

# Putting the User First

## Building User-Centered Documentation

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# Cost-driven innovations

- Single-sourcing
- Content management
- Web delivery
- Updatable documents
- Multi-platform
- Browser-based help
- PDFs



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# Reading Between the Lines

- Documentation not perceived as adding value
- Doc groups have little real clout in organizations
- Funding based on strict ROI (new efficiencies)
- Better docs = Cheaper docs



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# Need for a Counterweight

- Leverage technology to improve quality (address customer goals)
- Use new tools and techniques to add value (not just efficiencies)
- Adapt current practices to ensure quality
- Add-value to our organizations, not just efficiencies



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# How can we do it?



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# Success Factors

1. **User Involvement**
2. Executive Support
3. Experienced Project Manager
4. Clear Business Objectives
5. Reliable Estimates
6. Small Milestones
7. Firm Basic Requirements
8. Competent Staff
9. Proper Planning
10. Ownership



*Source : Standish group report (based on the analysis of 8000 software development projects)*

# Guiding Principles

1. By adapting current practices to increase user involvement, we can improve the success rate of documentation projects.
2. By increasing user involvement, we acquire knowledge that is truly valuable to our organizations and which contributes to the broader success of software development projects (synergy).



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# Building User-Centered Docs

**Part A:** User-centered documentation process  
(content modeling)

**Part B:** Designing User-centered Output  
(delivery mechanisms)



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# Why involve users?

- Understand user needs and goals (intent)
- Test assumptions about users
- Assess user skill level
- Understand context of use
- Understand domain area
- Create an architecture that supports the user's needs



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# Why involve users?

- Plan and prioritize our work around the customer's needs
- Obtain an ultimate measure of project completion
- Build something that truly addresses the user's needs using an optimized delivery mechanism



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# Benefits for the user:

- Docs make product easier to use
- Enhanced learning
- Fewer support calls
- Affect towards product (e.g. loyalty)



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# User-Centered Doc Process In a Nutshell...

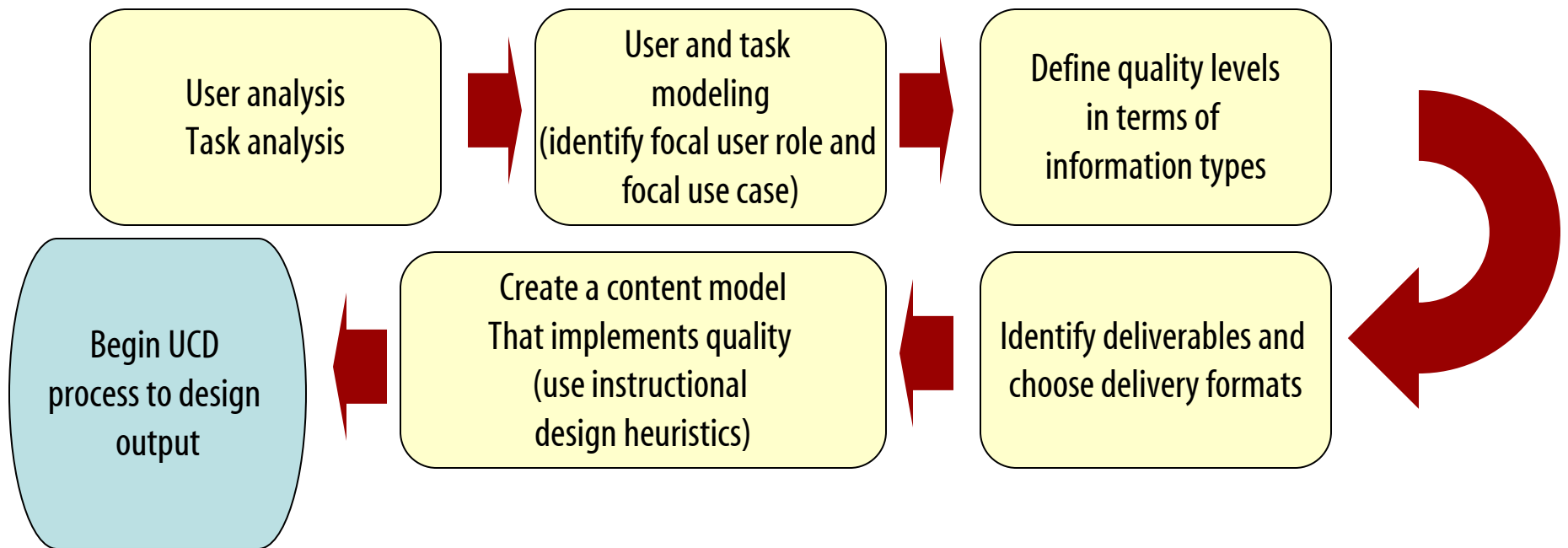
Start with the user and work your way back to the product (and never lose touch with the user).



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# User-Centered Doc Process

User-centered content modeling process



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## My favorite quote:

"You can use an eraser on the drafting table or a sledgehammer on the construction site."

- Frank Lloyd Wright



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# Documentation as Training

- Documentation is a misnomer.
- We are creating self-instructional materials
- We are engaged in the act of TRAINING.
- Users are engaged in the act of LEARNING
- Documenting the product will never be enough...



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# User Analysis

## Test assumptions

- Who are the users? (brainstorming)
- Build a user/task matrix or a user/characteristics matrix
- Technical competence?
- Domain expertise?
- Demographics (age, gender)
- Reading levels ?
- Motivation ?
- Frequency of use ?
- Training opportunities ?
- Experience ?
- Vocabulary ?
- Physical differences ?
- Users are very similar/dissimilar



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# User analysis

Methods :

- Questionnaires
- Visits
- Other corporate sources (be careful)
  - Support
  - Trainers
  - Sales/marketing



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# Examples

Belief:

- Users are either very technical (70 %) or very artistic (30 %).
- Users master the English language



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# User Analysis

Deliverables :

- Profiles (narrative)
- Statistics
- User/Task Matrix



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# User Analysis

- User Roles

« An abstract collection of needs, interests, expectations, behaviors and responsibilities characterizing a relationship between a class or kind of user and a system » (Constantine & Lockwood)

Example :

RoutineMimimalistPresenter

Frequent use; rapid, easy operation, unsophisticated uses; simple; standards formats; bulleted lists.



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Source : Constantine & Lockwood

# User Analysis

- Focal User Role(s)  
Main user role for the application



Source : Constantine & Lockwood

# User Modeling

- Persona
  - The « user » personified
  - Not statistical
  - Multiple persona's usually mean multiple deliverables

Example:

“Dexter is sysadmin at Steinhammer Video Productions in Hollywood. Dexter has a pager, two cell phones, a pocket computer, and a wireless modem stashed in the pockets of his courier jacket as he walks between sound stages. He is a master of technology, and he can solve any problem. His colleagues are always calling him over to find lost shots, but he is really too busy for those time-wasting exercises. Clint is holding on line three!”

*From The inmates are running the asylum — Alan Cooper*



# Task Analysis

- Understand user goals
- Understand workflows
- Job analysis
- Look for patterns
- Task hierarchies
- Task inventories
- Task linking



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# Task Analysis

Méthodes :

- Interviews
- Contextual inquiry

Important: Remember to record behaviors relating to problem solving and use of documentation/help



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# Task Modeling

- Regular Use Cases (existing software)
- Essential Use Cases (product under development)

Or a combination of both...



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# Task Modeling: Essential Use Cases

- Simple narrative
- Domain vocabulary
- No reference to technology or implementation
- From the user's perspective
- Actors are those identified in the user analysis



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Source : Constantine & Lockwood

# Essential Use Case (example)

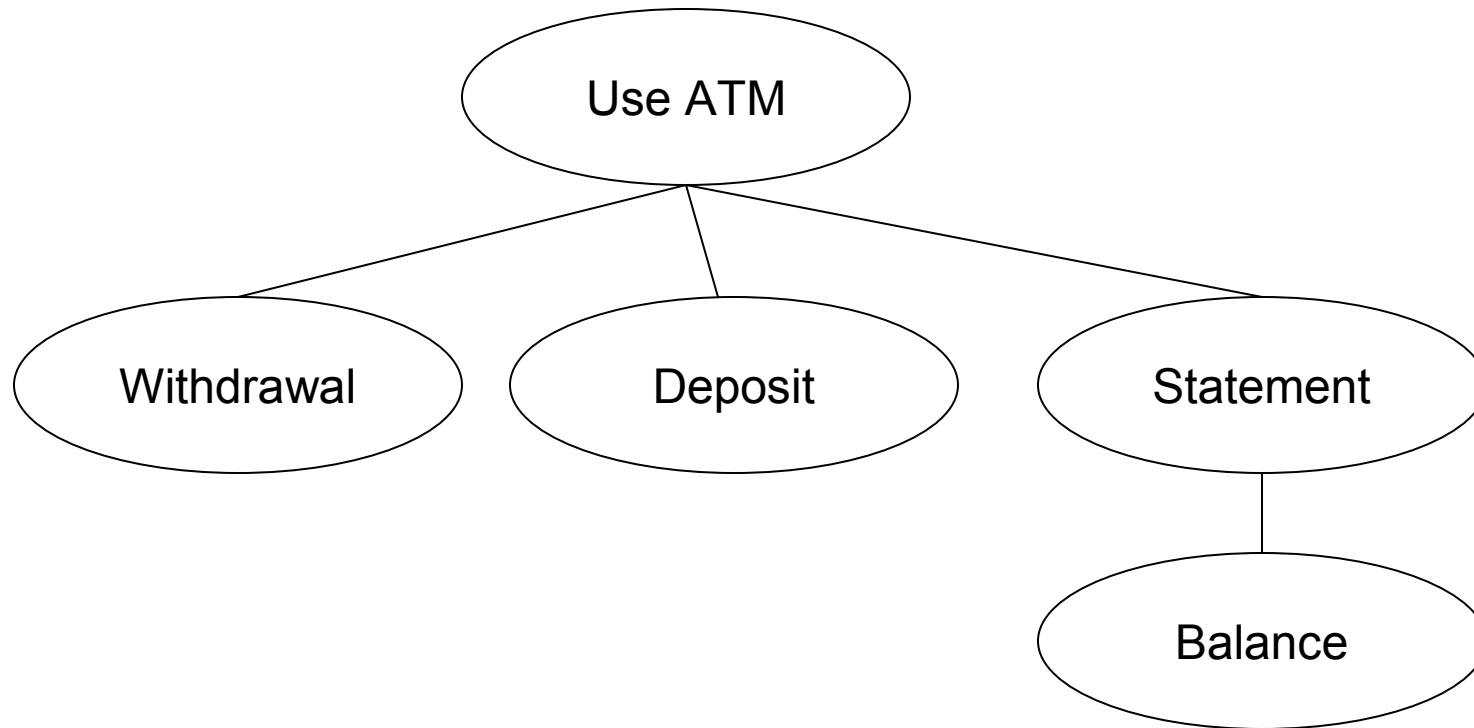
User Intention	System Responsibility
Identify self	Verify indentity
Choose	Offer choices Dispense cash
Take cash	



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Source : Constantine & Lockwood

# Use Case Map



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Source : Constantine & Lockwood

# Essential Use Case Extensions

Extends:

Change image

Insert image

Open image

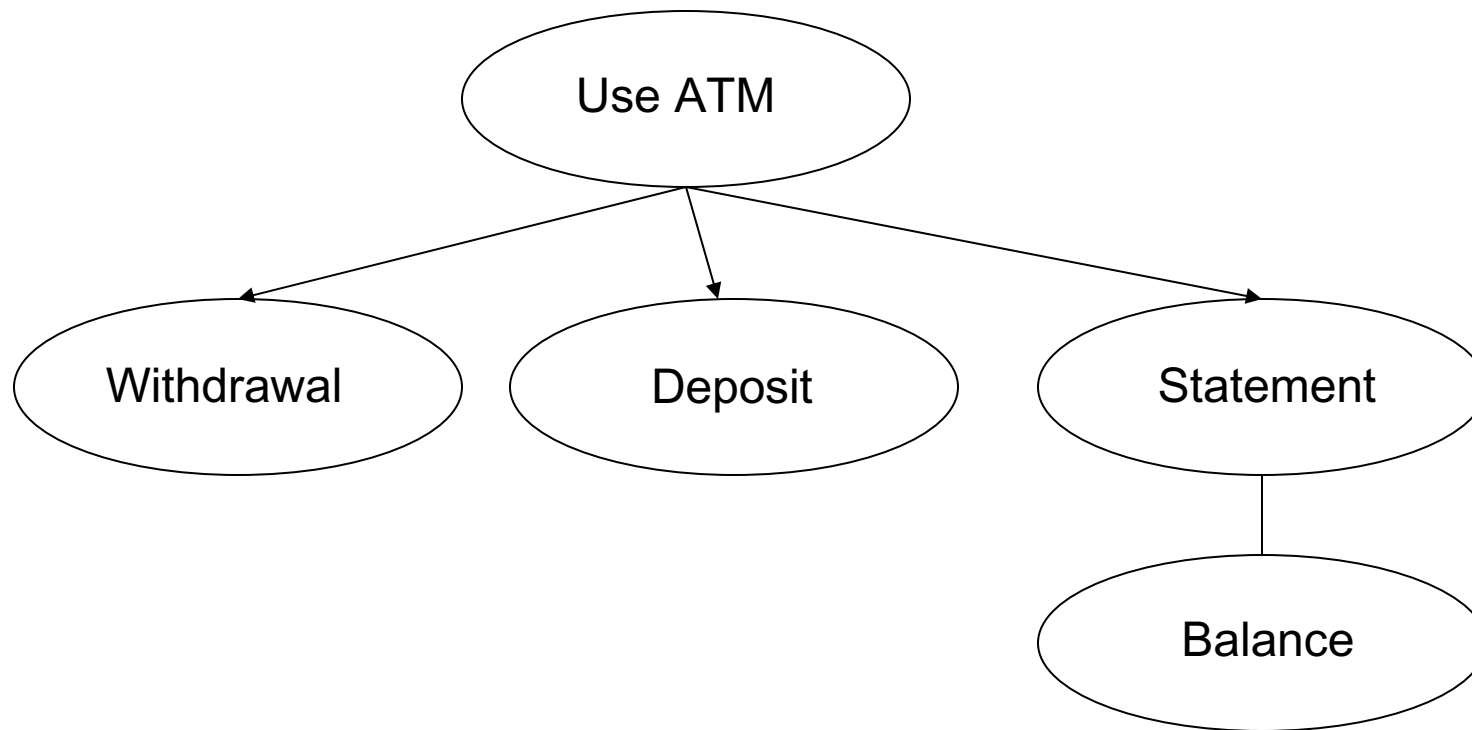
User Intention	System Responsibility
Request more [continue until found] Select image	Show more images  Insert image Close



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Source : Constantine & Lockwood

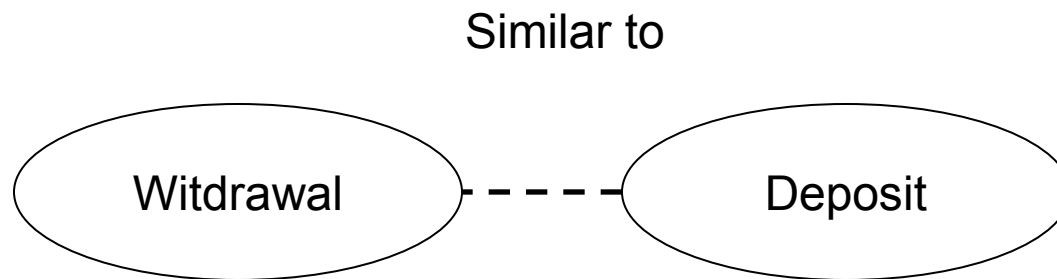
# Essential Use Case Composition



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Source : Constantine & Lockwood

# Essential Use Case Affinity



Source : Constantine & Lockwood

# Focal Use Cases

The fundamental use cases for the application.



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# Prioritize Tasks

- Match regular Use Cases (tasks) to Software Components
- As software design progresses you can match your essential use cases to the software features
- Prioritize use cases (group as required).
- Consider the information gathered during the user analysis.



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# Prioritize tasks (cont'd)

Rank tasks according to:

- Importance to job performance
- Task frequency
- Anticipated rate of failure
- Consequence of failure



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# Define Relevant Information Types

Information Type	Description
What information	All controls and product-specific concepts are
When and why information	Information about when and why you would use this tool, advantage over other similar tools, guidelines for use, context of use.
How-to information	Step-by-step procedures
Error avoidance and recovery	Information that warns users of potential pitfalls and how to recover from common problems
Examples	Information that relates a procedure to its use on the job (real-world)
Unguided Exercise	Unguided exercises that provide additional information relating to the usage context and provide an opportunity to practice new skills
Guided Exercise (tutorial)	Step-by-step examples that positions the procedure within the context of the most relevant job situation (learner carries out the task in a controlled
Trainer Guidance	Guidance for trainer-led instruction and presentation.



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# Information Types as Quality Levels

Quality Level	Information Type	Component/Headings
1	What information	UI descriptions, concept topics
2	When and why information	Procedure introduction, procedure wrap up
3	How-to information	Procedure topics (task-based)
4	Error avoidance and recovery	Things to Remember...
5	Examples	Real-World Example:
6	Unguided Exercise	Practice Makes Perfect
7	Guided Exercise (tutorial)	Lesson:
8	Trainer Guidance	Instructions to Trainers (side heads)



# Set Quality Targets for each Task

- Task 1 documented to level 7
- Task 2 documented to level 3
- Adapt quality to time constraints
- Increase quality over dev. cycles
- Give yourself a language to communicate quality to writers and management



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# Enhance the content model

- Add detail to your content model (flesh out the elements for each content type)
- Consider instructional design heuristics



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# Enhance the Content Model

## Instructional Design Heuristics

- Keep conceptual and step-by-step information separate.
- Provide a predictable and consistent structure for content.
- Provide advanced organizers that prepare users for the information they are about to receive.
- Provide “minimalist” task summaries and overviews for expert users
- Define concepts with appropriate examples
- Provide examples that show the procedure being used on the job.
- Provide unstructured exercises. Unstructured exercises provide an opportunity to place a procedure in context.
- Chunking - group relevant tasks together
- Organize and prioritize content according to job performance



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# Examples

- Implementation of content model as online help
- Implementation of content model as user's guide



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# Designing User-centered Outputs

Common misconception of UCD



Program  
or write

Bug Test and  
**User Test**

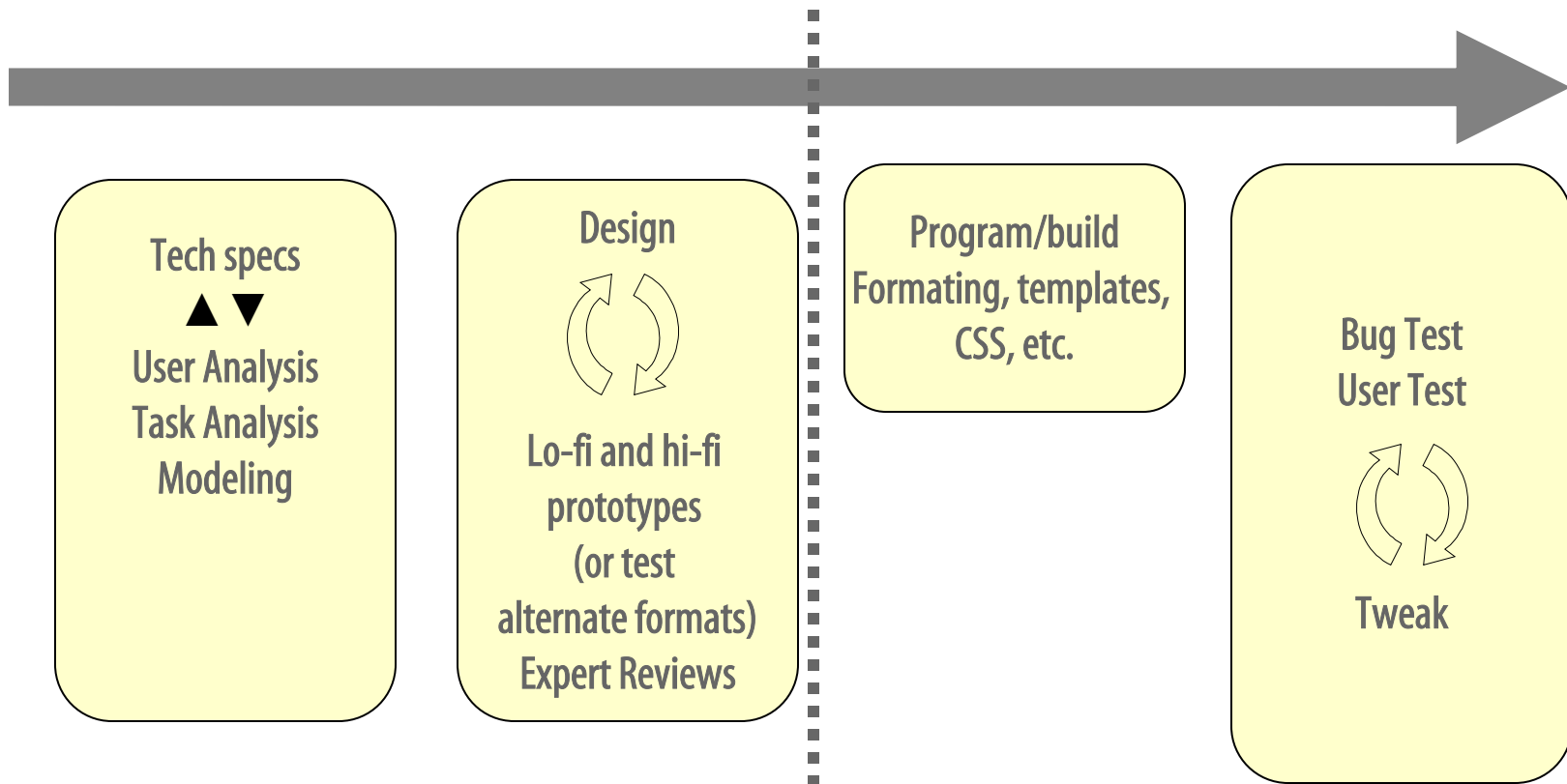
Tweak



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# Designing User-centered Output



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# User and Task Analysis Revisited

- Focus on problem resolution behaviors identified earlier (during task analysis)
- Remember environment (browser-based help is virtually unusable at 800 X 600)



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# Design: Low-fidelity Prototyping

- High level
- Paper-based (wireframe)
- Walkthrough testing
- Iterative process



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# Design: Hi-fidelity Prototyping

- mid-level implementation
- More realistic (with interaction)
- Full-fledged usability testing
- Iterative process



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# Expert Evaluation

- Benchmarks application to known usability standards or *heuristics*. Reduces cost and scope of testing. Best to have 2 reviewers.
- Compare your prototype to your competitor's
- Compare new approach to old deliverables



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# UI Specification

- Detailed spec of all aspects of the UI or manual (layout, indexing, search mechanisms, TOC headings, etc.
- Analogy: Architect's plan.



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# Final Validation

- Validate deliverables during alpha/beta periods (usability tests)
- Idea is to uncover minor usability problems and to validate the leap from prototype to final product (process leads to few surprises)
- Release !



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# Conclusion

- By applying the user-centered documentation process you can:
  - Identify the users goals and intentions
  - Prioritize content to suit the user
  - Develop a content model
  - Map content to quality “components” and iterate quality over several release cycles



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# Conclusion

- By applying user-centered design techniques to creating output you:
  - Ensure that your TOC, Index and navigation scheme are usable.
  - Ensure that users can find the information they need, when they need it.



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# Conclusion

- As your knowledge of users increase, so will your clout in the organization.
- Knowledge is power.



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- User and task analysis for interface design — Hackos & Redish
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- Standish group research reports
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- Randolph G. Bias and Deborah J. Mayhew. "Cost-Justifying Usability". Academic Press, 1994
- Standish Group. "CHAOS Chronicles or CHAOS: A Recipe For Success". 1995



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# UPA Montréal

Usability Professional's Association

[www.upa-mtl.org](http://www.upa-mtl.org)



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# Questions ?

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**End.**



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