

Digital Individual Benefit Statement: The Use of a Triangulation Methodology to Design a Digital Platform for Switzerland

Catherine Equey Balzli

Abstract—Old age retirement pensions are an important concern among the Swiss but estimating one's income after retirement is difficult due to the Swiss insurance system's complexity. This project's aim is to prepare for developing a digital platform that will allow individuals to plan for retirement in a simplified manner. The main objective of the platform will be to give individuals the tools to check that their savings and retirement benefits will allow them to continue the lifestyle to which they are accustomed once they are retired. The research results from qualitative (focus group) and quantitative (survey) methodologies, recommend the scope and functionalities for a digital platform to be developed. A main outcome is the need to limit the platform's scope to old-age pension only (excluding survivors' or disability pensions, for instance). Furthermore, an outcome regarding the functionalities is the proposition of scenarios such as early retirement, changes to income, or modifications to personal status. The development of the digital platform will be a subsequent project.

Keywords—Benefit statement, digital platform, retirement financial planning, social insurances.

I. INTRODUCTION

OLD-age retirement is an extremely relevant issue because many changes have occurred during the last decade. According to [1], old age retirement pension will continue to be the main concern of the Swiss in 2019. This concern, which has risen sharply over the last four years from 28% to 45% for Swiss citizens, is the reason for our research. Our project's aim is to provide simplified access to information for insured persons.

Retirement pension in Switzerland is particularly complex because it is governed by numerous laws, ordinances, and regulations. Many risks (death, disability, old age ...) are insured by several subsystems (3-pillar system). It is almost impossible for an insured person to estimate his or her total income after retirement. Insureds have only one certainty; they will experience a substantial reduction in their retirement income (without being able to say by how much).

During the 20th century, the family financial situation was more "stable", largely because the rate of divorce was low. Professional careers were also stable, with a low rate of

unemployment. It was common to work for the same company during your entire career. International mobility was lower than today.

In the past, financial market profitability was higher and interest rates for pension funds were far better.

Nowadays, the situation has changed. About 50% of marriages end in divorce [12]. Professional careers are not stable anymore and people often change their jobs and are sometimes unemployed. International mobility has exploded, especially in Switzerland. All these changes have an influence on social coverage, especially for the pension fund. Furthermore, poor financial market profitability and low interest rates increase uncertainties concerning retirement plans. Trust in pension funds is increasingly challenged and employees are more and more concerned. In this context, the objective of the Digital Individual Benefit Statement (DIBS) project is to determine the scope and functionalities of a digital platform that will allow individuals to plan and simulate their financial situation when retired (according to proposed scenarios). The DIBS project does not include the development of the digital platform, which will be the subject of a subsequent project. Therefore, the main project's aim was to prepare the development of a digital platform allowing individuals to carefully and in a simplified manner plan their retirement. The DIBS research project's results aimed to determine the:

- Needs of employees and employers (insurance, information and scenarios that must be processed by the platform).
- Specific scope of the platform (legal or vocational pension funds, savings, ...).
- Type, the source and the availability of the information which will be entered into the platform.
- Necessary functionalities or requirements of a digitalized platform to compile information from many sources to present the current financial coverage of an employee as well as the planning of his/her financial situation at retirement.
- Way to forward (= transfer to the platform) all information.

The project's aim was not to develop a digital platform but was exploratory research to develop such a platform. This exploratory study was a critical success factor to limit the risk of project failure and had given us the elements to prepare a second project that will be submitted at Innosuisse (Swiss Confederation) for funding. The aim of the second project will

Catherine Equey Balzli is with the University of Applied Sciences of Western Switzerland (HES-SO), Haute Ecole de Gestion Geneva, Campus de Battelle, 17 rue de la Tambourine, 1227 Carouge, Switzerland (e-mail: catherine.equey@hesge.ch).

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be the development of the platform tool.

II. LITERATURE REVIEW

To our knowledge there is extremely limited literature about retirement benefit statements (digital or not). Furthermore, academic literature concerning pension funds is also scarce. Ramaswamy [2] described the sustainability of pension schemes in policy perspectives but this is not linked directly to our project scope. We found only one paper describing benefit statement requirements [3]. However, this paper concerns the USA and is a static statement (with no planning or simulation). The low level of academic interest in digital benefit statements is surprising, as this topic has been described by the OECD [4], [5] as a major challenge. On the other hand, articles (mainly professional) describing the laws governing pension systems are numerous (as listed below), mainly because the Swiss pension system is particularly complex and governed by numerous laws. Among other laws, the main ones are:

- LAVS (Loi fédérale sur l'assurance vieillesse et survivants) which is the state Old Age and Survivors Insurance (OASI) law.
- LAI (Loi fédérale sur l'assurance invalidité) to prevent the effect of disability (Disability Insurance law – DI)
- LPP (Loi fédérale sur la prévoyance professionnelle vieillesse, survivants et invalidité) is the law which regulates the Occupational benefit Plan (OP) for employees
- LAA (Loi fédérale sur l'assurance accident) which cover retirement (old age)
- ...

Additionally, to the numerous laws' complexity, the source of information is also wide. Therefore, the Swiss social security system is particularly complex to understand and the main lines are described hereafter.

In Switzerland, all retired people receive state pension (OASI). In addition, they may receive benefits from an occupational or private pension fund and private savings could complete the pension plans. Banks and Insurances offer a huge diversity of financial options. This model is called the three pillars pension system. The most current and simplified illustration of the Swiss pension system described in the specialized literature is based on three pillars as described in Fig. 1. It shows all the financial mechanisms needed to maintain living standards at retirement and the structure of each.

The first pillar or the state pension plan includes several insurance laws such as the OASI, DI. OASI and DI are mandatory for all Swiss residents.

The second pillar, based on occupational pension plans and accident insurance, complements the first pillar for employees. Pension plans and accident insurance are mandatory for almost all employees. The self-employed can choose if they want but it is not obligatory. First pillar and second pillar benefits should allow an insured person to earn about two thirds of their final salary after retirement. The third pillar is a personal decision that people can choose to increase the

proportion of their last income not covered by the first two pillars.

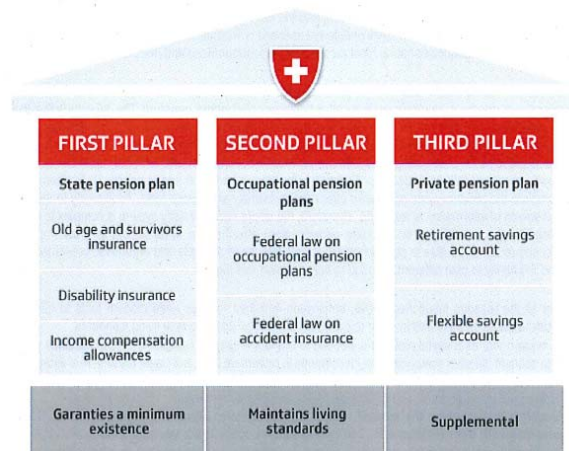


Fig. 1 Switzerland's three-pillar insurance system for retirement, death, and disability [6]

To allow people to know their current situation in the matter of future pension retirement, state, insurance, and banks provide quite a few information. Concerning the first pillar, on-line calculators are available on Internet sites of the Swiss Confederation (named ESCAL) or Cantons (i.e., Saint Gall). Planning for the second pillar is possible on-line, mainly on banks' Internet sites. For instance, the Migros Bank calculator is a very simple tool based on your situation (single or in couple, sex, and age) and with OASI and OP hypotheses. The aim of the calculator is to determine the lack of capital when retired and propose (with a second tool) how much supplementary savings must be done and its tax impact. With these tools, you cannot plan other scenarios that supplemental saving (third pillar) and the result concerning your pension retirement is not accurate. The Credit Suisse Bank calculator works similarly to the Migros Bank. They are both the most developed and realistic tools but do not allow planning. Their aim is to encourage clients to invest in supplemental private pension plans (third pillar) and to sell financial products.

Even if insurance corporations or banks provide material on their Internet site with simple calculators or give advertising information to prospects or clients, most of the calculators focus on only one type of insurance or pension plan (not the whole three pillars' system). On these platforms, the insured person must fill in personal information and the calculator will provide an approximation of his or her financial situation at retirement. These are static tools and forecasting (results of different scenarios or hypotheses) is not currently offered. Furthermore, tools are always linked with one firm (insurance or bank) with sales motivations. Moreover, some decisions (i.e., investment in a private pension plan) also have a complex tax impact. Thus, to be able to plan retirement, employees need an easy and ergonomic presentation of their existing savings and the ability to plan different situations to help with decision-making. Insured people must be able to effectively verify and plan their financial situation as retired to

maintain their living level as much as possible. Benefit statements are necessary for individuals to appreciate how much they will earn when retired and to make savings decisions [7], [8], and because collectively the first and the second pillars should cover only around 60% of the last salary before retirement.

In conclusion, currently in Switzerland, most employees receive paper benefit statements or can consult static electronic statements through internet sites that do not allow projecting or preparing retirement, but this is not in line with the digital transformation. Digitalization seems straightforward but as stated by Schulz et al. [9] "One of the most important economic and social developments of our times is the rise of the platform as a business and organizational model. [...] (p.56). The concept may sound simple, but it is radically changing businesses [...] (p.56) and an industry for which information is an important ingredient is a candidate for the kind of disruption that is enabled by platforms. [...] The tricky part is that the solution needs to fit the requirements of all of its players" (p.59). To precisely determine the prerequisites of an individual benefit statement digital platform is the aim of our exploration project. A modern instrument as a digital platform is needed to present a simplified retirement account balance and to project retirement, considering different scenarios (new investments in retirement funds, marriage, divorce, real estate investment, etc.) and it is our project's aim. The main function of the platform will be to give people the tool to check that saving and collecting for retirement allows them to maintain a similar lifestyle that they are used to after retirement and to take informed decisions (additional savings, house purchase ...). Consequently, the objective of the DIBS project is to define the scope and functionalities of a digital platform that will allow insured people to plan their financial condition in retirement by carrying out certain simulations (according to recommended scenarios). The DIBS project does not consist of the development of the digital platform, which will be the topic of a later project.

III. METHODOLOGY

Understanding a complicated subject matter requires having different angles of views. Therefore, triangulation was suitable for creating a digital platform for financial retirement estimation. As described by [10], we used methods triangulation. To achieve our research's goal, a qualitative (focus group) and a quantitative (survey) method were applied.

The first step was a review of the stakeholders, the literature and laws, the ecosystem (concerned organizations, government, employees, employers...) in order to describe: all stakeholders (mainly to form the focus group), all laws and their impact on calculations, source of information, (professional and academic), including a list of possible problems and, finally, methods to transfer data to the DIBS platform.

Secondly, we conducted 5 focus groups with the relevant experts chosen in the research's first step (qualitative

methodology). During the Focus Groups, we worked on 5 categories of decisions to be taken to be able to propose the functionalities and the scope:

- The desired "output" categories, i.e., the types of benefits or pensions that will have to be returned by DIBS at the end of the simulation (this is the perimeter of the platform).
- The type of "inputs" or information that should be entered in DIBS to be able to return the projected pension amount at the end of the simulation.
- How can the information be transferred to the DIBS platform, i.e., does the insured have to enter the information manually? Does it have to be scanned? Is it necessary to provide a bar code or an interface?
- The list of proposed scenarios (these are the functionalities).
- The technical characteristics of the future DIBS platform.

Third, two surveys (quantitative methodology) of insured persons (possible future users of the platform) were conducted. The first survey was conducted at CPEG¹. More than 56'000 insured people were contacted, and we received 184 answers (0.32% answer rate). The second survey was made with FER²'s members. More than 27'000 companies were contacted, and we received 702 answers (2.6% answer rate). Our funding request planned to conduct interviews with human resources managers and bankers. As the first phase of our research was also qualitative; we finally decided to test the focus groups' results with two quantitative surveys to enhance our perspectives and validate our selections.

The choices made by the group of experts (focus group) have been the subject of numerous debates (all reported in minutes) and they have considered the need to simplify the information given to the insured persons. The focus group's conclusions also intended to help insured persons better comprehend the Swiss social insurance structure and, finally, to allow people to approximate as best their revenue and wealth at the age of retirement. The main objective of the survey was therefore to validate the choices made by the group of specialists, i.e., to find out whether these choices correspond to the needs of the insured persons.

The questionnaire was divided into 3 parts. The first part of the questionnaire was done to find out the profile of the insured persons likely to use the DIBS platform (gender, age, income). Then the questionnaire, for the first pillar (OASI) and for the second pillar (OP), asked which benefits the insured persons answering the questionnaire would like to obtain in priority, which scenarios are the most important to simulate and, finally, which IT tools they would prefer to use and the possibility of including remarks or requests.

The objective of this dual methodology was to determine the perimeter of the platform and its functionalities. The focus group made suggestions and the qualitative survey validated their recommendations.

¹ Caisse de prévoyance de l'Etat de Genève (Geneva State pension fund)

² Fédération des Entreprises Romandes Genève (Firms' association)

IV. RESULTS

The results are presented according to the methodological breakdown, first the results of the focus groups and then those of the quantitative surveys.

A. DIBS Platform's Perimeter Proposed by the Focus Group

Following the Focus Group meetings, the experts decided to retain only old-age pensions. Therefore, survivors' allowances, disability pensions, auxiliary means, or additional benefits for OASI have been omitted from the scope of DIBS' platform. The risk of disability (DI), additional benefits, allowances for loss of earnings, family allowances and other social insurances were also excluded from the perimeter of the DIBS platform (for the first phase of IT development).

The focus groups also determined that:

- Only data valid at the legal retirement age would be returned by DIBS.
- The information given by the program would only concern the insured person (not his/her spouse or family).
- A scenario with a change of pension fund would not be feasible (because we have chosen to develop an interface with only one pension fund, supplementary links with other pension funds will be possible in a future development).

Simplification was the main justification for these choices, but we also considered the incidence and significance (in terms of income) of the components of the social security system.

B. DIBS Platform's Functionalities Proposed by the Focus Group

The members of the focus group agreed on scenarios to forecast the financial position of the insured at the end of his career. These scenarios are as follows:

- No change (my income, my rate of activity, my private situation will not change until my legal retirement).
- Variation of my income (increase or decrease – to consider a desire for a reduction in activity rate).
- Early or postponed retirement.
- Choice between pension and/or capital (instead of only pension).
- Supplementary investments in pension funds.
- Change in my personal situation (divorce, children, ...).
- Acquisition of a property with withdrawal of capital from the second pillar.

C. Technological Choices Made by the Focus Group

A majority of the focus group members preferred the DIBS platform being built on an Internet site to be valuable for a bigger group of users (instead of an application for mobile devices).

Regarding the calculations to be carried out to determine one's old-age pension after projecting a scenario, the two categories of experts (professional and academic) agreed not to carry out the calculations in the DIBS platform but to develop an interface in the existing systems.

The options made by the focus group were the subject of

many discussions and were mainly based on the need to make simpler the inputs requested for when individuals use the platform as well as the platform outputs. Despite the advantages of these choices, they were made by extremely experienced specialists and so individuals' needs may be different. The main objective of the second step (quantitative phase) was therefore to confirm the choices made by the experts, i.e., to check whether scope and functionalities selected are consistent with the requirements of the insured people.

D. Surveys Statistical Results

The average profile of the respondent of both surveys is a woman (CPEG 56% - FER 56%) who is in the 46 to 64 age range (CPEG 82% - FER 61.1%) and has an income of more than CHF 100,000³ (CPEG 55% - FER 45%).

The question of retirement benefits is an essential question (FER 92%) to those who answered the questionnaire. This validates that there is a real need among survey respondents to forecast retirement income.

Concerning, the most useful scenarios to be able to forecast with a digital platform, the respondents mentioned the following preferences in order of importance:

- Simulation of early or postponed retirement (CPEG 83% - FER 68.8%)
- No change in income or personal situation (CPEG 54% - FER 88.5%)
- Taking part of my retirement in capital and part in pension (CPEG 54% - FER 56.5%)
- Supplementary payment in my pension fund (CPEG 51% - FER 58.9%)
- A change in work income (CPEG 44% - FER 54.3%).

The five scenarios enumerated above are chosen as functionalities of the DIBS platform and will allow performing simulations of modifications in old age pension amount at retirement. The expert group also decided to add the two following scenarios despite a response rate of about 30% because according to their experience, these cases are also often requested by their insured people:

- Encouragement of house proprietorship (CPEG 30% - FER 34.6%)
- Changes in one's personal situation (marriage, divorce ...) (CPEG 29% - FER 38.8%)

It is interesting to note that the preferred scenario for CPEG insured people is the simulation of early or postponed retirement, whereas the scenario most requested by employees of FER's members is only to know their retirement condition without change.

The study confirmed that only the old-age pension will be planned to be returned by the DIBS platform as it is the most requested information wanted in both surveys meaning that the risks of disability and death will not be considered in the DIBS platform.

Finally, we asked the respondents about the preferred IT tools to be used. The most requested digital solution to

³ Approximately US\$110,000 in September 2020

perform DIBS is:

- A website (CPEG 73% - FER 69.3%)
- Indifferent (CPEG 16% - FER 20.7%)

The internet site is therefore popular and, surprisingly, a digital application is unwanted.

The survey of CPEG and FER insured people (quantitative phase) confirmed the work and choices made by the focus group (qualitative phase). However, it should be noted that the CPEG is a government pension fund and that its insured personnel do not stand for the entire population. Moreover, the comparatively low answer rate (certainly due to the summer period in the case of the CPEG survey) could also bias the outcomes. On the other hand, the FER survey obtained a higher response rate with younger respondents and is more typical of the Geneva residents.

For the creation of DIBS platform, the results obtained from the focus group meetings and, the CPEG and FER surveys' findings allow confirming scientifically the decision taken. These choices will enable us to move ahead for the IT development of DIBS.

E. Blueprint for the DIBS Platform

To present the research's findings more easily, the academic research team finally prepared a blueprint of the future platform. The Blueprint intends to present the future screens of the DIBS platform. Each screen was defined with the focus group to give an illustration of the presented information. Furthermore, each screen contains information such as: where the information comes from, in which screen the result or information must be forward, how it must be presented (with presentation differences from one pension fund to another). An example of one screen of the DIBS blueprint is presented in Fig. 2.

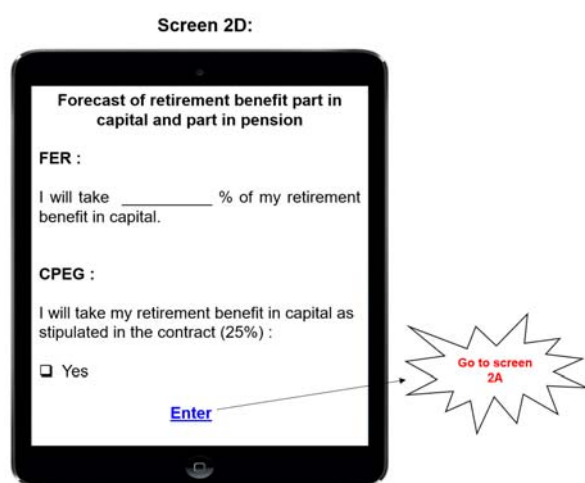


Fig. 2 DIBS blueprint

The DIBS blueprint will be used as specifications for IT development as it recaps all the functionalities and the desired scope for the DIBS platform.

V. LIMITATIONS AND CONCLUSION

On the one hand, the Swiss pension system, which was implemented in the 1900s, is appreciable because it aimed to ensure a decent financial situation in retirement. This issue is crucial because more than half of the world's population have no access to health care and have no social protection [11]. This benefit system is also based on solidarity between population and generations to avoid exclusion. This solidarity is important because it guarantees a minimum subsistence level for all. On the other hand, our welfare system is complicated because it is governed by numerous laws, ordinances, and regulations. It is also complicated because many risks (death, disability, old age ...) are insured and, for the insured, obtaining reliable information on their retirement income is not easy. The OECD [4] noticed that the main issue to establish benefit statements is combining diverse sources of information, mainly public and private, to obtain a correct picture of one's pension benefit when they retired.

The DIBS digital platform will be designed to reduce the above-mentioned complexity and to present in a simplified manner the essential information that is necessary for an insured person to understand his financial situation at retirement and to make savings decisions to ensure a proper quality of life when retired. Therefore, the aim of the research presented in this article is to determine the specific scope and functionalities of a digital platform to allow easier retirement financial planning with different scenarios. The main disadvantage of this option is, as with any simplification, many elements have been omitted. Moreover, the research is based only on Switzerland and could hardly be reproduced for other countries because the laws are different. Nevertheless, the research methodology could be replicated.

The research presented in this article has provided the scope (old-age pension) and highlighted seven scenarios (see Section D) to be projected in order to estimate retirement benefits with a digital platform for planning retirement. The triangulation method scientifically validated the options taken and will enable us to move forward for the IT development of DIBS.

To conclude, it is especially surprising that we can check our bank accounts via an e-banking solution but not possible for our pension benefits. We hope that the development of the DIBS platform will help to fill this gap.

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