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Creative Sprints: An Unplanned Broad Agile Evaluation and Redesign Process

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Abstract

We report how a request for routine usability work rapidly evolved into a novel agile process for evaluation and redesign. This process is described and then analysed to identify reasons for success. This analysis supports *realistic* knowledge transfer between User Experience professionals by *outlining* how similar future processes could succeed. *Realistically*, professionals must work to get approaches to work. Uncritical copying of concrete details is unrealistic.

Author Keywords

Creative Sprints; Agile Development; Service Design

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

The scope of academic research on Human-Computer Interaction (HCI) has widened over three decades, sometimes preceding a widening of Interaction Design (IxD) scope, but often broadening in response to IxD best practice. Two major trends can be identified. Firstly, HCI has broadened its guiding values from a narrow focus on performance to any possible value consideration. Secondly, HCI has expanded its phenomena of interest from a narrow focus on one user

More Purpose(s) in Scope

Initially HCI and IxD valued task completion and efficiency more than task quality and user satisfaction. User experience brought more values into play, with satisfaction decomposed into frustration, surprise, delight, fun and many more positive and negative emotions. As HCI extended to valuable outcomes, all values could be considered, with the balance of positive and negative experiences and outcomes unified within the concept of *worth* [1].

More Artefact(s) in Scope

Initially HCI and IxD focused on the user interface of a single application. The 1990s 'turn to the social' expanded HCI's scope to complete socio-technical systems, typically focused on a single application. Since then, service design approaches [5] have broadened IxD's span to multiple customer touch points in product-service ecosystems involving several digital systems.

interface to multiple touch points. Both trends are briefly reviewed in the box to the left.

The Lag in Client Expectations
Unsurprisingly, clients for user experience (UX) services do not have the broadest possible understanding of the scope of HCI and IxD, but nor can any individual researcher or practitioner.

Clients will thus often expect less from UX work than is currently possible. A major challenge is persuading clients to embrace possibilities beyond user interface usability. The full current scope of HCI and IxD cannot be offered during initial contract negotiations, but the scope of work can broaden once a project is underway.

This paper reports such a broadening of scope. The first two authors had previously successfully expanded the scope of work in a collaboration where a change to an evaluation scenario enabled various departments' staff to understand each other's needs, streamlining knowledge transfers during cooperative work [7]. The case study reported here led to a broader extension of scope. In collaboration with the third author, reasons for success have been identified; allowing future use of the process through realistic guidance on what is required for broad agile UX work.

A Request for Routine Usability Work

A large Polish financial services company requested usability evaluation of a specific module within a multi-modular CRM (Customer Relationship Management) system, in daily use by call-centre operators to support thousands of customers. As with many corporate IT systems, the CRM system was introduced to deliver commonly sought benefits, such as process optimisation, enhanced employee creativity, and support for teamwork and communication.

The initial objective of this project was defined simply: improve the usability of one module (CC-CRM*: Call Centre Customer Relationship Management*) to shorten customer waiting during an enquiry or request. The experience of the external consultants (first two authors) made this work appear to be routine. Like similar previous work, it was planned as three phases:

1. *Familiarisation* with context of use: understanding users, tasks and organizational culture and their impact on work behaviour, plus factors shaping staff motivation, attitude and incentives.
2. *Evaluation*: targeting known problem areas via identifying and categorizing usability problems using expert inspection via direct CC-CRM use, usability checklists and heuristic evaluation.
3. *Redesign*: proposing changes to CC-CRM, communicated by a final presentation.

This corresponds to Gould and Lewis' three key principles for usability [4], but with 'empirical measurement' replaced by expert review: no user-based evaluation methods were planned, because access to experienced senior operators would provide sufficient contextual information to support impact analysis and problem prioritisation.

The Emergence of Creative Sprints

The above plan could not be followed for two reasons. Firstly the client had already crowd sourced usability problems via email from call centre operators. These problems were grouped and ordered by three very experienced senior call centre operators. Secondly, the consultants could not use CC-CRM, which gave access

A Creative Sprint

is a single coherent episode of evaluation and redesign activities focused on a (group of) usability problem(s), as pre-identified by users. Experienced operators demonstrate a task to expose problem(s) to a multi-disciplinary team in a place without distractions or interruptions, where all have a direct shared legible view of the demonstration. Spontaneous questions and discussions during and after the demonstration can: identify further problems; explain, categorize and prioritize problems; and propose and explore possible solutions and their feasibility (all motivated by the need to persuade project sponsors to accept evaluation results and redesign recommendations). Collaborative knowledge exchange and mutual learning are critical to successful creative sprints, which must be underpinned by breadth and depth of relevant knowledge from motivated local stakeholders and UX experts.

to confidential customer financial information. Nor can we give full details of the work here, including the evaluation results, due to commercial confidentiality.

Instead, the consultants had to work with a local team of four (senior call centre staff, plus IT lead responsible for CC-CRM) in an isolated dark training room where interactions could be projected in private onto a large screen from a laptop operated by an experienced operator. The local team took each (group of) crowd sourced problem(s) in turn, and completed a task to demonstrate them. Due to gaps in their domain knowledge, the consultants asked apparently 'naïve questions' about work practices. These were answered by the operators, which led to group discussions of work practices and knowledge sharing. This enabled an in-depth grounded understanding of the causes of usability problems, and agreement on their criticality and location within the CC-CRM software. Solutions were creatively brainstormed and discussed, with the IT lead commenting on the viability of proposals. One consultant captured and annotated screen shots, and the other took notes, which were consolidated at the end of each problem cycle. These notes and annotations formed the basis for the closing project presentation, for which there was a strong focus on persuading client executives of the need for changes and the desirability of specific redesign options.

This full cycle of demonstration, contextualization, knowledge sharing, causal analysis, prioritization, brainstorming of solutions and recording of feasible outcomes took several iterations to emerge and stabilize. Initially, the consultants' broadening role with a changed relationship from experts to partners was unsettling, but the value of the emergent process quickly became apparent to all involved. This led to the original usability focus on the CC-CRM user interface being rapidly expanded (to include operator and customer experience) within the context of a service value chain (spanning a range of call-centre modules and intra-organizational relationships). Over 30 creative sprints were completed in almost 5 days' work. Change proposals addressed the complete service value chain, including internal policies and procedures.

The first author's expertise in agile development [3], made each process iteration feel like a 'creative sprint'. The problem list corresponded to a backlog in Agile, with each creative sprint removing a group of problems from the backlog, and documenting a prioritized problem and viable solution.

Retrospective analysis of this case study with the third author revealed a stable structure for creative sprints, summarised in the box to the left, and shown in Figure 1 overleaf. During demonstrations and discussions, further problems were discovered that were not part of the original 'backlog' from email crowdsourcing. These could emerge at any point after an operator began to demonstrate a crowd sourced problem. About 10 days after the last creative sprint, a final presentation to the client's executives, based on the documented solutions and alternatives, concluded the project very successfully. Recommendations went beyond user interface changes to the redesign of internal services.

Success Factors for Creative Sprints

Support for UX work is typically conceived of as development and validation of 'methods' to be followed as documented, with some guarantee of effectiveness.

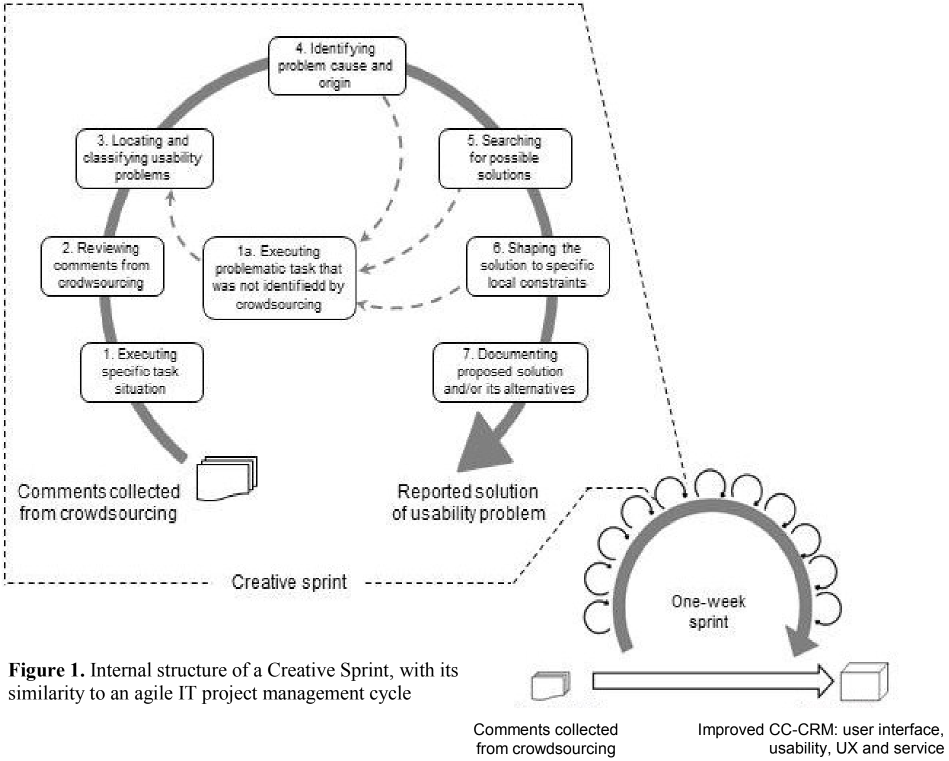
4. Identifying problem cause and origin
3. Locating and classifying usability problems
5. Searching for possible solutions
2. Reviewing comments from crodwsourcing
1a. Executing problematic task that was not identifiedd by crowdsourcing
6. Shaping the solution to specific local constraints
1. Executing specific task situation
7. Documenting proposed solution and/or its alternatives
Comments collected from crowdsourcing
Reported solution of usability problem
Creative sprint
One-week sprint
Comments collected from crowdsourcing
Improved CC-CRM: user interface, usability, UX and service

Figure 1. Internal structure of a Creative Sprint, with its similarity to an agile IT project management cycle

In this case study, the consultants had planned to use their own approaches to context of use research, usability inspection, problem analysis, and solution recommendation. These all have their origins in published HCI research, but have evolved and had been adapted in response to local project circumstances over almost two decades of consultancy work. Despite the maturity and practical worth of these approaches, they could not be used as planned in this case study. The success of the project thus cannot be attributed to the consultants following (adapted) public documented methods from HCI research and/or IxD best practices.

The TwinTide COST Action developed understandings of UX work that do not depend on following public documented *methods*, but instead result from the combination, completion and adaptation of *resources* [2]. These may have a public documented form, but more often are local and not publicly disseminated. Some emerge within project contexts. Whether public, local or emergent, resources have a range of potential *functions* that are only realized in specific project contexts. UX experts and designers have to *work to get design and evaluation resources to work*.

Ten resource functions are listed in the box on the next page. The third author (who led on [2]) worked with the first two authors to apply *Resource Function Analysis* to identify why this project succeeded.

Resources can be archived knowledge, individual expertise, emergent practices, physical artefacts or any manifest or inferable entity used in IxD or UX work. Resource functions can have a cognitive, affective or social basis, i.e., they are not wholly knowledge based, and cannot be wholly publically archived. Examples of each function in the case study are now given.

Guarding Customer Data
Expert inspection via direct use was not possible. Instead, the project team worked together in an isolated room, with a senior operator operating CC-CRM and avoiding disclosure of private information. UX work would have been impossible without such safeguards.

Motivating Creative Sprints
The high quality of crowd sourced problems reflected call-centre operators' motivation to improve customer experience (and their bonuses). The darkened isolated

Approaches, Resources and Functions

HCI research and leading edge IxD do not produce complete design and evaluation methods for use 'as is'. Instead, research and practice propose *approaches*, (loose incomplete groups of incomplete *resources*), with potential *functions* that can only be realized in practice. Ten functions have currently been identified [2]. A resource can be used to:

1. Guard (*protective*)
2. Motivate (*invigorative*)
3. Inform (*informative*)
4. Learn (*inquisitive*)
5. Direct (*directive*)
6. Record (*expressive*)
7. Present (*performative*)
8. Co-ordinate (*integrative*)
9. Scope (*adumbrative*)
10. Edify (*ameliorative*)

Function names in brackets are preferred in [2] and are *italicized* opposite.

No guarantees are associated with IxD resources. We must work at getting them to work.

room was also *invigorative* for creative sprints, as were local team member values (bonuses, fixability).

Informing Creative Sprints

The consultants' knowledge of agile software development practices, user and customer experience, and service design and value chains was critical to expanding the scope of the UX work from 1980s usability to contemporary human- and business-focused design. Their published work on software layer location [6] informed problem location and classification. The IT manager's knowledge of CC-CRM and related systems' architectures was vital to identifying feasible re-design proposals. Last, and by no means least, senior operators' knowledge of work practices, internal services, policies and procedures, and existing workarounds for usability problems were all vital to understanding and prioritization.

Learning within Creative Sprints

The consultants' naïve questions and extensive discussions accessed the extensive knowledge of the project team. Crowd sourcing was a further *inquisitive* resource for finding usability problems.

Directing Creative Sprints and Crowdsourcing

Local client resources were critical here. The client organized the email crowdsourcing. Senior operators grouped and ordered reported problems, directed creative sprint order, and chose demonstration tasks.

Published methods tend to foreground *directive* functions that tell us how to use them. However, all critical directive functions in this case study were local and emergent, and we would expect this to be (partially) the case for future use of creative sprints.

Recording Creative Sprint Outcomes

All resources here were emergent and evolved during initial sprints. Published methods sometimes foreground *expressive* functions that tell us how to report outcomes. However, expressive functions in this case study were local and emergent, which we would again expect to be true for any future creative sprints.

Presenting Creative Sprint Outcomes

Much of the planned structure and content of the final presentation was used, but local guidance on how to win (or lose) the confidence of executives was crucial.

Coordination within Creative Sprints

Creative sprints had emergent *integrative* functions, coordinating discoveries from earlier steps with later ones. This resulted in a lean (low waste) process where demonstrations and discussions contextualized usability problems, and contextualization guided problem categorization, which informed redesign proposals (along with service design and IT system expertise).

Scoping and Edifying Creative Sprints

There was limited departure from plan here. The highest level scope of the work was unchanged, but within this, scopes did expand by considering: service value chains beyond the CC-CRM user interface (extending the scope for system *artefacts* within focus); additional *beneficiaries* (focus on customer experience and client's brand); and new forms of *purpose* and *evaluation* (beyond usability). The latter reflected extension of edifying UX principles from efficient operator performance to a range of both user- and business-focused values.

Successful Creative Sprints need:

- Creative responsiveness within an agile process, coordinating emergent local resources, and openness to a range of project values.
- Knowledge of UX and Agile development (and more as relevant, e.g., Service Design, customer experience, value chain analysis)
- A constant .focus on persuading key decision makers with well evidenced credible proposals.
- Management champions
- Collaborative mutual learning partnerships within a project team, including well-motivated knowledgeable lead users and IT experts, who can address management agendas.
- User (crowd) sourced list of (grouped) usability problems.
- A suitable collaborative workspace.
- Proactive risk management.

Conclusions

The primary contribution of this industrial experience paper is the account of creative sprints and associated crowdsourcing of usability problems. The project outcomes were much beyond all stakeholders' expectations. Creative Sprints are thus a potentially valuable new UX practice that are important for releasing latent local resources that are vital to agile generation of feasible redesign approaches. However, practitioners who want to adopt creative sprints (or indeed *any* IxD approach or process) cannot develop competences from concrete examples or tutorial guidance alone. Instead, they must understand the range of local and emergent resources that must be sourced and exploited for successful creative sprints. Resources and their functions do not replace methods. Rather they explain how methods actually work. This is what they concretely add to HCI and IxD.

The second contribution, the application of resource function analysis, is thus not secondary, but needs to be understood and appreciated for effective knowledge transfer between UX professionals. Resource function analysis structures an outline of how similar future processes can succeed (in contrast to simplistic understandings via ‘methods’). Method diffusion in HCI has been understood to result from describing directive, inquisitive, informative and expressive resource functions. This is not adequate for effective diffusion of novel approaches. Instead, UX experts need to understand what they need to do to get approaches to work. Affective and social aspects of UX work are as important as cognitive ones. To repeat our success here, UX consultants need to ensure that the success factors, as identified in the box to the left, are provided by a group of coordinated resources that can be sourced, developed and applied in practice in order to achieve the required resource functions.

Acknowledgements

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