A Cross-Team Collaborative Evaluation of a CRM System

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ABSTRACT

This paper presents an analysis of an usability evaluation a CRM (Customer Relationship Management) performed by a team composed of external usability experts jointly with a CRM staff. The evaluation process differed from a classical scheme known from former projects, including some new elements resulting from a specific context of this study. These novel elements resulted in reshaping the role of the CRM system and considering it as a specific back-stage on-line service for internal customers. Discussion of lessons learned from this unprecedented study concludes the paper.

Author Keywords

usability, User Experience, User-Centred Design, Services Design, collaborative design, Intranet

ACM Classification Keywords

H.1.2. Human factors; H.5.2. User interfaces; H.5.3. Group and Organization Interfaces;

INTRODUCTION

Usability of business IT systems has been a topic of numerous studies since the beginnings of HCI. Usability of company Intranets and other back-stage IT systems still has a big impact on work efficiency [1, 6, 9]. Negative experience of system operators resulting from poor usability, may also affect quality of front-line service provided for external customers.

PROBLEM DESCRIPTION

Problem background

A multi-modular CRM (Customer Relationship Management) system has been used by a large Polish financial company, but in the focus of this evaluation was included only the CRM module used by call-centre operators for serving daily hundreds of customers by the phone.

This usability evaluation project was undertaken mainly due to systematic complaints arriving from the call-centre operators, who were claiming that poor system usability dramatically slows down the–customer service. The web interface of this system was already known to be error-prone, with many operations not designed in a task-supportive manner. The system operation required plenty of very precise mouseclicks while operator's attention should be concentrated on the conversation with the customer. As a result, after reaching some critical mass, these operator complaints were seriously taken and finally a CRM usability improvement project was launched.

Evaluation framework

The financial company so far has not had their own usability staff, so an evaluation team has been formed of:

- two external usability consultants,

- four employees: the CRM system "owner" from the IT department and three very experienced senior call-centre operators.

Before starting the evaluation, following evaluation procedure was agreed with the CRM department supervisors:

1. "Crowdsourcing" will be used as a main method for gathering by e-mail all observed complaints from front-line operators in the call-centre.

2. Collaborative expert review of typical operator procedures will be performed for major operational paths.

3. Complaints collected from front-line operators will categorized by the team according to their relevance and feasibility for planned usability improvements.

4. Supplementary expert evaluation (inspection checklist and heuristic evaluation) will be applied for assessing the user interface compliance with general HCI guidelines.

5. Final report (a slideshow) will be prepared, showing prioritized recommendations and their projected impact on system usability.

Evaluation context

The team was working for several days, analyzing a live demo of on-the-phone customer service performed by senior operators. The system was operated from a laptop in a training room, with live CRM projected onto a big screen where the identified usability problems were easily visible. The demo was accompanied with narrative "user stories" by

senior operators explaining the purpose and meaning of each action performed in a call-centre conversation context.

During the presentation, operators' remarks and suggestions from crowdsourcing have been categorized and supplemented by senior operators' comments on the possible impact a specific flaw could have on the customer service speed and quality.

During the teamwork we could observe gradually changing focus of attention from pure usability of the CRM system to analyzing operator's user experience in a broader context. Moreover, in subsequent sessions it became obvious that poor usability of on-line internal services (as internal tools) affects quality of service offered to external customers.

EVALUATION RESULTS

Usability and UX aspects

Despite many usability flaws have been detected, in general in this CRM system using tab-based web interface with plenty of editable forms, operators basically met no particular problems in finding on-the-fly suitable navigation paths, matching specific needs of the actual customer on-the-phone.

However, it turned out that the most important operator UX discomforts with this CRM system were caused by some other factors, like:

- necessity to frequently quit the CRM system in order to find information available only in other systems (for instance history data of off-line contacts or access to authentication modules);

- specific technical issues, causing sudden delays in data transfer or necessity to verify currently displayed data in other systems;

- frequent new releases of the CRM system components, with no simultaneous actualization of documentation manuals etc., hence the operators had established an informal system for exchanging news about latest changes in system functionality.

The issues of demanding manual control, sub-optimal visual design or inconsistent labelling have been also raised, and later confirmed in the expert heuristic evaluation.

It also turned out that operators were very creative in finding various workarounds to overcome existing usability problems because their performance was very much affected by the bonus system, which was fed by data from automatic monitoring of operator's actions in the CRM system. This finding was a crucial element for understanding actual operators' work habits, motivations and attitudes, bringing important ethnographic elements to the scope of this evaluation study.

Organizational aspects

During evaluation sessions usability focus was gradually evolving towards user experience (UX) issues, interpreted in twofold manner:

(1) *Operator experience*, covering a set of emotions resulting from the CRM system behaviour and simultaneously, from the customer behaviour on the phone line, in particular:

1. demand to be polite to the customer in any circumstances,

2. demand to maintain the contact with the customer event if the CRM system is slow and there are occurring lags in data access or any other interaction problems;

(2) *Customer experience*, covering the set of emotions resulting from the perceived quality of specific on-the-phone service:

- depending on customer expectations (based on other similar services) and on actual "performance" of the service delivered;

- when the service is slow, customers often get irritated (not always expressing it in an open manner, but experienced operators feel its impact on the customer's mood);

- repeatedly slow service on-the-phone (what sometimes appears in results of customer surveys) adversely impacts the image of the company and affects relationship with customers, who become reluctant to contact call-centre by phone.

As a result, a set of guidelines was proposed for the final evaluation report, covering issues such as:

- improvements in visual design of screens,

- software technical improvements,

- IT support quality and organizational changes,

- improving usability specifications for external software suppliers.

More importantly, a set of classified (visual, operational, performance- and feedback-related, etc.) recommendations was made, aimed at improving operators' trust towards the CRM system and their relationship with the company brand.

Other outcomes

Apart from usability- and UX-relevant outcomes, other key findings of this study were important:

- in this project company managers for the first time decided to gather usability comments from CRM operators by open internal crowdsourcing; it produced surprisingly fruitful outcomes and

resulted in creating a unique cross-departmental cooperation around this project;

- front-line operators turned out to be highly motivated to deliver their comments in crowdsourcing and to participate in further redesign process of the CRM system; this clearly indicates a positive attitude to their work[1].

Finally, during subsequent evaluation sessions a cross-disciplinary perspective was developed in the project team, which seemed to contribute much to the project success.

CONTEXTUAL FACTORS

Success contributors

At this point, after completing the evaluation part of this project, some key success factors could be identified:

A. High commitment of staff

The first success factor - already mentioned - was very *productive crowdsourcing*, which delivered dozens of valuable comments and suggestions from the front-line.

Consequently, *senior operators and the CRM owner (IT)* - used their expertise to associate collected suggestions with specific task contexts, and were very active in searching for feasible solutions.

In both cases it was visible that the staff was aware how the usability flaws affect the service quality for external customer.

Finally, the *integrating role of senior operators* was crucial during evaluation sessions: they enabled putting the operators' complaints *into the screen context* and *into the task/organizational context*, both essential for proper adopting high-level interaction design principles to a specific screen or a conversation scene.

B. Agile-like teamwork style

The next important success factor was *agile-like evaluation cycle* which formed the canvas for the analytic part of the project. This cycle was repeated regularly for each discovered usability problem and consisted of following sequence:

1. executing step-by-step specific task situation in the CRM system, accompanied by narrative "user stories",

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[1] It is quite possible that unexpectedly high staff commitment was correlated with operators' average education level; in Poland call-centre operators often are full-time university students who take this job primarily because of flexible working time schedule. However, in this study there was no opportunity to verify possible correlation between users' commitment and their education level.

2. reviewing situation-relevant comments and suggestions from crowdsourcing,

3. locating and classifying user interface problems,

4. spontaneous brainstorming for possible solutions,

5. searching for the problem cause and origin,

6. problem diagnosis and reference to the procedures or local organizational context,

7. documenting proposed solution (or a set of).

This cycle was iterated for each detected problem and it allowed conducting unstructured analysis. Iterative conversational method, asking "naive" questions to the senior operators and refining answers through the unrestricted creation of ideas have finally led to developing interesting solution proposals. Moderating role of the CRM owner was very similar to the role of "scrum master" in SCRUM-based IT projects [3].

It seems noteworthy to mention that in this project creating an *ambient evaluation environment* was also very important for facilitating effective teamwork: a round table configuration, circular information flow, ongoing visual contact, a wall-size projected CRM screen as a central focus of attention - all these elements all helped to stimulate group dynamics in this project.

Novel evaluation elements

As well as direct outcomes aimed at the CRM system redesign, three methodological innovations emerged.

A. Innovation and creativity workshops

When developing proposals for improving the operator UX, both individual creativity and team-discussed refinements were combined, using spontaneous brainstorming and also analytic conceptual refinements.

Starting from visions of specific screens with improved interaction elements, the amount of creativity input was growing so fast, that it gradually converted usability evaluation sessions into a sort of innovation workshop. The list of proposed improvements and innovations was long, and they could be sorted into two groups:

- ideas relevant to UX, user interface and the CRM system, aimed at improving operator UX with the CRM system;

- ideas relevant to various organizational improvements related to the back-stage activities, like staff training, horizontal communication, coordinating the human factors issues with this CRM and other IT systems, etc.

B. Forced multipoint analysis

Due to sensitivity of this project, invited external usability experts were able to operate the CRM systems only via an authorised senior operator. It resulted in an "indirect"

system operation, without opportunity for touching the keyboard, but with very good verbal communication instead, even more helpful in understanding the task context. Paradoxically, the apparent shortage of direct experience from "feel" of the system resulted in more extensive discussions, because domain experts (senior operators) had to explain in more detail the meaning/purpose sense of each click and each operation.

There was also observed another side effect: while it was necessary for external usability experts to understand the task context, at the same time other senior operators could to look at familiar work procedures from a viewpoint of another department. Sometimes naive questions asked at this point allowed the usability experts to learn the basics, while the rest of the team was surprised by discovering differences in their work methods and step-by-step was developing a broader view of specific part of the system.

In seems that forced restrictions in access to the system apparently facilitated developing multi-point, cross-disciplinary evaluation perspective for team members.

C. The CRM system as a back-stage on-line service

Cross-disciplinary evaluation perspective has finally led to relating the CRM system to the context of the call-centre services offered to customers.

From the external customer viewpoint everything is a service, and from the operator viewpoint everything what is provided to facilitate his/her work can be also considered a service (on-line or off-line, respectively).

As such, the CRM system actually is an back-stage on-line service for operators, who in this organization can be considered as internal customers. Analogically, the other part of the system (voice interface with an operator) is the front-stage e-service aimed at external customers.

Treating an IT system holistically as e-service (internal and external), helped to identify complementary values produced for internal and for external customers, for instance:

- service speed: both external customer and the CRM operator want to complete the service as soon as possible;

- minimizing information load: both external customer and the CRM operator want to complete the service with as little information required as possible; on the other hand, there is a significant asymmetry in access to information: the CRM operator has access to full range of data about the customer and his/her history while the customer has no specific knowledge what data are actually available and needed for a particular situation;

- positive emotional experience: both external customer and CRM operator want to avoid

misunderstandings or other stress-related situations despite of lack of visual contact.

KNOWLEDGE DIFFUSION

The teamwork in this project consisted of three main parts:

1. analytic - typical evaluation, based on general HCI and usability evaluation methodologies [5],

2. creative - brainstorming and evaluating solutions, ,

3. constructive - documenting redesign recommendations, to be implemented later in another project.

In both analytic and creative parts knowledge-intensive tasks have been performed, involving cross-disciplinary knowledge diffusion among team members

For developing cross-disciplinary perspective, and common understanding of the problem, the types of knowledge transfer defined in [7, 8] were taking place, especially:

- knowledge diffusion outside the team:

  o from front-line operators to senior operators,

  o from front-line operators to IT support staff (requirements, expectations, organizational and information flow issues);

- knowledge diffusion inside the team:

  o from senior operators to the CRM owner (IT) and vice versa,

  o from external usability experts to domain experts (senior operators and the CRM owner).

All the knowledge flows helped to work common understanding of detected usability and UX problems, and to develop creative solutions.

SERVICE DESIGN PERSPECTIVE

This evaluation project has raised the significance of broader UX evaluation focus, namely treating the *interactive system as a service system*, which produces value for internal and for external customers. This was the first corporate usability consultancy project in our career, where service value chain issue came to light in a very direct manner, and elements Service Design approach [10] have been applied.

The concept of service value chain proposed in the work of Heskett et al. [4], who contended that internal service quality (incl. tools for serving customers) affects employee satisfaction and job commitment. Consequently, in this case of this CRM system the operator UX has an indirect impact on customer UX and on future relationships with the work environment as a part of the internal branding.

Adopting service value chain perspective may redefine the role of HCI in current IT projects:

- while IT these days is often merely a vehicle for launching specific on-line services (internal or external), HCI and interaction design are often expected to build UX-competitive advantage and deliver value to users (customers);

- possibly better UX results may be achieved if an interactive system is designed as a service system (IT-based), aimed to offer value for specific group of customers.

Service design perspective also rises the issue if *value co-production* [4, 10]:

- in on-line *service systems* value for customer is co-produced in part by quality of human-computer interaction, but in the other part by quality of human-socioeconomic relationships relevant to actual system usage, like convenience, cost-saving, community etc.

- in on-line service *design process* value is also co-produced by participating clients/users (Value Co-Creation), what extends the current scope of User-Centred Design and UX design closer to increasingly popular the Service Design approach.

Developing profitable on-line relationships, involves mutual sharing of values produced by specific business model.

In case of on-line service systems this perspective places current HCI design practices much closer to economics, especially if the user is a conscious consumer (external, internal) willing to consume, abut also willing to co-produce value in a specific business context relationship.

SUMMARY AND CONCLUSIONS
Table 1 presents the summary of evaluation elements applied in this CRM evaluation project. The left column contains "classical" elements – evaluation methods and tools well-known form the past studies and HCI literature.

"Novel" elements are concepts, methods, tools and techniques which newly appeared in this study and were applied in a corporate context for the first time. Many novel elements in the right column suggest that the scope of this evaluation was broader that usual, the teamwork style was agile-like, and it resulted only during the project as a result of favourable contextual factors, resulting from organizational culture of this specific company. Actually, some of these novel techniques stem form organizational or marketing research, and they appeared as novel only in the context of this usability evaluation project.

This evaluation study produced several novel outcomes, unexpected at the beginning of this project: effective use of crowdsourcing, use of narrative "user stories"

ethnographically presenting operators' work habits, as well as using elements of Co-Design and Value Co-Creation, characteristic for the Service Design approach.

This project also led to a deeper understanding that:

- in e-business systems projects HCI has many common points with service design,

- many interactive systems can be designed as IT-based service systems, producing value for both internal and external customers,

- in usability evaluation and UX design users/customers should be involved as value co-producers, what extends their role in the current UCD approach.

Classical elements	Novel elements
• usability checklists	• crowdsourcing
• heuristic evaluation	• user stories
• in-depth interviews	• brainstorming
• contextual analysis	• knowledge diffusion
• ethnographic perspective	• high commitment of system operators
• slideshow as evaluation results reporting	• agile-like teamwork style
	• naive questioning
	• multipoint analysis
	• indirect system operation
	• Service Design perspective
	• understanding work behaviour: staff motivation, attitude and incentives

Table 1. Classical and novel elements applied in the CRM evaluation project

From the HCI methodology perspective two outcomes seem to be most significant:

- merging classical (from the HCI area) and novel elements, partly adopted from other studies, partly invented on the spot;

- applying *Service Design* perspective along HCI/usability research focus.

The general outcomes of this work show that in UX/usability consultancy practice there are some factors, which – if appropriately triggered – may utilise local

resources that invigorate functions driving project forward through enhanced knowledge and commitment of project stakeholders [2, 11]. In this project resources that were crucial could be identified as:

- procedural, relevant to the novel evaluation framework, integrating diverse methods in a flexible manner;

- expressive, relevant to the problem-focused group of committed CRM system operators, sketching solutions on-the-fly;

- knowledge resources, that have been identified in the project and purposefully used for a better understanding the CRM system context and values shared by its external and internal customers.

As a result, this project has proved the service value chain concept may be applied for many corporate IT systems, which should be treated as e-services designed jointly with User-Centred and Service Design approaches.

Further research work in this area is planned, because the impact of economic factors shaping behaviour of humans involved in diverse value chains/networks on-line becomes more and more significant element of user-service interactions.

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