PROGRESS SOFTWARE

Putting the user into YOUR user interface

Case study of an effective user interface redesign

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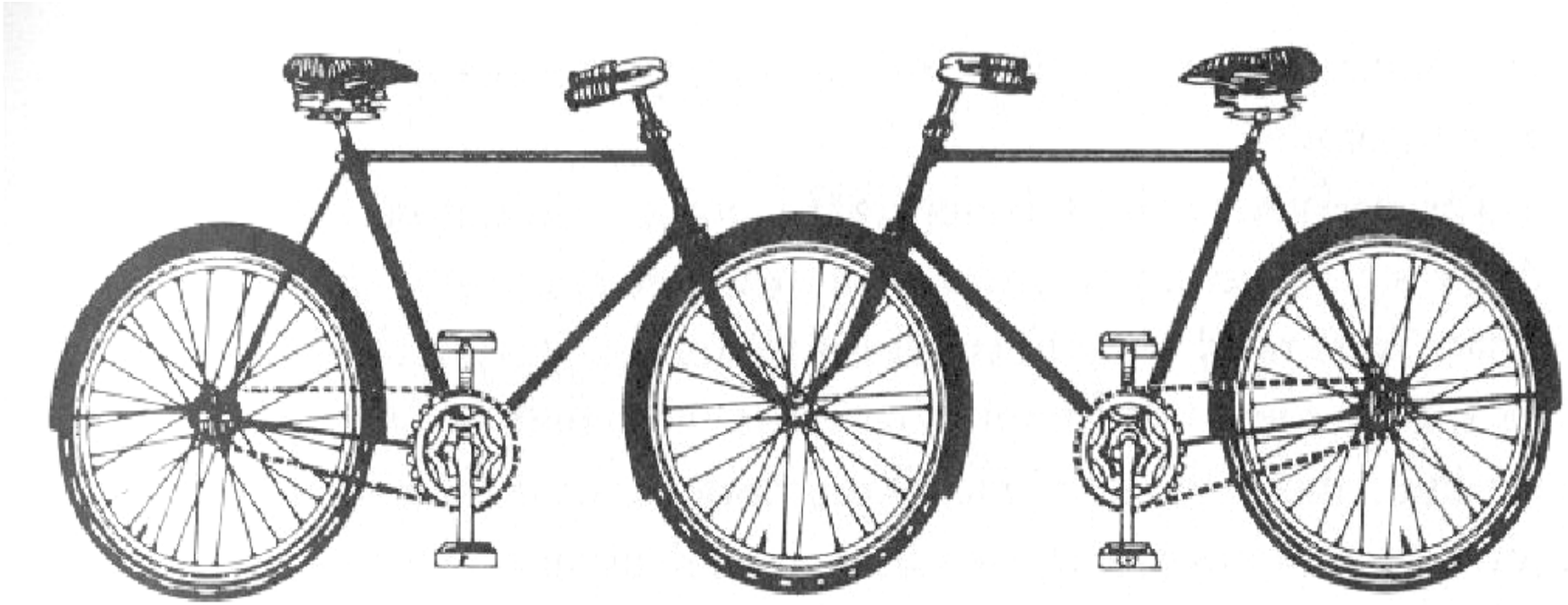
Agenda

- 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 *(Jacques Carelman)*

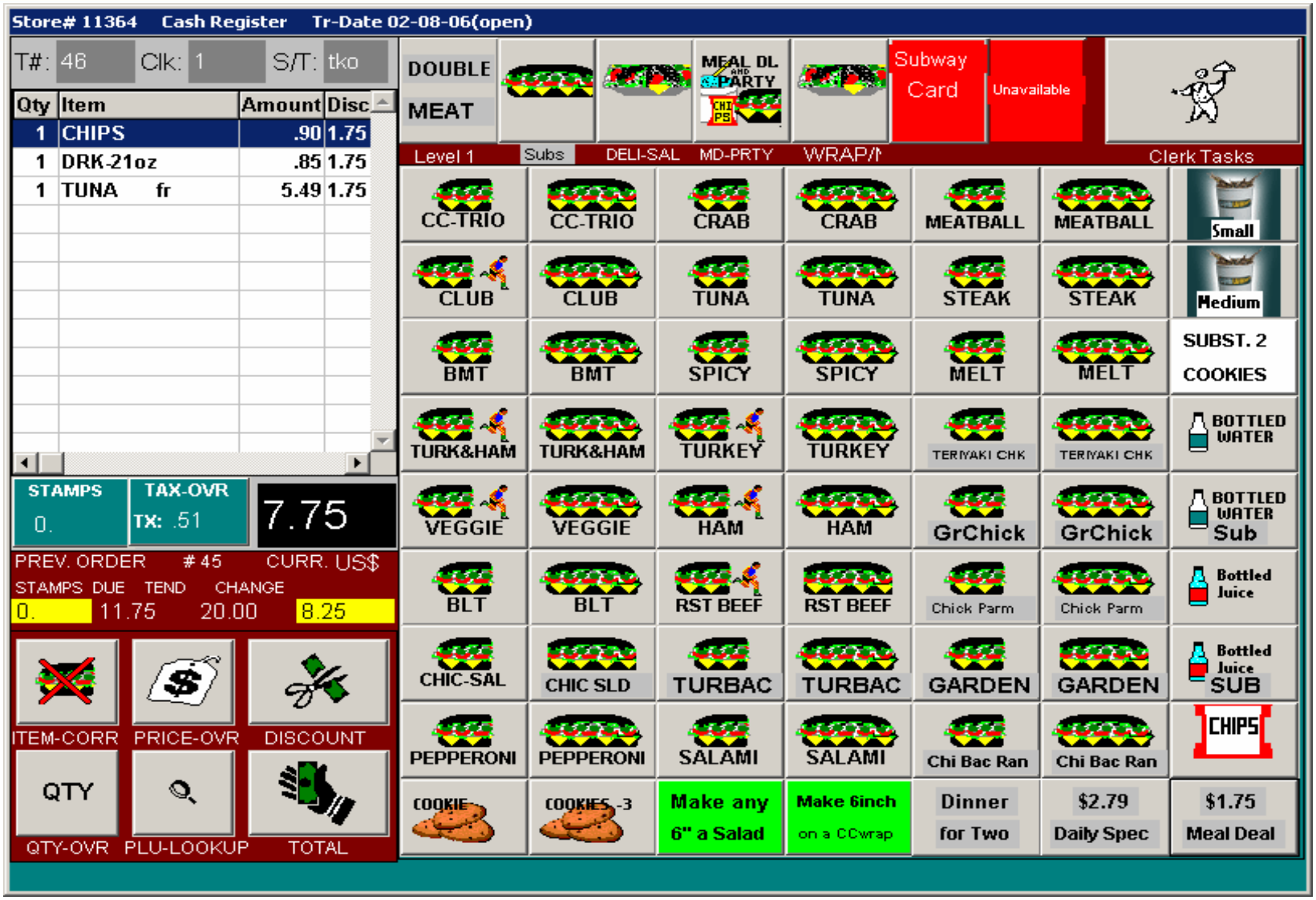
Bicycle for fiancés *(Jacques Carelman)*



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

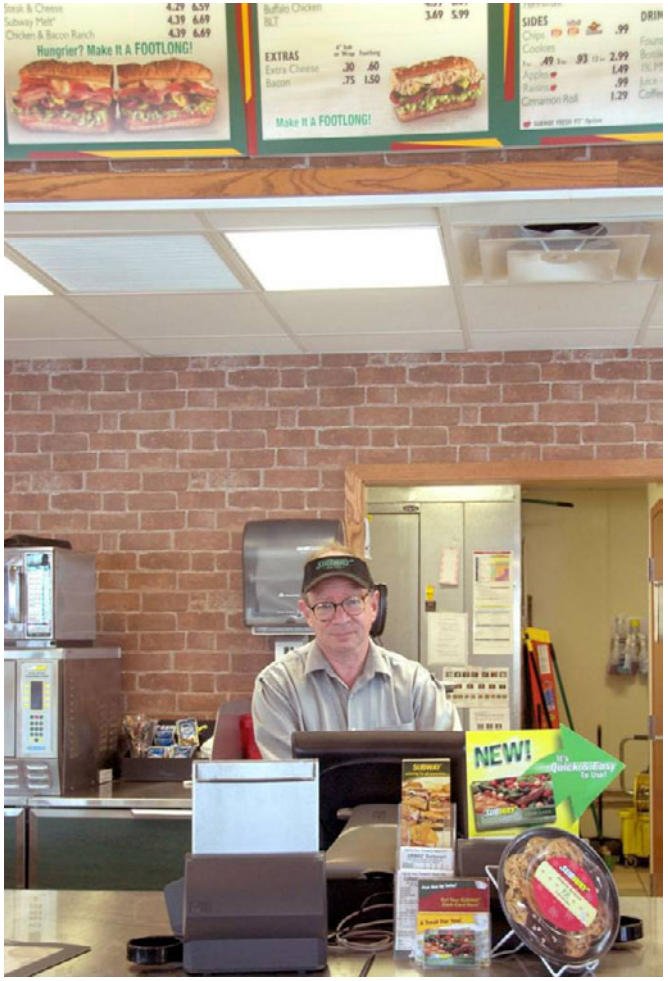
Our hopes

- 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

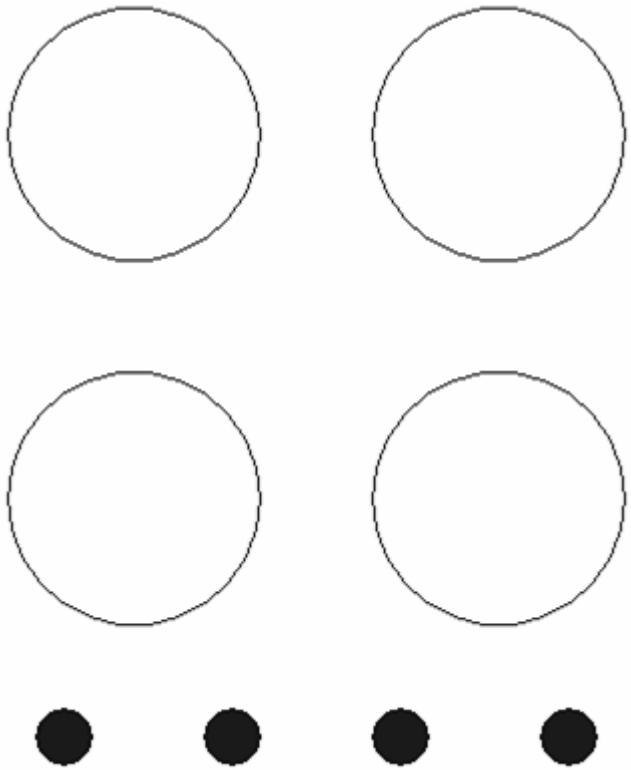
The design process

- 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 …)

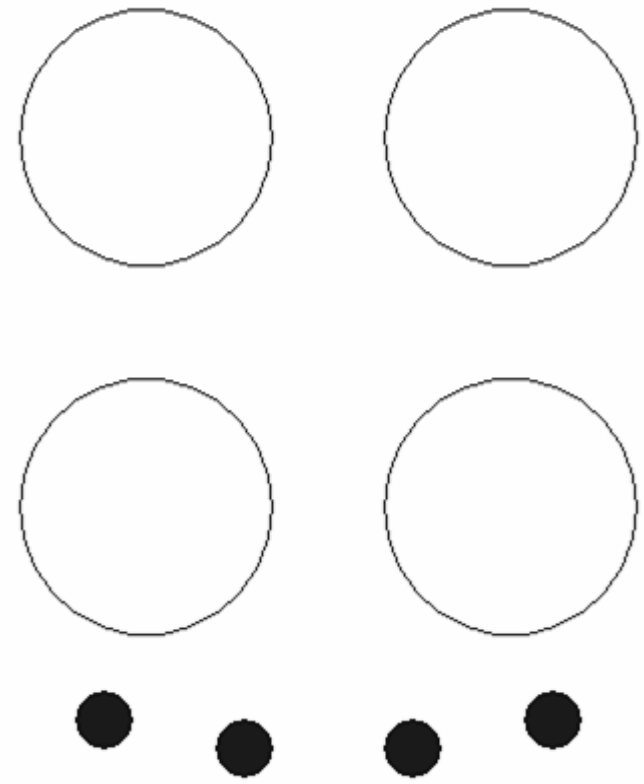
Design, by . . .

- Challenging assumptions
- Getting back to basics
- Generating ideas
- Respecting each other
- Maintaining patience

Which knob controls lower left burner?



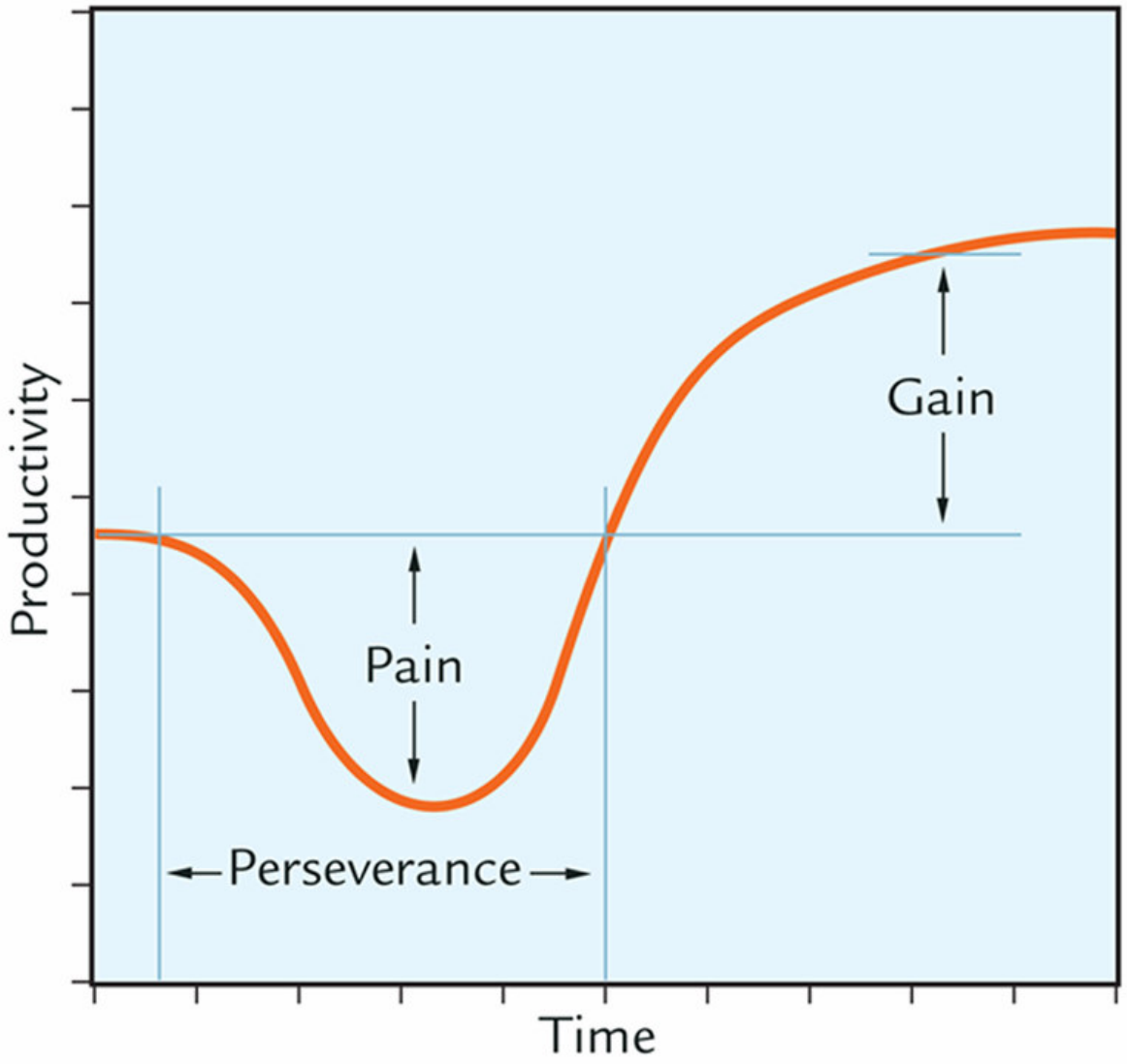
Which knob controls lower left burner?



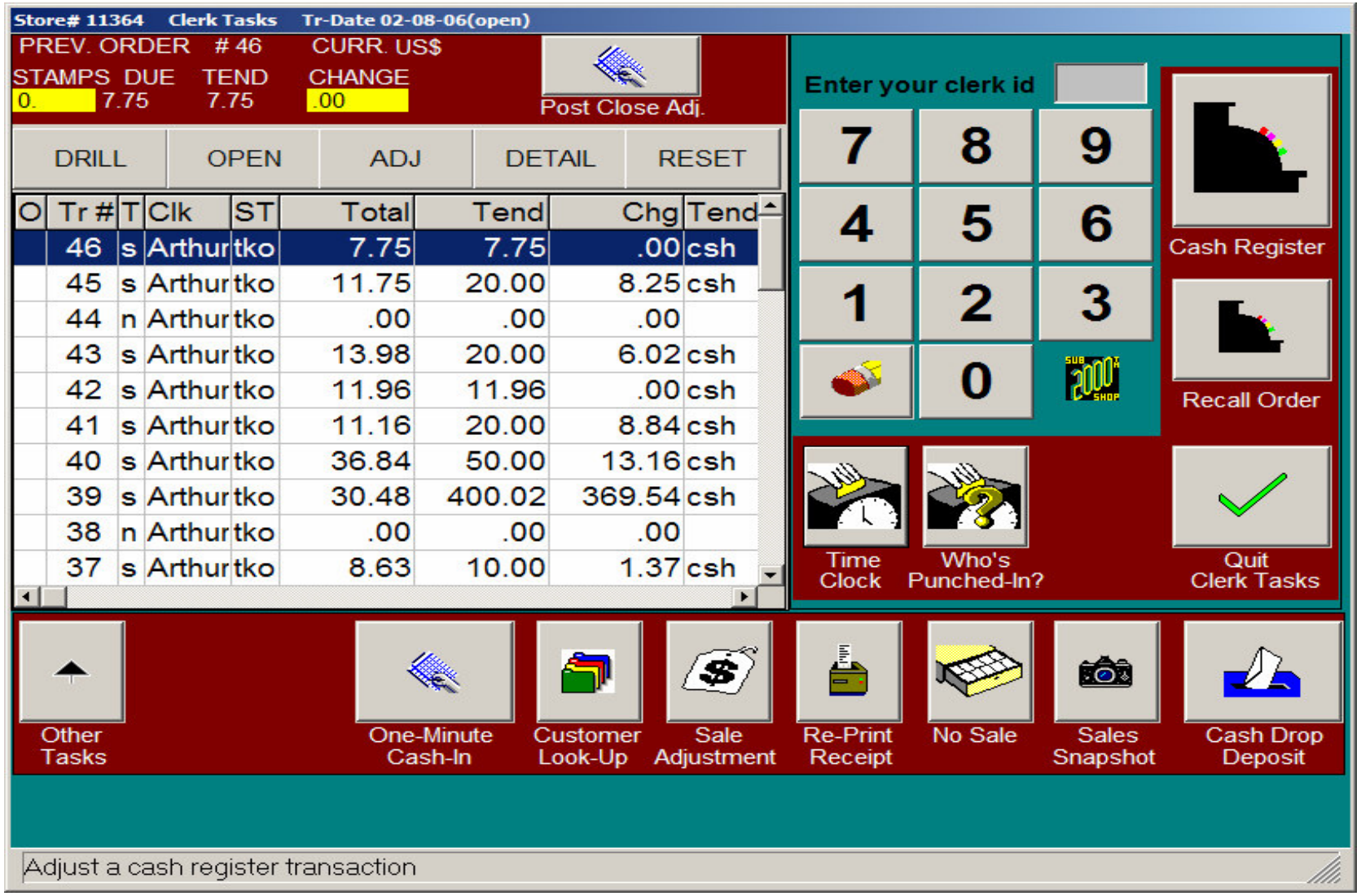
The fear

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

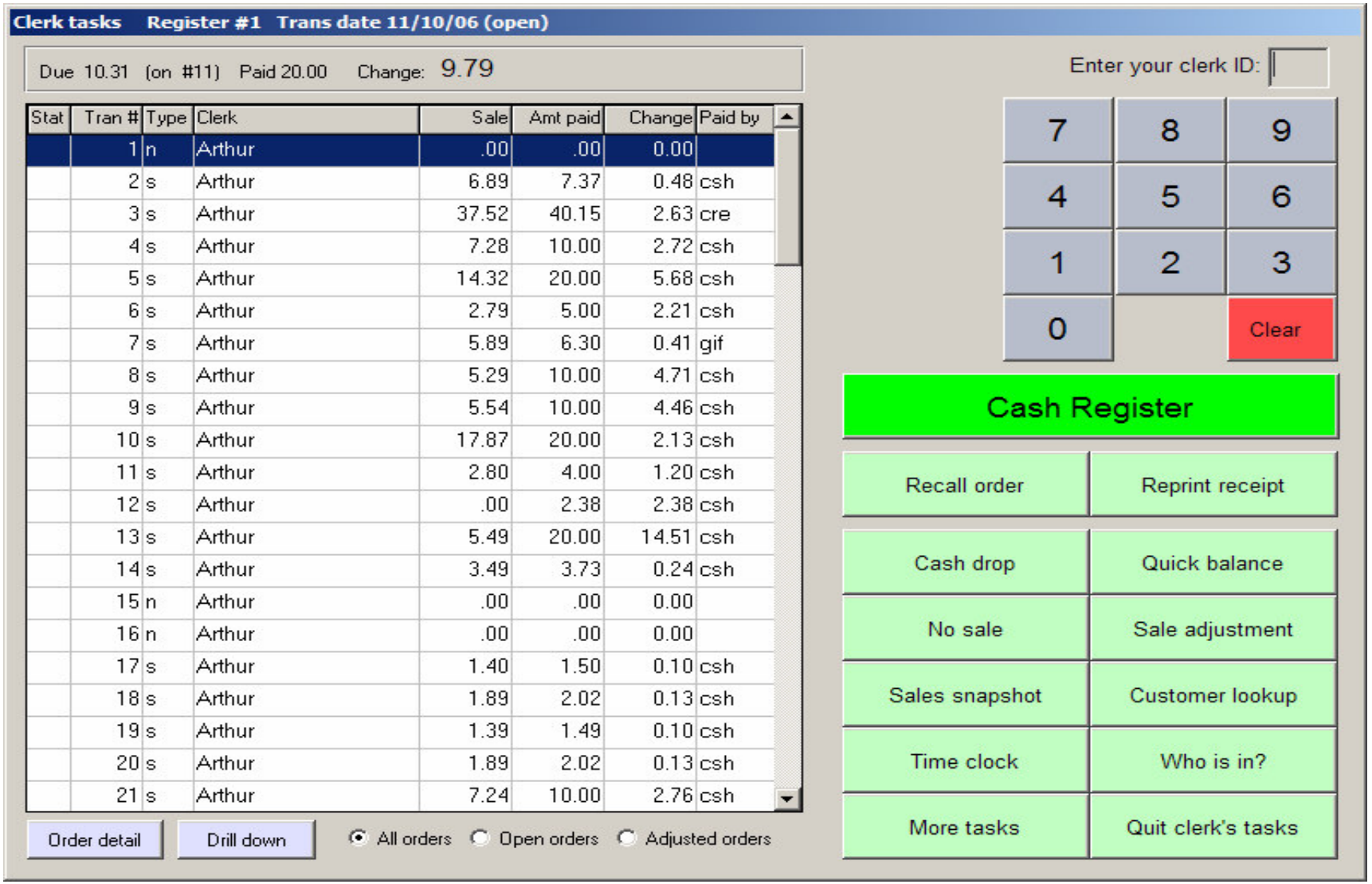
Dispelling fear



Clerk tasks screen -- existing

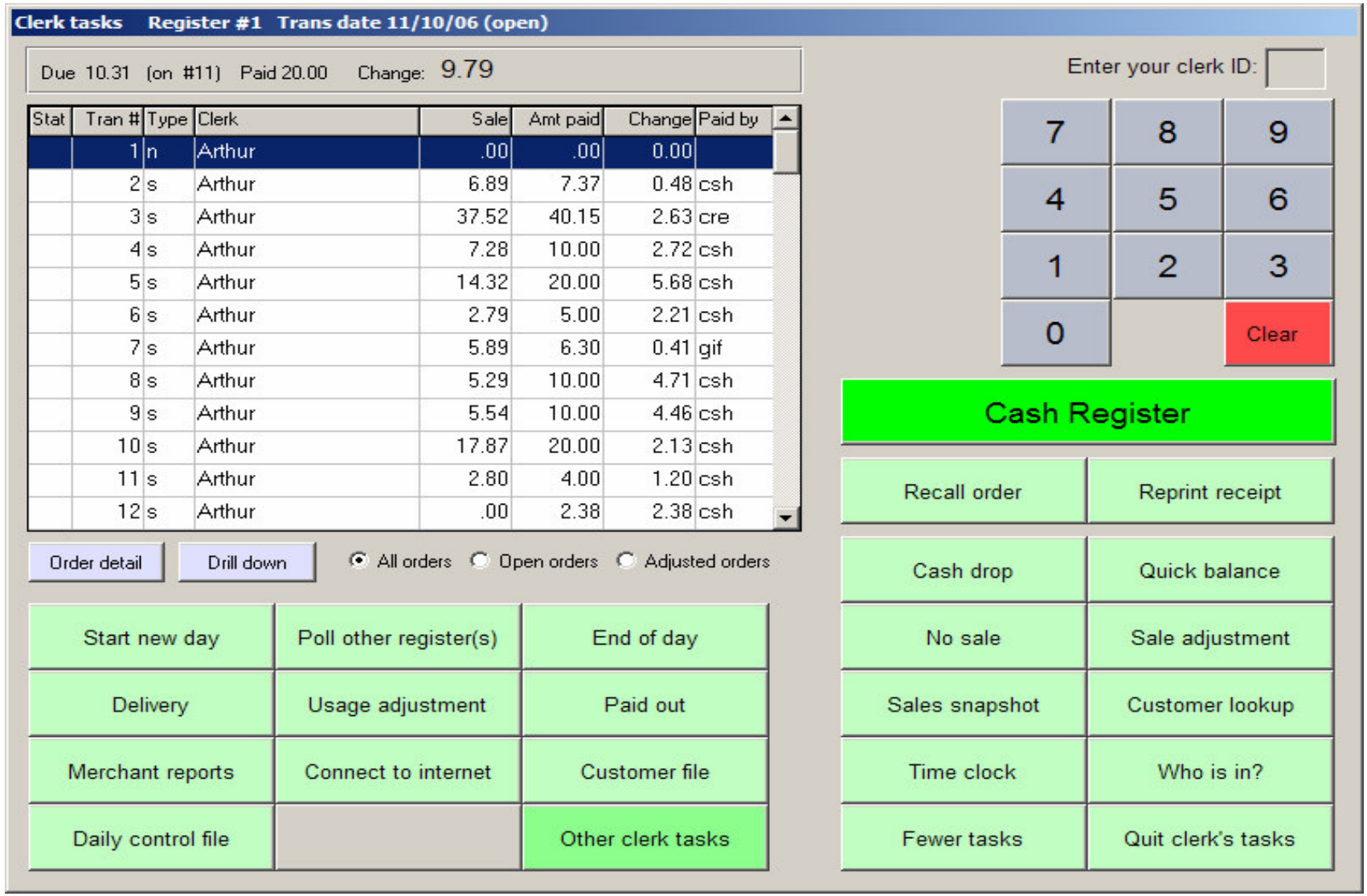


Clerk tasks screen – proposed

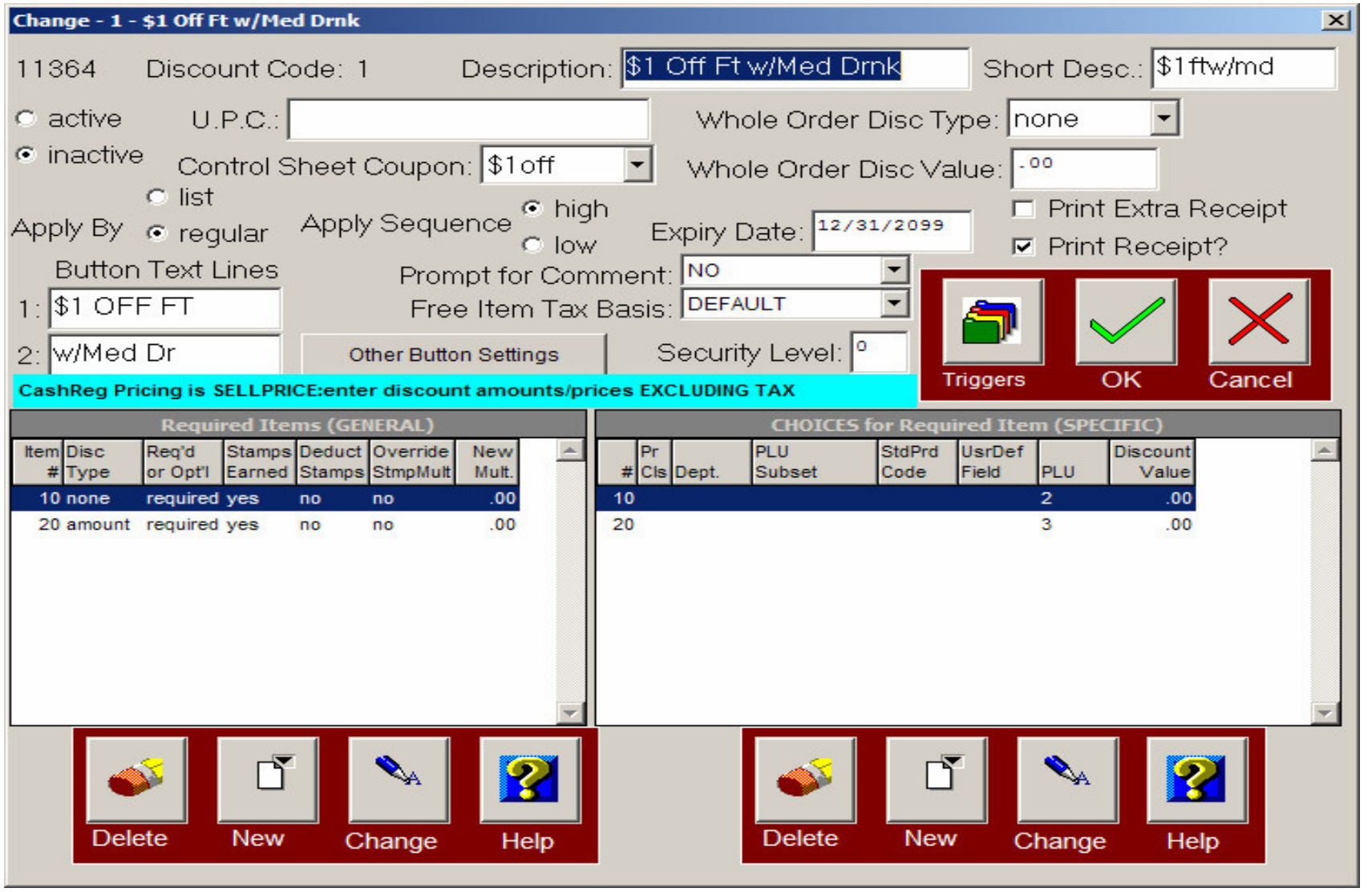


Stat	Tran #	Type	Clerk	Sale	Amt paid	Change	Paid by
	1	n	Arthur	.00	.00	0.00	
	2	s	Arthur	6.89	7.37	0.48	csh
	3	s	Arthur	37.52	40.15	2.63	cre
	4	s	Arthur	7.28	10.00	2.72	csh
	5	s	Arthur	14.32	20.00	5.68	csh
	6	s	Arthur	2.79	5.00	2.21	csh
	7	s	Arthur	5.89	6.30	0.41	gif
	8	s	Arthur	5.29	10.00	4.71	csh
	9	s	Arthur	5.54	10.00	4.46	csh
	10	s	Arthur	17.87	20.00	2.13	csh
	11	s	Arthur	2.80	4.00	1.20	csh
	12	s	Arthur	.00	2.38	2.38	csh
	13	s	Arthur	5.49	20.00	14.51	csh
	14	s	Arthur	3.49	3.73	0.24	csh
	15	n	Arthur	.00	.00	0.00	
	16	n	Arthur	.00	.00	0.00	
	17	s	Arthur	1.40	1.50	0.10	csh
	18	s	Arthur	1.89	2.02	0.13	csh
	19	s	Arthur	1.39	1.49	0.10	csh
	20	s	Arthur	1.89	2.02	0.13	csh
	21	s	Arthur	7.24	10.00	2.76	csh

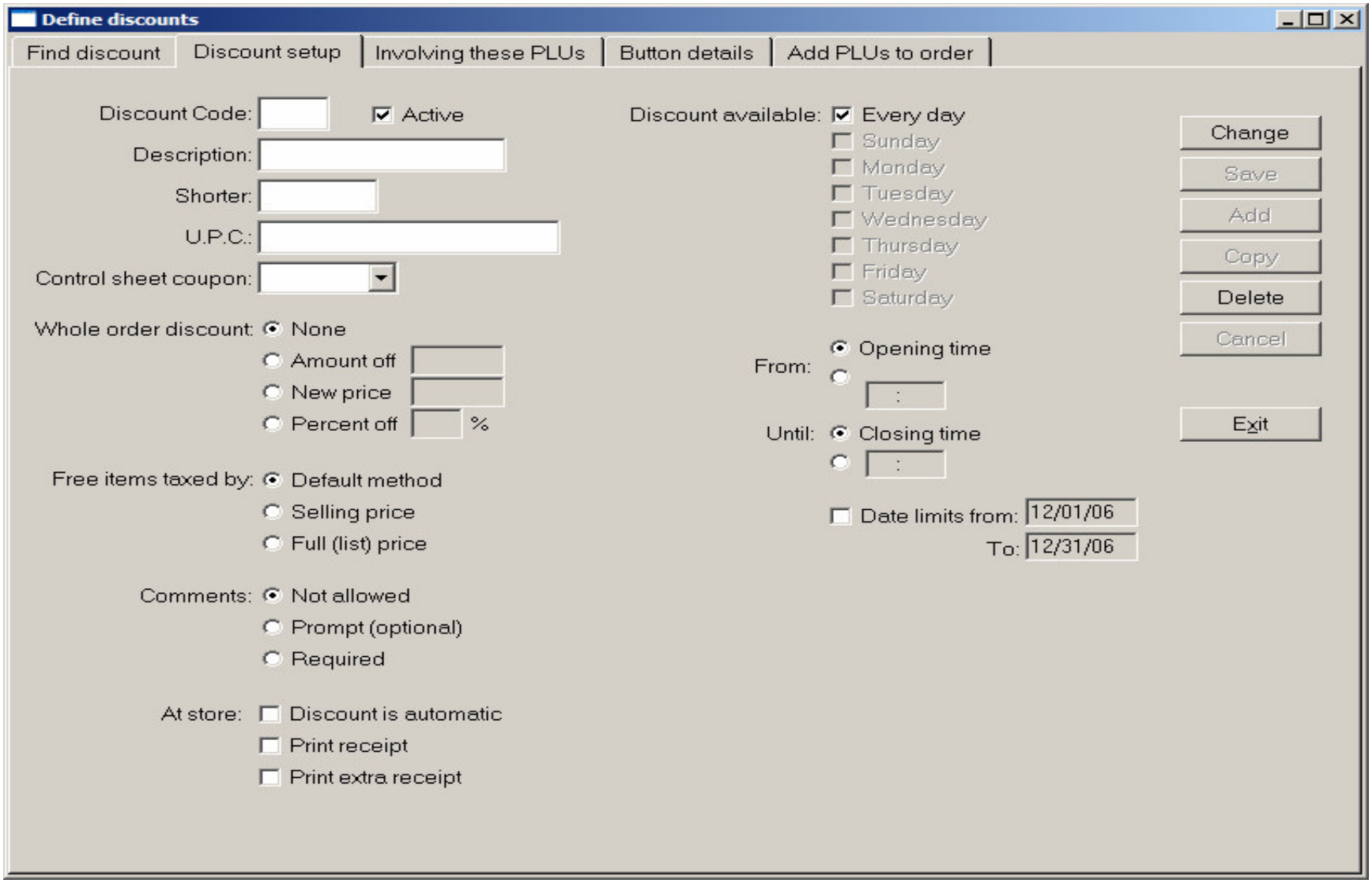
Clerk tasks screen – proposed ('more' page)



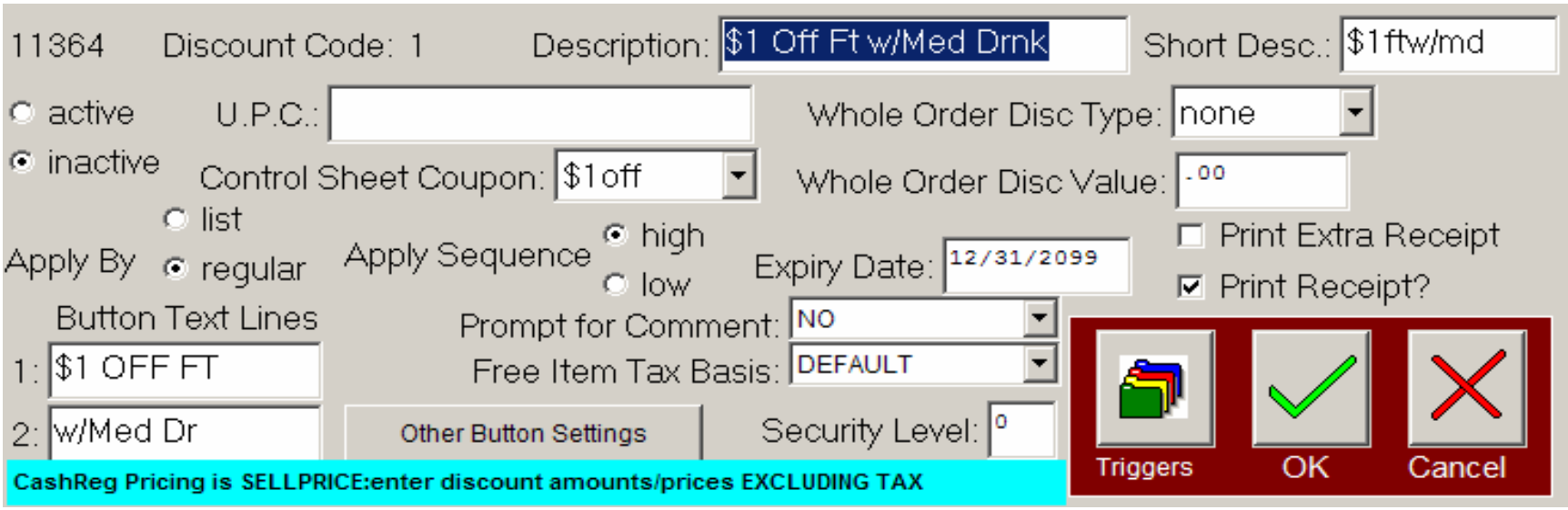
Define discount – existing screen

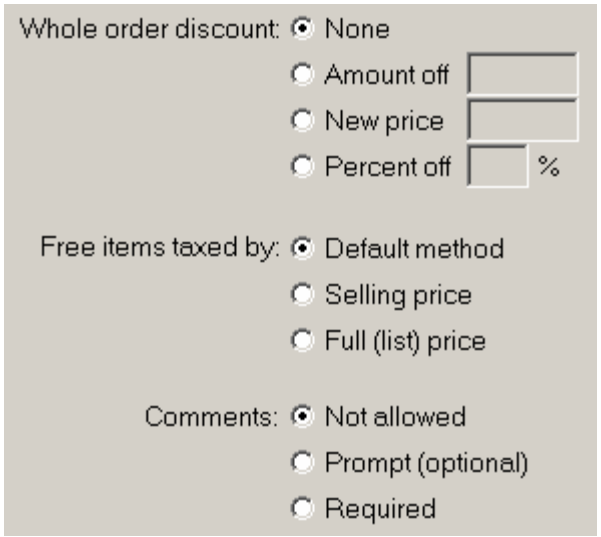


Define discount – proposed screen



Define discount – detail of changes



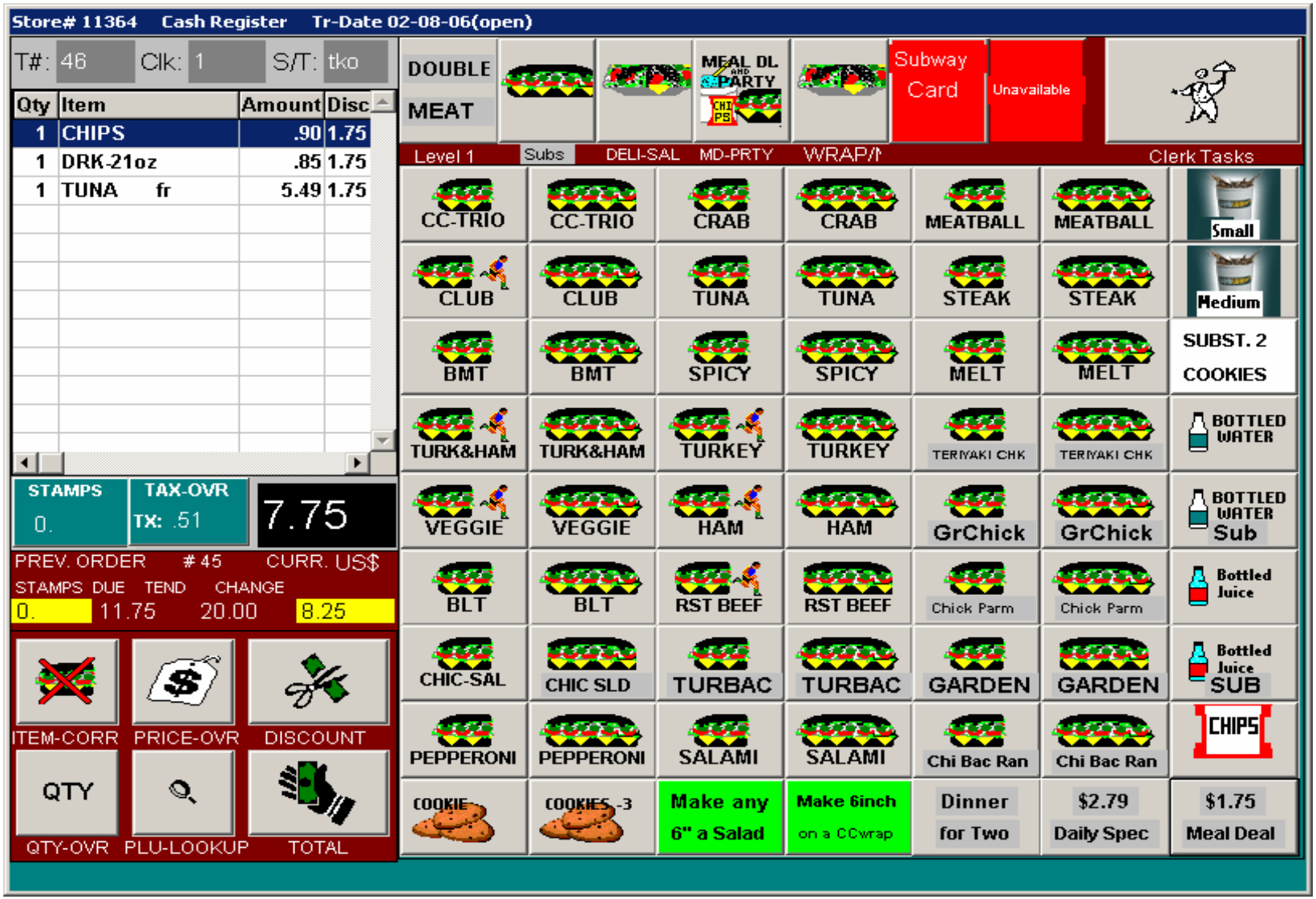


UI does not need to follow data dictionary 'view-as'

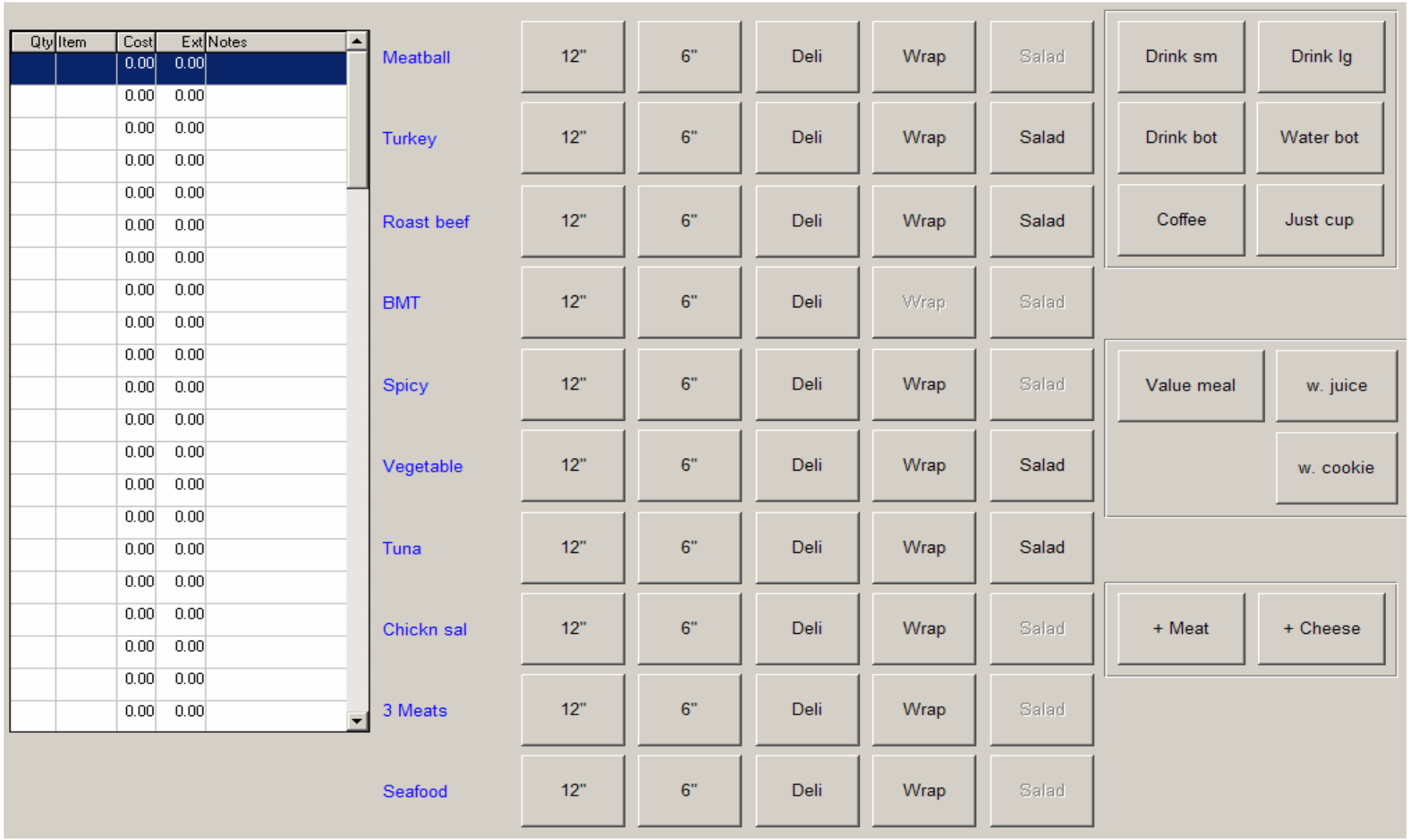
Cash register screen -- issues

- 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

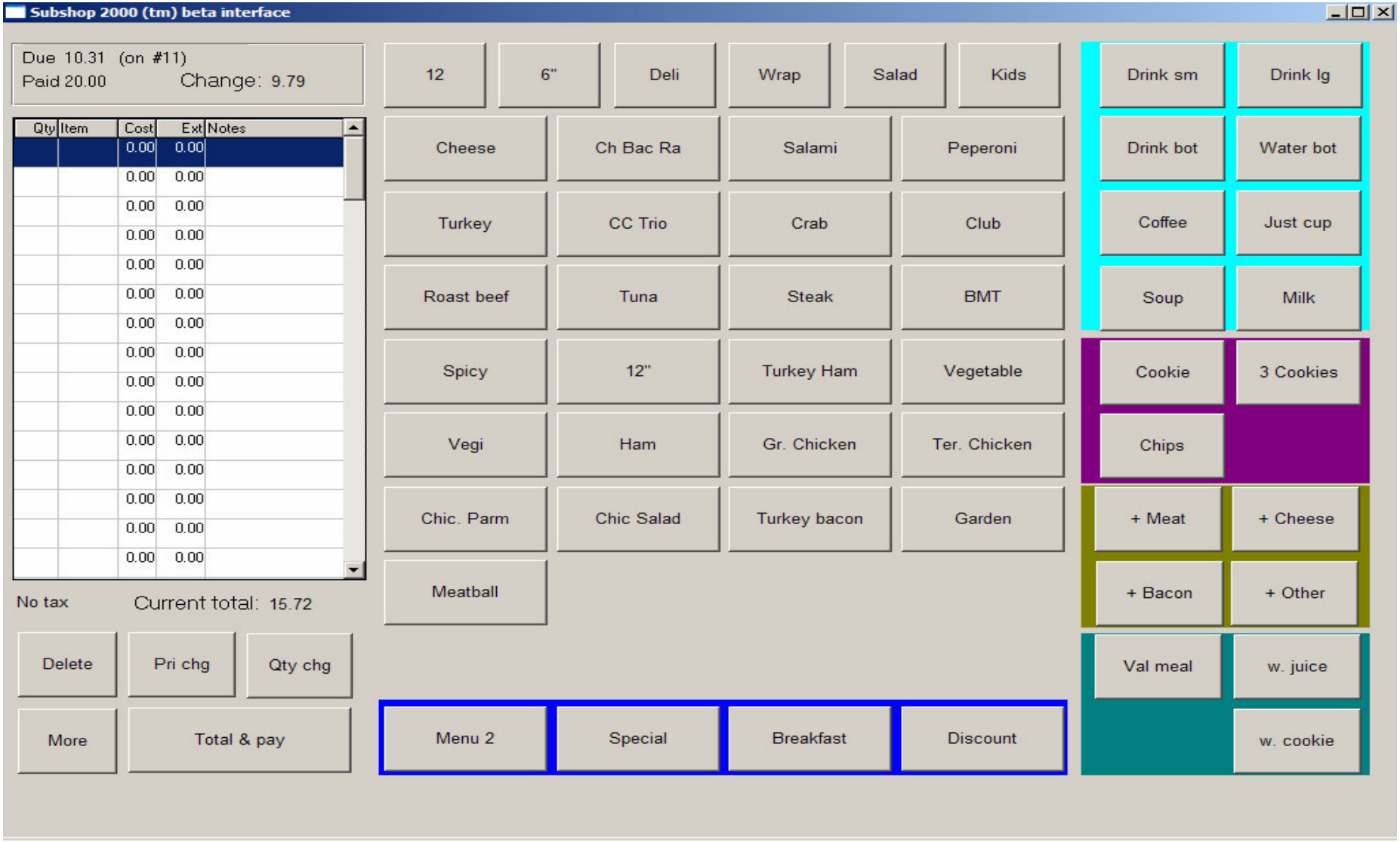
Cash register screen -- existing



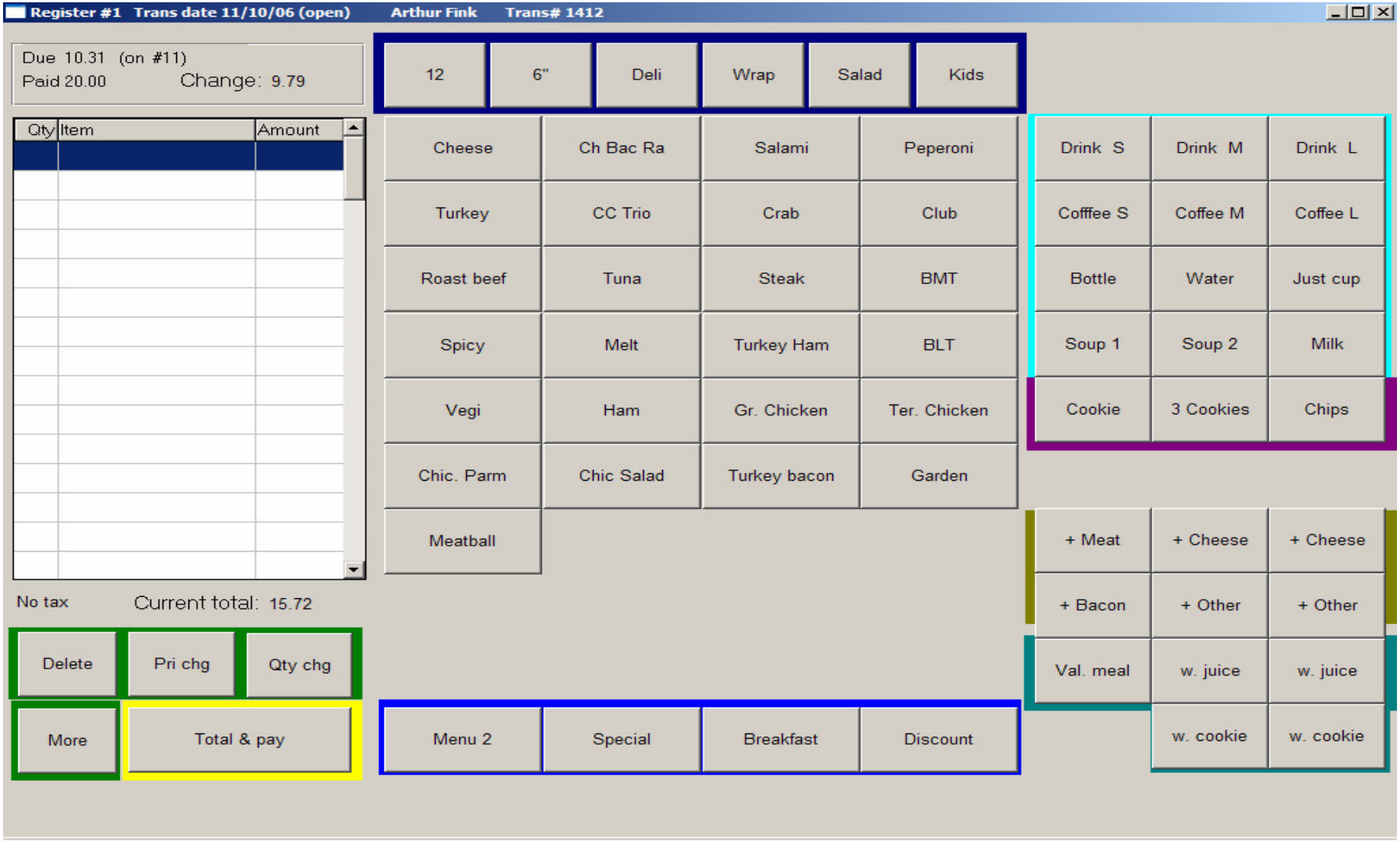
Cash register screen – design idea #1



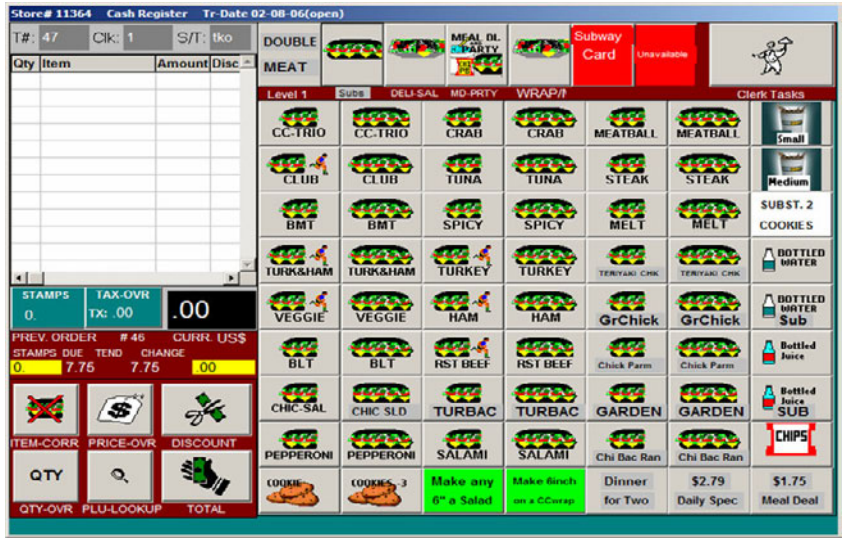
Cash register screen – design idea #2

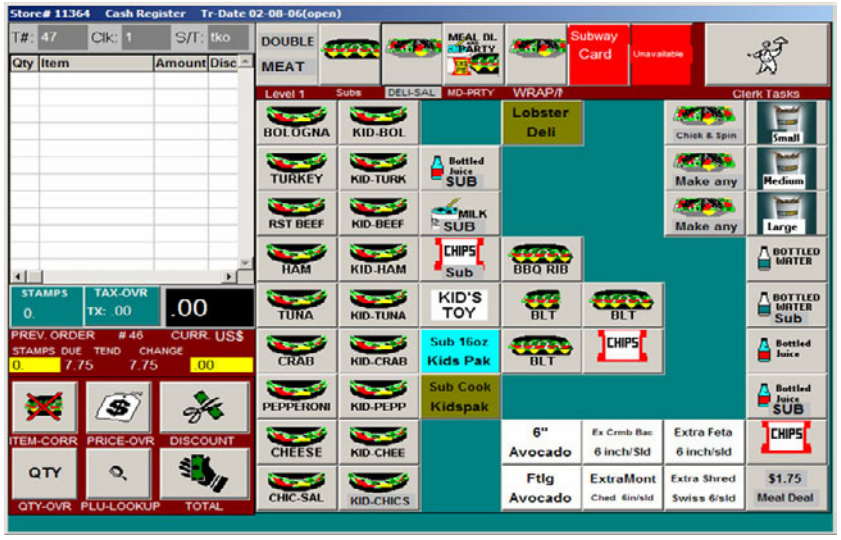


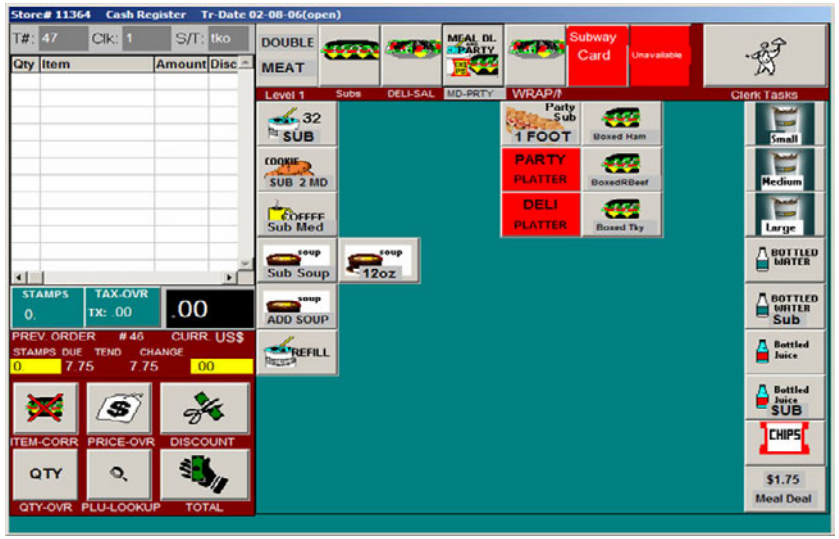
Cash register screen – design idea #3

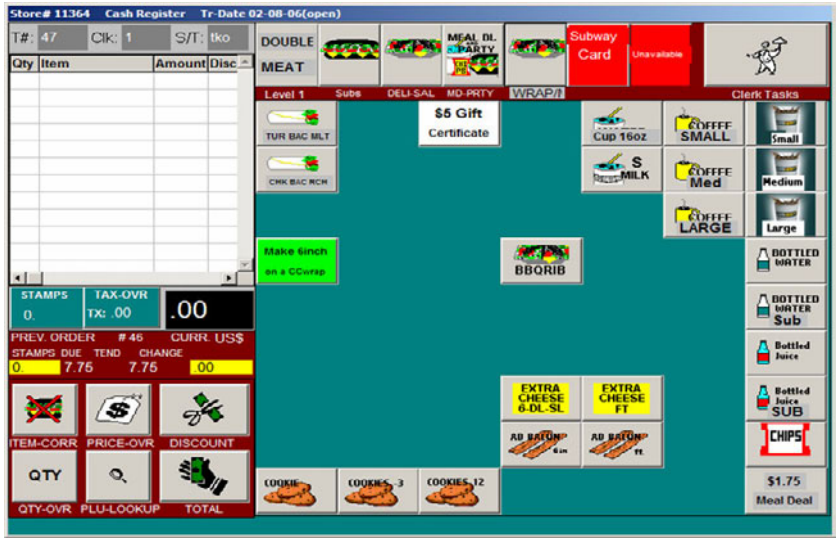


Cash register screen – four screens on one!









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

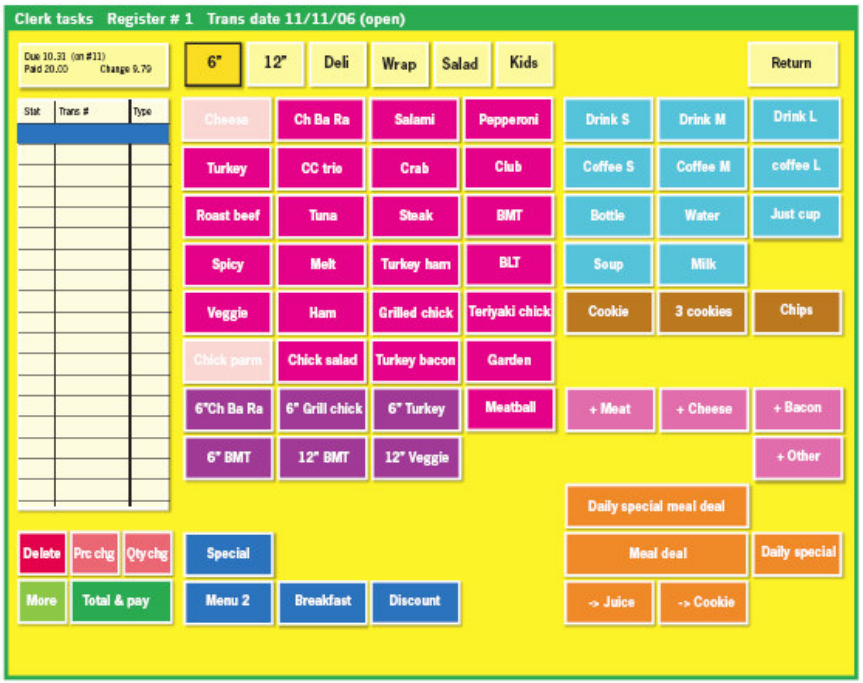
Cash register screen – design idea #5

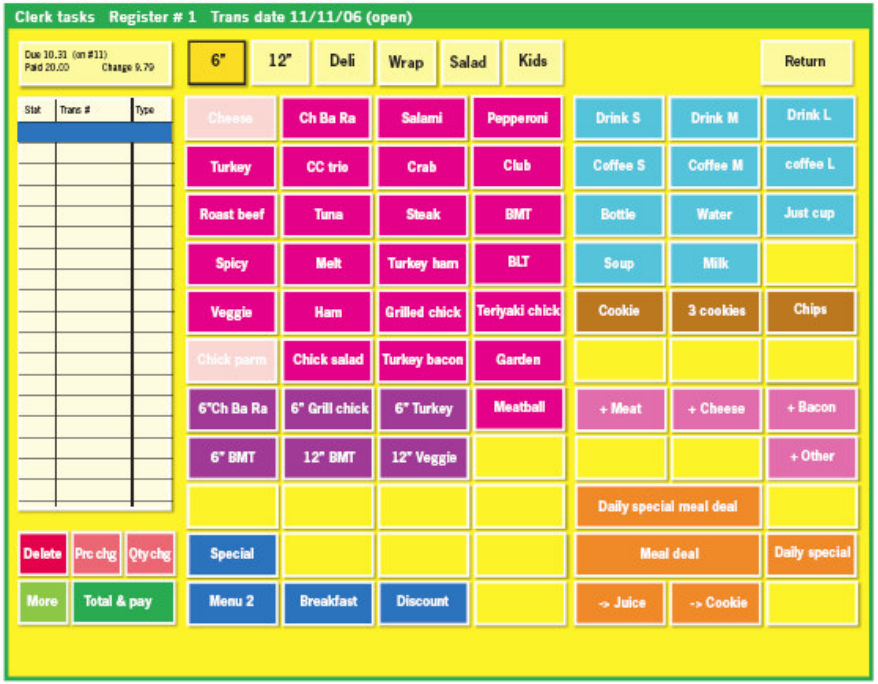
Cash register screen – design idea #6

Cash register screen – design idea #7

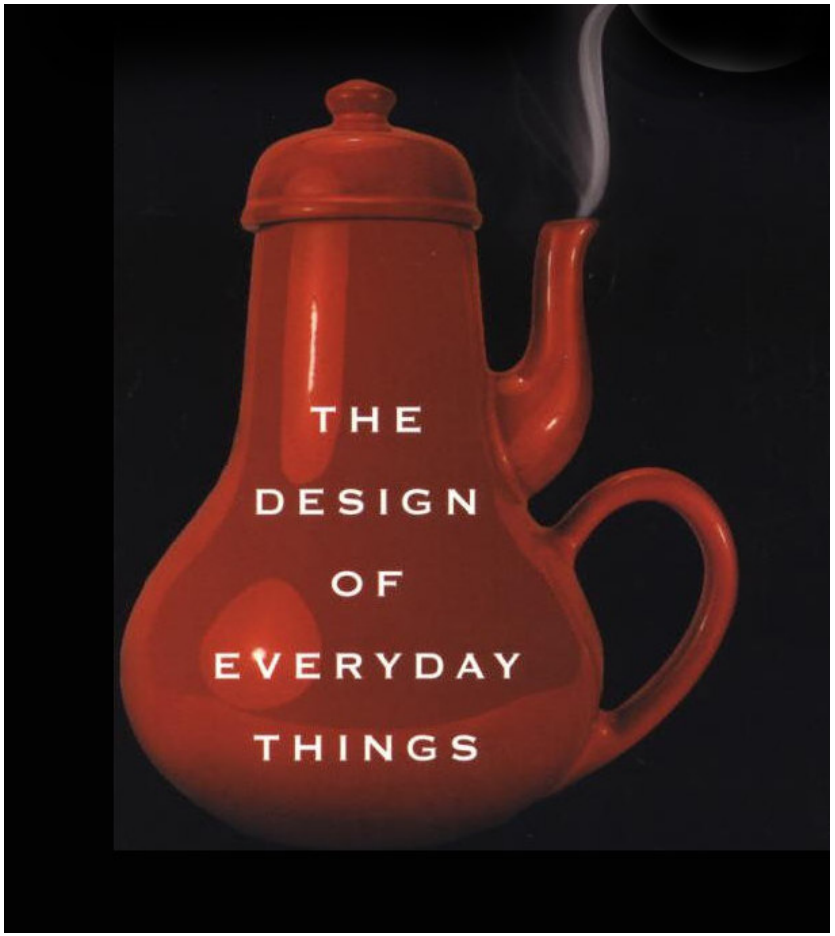
Cash register screen – design idea #8

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.

Your questions Your comments