***M-learning courses used in the National Population and Housing Census 2011, as an example of lifelong learning, tailored to an individual time organisation model employed by census enumerators, and to their information needs, as well as in the context of training courses conducted as part of supplementary recruitment of enumerators***

Censuses conducted in the round 2010 - 2011 (Agricultural Census 2010 and National Population and Housing Census 2011) were fundamentally different from those conducted thus far primarily, due to the use of the repository of registered data and IT tools enabling a direct gathering, transferring, directing and transferring data gathered using the CAII *Computer Assisted Internet Interviewing*, CATI *Computer Assisted Telephone Interviewing* and CAPI *Computer Assisted Personal Interviewing* – and the census enumerators were using mobile terminals.
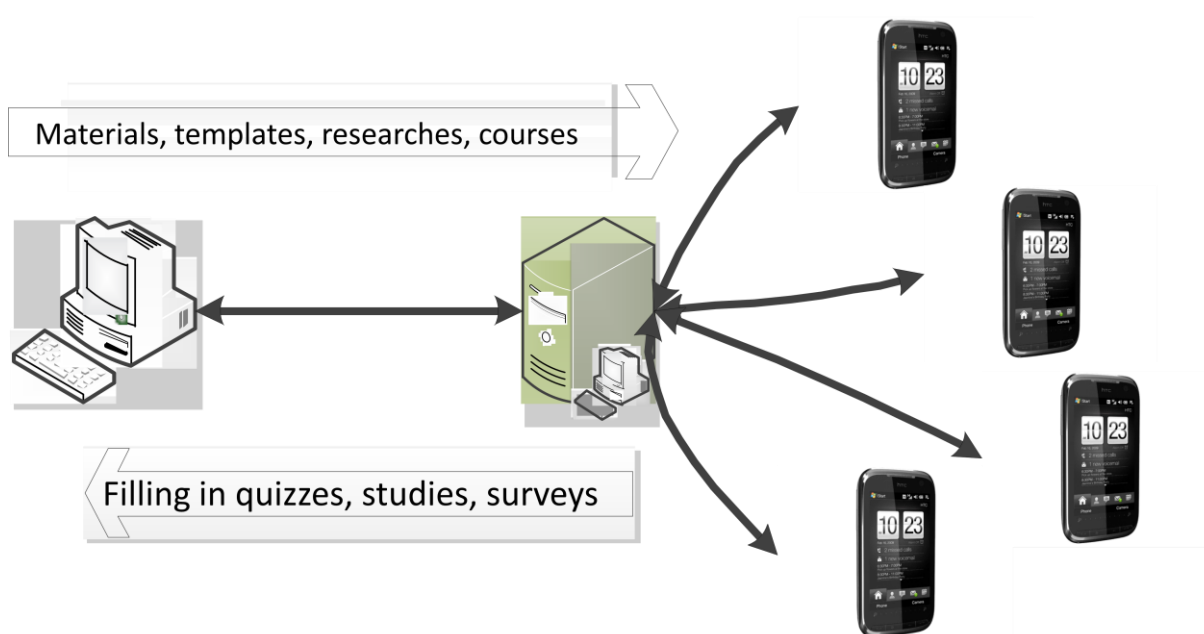
In the previous census editions only a traditional form of schooling was used exclusively, which caused that the schooled persons did not have the possibility to practically apply the knowledge acquired during training, or who did not have the opportunity to employ the information before the census (apart from the admission exam). Therefore, it was necessary to introduce a solution which would allow for the best possible preparation of census enumerators to their role and for a real control of the level of knowledge of particular census enumerators. Bearing in mind that the satisfactory preparation of census enumerators was the condition upon which the undertaking was based, it was decided that mLearning type solution should be acquired as a tool enabling control and verification of the knowledge of census enumerators taking part in censuses.

Census enumerators before commencing work were obliged to take part in the training in methodology and organization of the census and workshops dealing with managing the terminal and installed applications. In order to facilitate the workflow of census enumerators using the mobile terminal, an mLearning platform was prepared and implemented. Moreover, quizzes and training materials were prepared and then were used during the auto-education with the use of mLearning. Thanks to it, from the time of initiating the census, the census enumerator could actively facilitate the knowledge and test the census application so that the census activities could be efficiently implemented. The system was helpful in the learning process and verification of knowledge acquired by census enumerators and municipal leaders (who were supporting the census enumerators, verified problems and issues voiced by the census enumerators regarding organizational and technical matters) and its basic components included the Management Platform and the Mobile Application. mLearning was used also during the follow-up recruitment of census enumerators.

The management platform was a module responsible for managing the system. It allowed to introduce the users into the system, creating groups of users, i.e. establishing authorization. First of all, it enabled functional creation of templates and courses.

The mobile application was a module of the system which was launched on mobile hand-held devices. The mobile application census enumerators were solving quizzes and the very application made it possible to synchronize data, download training materials, make courses and collect notifications from the Management Platform.

Fig. 1. Architecture of the mLearning system



The application used for training, made it possible to create of content, transferred to the mobile devices as a course for users (census enumerator, municipality leader), as well as audio and video materials, as additional source of transferred knowledge. After the course, the mobile solution made it possible to control the knowledge that could be extracted by the course recipient with the aid off the quiz developed on the management application. The application itself makes it possible to generate quizzes and surveys and forms which included questions and optionally selected answers. The management application also enabled to transfer of content using the communication channel, quizzes, schedules etc. to hand held devices. The user or the terminal device, on the basis of those data within the appointed time span replays the content of the course and then if its according to plan fills in the questions from the quiz (form, survey) asked by the administrator. In the case when the user of the mobile application (course participant) did not achieve the expected quiz result, the administrator of the system had the possibility to transfer to the user additional training materials and quizzes (created/ existing in the system) allowing the user to correct his/her skills and knowledge both content-wise as well as with regard to the management of the census enumerator's application.

Apart from the participants (users of mobile application) who performed the tasks defined in courses ascribed to them. The system also allowed to group the settings of persons and implementing the

supervisory tasks, which include among others:

- linking users with courses
- managing courses
- creating/deleting users/resetting passwords
- managing groups and grouping of users

Authorization in the scope of published courses were the task of the content supervision (department responsible for the methodology of the record).

**mLearning System was based on the functionalities which included:**

- Access via the mobile application to materials, training courses and quizzes defined on the basis of plans.

- Access to the list of all training courses transferred to a given participant. The list featured all training courses transferred to the course participant with characteristic graphic marking of the items downloaded onto the device, new (downloaded) items.

- Possibility to search and sort out transferred training courses available on the hand held terminal according to (among other criteria) the date of transfer, author of the course (leader), category of the course and status (new, downloaded).

- Possibility to use characteristic marking (graphic) in the mobile application of tasks on the list according to type (e.g. quiz, folder with files), progress status (not finished/ started / performed).

- Possibility to view the content of the course's tasks.

- Possibility to view the „terms dictionary", where the user of the mobile application had the possibility to browse particular terms useful with regard to the topic of the training course.

- Possibility to access the quiz in which the user of the mobile application entered answers to the defined questions. The training course participant depending on the definition of the task had specified time of performing it, number of attempts to pass the quiz, time between consecutive attempts to pass the quiz.

- Possibility to access the results by particular participant of the training course. Mobile application made it possible to browse particular tasks and the obtained results within one task or selected training course.

- Management platform where tools for creating/modifying training courses were made available to participants (using the mobile application).

- Creating a training course using, inter alia, a defined template of the course. Process of creating a training course consisted of the following stages: introduction of fundamental information regarding the training course, setting the tasks of the training course and transferring the training course to selected participants (to the mobile terminals).

- Transferring the courses in the system to participants of the training courses. Participants were divided into specific training groups for purposes of later verification of the progress of individual and group work.

- Enabling training participants access to training courses via the mobile application. After the login to the mobile application the participant was informed on the transferred new course and the possibility to download it to the mobile device.

- Searching and sorting the transferred training courses according to the date of transfer, author of the course (trainer), category of the course and status (new/requiring updates/not downloaded/downloaded).

- Ensuring stable updates of the list of available training courses for specific users of mobile applications. When new training course was made available, the status update signal informing on such an event (optionally turning the communication on/off) was displayed in the mobile application.

- Providing the function that reminds the user of the upcoming events including the upcoming time for a chat-discussion in which the participant of the discussion should take part.

- Differentiating between the training courses with regard to:

· Weekly type– which was organized according to strictly specified weekly sections along with the date of commencement and termination of the course. The given section was visible for the course participant in a specified term. To every section appropriate tasks were ascribed, which the participant should perform.

· Topical type – which was organized according to strictly specified topical sections. To each section appropriate tasks were ascribed, which the participant should perform.

- Social type– which was organized as forum with a specific topical –orientation. On subpages separate threads were located where course participants and the trainers had the possibility to conduct the discussion on a given topic.

- Introduction of entries to the discussion (created by the trainer and other participants of the course) and creating new discussions on the Form. Participant of the course had the possibility to add an attachment to every introduced entry.

- Possibility to access „voice" tasks, where the participant had the possibility to link one of the answers to the asked question. The task had a time limitation (access only in the time allowed by the trainer) and a specific manner of publishing results to the course participants (for example the publication of results only in the group to which the participant belonged to).

- Possibility to grant users access to the task „chat" in the mobile application within time planned by the trainer conducting the training course

- Ensuring the functioning / analysis reporting of the progress of the training course. The overview of the training course – number of the tasks performed and the time of performing the tasks was available for the selected (one) participant of the course/ selected group of participants / all participants of a given training course.

- Introduction of the manner of evaluating participants. This functionality made it possible to control the progress of work performed by the participants – their results regarding particular tasks as well as the overall results (averages) of created participant groups in the course.

According to the results of the post census final reports, the introduction of the mLearning system to the training of census enumerators was positively viewed and approved by the users.