ARCH-6: Putting the user into YOUR user interface

Case study of an effective user interface redesign

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Agenda

- The design relationship & process
  - Collaboration = surprise + tension + fear + relief

- Show & tell – how we did it
  - Generating new ideas
  - Embracing – not fighting with -- users
  - Iterative design – when we ‘thought’ we were finished . . .

- Unexpected benefits

- Lots of specific insights

- Your questions / comments
Coffeepot for masochists

Bicycle for fiancés
The product

- Point of sale system for quick serve restaurants
  - Cash register (sales, payments)
  - Management planning + tracking
  - Complex data (discounts, product structure, etc.)

- Runs in touch screen environment
  - Need large objects, with space around them

- Fast fast pace

Existing system -- Entering sandwich, drink, etc
Existing system -- Paying for it

The importance of interface design

- Interface design a process.
- Need for outside review
- OpenEdge® a solution, but not to **this** problem
Our hopes

- **Carl**
  - Better management interface
  - Responsible UI plan as system grows
  - More intuitive and contemporary look + feel

- **Arthur**
  - That Carl would let go of the ‘ugly’ features
  - Much higher productivity + accuracy
  - ‘Showcase’ solution for my portfolio

Initial demonstration / training

- **Carl’s dual personality**
  - Developer & entrepreneur (today)
  - Franchise owner / operator (yesterday)

- Carl ran system ‘demo’ in my office

- Arthur tried to imagine work environment
Reality testing – on-site observation

Reality testing – surprises for Arthur

- The current system worked
- High throughput + accuracy
- Users weren’t complaining
- Users took responsibility for data!
Reality testing – more surprises for Arthur

- System slowed down with ‘new’ user
- ‘Special’ requests a big problem
- User requests for new functionality

New agenda – surprises for Carl

- Cash register could be major design focus
- Management UI not the biggest opportunity
- Examining UI led to rethink core business rules
- Change in look / feel led to changes in function
The design process

- Observation
  - “Being” cashier
  - Seeing user view of the world

- Reflection
  - Organizing critical tasks
  - Finding new paradigms

- Prototyping (again and again and again)
- User testing
- Iterate (prototype + test again …)

Design, by . . .

- Challenging assumptions
- Getting back to basics
- Generating ideas
- Respecting each other
- Maintaining patience
Which knob controls lower left burner?
The fear

- Change too stressful
- New UI would lead to errors
- Management would resist
- Store employees would complain

Dispelling fear
Clerk tasks screen -- existing

Clerk tasks screen – proposed
Define discount – proposed screen

UI does not need to follow data dictionary ‘view-as’
Cash register screen -- issues

- Too many products to fit on one menu
  - Typical item can be: 12” or 6” or wrap or deli or salad or kids
  - Also drinks, discounts, special choices
  - Expect # choices to grow
  - Fast, accurate entry here is critical

- Display and receipt hard to read
Cash register screen – design idea #1

Cash register screen – design idea #2
Cash register screen – design idea #3

Cash register screen – four screens on one!
Cash register screen – Letting go for change!

- No menu-item icons
- Store owners can’t define icons
- Only single-line button labels
- All button labels the same size type
- Amount of text is limited
- May need two keystrokes / menu item
- But . . . fewer menu panel changes

Cash register screen – Fear, & fear of change

- Multiple key strokes would slow users down
- Context keys would be confusing
- Clerks would ring up wrong items
- Too big a change for top management
- Losing icons = losing personality
Cash register screen – design idea #4

Cash register screen – design idea #5
Cash register screen – design idea #6

Cash register screen – design idea #7
Cash register screen – design idea #8

Cash register screen – design ideas #9, #10
My inspiration – Don Norman

Preliminary results

- Design philosophy –
  - Less is more
  - Show only what’s needed.

- Prototype screens, with user acceptance.

- Standards, that should inform later design efforts.

- Working relationship
  - Informs future design efforts
Usability is a lot more than User Interface (UI)

- UI Review uncovered gaps in functionality
- Perceived as UI problem
- Solution was different, simpler, data structure.
- *(Example: How to apply costs of a discount)*

Why do it?

- Intangible vs tangible benefits
- This design process opened up path towards needed new functionality.
- A much more appealing and efficient look, feel, and efficient throughput.
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