


User Centered Design
and Agile Development

Lynn Miller
Manager, User Experience Group

World Usability Day
Toronto, November 14, 2006

Autodesk

SketchBook Pro - UI innovation



World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Agile - Process innovation

Waterfall

```
graph LR; A(Analysis) --> B(Design); B --> C(Coding); C --> D(Testing)
```

Agile

```
graph LR; subgraph Cycle1; A1(Analysis); D1(Design); C1(Coding); T1(Testing); end; subgraph Cycle2; A2(Analysis); D2(Design); C2(Coding); T2(Testing); end; subgraph Cycle3; A3(Analysis); D3(Design); C3(Coding); T3(Testing); end; Cycle1 --> Cycle2; Cycle2 --> Cycle3
```

Adapted from the Cutter Consortium. "Agile Software Development"

World Usability Day, November 14, 2006 © 2006 Autodesk

Autodesk

Agile caused a problem

User Experience

Agile

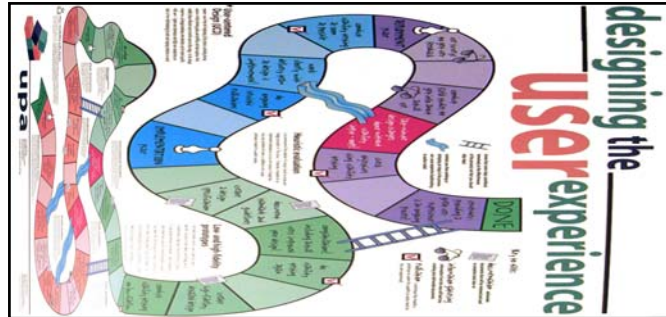
```
graph LR; subgraph Cycle1; A1(Analysis); D1(Design); C1(Coding); T1(Testing); end; subgraph Cycle2; A2(Analysis); D2(Design); C2(Coding); T2(Testing); end; subgraph Cycle3; A3(Analysis); D3(Design); C3(Coding); T3(Testing); end; Cycle1 --> Cycle2; Cycle2 --> Cycle3
```

Deployment
↑
Implementation
↑
Design
↑
Analysis

World Usability Day, November 14, 2006 © 2006 Autodesk

Autodesk

This doesn't work - we tried it



Agile

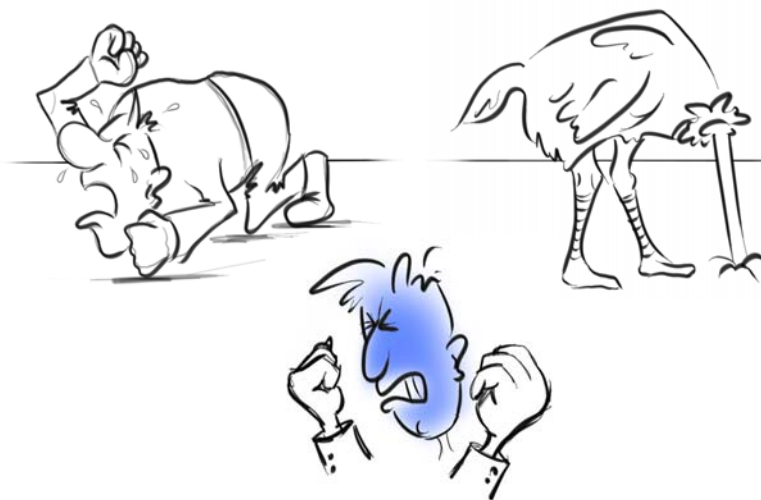


World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

This **really** doesn't work



World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

So what did work?

- Developer track: Production code
- Interaction designers track: User contact



World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Cycle Zero : Release planning

Identify critical capabilities to achieve goal

- Interviews, contextual inquiry, usability tests
- Email, discussion forums, trade shows
- Result: 20 possible issues



Prioritize

- Survey of non-purchasers
- Results allowed us to rank the 20 issues
- Found 5 we absolutely had to add

Iteration planning meeting

- Initial plan (2 week cycles)
- Make sure 5 critical issues will be fixed
- Rough schedule, first 2 iterations solid

No detailed requirements. No designs.

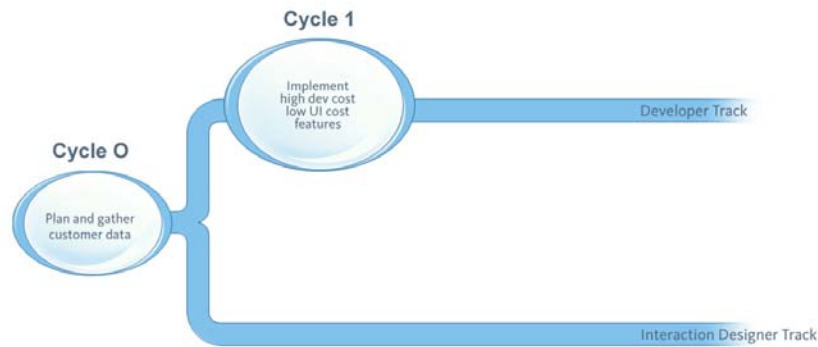
World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Cycle 1: Developer track

- Underlying architecture work
- Critical features with little user interface design required



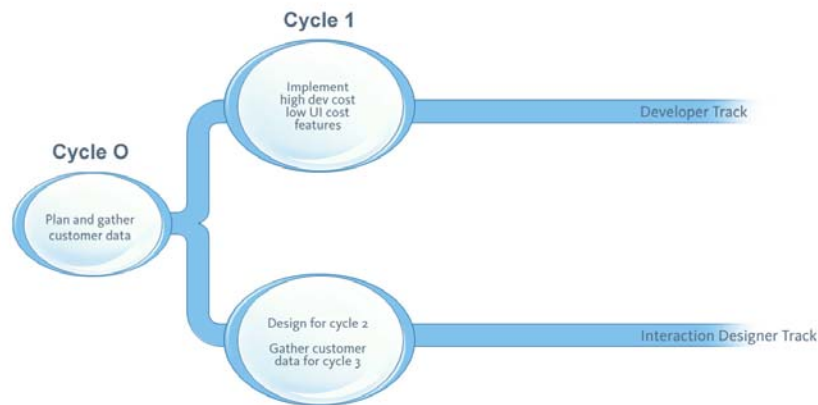
World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Cycle 1: Interaction designers

- Design, create prototypes, usability test, and iterate
- Field studies to understand user needs. e.g., contextual inquiry



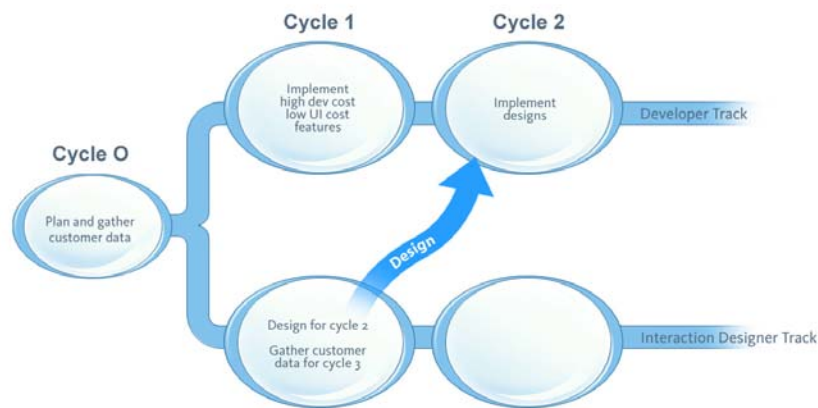
World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Cycle 2 : Developers

- Take the verified designs and start making them a reality



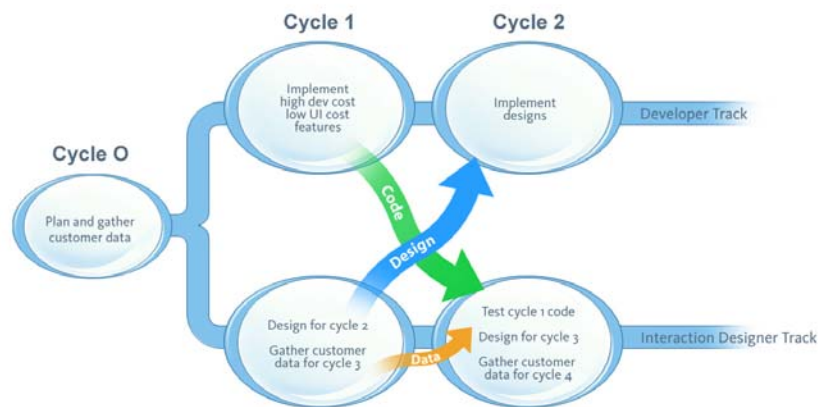
World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Cycle 2 : Interaction designers

- Usability test completed code for integration and implementation issues
- Use data gathered in the last cycle to create designs for next cycle
- Field studies for detailed information needed for upcoming cycles



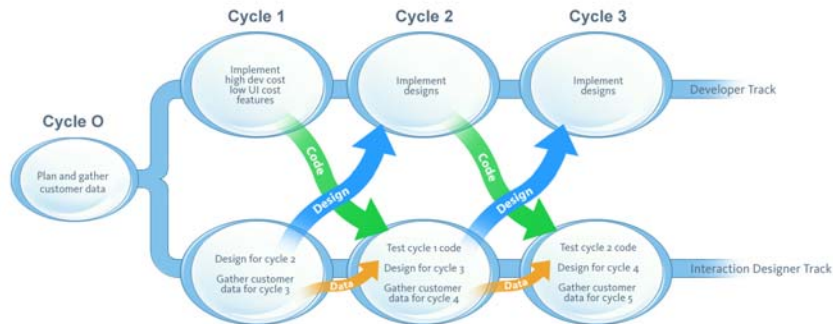
World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

And so on...

- Communication between the two tracks is essential for success



World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

How did this affect UCD?

Agile doesn't affect:

- Identifying the target audience
- Determining what data is needed
- Data collection techniques
- Facilitation and moderating skills
- Design skills

These had to change:

- Frequency of user contact – now every cycle
- Timing of interface design – completed just before needed
- Deliverables to developers – minimize documents
- Working relationship with developers – much closer

World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

What we found

Parallel track structure gave us:

- Less wasted time
 - Didn't design things that got dropped
- Better designs
 - Validated before implementation
- Deeper feedback
 - Small set of new features each cycle
- Feedback acted on
 - Process allows change to schedule



We didn't want to go back to the waterfall process.

World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk

Questions?

For more information:

Miller, L., "Case Study of Customer Input for a Successful Product", *Agile 2005 Conference Proceedings*, 2005.

Sy, D., "Strategy and tactics for Agile design: a design case study", *UPA 2005 Conference Proceedings*, 2005.

Miller, L., "Interaction Designers and Agile Development: A Partnership", *UPA 2006 Conference Proceedings*, 2006.

Sy, D., "Formative usability investigations for open-ended tasks", *UPA 2006 Conference Proceedings*, 2006.

lynn.miller@autodesk.com

World Usability Day, November 14, 2006

© 2006 Autodesk

Autodesk