User-Centered Design in Practice:
A Look at the CATA Website
Redesign Project

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Overview

• Defining the Challenge: Evaluation & Analysis
• The Process: Applying User-Centered Design
• Measuring the Results: Post-Evaluation
• Looking Ahead: Challenges for the Future
Defining the Challenge: Evaluation & Analysis
CATA’s Vision

“CATA’s vision over the next five years is to create a transit system that uses innovation to respond to the public transportation and mobility needs of the tri-county area, enhancing the overall quality of life for our community”
CATA’s Objectives

• Remove barriers to information riders need
• Increase accessibility to commonly used features
• Integrate new features to enhance functionality
• Provide greater value to the organization
• Improve the experience for CATA customers
Evaluation & Analysis

• Usability testing of the original site prior to redesign or development efforts
• Expert recommendations provided by MSU Usability & Accessibility Center staff
• Development of strategic plan for website redesign project
Evaluation & Analysis

Baseline Usability Testing Objectives

• Define what users like and dislike about CATA’s website
• Determine what aspects of the CATA website are difficult to use
• Define user expectations of the CATA website
Evaluation & Analysis

Usability Testing: Profiles & Protocol

- 15 testers recruited, sampled from CATA’s target customer base:
  - Downtown commuters
  - Youth
  - Undergraduate college students
  - Seniors
  - Screen reader users who are blind
Evaluation & Analysis

Usability Testing: Profiles & Protocol

• Evaluation sessions included:
  • Demographic questionnaire
  • Background interview
  • Task scenarios performance; 8 tasks measured for successful completion
  • Post-study questionnaire
  • Post-study discussion
Evaluation & Analysis

Expert Recommendations

• Design for accessibility compliance
• Interactivity for route mapping and schedules
• Consolidate content by relevant topics
• Consistent user interface throughout
• Reduce excessive graphic and color elements
• Improve visibility of sub-navigation
• Add a search feature to the website
Evaluation & Analysis

Website Strategic Plan

• Provide easy access to information for all target users
• Clearly demonstrate how to use the CATA transportation system
• Provide feature enhancements to create a better custom experience online
• Support organizational goals such as marketing, job postings and bidding opportunities
The Process: Applying User-Centered Design
What is Design?

• Not just “aesthetics”
• Creative process to develop a system, architecture or interaction
• An integral part of the development process, not a separate step
What is User-Centered Design?

- A process methodology
- Creative problem solving around the needs of the User
- Usability is a goal, objective or outcome. User-Centered Design is a means to achieve usability.

*Designing without input from your users is designing without a purpose.*
What Would Users Do?

Start by asking:

WWUD?
(WUD, get it?)
The Methodology

- An iterative model of development
- Origins in Agile Development Methodology
- User-Centered Design focuses more heavily on constantly gathering and assessing user feedback during requirements and testing
The Methodology

The Iteration Model

Test & Evaluate  Requirements

Develop  Prototype
The Methodology

*Iterations reduce uncertainty over time, and increase accuracy by incorporating constant user feedback.*
So Let’s See Some Examples!
www.cata.org
Before
Before

- Inconsistent navigation across subpages
- Inconsistent navigation
- Content organization & presentation
- Lack of search
Main navigation changes
Side navigation disappears
Static route information is difficult to use
### Before

**Table data not accessibility compliant**

#### Cash Fares

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Cash Fare</td>
<td>$1.25</td>
</tr>
<tr>
<td>Discounted Cash Fares</td>
<td></td>
</tr>
<tr>
<td>- Medicare cardholders</td>
<td></td>
</tr>
<tr>
<td>- Students with valid CATA or college student ID card (ID not required for students 12 years and under)</td>
<td></td>
</tr>
<tr>
<td>- Seniors (62 years+ with valid CATAClub card)</td>
<td>60¢</td>
</tr>
<tr>
<td>- Persons with Disabilities (with valid CATAClub or ADA card)</td>
<td></td>
</tr>
<tr>
<td>Children (under 42 inches tall)</td>
<td>Free</td>
</tr>
<tr>
<td>Transfers (customer must request transfer ticket upon boarding)</td>
<td>Free</td>
</tr>
</tbody>
</table>

While drivers cannot make change, the farebox issues a CATACash Card for the difference between what you owe and what you deposit in the farebox. Fareboxes accept $1, $5 and $10 bills. Each farebox has an 8 card limit. CATACash Cards are not accepted.
After
After

Optimized navigation for organization and ease of use
Consistent across all pages
Integrated search
Integration of enhanced automated trip planning and schedule features

Integration of more relevant content
After

CATA Services

CATA Services at a Glance

Check out the services CATA provides by area, including Lansing, East Lansing, Lansing Township, Delhi Township (Holt), Meridian Township (Okemos & Haslett), MSU, Williamston, Webberville, Mason, Dansville, and more.

Fixed-Route Service
Fixed-route buses travel throughout the Lansing urban area, picking up customers at bus stops and following a regular route at scheduled times.

Curb-to-Curb Services
CATA offers a variety of "we’ll come to you" curb-to-curb services to take you to your destination. These services require advance reservations.

Spec-Tran Service
Spec-Tran curb-to-curb service transports persons with disabilities who are unable to use fixed-route service.

Clean Commute Options
options to driving alone such as busing, walking, biking, ride sharing.
After

Content consolidated and condensed for web readability

Consistent sub page navigation

Customer Service contacts throughout
After
Enhanced Features - Shop Online
After
Enhanced Features - Online Bid Tracking
After
Enhanced Features - Job Postings/Apply Online
After
Enhanced Features - Rider Alerts Subscriptions
Measuring the Results: Post-Evaluation
A Second Usability Test

- 15 testers recruited, sampled from CATA’s target customer base.
- Some demographic variance in the new test group.
- Same objectives and testing protocols as used in the baseline study.
And the Results...

Measurable Improvements

- Test results showed significant measurable improvement in 6 of 8 task scenarios
- Positive feedback from users:
  - “Easy to use, to navigate, helpful information.”
  - “(CATA) Care about getting info to riders, keep info current, keep riders informed of services they offer.”
And the Results...

Opportunities for Improvement

• Majority of issues centering around new enhanced features
• Increased complexity introduced into the system
• Identified areas lacking in accessibility code compliance
Looking Forward: Challenges for the Future
Future Challenges

An Ongoing Effort

• Use feedback gained from testing new features to continue improvements
• Continue to gather feedback and listen to user’s needs and expectations
• Maintain CATA’s spirit of innovation philosophy to help enhance the quality of life within our community
Thank You!

CATA, MSU, WUD and YOU for helping to make the web a better place

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