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HOUSING SUBVENTIONS IN SLOVENIA: EXPERIENCE FROM THE SECOND YEAR

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Abstract

In this paper we present a system for supporting the process of approving housing subventions in Slovenia. The system was used for supporting two calls in the last two years. From this perspective, the impact of effective change management procedures is elaborated in more detail. For improving the effectiveness of the system, a module for interoperable data exchange with the Central Register of Population in Slovenia was further developed. Starting from the findings elicited in the first call, we compare and analyse the impact of actions taken in the second call. It turned out that the most important critical success factors were agility, robustness and flexibility of the presented system, as well as a careful business process management. We also present a few new lessons learned in the process of developing and using the system.

1. Introduction

The Housing Fund of the Republic of Slovenia, public fund was founded in 1991 as one of the necessities of the Housing Law for the reason of financially supporting the Slovenian national housing programme. In the last decade the resources were primarily allocated for loans with financially pleasing terms to citizens and non-profit housing organizations [1]. However, the Fund's financial incentive focus has recently widened also to increase supply of newly constructed flats to the housing real estate market as well as to encourage housing savings and granting subventions to young families for their first attempt to consolidate their housing status.

As a direct consequence of a new updated act called "National Housing Savings Schema and Housing Grant for Young First-time Homebuyer Families Act" [6], which was enforced in Slovenia in March 2006, the Housing Fund of the Republic of Slovenia announced the first call for granting subventions to young families that bought or reconstructed their housing real estate for the first time in 2006 [3]. The call was announced in the Official Gazette of the Republic of Slovenia [7, 8], in daily press and on the Fund's web site [10]. According to the act, the Fund is obliged to proclaim the calls on yearly basis, since it established a framework for housing subventions for the time span of eight years. The most important changes introduced to the act in 2007 were intended to cover additional purposes for housing construction, wider span of earnings per family member, and additional subventions for renting flats for young student families.

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The purpose of the act and the corresponding public calls was to grant yearly subventions to beneficiaries as an incentive mechanism for first-time buying or constructing suitable housing facilities. Citizens of the Republic of Slovenia and other EU member states (with a permanent stay permit in the Republic of Slovenia in the corresponding year) were eligible to apply to the call. The suitability of each applicant is determined according to the enforced legislative regulation in the Republic of Slovenia. In order to obtain the yearly subvention, each applicant had to fulfil three criteria. First, the applicant's family had to have a young family status. Second, the applicant had to have a contract for buying a housing real estate or a legally binding building permit for the construction of an individual house. And third, the earnings per applicant's family member were not allowed to exceed one half of the average salary in the Republic of Slovenia in the past year.

To evaluate earnings criteria all the family incomes in the previous year are taken into account. Average net salary in Slovenia in the year 2005 was € 8.828. To illustrate the increase of the upper limit for earnings per family member let us consider a family with four members. In the call in the year 2006 such family earnings should not exceed € 17.658; however, in the call in the year 2007 the boundary earnings increased to € 32.662.

The earmarked amount for the year 2006 was € 758.275. The resources were allocated from the state budget and were transferred from the Ministry of Environment and Spatial Planning to the Housing Fund of the Republic of Slovenia in November 2006. In the designated time for the first call for housing subventions the Housing Fund of the Republic of Slovenia received 321 applications. After the completed application gathering and data verification processes the Fund approved 176 applications and therefore granted € 107.360 for subventions. So, the approved amount was seven times less than the earmarked amount. One of the goals for the second year of granting subventions was, with no doubt, to improve this ratio.

In this article we present a system for supporting the distribution of the housing subventions for young families in Slovenia. Since the system is now in use for the second year, we first focus on the change management procedures that were required to update the system to the 2007 requirements. Next, we give more detailed description of the implemented supporting system. Then, we analyse the context and the results obtained in the first two calls. Next, we present some lessons learned in the process. Finally, we conclude with emphasizing the most important points and identifying some ideas for further work.

2. Two calls for subventions in housing

Due to the fact that the first call for granting subventions in 2006 in Slovenia was a significant novelty in the housing real estate field, the accurate estimation of beneficiaries and, consequently, the required financial resources was not an easy task. Since such estimation is needed for efficient planning of the underlying business process, constructing the process workflow turned out to be difficult, too. Therefore, one of the characteristics of the project was the inherent uncertainty that had to be taken into account in all related actions, also in designing the computerized decision support system.

The intention of the public call was to grant yearly subventions to beneficiaries as an incentive mechanism for first-time buying or constructing suitable housing facilities. The eligibility is determined according to the enforced legislative regulation in the Republic of Slovenia. Citizens of the Republic of Slovenia and other EU member states (with a permanent stay permit in the Republic

of Slovenia in the corresponding year of the call) were qualified to apply to the call. However, in order to obtain the yearly subvention, each applicant had to comply with three criteria: young family status, contract or building permit, and below average salary.

Before the preparations of the changes of the National housing Schema Act the predictions were rather optimistic. The call in the year 2006 showed that the actual number of beneficiaries for the subventions was quite narrowed, mostly because of the severe income restrictions. Consequently, the changes of the act were planned in order to increase the number of beneficiaries for subventions.

The analysis of the applications revealed that the target limit for the family income was set too high. So, among the beneficiaries there were only those young families with below average income that can hardly afford to buy or construct their own dwelling. At the same time, many young families improve their housing conditions by reconstructions and renovations of the existing apartments. In the year 2006, such cases were not eligible to obtain housing subventions, in spite of the fact that they obtained building permit for their actions.

One of the findings from the year 2006 was that a category of "young student families" should receive special attention. It was estimated that there are about 500 such families in Slovenia. Such young families with at least one of the parents with university diploma are usually not able to buy or construct their own apartment; besides, they are sometimes forced to rent an appropriate facility at the profitable rent rates. So, they should also be included among the beneficiaries for housing subventions. The resulting changes of the act should, therefore, include also such student families.

Among other positive impacts, changes in the act should also influence Slovenian demographic trends. Demographic situation in Slovenia reveals that the population is aging. In the recent years, the population growth is negative. Also, the birth rate is relatively low. Average age of a woman at her first birth is more than 27 years. One of the most important contributing factors for such trends is the inherent difficulty of solving housing problems. The changes of the act were enforced in July 2007 [8]. The major changes reflect additional housing building purposes, higher threshold for salaries and additional subventions for apartment renting for young student families.

In the second call the yearly subvention was set to € 300 per family member, which was much higher than € 160 in the first year. The earmarked amount from the state budget was set to € 2.377.854; it was estimated that the sum would suffice for one thousand young families and about 600 young student families for renting subventions. Next year, the earmarked amount is predicted to increase to € 3,7 million.

In both years, all applications for subventions had to be submitted on a prescribed standardized form that was accessible from the Fund's web site [10]. The web site also implemented the procedure for checking the salary criterion, so that the applicants could verify their situation before submitting the application. In the year 2007 we observed that the use of the checking facility was much higher than in the first year.

In the assigned time for the second call for housing subventions the Housing Fund of the Republic of Slovenia received 1360 applications, which is four times more than the first year. Each applicant was notified about the status of her or his application; in case of some missing documents the Fund requested to supply them in designated time. Also, the Fund executed renewed and updated procedures to obtain data from various e-Government sources and services, like for example from

the Central Register of Population. Those data were used more actively in the data entry phase, therefore simplifying and shortening the underlying procedures. The burden of data-entry was drastically reduced – the required data-entry time for a single application for subventions was five times shorter, maintaining the same quality of gathered data.

After the completed application gathering and data verification processes the Fund approved 979 applications for the year 2007 and therefore granted € 1.068.600 for subventions. So, the increase from 2006 was identified not only in the number of applications, but also in the success rate, which raised from around 50% in the year 2006 to more than 70% in the year 2007. The conclusion is, therefore, that the legislation changes introduced in the second call were very well justified. Relative increase of the number of approved subventions from the year 2006 to 2007 shows substantial improvement in helping young families solving their first housing problem. On the other hand, since only one third of the earmarked sum was consumed, there still remains substantial motivation for relaxing the criteria for approving subventions. It can be observed that the changes in legislation in the year 2007 that were based on 2006 analysis caused overly optimistic expectations, mostly for subventions for renting apartments. Here the plan was to receive over 500 applications; however, only 77 actually applied, resulting in only one approved application.

The most important reason for relatively low proportion of successful applications for subventions are high prices or real-estate property in Slovenia. Based on the data from Statistical office of the Republic of Slovenia the prices in the year 2006 were about 50% higher than in the year 2003. The average price for a square meter of dwelling in the capital city of Slovenia was in September 2007 more than € 3.000. Due to high prices of housing only a small portion of young families can afford to buy their private apartment; therefore, majority of them stay at home, at relatives or friends. It is worth mentioning that in Slovenia there are more than 90% of all housing facilities privately owned. In order to buy or construct their own apartment, young families must usually save substantial amount of financial resources over longer period of time. In addition, their relatives and friends must help to make the investment viable. As a result, the decision to raise family is prolonged to a later period in life in most of the cases.

Prices for renting housing facilities in Ljubljana are high, too. To rent a one-bedroom apartment in Ljubljana, one has to pay between € 250 and € 700 per month, while prices for two-bedroom apartments sometimes exceed € 2.000. Most of the young student families can afford renting apartments only from their relatives, friends or acquaintances, because in such cases they usually pay much less than otherwise [2].

3. Implementation and change management

The scope of the information system [3] was established by the National Housing Savings Schema and Housing Grant for Young First-time Homebuyer Families Act. Since the act was amended in the year 2007, the system had to reflect the desired changes. On the other hand, some sort of backward compatibility had to be assured for continuing the policy from the year 2006. For that reason, strict change management procedures were established, so that every taken action was thoroughly documented and tested before put into production. Therefore, following from the formal definition of the system requirements that can be derived from the Act and the call, we documented every request for change as well as the process that leaded to its implementation. These actions were well suited, since it was our intention from the beginning that the resulting system be flexible and robust.

The fact is that normally the changes in user requirements tend to corrupt pretty designs. Frequently, the source code slowly sinks from engineering to hacking, which gets frustrating because computer programs are harder to read than the average mystery novel or newspaper article. One way of coping with such eventualities is to employ standard design methodology that promises to overcome these difficulties. In our case we knew that maintainable code is necessary if we want to be able to adapt to changing requirements. So we decided to use the design methodology that was based on the Rational Unified Process (RUP) methodology [5] with several agile elements [9]. One of the main advantages offered by RUP is constant determination for risks and effective risk management. Also, the approach is well suited for change management since changes are adopted early in the system design phase.

It turned out that one of the pillars of good design was the development of two rule-based expert systems that were included in the described information system. The first expert system is designed to respond to errors at the data-entry level, resulting in increased quality of the entered data. The Fund's officers responsible for the project developed the rules that govern the execution of the system. In the second year, we were able to adapt the system by changing only the required rules. Note that the program's source code remained intact in this case. Similar approach was applied also in other Fund's floats and tenders in the past [1], so it was included in the list of the Fund's best practices in IT.

The second expert system was designed to validate the compliance of an application to the demands of the call. In other words, it is used for the logical evaluation of every application. The outcome of the second expert system is used to rank applications into three categories with respect to which kind of demands of the call they violate. In the first category there are applications that conform to all the provisions of the call. Those are the applications that fulfil the conditions to receive a subvention. The second category contains applications with severe violations of the call provisions, like for example if the applicant's family is not young. The third category contains applications that require some additional documents; these applications can be approved if the required documents are delivered. For example, if an applicant forgot to attach the building permit, the system identified it as a severe shortcoming, but the applicant was notified that he or she is required to complete the application in order to become qualified for subventions.

The system includes support for the time-related issues that are prescribed in the General Administrative Procedure Act. This is undeniably a great advantage. The Fund's officers responsible for handling communication with the applicants benefited a lot from this feature. Offering a support in tracking the time constraints of the applications represents a firm second line of defence, relieving them from tiring routine work. For example, they were able to form a list of applications that were due for sending documents with final decisions. Also, the system kept track of when the final decision became legally binding, which was in case of approved subventions followed by money transfer to the beneficiary's account.

4. Lessons learned

Several stakeholders actively participated in the process of designing and constructing the decision support system for housing subventions. Our experience shows that developing an application without feedback from all the interested stakeholders is only slightly less dangerous than driving a car blindfolded. So, the stakeholders in our case included system developers, business process

owners, and system users. However, there is a price tag on every decision. In our case it turned out that the project was more difficult to manage. In spite of that fact, it turned out that we were able to produce the results faster and in a more reliable fashion than otherwise.

If you ordered pizza and get a book delivered instead, you remain hungry. Worse yet, it's a sign that there is something wrong with stored phone number. In most cases it is the problem of interfaces – how to store and retrieve the desired telephone numbers. Therefore, we also paid much attention to the correctness and design of the user interface. It is well known fact that good intuitive user interface makes computer programs more successful in practice. The extent of such benefit is difficult to measure in normal conditions; however, it is our impression that the learning curve of the users of the system was rather steep. As a result, they were able to reliably carry out complex operations. Also, the HFRS carries out the project through careful business process management [4]. The whole business process cautiously divided into sub-processes, where each of the sub-processes is described in detail with several diagrams and written description in Slovene language.

The system was also designed to produce several analytical results obtained from the data in the database. This ability turned out to offer a large comparative advantage over classical data-entry systems. To illustrate the system's analytical functionality we selected a geographical map of Slovenian regions and showed the number of applicants from each region on the map. Figure 1 shows the numbers of approved and rejected applicants for subventions for the years 2006 and 2007. The size of the circle in a region shows the relative number of applicants from the region normalized according to the total population in the region, while the coloured share of the circle shows the ratio between approved and rejected applications.

For communicating with other agents, the system incorporated procedures to exchange data with others e-Government sources and services. The most important external source for this system was the Central Register of Population (CRP), whose data were used to control pieces of information that were supplied by the applicants. While in the previous version the integration took part at the data exchange level [3], the new version incorporated web services technology and was, therefore, more actively included in the controlling process. As previously stated, the impacts were huge since we were able to increase the quality of entered data and, at the same time, reduce the required data-entry burden for a single application for five times.

Regarding the novelties introduced to the legal act [8] we have to comment the subventions for renting apartments for young student families. We think that generally the instrument is well suited for the purpose; however, the only problematic thing is its execution. The target population for this instrument belongs to a narrow niche of young families right after receiving university degree. While their housing situation might be quite delicate, our impression is that such short-term subventions will not contribute substantially to their housing wealth and prosperity.

In the first call in the year 2006 it turned out that the only problematic region in terms of the citizens' response to the call was the Slovenian coastal region 12, where both the relative number of applicants and the relative number of approved applications were bellow expectation [3]. As expected, more carefully planned actions in the second call in 2007 resulted in much more balanced situation with respect to the other regions. Moreover, also the percentage of positive applications increased from 50% to 70%. It can be concluded that the obtained results justify the changes and measures introduced in the year 2007 [8], both from political as well as technical standpoints.

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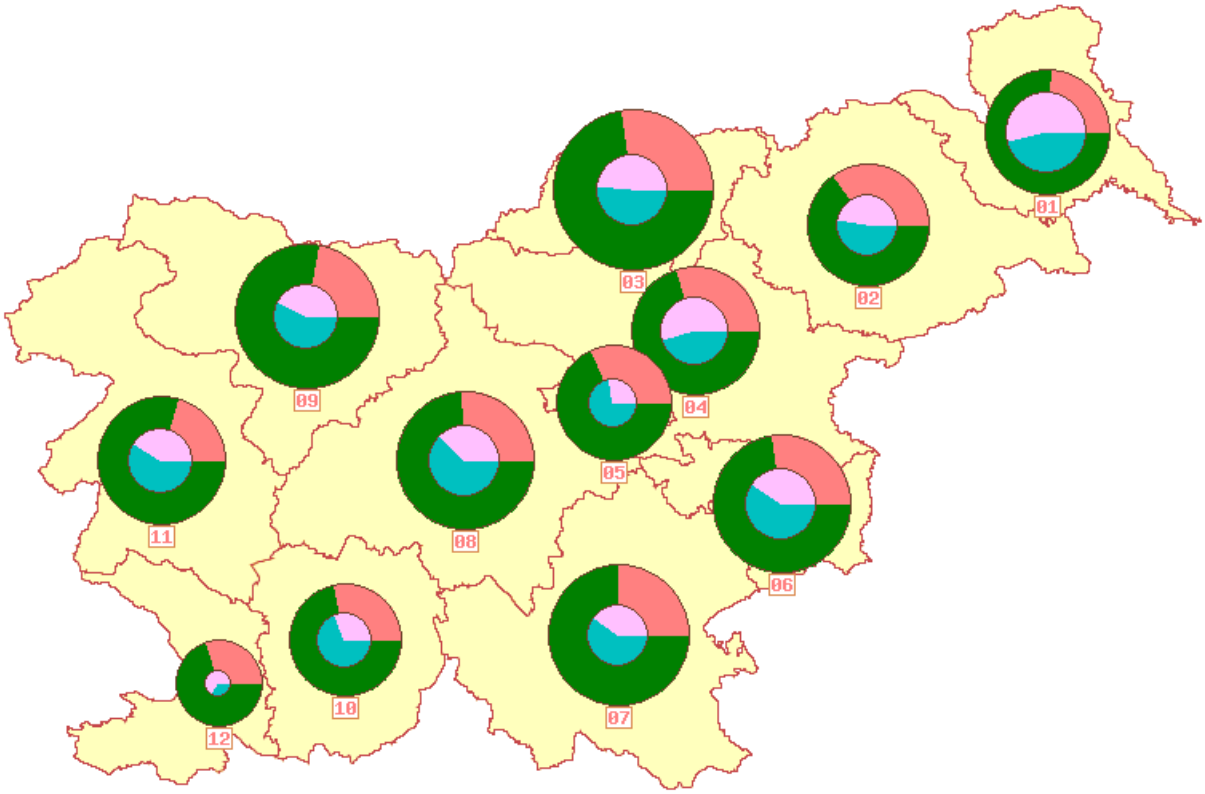

Figure 1: *A relative proportion of applicants from each Slovenian region with approved (green-dark) and non-approved (red-light) subventions, relatively to the number of region inhabitants for the years 2006 and 2007. The outer circle represents the year 2007 and the inner circle the year 2006. Note the increase in figures and the approved rate in the year 2007 with respect to 2006.*

5. Conclusion

The information system that is presented in this paper is used to support two consecutive calls for subventions at the Housing Fund of the Republic of Slovenia, public fund. Distributing housing subventions is one of the Fund's basic business processes; therefore, it has great impact to the overall Fund's business. The system was designed in a flexible and robust manner relaying on Rational Unified Process [5] and Agile [9] methodology. Strict change management procedures turned out to be beneficial for handling the risks related to developing new versions of the system.

The implemented system offers several additional possibilities that increase the overall usability in solving complex problems related to the underlying business process. Among other things, the system includes a module for handling complaints of the applicants. Also, several important pieces of information that can be used in newspaper articles are generated directly from the system. In such way, the media receives accurate and prompt information about the important facts.

The crucial advantage of the system presents a module for exchanging data with the Central Register of Population. This module was heavily redesigned from the first version and enables drastic reduction of the time required to enter the data of one application into the system's database. In such way, the Fund's officers were able to perform data-entry task more than 5 times faster than otherwise, and can, therefore, spend more time in controlling the important aspects of each application for subventions, which ensures higher quality of the executed decisions.

The new measures concerning housing subventions introduced in the year 2007 [8] resulted in four times increased demand and higher success ratio with respect to the year 2006. Also, the distribution of applicant was more balanced with respect to Slovenian regions. However, the approved consumption was still tree times lower that the earmarked amount, which calls for additional actions for the year 2008. Among possible causes we can identify overly complicated procedures for application and approval, too strict business rules governing the eligibility of applications, and too optimistic expectations with respect to the number of applications.

In the recent years the Fund has followed its strategy concerning information technology by attempting to model and reengineer its high impact business processes. The resulting process model serves, among other things, as a guideline for directing workflow execution, responsibilities and resources. The first step towards business process reengineering was to define and understand the processes. Although this step looked fairly simple, it required a substantial amount of skill and effort. One of the most interesting conclusions was that the real difficulty lies not in accepting and implementing new ideas but, strangely enough, in abandoning the old ones.

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