Follow-up of face-to-face contacts for the evaluation of users satisfaction

Francisco José Trigo da Cruz dos Santos Cunha, Student 75284, MEEC IST

Abstract—Many administrative establishments have a face-to-face service between users and employees. It is important to assess user satisfaction. In this work it is studied the requirements and it is developed a system to evaluates the level of satisfaction of users after face-to-face contact with a certain service that has a computerized customer care management system.

The Integrated Queue Management System (SIGA), a ticket’s system, currently in use at the IST Graduation Unit, Alameda campus, has been improved with the goal of recording relevant information related to the satisfaction and effectiveness of the interactions. As part of this work an independent feedback system (FEBK) was developed, compatible with the updated version of SIGA. The FEBK system developed and the improvements made in the ticket’s system were evaluated, with positive results.

Index Terms—Backoffice Interfaces, Customer care, Feedback System, Web Application

I. INTRODUCTION

Many services have a face-to-face service between users and employees. In the specific case of Instituto Superior Técnico (IST), an example of this service is the Graduation Unit, Alameda center, or the Núcleo de Mobilidade e Cooperação Internacional (NMCI). Both the aforementioned services, the graduation unit and NMCI, currently have a tickets system, a queue management product called SIGA (Integrated Queue Management System).

In this system, some data can be registered that can be used to gauge the effectiveness of the service provided, such as the registration of the instant a ticket was created and the instant it was called, or the average waiting time of a queue [1]. However, there is no evaluation of the satisfaction of the users with the service, nor the automatic processing of data relevant to evaluate the service provider. There isn’t an automatic and configurable generation of reports that evaluate the satisfaction of the service nor reports on the effectiveness of the service, with collection of relevant data, for further analysis.

Several public services already measure the satisfaction of their users in an automatic (computerized) way, like IMTT - Instituto da Mobilidade e dos Transportes Terrestres, Lisbon, where there is an evaluation of the service provided - a device is available to evaluate the service provided on a qualitative scale.

Currently, at IST, some services are the target of annual surveys to evaluate the satisfaction of users, but, for example, at the graduation unit, the last such survey was applied in 2011, and it was not later applied due to the absence of a survey base (list of users) for this service.

In the graduation unit, since there is no system for assessing the level of satisfaction in this service, its manager does not have access to performance indicators regarding satisfaction with the current service or the effectiveness of the interactions that occurred.

On the other hand, there are other services at IST where it would also be useful to measure the satisfaction of its users, who also require the physical attendance of the user to use it but have different customer care management systems, such as the Scan & Print service of IST.

Thus, it makes sense the development of an independent system, but that can be integrated with other systems that already exist, or that may exist, to evaluate the level of satisfaction, as a user, of the service experienced. With that aim, it was studied the requirements of an independent system to evaluate the level of user satisfaction after using a service, that should be compatible with a customer care management system, such as SIGA. A system that complied with the obtained requirements was developed – the FEBK system.

The FEBK system, compatible with the SIGA system, is a web application, developed in Django.

In this system:

- relevant data resulting from interactions that occurred in a given service is stored;
- after choosing the desired frequency, digital questionnaires are presented to the users concerning interactions that occurred in a service;
- after data processing, statistics are generated about the satisfaction and effectiveness of the service, according to the available configurations, with the possibility of exporting the produced data.

To integrate the SIGA system with the FEBK system, in order to store relevant data from the SIGA’s services, in the updated version of SIGA a number of improvements were made:

- the identification of the user is registered and the concept of a service action (e.g. payment, course’s enrollment) is introduced;
- a new service flow is available, with new tickets states such as attended and not attended (the user did not appear when the ticket was called) and with the record of which actions were requested and resolved in the interaction;
- the duration of the interaction is stored;
- information on any tickets in tolerance is available on the operator’s panel.

The updated version of the tickets system and the feedback system were evaluated, with positive results.
II. RELATED WORK

As part of a work prior to the implementation of the feedback system and the updated version of the tickets systems, three public services with relevant use were briefly studied: Loja do Cidadão (Laranjeiras), IMTT, and the graduation unit, all in Lisbon. Scientific articles related to the theme of satisfaction were studied, in order to better know what characteristics the systems should have.

IMTT has both a tickets system and an evaluation of the service provided.

The IMTT allows users to obtain a ticket in its premises, which is printed on paper by a machine installed for that purpose, or via an Internet connection, using a free application available for smartphones, SIGAapp, which allows the users to obtain tickets in this and other public services.

In the IMTT there is an evaluation of the service provided, being available, at the operator’s desk, a device to evaluate the service provided in a qualitative scale, which has four levels.

In Loja do Cidadão the tickets are obtained in the service’s premises, and there is an application which can be used to get information related to the current ticket in attendance, the queues in the services and general information about the services. It wasn’t found out any form of evaluation of the service provided in this establishment when it was visited.

In the graduation unit there is no evaluation of the service provided. The tickets can be obtained in the premises or through the application of IST, which allows the users to get a digital ticket.

According to the studied articles, the customers are less inclined to feel that there is a relationship with the company if they have always to start contact [2], and there is a need for coordination among the various functional areas within a service company [3].

Besides that, managers of a given service must measure both the overall satisfaction and the satisfaction of the last transaction [4] and although it is prevalent in practice, the common selection indicators with 4 items usually fail in the prediction of customer retention [5]. In the developed feedback system, the satisfaction of the last transaction is measured with a questionnaire with 5 indicators of satisfaction. Apart from that, the system produces a list of users that used the service in a chosen period of time, which can be used to inquire users about the overall satisfaction.

III. REQUIREMENTS

In order to obtain the requirements for a feedback system and an updated tickets management system, a questionnaire was given to some IST students and some interviews were made with the appropriate services in IST.

In the questionnaire, which was about the graduation unit, it was found out that the majority of the students would like to evaluate the service in that unit, being the mobile application the preferred way to do it. The second chosen way was using a device with a qualitative scale.

Two services and one area (AEPQ), which has the mission to promote quality and contribute to optimize the IST’s management and strategic development, were interviewed.

In the graduation unit, it was considered relevant to have dashboards with the results of the evaluation of the service by its users and reports related to the tickets system, which could be used to check peaks in the service’s use.

In the above mentioned area, it was relevant to have the list of users of a service, in order to send them questionnaires about the (overall) satisfaction with the use of a service.

In the other service, Núcleo de Suporte ao Utilizador (NSU), besides being relevant the development of a system that would allow the service’s manager to define the questions that he wanted to be present in the questionnaire, and to display some automated questions related to the actions that happened during some interaction in that service, it was wanted that the statistics produced by such a system would have the role of the user (in the academic context, if the user was a student or an worker of the school, for instance).

Based on the related work, questionnaire, and interviews, and considering the time to develop the system, the following requirements were obtained:

- Feedback System:
  - RF1: Communication with a computerized service system;
  - RF2: Storage of data transmitted by the services associated with interactions: Service name, worker, date, time, duration of the interaction, number of actions performed, action name, action state requested, action state resolved;
  - RF3: Display the history of interactions occurred regarding a given service;
  - RF4: Presentation of satisfaction questionnaires to answer regarding an interaction;
  - RF5: Getting the list of users of a service in a given period of time - producing a list of the email of all users who attended a service, with one email per user for a given period of time;
  - RF6: Definition of immediate satisfaction questionnaires regarding the service and its frequency of generation;
  - RF7: Display of reports related to the evaluation of the quality of service provided and their effectiveness;
  - RF8: Export the data of the reports produced.
- Updated version of the tickets system:
In this system, questionnaires are generated according to the context of communication between both systems.
After the registration of the service, the FEBK system is ready to start receiving information associated with interactions that have occurred. The service’s system must send, for each interaction that occurs in the service where it is installed, information about it for the endpoint receive_statistic (for example, for a base URL https://febk.tecnico.ulisboa.pt/, the endpoint would be https://febk.tecnico.ulisboa.pt/receive_statistic/), with the POST method, authenticating the communication with its authpersonal token registered in the FEBK system (this authentication corresponds, in the HTTP request, to be present the header Authorization, and, in that field, to be present the authentication token, such that that field has the form Authorization: Bearer authpersonal). The information sent should be in the json format and have the service name, the worker istid the user istid, the date, time and duration of the interaction, the number of actions requested or resolved, and, for each action, the name, and a boolean field which can be used to register if that action was requested or resolved. An example of this information is given below, for an example service called S1:

```json
{
    "service":"S1",
    "worker":"ist175284",
    "user":"ist14028",
    "date":"2018-05-24",
    "time":"13:51:15.909379",
    "duration":"00:01:30.123456",
    "numactions":"2",
    "actions":{
        "1":{
            "name":"Requerimento Livre",
            "asked":"True",
            "resolved":"False"
        },
        "2":{
            "name":"Melhoria de nota",
            "asked":"True",
            "resolved":"True"
        }
    }
}
```

Thus, it can be said that the FEBK system is open to the service’s system.
The work developed, which allows the different actors of the systems access to new relevant functionalities, such as being able to measure the effectiveness of an interaction, in terms of actions requested, solved and its duration, and to evaluate the service provided, by means of a questionnaire, generally complied with the proposed requirements.

In order to evaluate the developed systems, a questionnaire with the aim of evaluating the satisfaction of a user was given to the manager of the graduation unit. This questionnaire, based on ISO norms, is adapted from a questionnaire present in a consulted article [6].

The overall satisfaction level for improvements in the tickets system is "Satisfied" (fourth level on a scale of 5), and with the feedback system is "Very satisfied" (fifth level on a scale of 5).

On a scale of 1 to 5, the overall satisfaction level for improvements in the tickets system is "Satisfied" (fourth level on a scale of 5), and with the feedback system is "Very satisfied" (fifth level on a scale of 5).

On a scale of 1 to 5, the average value of satisfaction with all the evaluation areas, for the FEBK system was 4.0.

On a scale of 1 to 5, the average value of satisfaction with all the evaluation areas, for the updated SIGA system, as a whole, was 3.5.

Regarding improvements to the systems, it was pointed out that in the tickets system it should be possible to configure the number of tickets in tolerance, and it should be possible to connect the requested actions, in an interaction, to the resolved ones, in another interaction. Besides that, it should be possible for the ticket system operator to force the presentation of a questionnaire to a user in the FEBK system. In addition, in the systems, actions should be bilingual or in English.
VI. CONCLUSION

These systems, if put into immediate production, will provide a lot of useful information to the management of the services were they are installed: they allow the production of evaluation statistics for the service, the production of statistics related to the efficiency of the service and the identification of all the users of the service, which provides a list of users that can be used to evaluate the service as a whole – overall satisfaction with a service. If these systems are not put into production, the work developed is a guide, in the requirements and, in particular in the FEBK system, in the surveys, for the development of a system for assessing the satisfaction of users with a given service.

For future work, it is necessary to improve the systems developed so that they are fully bilingual and explore if it makes sense and how can the follow-up of actions requested and resolved during various interactions be done. In a more immediate way, it is necessary to integrate the developed systems with the fenix system (an academic system, which has users idata such as names and emails), in order to allow the area interviewed to obtain the list with the emails of the users of a service. Such integration would also allow the operator of the SIGA system, inserting for that purpose the identification number of the user that is at that moment being attended (the istid), to obtain the name (does not need to be complete) of the user being attended.

REFERENCES