

User Interface Design as a Facilitator of IT Project Communication – A Case Study

Introduction and OZCHI submission details

A 250 word summary for the conference programme including the problem addressed, what will be presented, and its relevance to the HCI community.

While user interface designs are key outputs of any information technology (IT) project, the user interface design process itself can also contribute other ancillary benefits to the development process, quite apart from the final deliverables. This paper discusses the authors' experience establishing and working in the user interface team of an IT project developing a case management system for government use. Visibility of the user-centred design process, and its products, were seen to facilitate better communication amongst disparate team members, and to facilitate a 'shared vision' within the team which helped focus team efforts on a common objective.

The challenges explored in this paper will be familiar to those who have worked on IT projects comprising multiple teams of specialised disciplines. Issues of misalignment between the expectations of business stakeholders and system implementation teams are addressed through the targeted application of interaction design techniques.

The solutions presented are highly practical, drawing upon a base of existing interaction design skills and tools. The approaches described can be applied to IT projects of any scale.

PRESENTERS' BACKGROUNDS

Matt Morphett is a management consultant and usability expert with 13 years experience in the IT industry. Matt lead the User Interface design team, liaising with business representatives and project stakeholders in addition to producing key deliverables including the User Interface Framework, the foundation wireframes and many core interaction sequences

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Shane Morris has worked as a user interface designer and usability expert for over 15 years. For this project, Shane's role was to explore and illustrate alternative user interface design concepts with business representatives as well as to advise on user-centred design approaches.

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ABSTRACT

While user interface designs are key outputs of any information technology (IT) project, the user interface design process itself can also contribute other, ancillary benefits to the development process, quite apart from the final designs.

This paper discusses the authors' experience establishing and working in the user interface team of an IT project developing a case management system for government use. Visibility of the user-centred design process and its products was seen to facilitate better communication amongst disparate team members, and to facilitate a 'shared vision' within the team which helped focus team efforts on a common objective.

Author Keywords

Design wall, design walkthrough, IT project communication, design rationale.

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INTRODUCTION

As a result of a public inquiry into the abuse of children in foster care, the Queensland departments of Child Safety and Communities are developing an "Integrated Client Management System" (ICMS). The ICMS is a client management and case management system that collects and provides information about people known to the departments such as:

- Case details of children who have suffered (or are at risk of) neglect or abuse;
- Information about Young People with a Youth Justice record;
- Foster and institutional carer approvals and placement details.

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The system is designed to facilitate better decision making – both at a day-to-day 'coal face' level and in the evolution of strategy and policy. By making it easier for departmental officers to capture information in a timely manner, and by sharing that information (where appropriate) across the state and across both departments, users have the necessary information at hand when they need it.

Interaction Design Team

The authors were members of an interaction design team which was formed after initial requirements and architectural design had been completed. The team was responsible for:

- Development of a conceptual design for the application user interface.
- Development of a user interface "framework" (style guide).
- Specifying user interfaces for key functions.

In response to a perceived lack of a common vision between architectural, requirements and business representative functions within the project, the interaction design team also took on an unofficial role of facilitating communication within the team and between the team, business representatives and stakeholders.

This was a natural fit, since experiencing the proposed user interface design is a very natural way for individuals to envision the proposed solution and how it will operate in the workplace.

BUSINESS PROBLEM

The challenges explored in this paper will be familiar to those who have worked on IT projects comprising multiple teams of specialised disciplines. Issues of misalignment between the expectations of business stakeholders and system implementation teams are addressed through the targeted application of interaction design techniques.

The solutions presented are highly practical, drawing upon a base of existing interaction design skills and tools. The approaches described can be applied to IT projects of any scale.

ICMS

The ICMS is a composite IT solution comprised of a number of functionally-specialised software products which are integrated into an ASP.NET core.

In addition to managing client and carer information, the ICMS facilitates the completion of departmental forms and presents valuable information through the provision of operational and management reporting.

A workflow management system directs work to the appropriate areas of the organisations by managing the ownership and approval of forms.

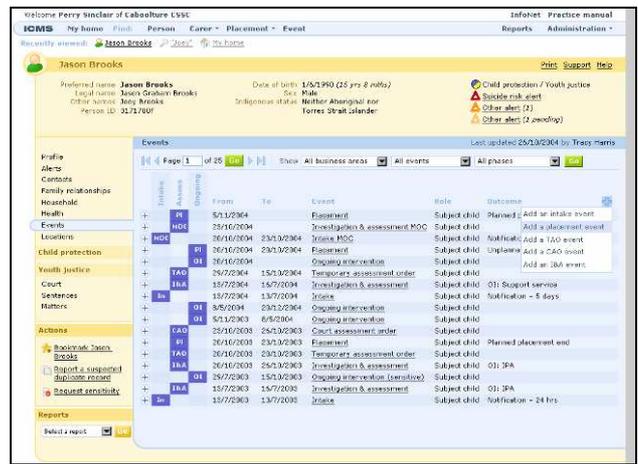
The ICMS is accessed through a web interface which, given the sophisticated nature of the business processes, has proved challenging from an interaction design perspective. In developing the user interface, a balance has been struck between the use of proven, enterprise class, web technologies and newer web technologies providing richer mechanisms of interaction.

The solution is being built jointly by the Queensland Government Shared Information Solutions provider and Microsoft.

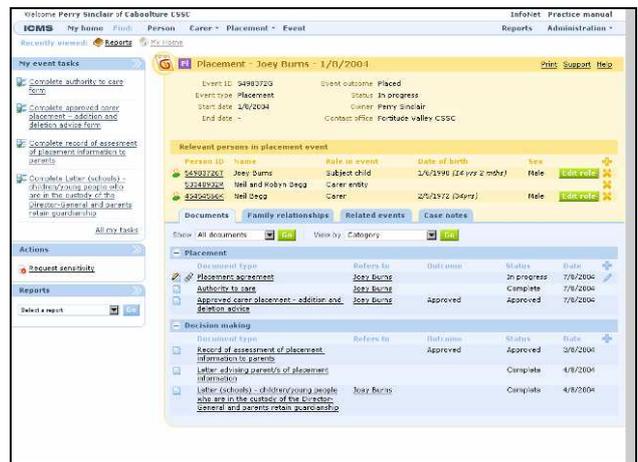
The first two releases of the system are live and currently in use by departmental staff. These releases allow information to be shared state-wide whereas previously it was managed strictly within the originating office.

Screenshots

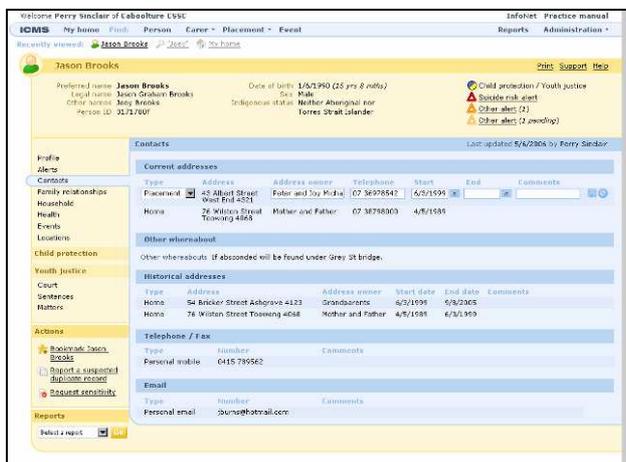
Visual mock-ups showing a small sample of system functions are presented here. These mock-ups were used to communicate system functionality to business and technical audiences.



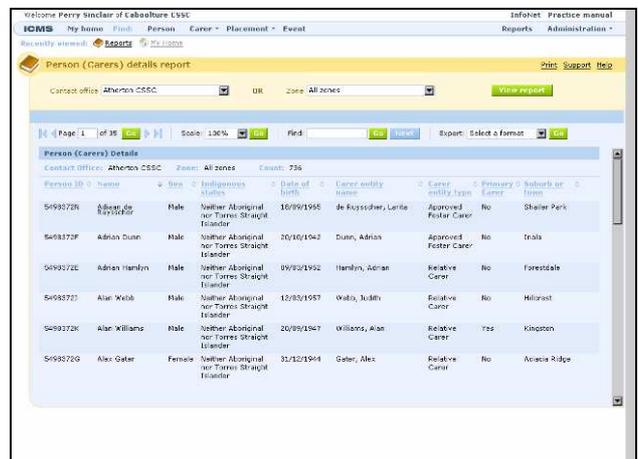
Person record showing event history



Event workspace



Person record showing contact information



Operational report

CHALLENGES AND ISSUES

The dedicated interaction design team was established as a part of recommendations from an external review of the project. At the time the team was established, significant work had already been undertaken defining architectural standards and business requirements, however there was a perceived lack of a shared understanding between requirements, architecture and business representative groups of the project.

The interaction design team identified opportunities to improve stakeholder engagement, as well as to facilitate a shared vision amongst the project team.

A number of activities undertaken by the design team helped to alleviate the challenges outlined above. These included:

- Development of a user interface framework;
- Wireframing as a rapid, transportable visualisation tool;
- Introduction of a project design wall;
- Regular design walkthroughs;
- Deliberate exposure of the user-centred design process.

Each of these points is explored further below.

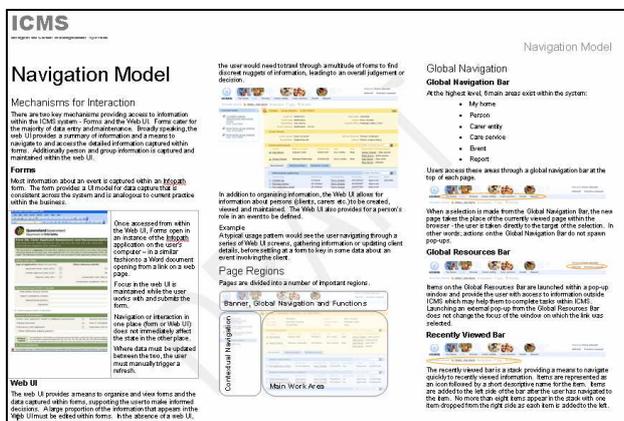
User Interface Framework

A framework was developed to provide guidance to the requirements teams and coding teams. The UI Framework communicated standards for interaction, navigation, page layout, and visual design.

Business representatives and users were consulted through the development of the UI Framework - important not only because their input drove the content of the deliverable but also as it engaged stakeholders, providing a picture of how the system operated.

The standards defined in the UI Framework were leveraged and applied by the teams developing the related systems for Structured Decision Making and the reporting of Suspected Child Abuse and Neglect.

While the UI Framework was not final in its first release, it provided a valuable point of reference and discussion with the team and business stakeholders. It was really the first time, the business has “seen the system”.



A page from the ICMS User Interface Framework

Wireframing as an Enabler of Business Engagement

Wireframes were used early in the development of the system conceptual model as a means of providing a vision for how the system would operate. By following real world scenarios, annotated sequences of wireframes helped business stakeholders visualise a day in the life of their staff once the system went live.

Previous to the development of wireframes, the operation of the system had been documented and communicated through data model diagrams, and business requirements that were not easily aligned with practical user processes.

Later in the project, the business requirements team were encouraged to use wireframing as an integral part of their requirements formulation and signoff processes. Wireframes were taken to weekly business reference group meetings and became the primary mechanism through which system operation was communicated. The use of wireframes in this context reduced the incidence of false signoff – where requirements were approved without a complete understanding of how they would translate into system operation.

The low fidelity nature of wireframes allowed all parties to concentrate on the requirements and user experience delivered rather than visual design. Removing the requirement for an attractive visual treatment made other team members, such as business analysts, comfortable to create their own wireframes as a way to help communicate their own work.

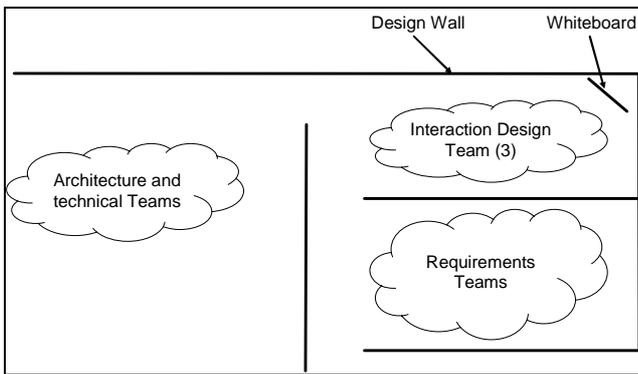
Design Wall

The design team posted wireframes and rich visual mock-ups of the system as it evolved on a wall adjacent their workspace.



ICMS Design Wall

The design wall was a great catalyst for communication. Members from other project teams would assemble around the wall to hammer out topical issues of system functionality. While often distracting, it did mean that the design team were always well informed of the pressing issues within the project. It also meant that the design team could have early input into the resolution of architectural and implementation issues, thus driving a user-centred agenda early, rather than having to deal with the implications of decisions for users after the fact.



Map showing the design wall located between technical and requirements teams

Having the most comprehensive picture of the system physically located close by meant that the design team was branded (even if only by association) as the group who had the most comprehensive understanding and who could provide immediate answers on scope and functionality. It was a measure of the success of this strategy that the team was routinely consulted first on matters pertaining to business requirements, architectural standards and technical feasibility.

Design Walkthroughs

Weekly design walkthrough were undertaken as a means of updating other teams on the changes and developments occurring in the system design. Run as an informal, yet strictly 30 minute, weekly “stand-up” briefing in front of the design wall for any interested parties, the “What’s new in design” sessions became a popular fixture on the project calendar. Attendance from architecture, requirements, development, data migration, testing and training teams was strong with numbers often swelling to 15 or 20 in the small design pod.



Attendees at the weekly “What’s new in design” session by the design wall

This activity further consolidated the design team’s position as thought leaders with regard to the system.

The design walkthroughs achieved another goal – to bring other teams closer to the design process thereby breaking down the large gulf that often expands between the design and implementation functions of a large project.

Exposing the Design Process

On a number of occasions the design team was asked to present the system as it evolved to various stakeholders from new project members through to key project stakeholders including area office managers and Departmental Directors General. Through these presentations it was important to not only explain the operation of the system but to communicate the user centred approach by which the system conceptual model and user interface was arrived at.

It was also vitally important to continue to communicate the importance of the User Centred Design approach as the project evolved. By attending key architectural decision making meetings, talking to new staff, advising other teams and encouraging others to take an interest in usability, the team was able to elevate and maintain the profile of a user centred approach.

CONCLUSION

The benefits of taking an open, communicative and inclusive approach to design easily outweigh the investment required to achieve it. By taking such an approach the ICMS design team was elevated into a position of helping to craft the business requirements and the architectural standards for the system. Too often we see the design function operating in response to these elements rather than as a part of their creation and evolution.

Additional benefits to the project included:

- The engagement and trust of other teams on the project early
- Presentation of a single view of the system
- Facilitating better communication and cleaner signoff of requirements with business stakeholders
- Providing team members an understanding of the importance of user-centred system design thereby ensuring earlier design team engagement and a more user-centred outcome.

Application in other Contexts

The concepts described entail very simple approaches, and are easily applied on projects of any scale. The key is to engage thoroughly and make it easy for people to engage you. Don’t live in an ivory tower and try to be in it for the long haul.

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