

## **Design Case Study: Z-Tel Technologies, Inc.**

Developing a well-architected, user-centered interface and interaction design

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### **Business Need**

Telecommunications service provider Z-Tel was developing an integrated telephony application to unify all messaging types, including email, voice mail, and fax. The product development team had roughed out a user interface approach but was not equipped to fully realize the design or to address usability issues. I was brought in to organize the process and to develop a well-architected, user-centered user interface (UI) design.

### **Design Role**

My design work covered information architecture, interaction design, and visual/user interface design, as well as project management. I directed and managed an outside graphic design contractor tasked with proposing application color schemes and all graphics (including custom icons).

### **Challenges**

The project had many design challenges. There was little market research to build on, target users were rather vaguely defined (e.g., "business people who use email and telephones"), and there were no existing product or marketing requirements documents. A highly aggressive development schedule meant there was no time for formal usability testing, yet I was charged with producing an application with "a good usability treatment." The company was also undergoing restructuring and re-branding.<sup>1</sup>

### **Design Process**

I began by gathering as much internal information as possible regarding application and market requirements. Since there was no existing market research from which to work, I began by interviewing the development team and key executives. This internal discovery process allowed me to uncover business objectives and the varied feature sets assumed by a range of individuals.

I followed the internal review with a thorough comparative analysis of products available in a similar market space. The analysis looked at popular Web-based messaging applications, both commercial and freely available, including Hotmail, Microsoft Outlook 2003 Web, Yahoo! Mail, and others. As a complement, I reviewed recent articles and industry analyst reports to learn about what the industry considered to be right (as well as what was not) in telephony and Web-based messaging applications.

The next step was to synthesize application requirements based the internal and external research results. This allowed me to organize functionality and create a user task map. The formalized—and as a result, now well understood—range of user tasks identified key application components and prioritized development efforts.

The design and concurrent development process succeeded because I met on a weekly basis with the VP of Engineering and on a daily basis with the Web development team lead. In general, the team lead and I discussed functional application details from which I would design specific portions of the application. One or more iterations later, the design would be presented for review in weekly executive meetings.

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<sup>1</sup> In fact, Z-Tel Technologies, Inc. is now Trinsic, Inc.

## **Benefits & Results**

The final deliverable comprised a fully documented UI design with detailed functionality rationales, wireframes for every screen and dialog, and a comprehensive blueprint of the complete application. A physical, wall-mounted map of the entire application decorated a nearby hallway and (along with the design documents and specifications) allowed the team to clearly see application interconnections, evaluate interdependencies, and better understand requirements for a good user experience.

Moreover, the UI design specification and wireframes served as touchstone documents for both developers and company decision makers. Other documents contained the application blueprint (site map) and the user task map. The fully documented design and clear description of design objectives communicated design direction and development status to other parts of the company, including the support and sales groups. A "messaging UI brief," an abbreviated version of the UI specification, was specifically tailored to inform the CTO of key functional and design elements of interest at this level.

## **Final Deliverables**

- A prioritized user task map of application areas.
  - Conceptual organization of technical product functionality according to user tasks.
  - A comparative design analysis of five existing Web-based e-mail clients to establish baseline functionality and typical features (included screenshots, features inventory).
  - Interfacing with, critique, and management of the company's graphic design efforts during the creation of all graphical elements, including application icons, colors, and logos/branding.
  - Numerous iterative refinements for usability, efficiency, and visual appeal.
  - A complete set of thoroughly annotated application wireframes.
  - A complete and fully annotated application site map (blueprint).
  - A complete UI design spec document for the messaging component of the application.
  - An extensible framework for future documentation and design work.
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