressing problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Deadline-driven projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Prevention, capability improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Relationship building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Recognizing new opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Planning, recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not important</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Interruptions, some callers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Some mail, reports, meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Administrative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Trivia, busy work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Some mail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Some phone calls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Time wasters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Pleasant activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activities in the first quadrant are the “urgent” and “important” ones. They have to be immediately accomplished. Here individuals have to organize, produce and use their experience and reason to instantly respond to the multitude of challenges. But we can avoid being in this quadrant by not delaying activities and more planning.

The ideal quadrant to work in is quadrant 2. This is the working smarter alternative. Individuals use thinking time effectively to focus, plan and prioritize their work. They prevent the problems; delegate the tasks, increasing their ability to react. This will feel less stressful and in turn will be more effective in their roles.

Activities in this quadrant can be minimized. The tasks that are “urgent” but “not important” are often “important” for other individuals than for us.

Quadrant four contains activities that can either be dropped all together or used as a break from the pressure. Individuals should not be in this quadrant because usually they waste time being here.

The improvement of the new generation can be in a way to automate some of the activities spent in quadrant three. The automation can be done using informatics supports that must be online and accessible from everywhere. Due to this automation, individuals will have more time to spend in quadrant two, in planning and prioritizing the tasks. These online informatics supports should be used by individuals with a monthly fee or for free. The time spent in organizing and paying our own invoices, bills, utilities, taxes is bigger than it their importance. An automated way of doing this would improve our life living us time for other relaxing activities.

According to Harris Interactive (http://www.productiveandorganized.net/2007/12/bill-paying---a.html), the household management is a real administrative burden: 23% of adults pay bills late and endure fees because they cannot find their bills.

Considering the above mentioned, a web based solution for managing invoices, utilities and taxes is needed.

3. The existing IT-based solutions

(Bennet, Lapides, Morabito & Averyt, 2011) presents a method and system for generating and presenting invoices or bills from a biller to a payer. The bills are generally sent to the payer on a branded virtual site to look like the biller’s website. Single or multiple bills will be presented to the payer through email notifications. The payer would have the option of paying the entire bill or portions of the bill utilizing various methods of payments, such as e-checks, paper checks, credit or debit cards as well as automatic withdrawal from a check or savings account. The payer would also have the option of selecting a paperless billing system instead of receiving both email as well as paper notifications of a particular bill or bills.

Electronic calendars, and especially internet-based calendars, are becoming more and more popular. The software application presented in (Ahmad, Nasr, Safwat, Gaber & Ahmed, 2011) allows for the easy generation, management and storage of lists of personal events using the internet-based application calendar.

In (Remington & Dent, 2009), a bill presentment and payment remittance system is configured for use over an electronic network, such as the Internet. The bill presentment and payment remittance system allows the biller to create a bill and payment remittance information in a format specified by the biller. The biller submits the bill and associated payment remittance information by electronically transmitting it over the Internet to the consumer. The consumer authenticates that the bill did indeed come from the indicated biller. The bill is presented in a user interface which provides a line-by-line itemization of the bill, along with a predefined dispute reasons which the consumer can check to challenge particular items on the bill.
An interesting approach is implemented using virtual banks. The process of money transfer can be implemented in these virtual banks. The three steps: deposit e-money, withdrawal e-money and determine account balance can be used in developing a payment application. For authentication rules, security and privacy a gateway translator is used. (Shaban, Noory & Yaseen, 2012)

We propose an automated solution for paying and managing the utilities, with less as possible time spent by the individual for organizing his invoices and paying them.

4. The proposed solution

Our solution is web-based and mobile. By using the application an individual can create a user account (user and password) and access his personal information. The application gathers all the pre-defined invoices, taxes and payment notices of an individual and builds one notification payment each month. The notification payment is sent to the individual via different communication channels (email, online, SMS). After it is paid, an automated mechanism starts and redirects the money to each invoice supplier.

The managed invoices are: local taxes, utility invoices (gas, electricity, TV, internet, water and sanitation), personal, home and car assurances and individual tax records excluding companies.

5. The implementation of our solution

Fig. 1 shows the actions taken by a user when logging into the application. These actions are split in three blocks. In block 1, the user accesses the application via a username and password. The individual must complete his personal data so he will be identified in the supplier system. The logging system is very easy and simple to use. Block 2 contains the registration of service providers to which the individual wishes to have access using our application. Recording each provider requires authentication of the user input according to the supplier, e.g., subscriber code of electricity provider of energy or subscriber code for the telephone service provider, internet and television. Once registered these services, the user is able to access his personal account for each application service provider. Accessing personal accounts is done using CURL technology. Also, the user can record single invoice of service providers that do not offer, for now, an online platform that can be access based on user name and password. Manage invoices of the suppliers is equally useful as those providing online platform of its kind, therefore the application treats these situations.

Individual may choose to receive email notifications for bill payment maturities for service providers he subscribed. The application offers a wide range of notifications, the individual can customize according to expectations.

These activities are part of quadrant three, discussed in chapter 2. They are non urgent and important for the utilities suppliers so their handling can be delegated to our system.

Besides managing vendor invoices, individuals can manage their own costs and revenues. These features are presented in block 3 of fig. 1. Every month, they can generate reports that show returns for the category of income categories and the differences between incomes and expense. Compared with the initial estimate, the individual can calculate his monthly rate that has surpassed the budget.
Individual can receive email notification on multiple events that he previously defined them. Some examples of these events are:

Fig. 1. User actions
Due date for payment auto insurance, medical or home
Due date for conducting periodic self inspection
Next due date for making dental visits
Due date for making the next oil change and filters to private car
Etc.

Basically, any information or event that an individual wishes to be informed of can be introduced into the system, following the application notify each event occurrence date.

Figure 2 shows the architecture of system, the relationship between blocks and the communication between the parties.

The application database is SQL. SQLAlchemy is a Python SQL toolkit and ORM (Object Oriented Mapper) that provides developers with full power and flexibility of SQL handling. The set offers different models built for easy access, fast and efficient database adapted in easy to use Python language. Python SQLAlchemy ORM associates predefined classes with the tables in the database and instances of these classes (objects) with lines corresponding tables. The database contains all the registered users and each user supplier invoices handled by the system.

REST (Representational State Transfer) is a software architectural style for distributed systems, such as the World Wide Web. Restful services are faster than web services and have more methods than these. REST methods used are:

- POST (create new object)
- PUT (change object)
- GET (read article)
- DELETE (delete object)

Communication with the browser is done through JSON (JavaScript Object Notation). JSON is a data interchange standard for open development. JSON is independent of any language and is available equally for each language separately. JSON format is used for serializing and transmitting structured data over a network connected. It is used primarily for data transmission between server and web application, being an alternative to XML. JSON's basic types are: number, string, boolean, array, object and null. JSON advantage against that XML is the fast that it requires less data, making it easier for people to read and write and easier for machines to interpret and generate.

The software technologies can use JSON for the development of Android or Apple - iPhone. Thus, any application of this kind will be easily adapted to the entire system and can communicate with the browser without major changes in application architecture.

6. Conclusions

The delegation of tasks is one of the most important aspects for an optimized time management. And also is one of the hardest things to do. In many cases, individuals have the rush to say “I will do this thing better”. But this kind of thinking pushes us to fulfill activities in quadrant one, presented in table 1. The ideal is to delegate the activities from the quadrant three. Activities from this quadrant are the easiest and safest to delegate. Personal management of an individual is important but not urgent. Paying any kind of bills, taxes, utility invoices is also
important but for sure, it is not urgent. With a good planning made by a web-based and mobile application, these tasks will never be a stress for us. Our intention is to improve the fourth generation described by Covey and our proposed solution fulfills this criteria.

The system is designed to operate with the latest technologies, on all types of devices: desktop/laptop, iphone, ipad or Android type. The three modules resolve in an integrated way the issue of paying and managing the utilities. It solves this problem for each person with no time available to spend on activities in quadrant three. The system is very easy to use by all types of users, either being an IT experimented user or a non-experimented type.

The possible enhancements of the system are better and more statistics, the management of the expenses for individuals living in an apartment in a block, the management of the annual financial sheet of an individual and basically all the possible types of payments that could be made by an individual in one year.

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**Fig. 2. Architectural model**
References