



The Business of Product Development:
People, Process & Technology Across the Life Cycle

Customer-Centered Design at HP

Nancy L. Clark & Craig B. Neely

BOSTON
OCTOBER 4-8
BOSTON MARRIOTT COPLEY PLACE



- Why is Customer-Centered Design important?
- HP Customer-Centered Design Services (CCDS):
Who are we?
- Overview: Where we fit in the Product Development Process
- Case Study: Designing a complex application suite
- Case Study: Merger of Compaq and HP support web sites

Why is Customer-Centered Design Important?

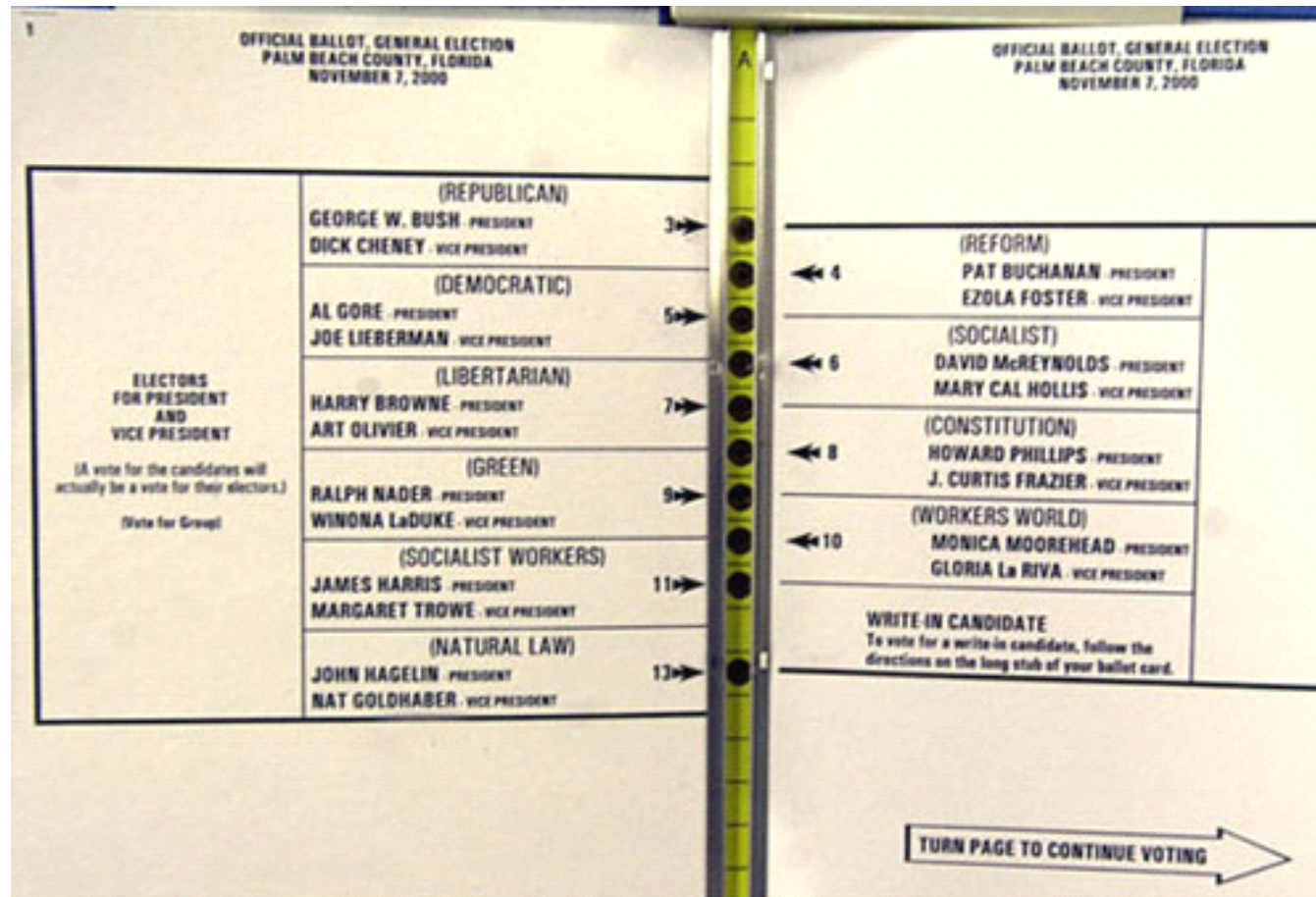


Photo by Scott Fisher, Sun-Sentinel staff photographer.

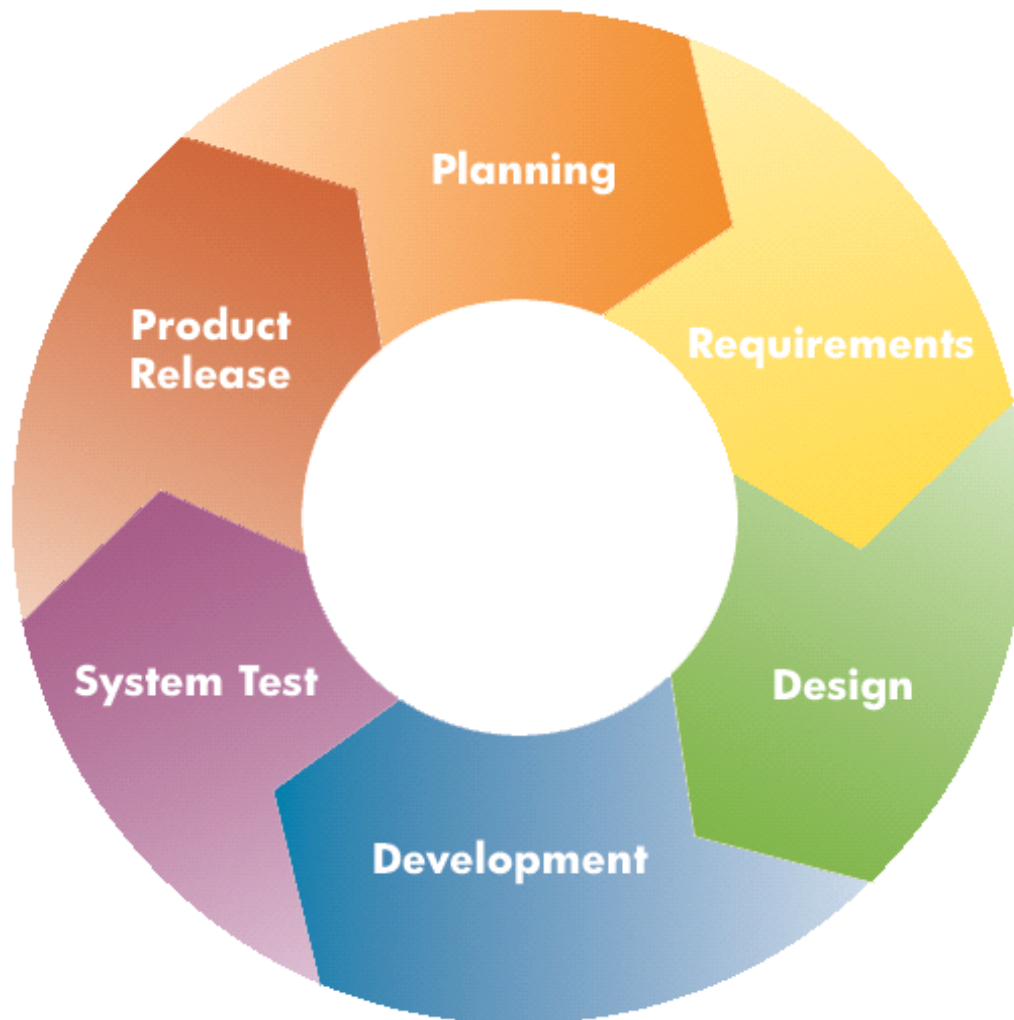
HP Customer-Centered Design Services (CCDS):

Who we are



- Center of competency in customer research and designing user interfaces, with facilities around the country
 - Staff educated and experienced in cognitive & physiological disciplines
 - Centralized resource for HP design teams who do not have research, design, & testing skills
- Primary value add to HP design teams:
 - Improve development process by bringing HP design teams together, creating a common product vision
 - Bring target users of products together with design teams to define, design, develop customer-centered

Product Development Process: Overview



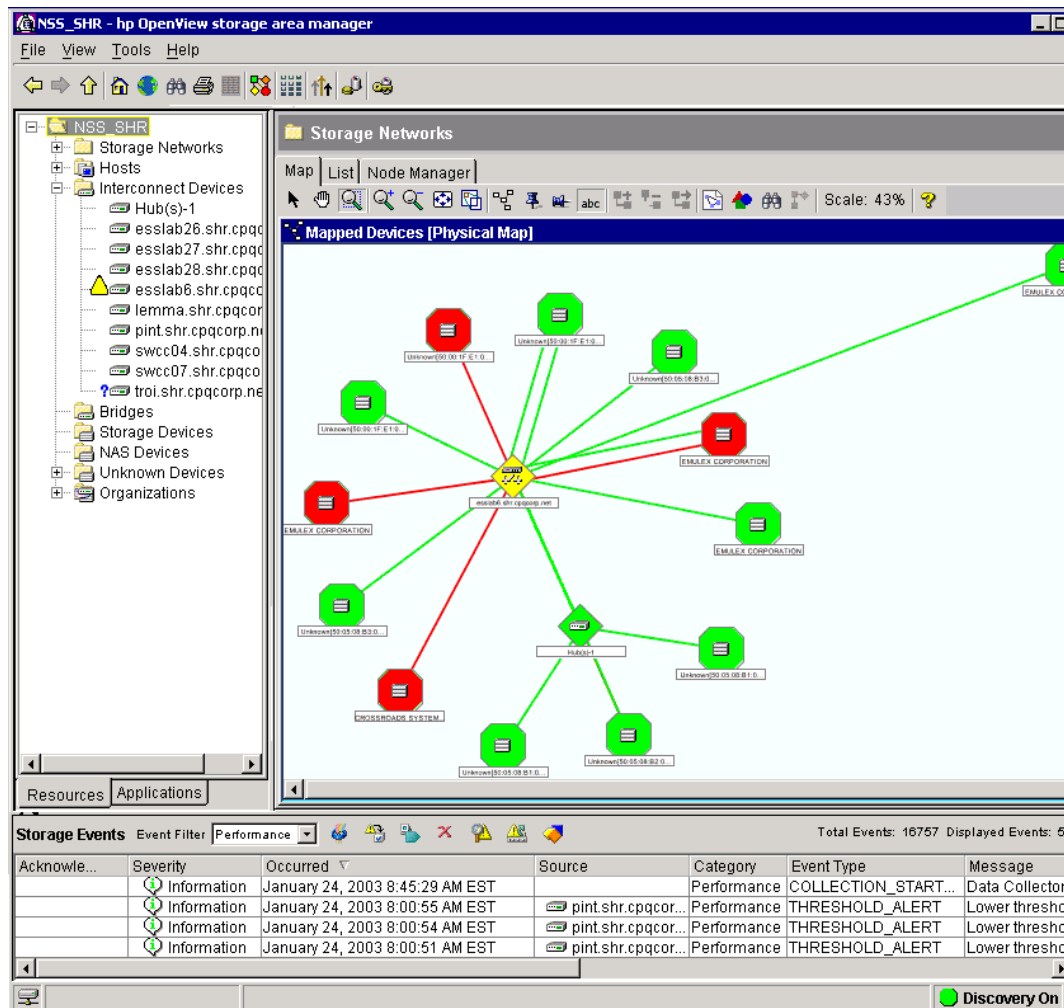
Our Focus:

- User analysis, requirements
- Product definition, design, & development for ease of use and usefulness

Other Elements of the Customer Experience:

- Ordering, delivery
- Documentation
- Installation
- Integration with 3rd party products
- Customer Support

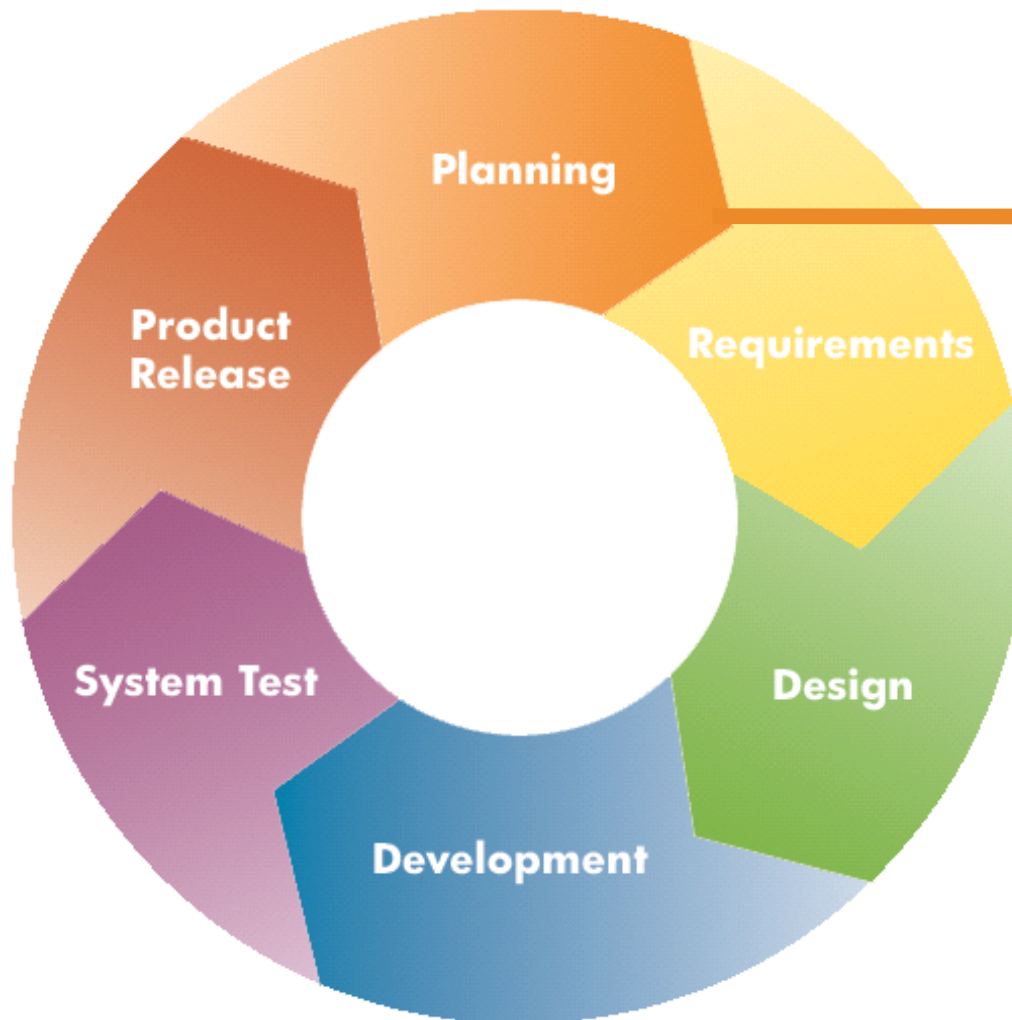
Case Study: Designing a Complex Application Suite



Storage Network Management Challenges

- Very large scale, distributed networks – thousands of devices, huge amounts of data
- Very complex to manage
- Need continuous, reliable access to critical business data
- Imagine a hard drive crash!

Case Study: Designing a Complex Application Suite



Planning

Challenges:

- Vague product concept
- Customers' priorities?
- Developing a shared vision

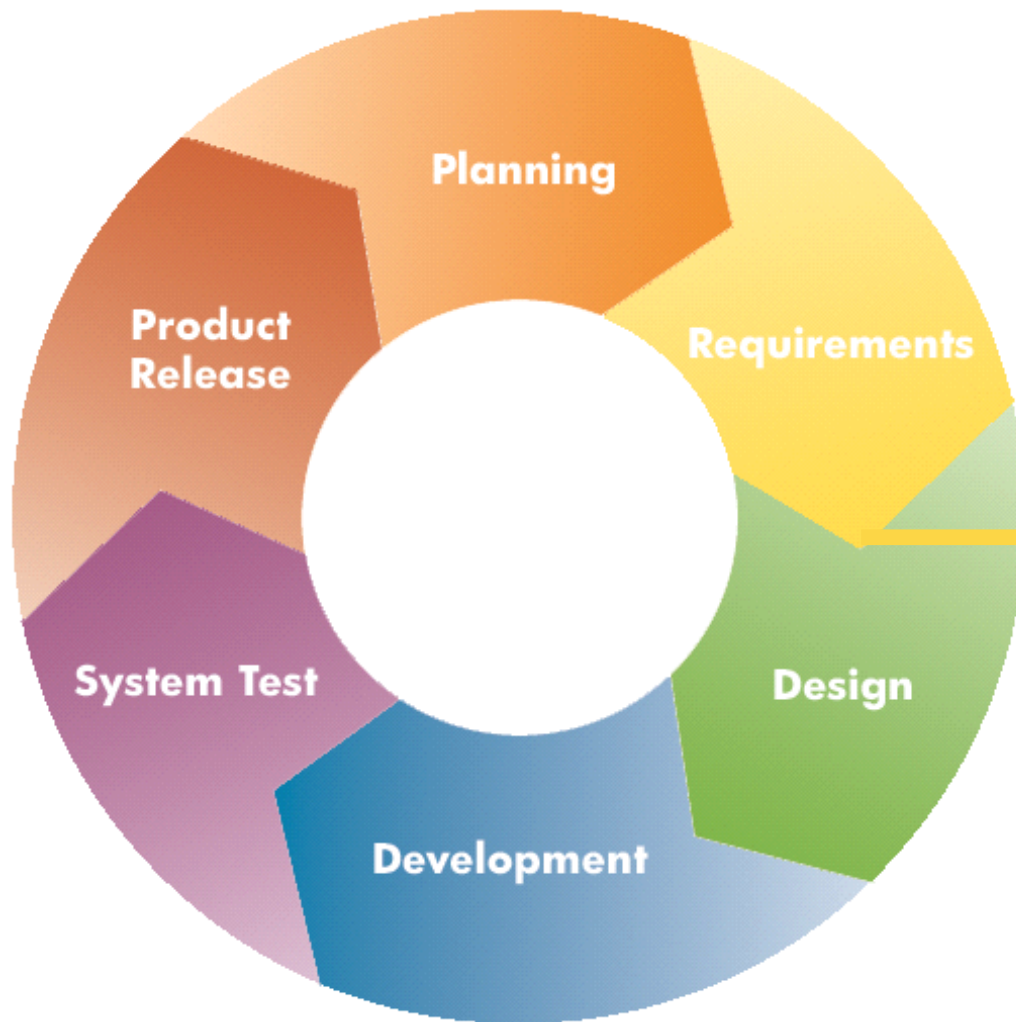
Solutions:

- Customer focus groups
- Designed sketchy prototypes, customers filled in blanks

Value:

- Requirements, shared vision
- Not just a launch point for management applications!
- Network representation
- View of business apps, data

Case Study: Designing a Complex Application Suite



Requirements

Challenges

- What details do users need and expect?
- Requirements risks: incomplete, failure to confirm

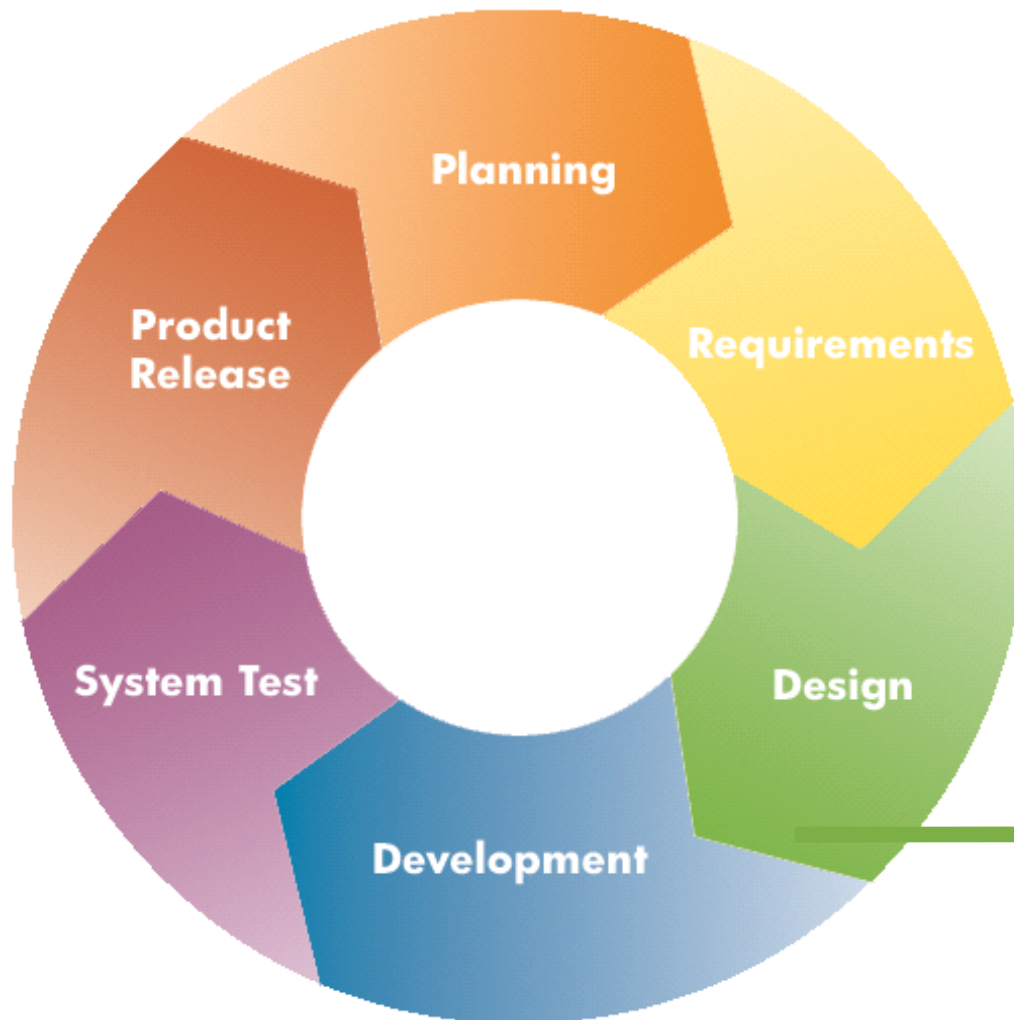
Solutions:

- Refined prototypes with more details
- Iterative research to define next level of detail

Value:

- Details for info & task flow (e.g. status, clicking behavior)
- Avoided costly re-design

Case Study: Designing a Complex Application Suite



Design

Challenges:

- Complex: hundreds of details
- Tradeoffs: ease of use versus development cost

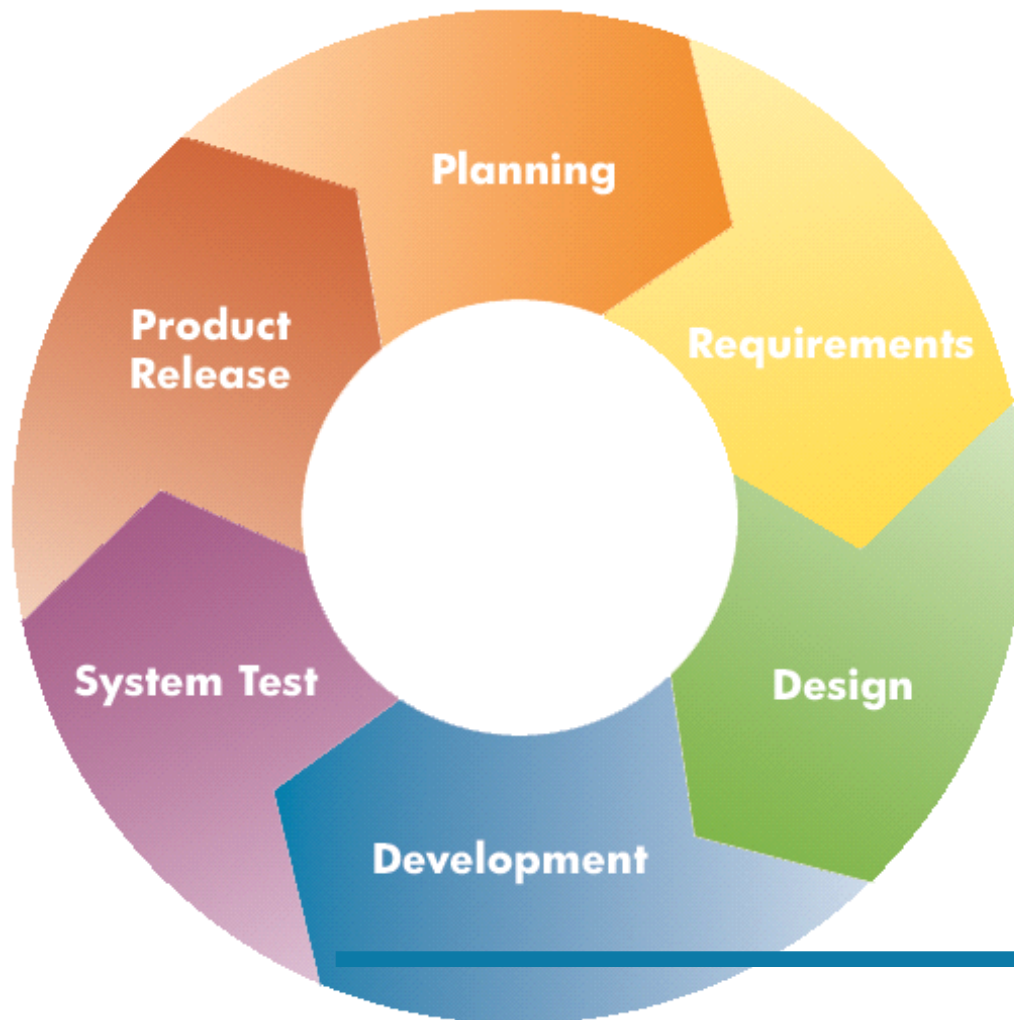
Solutions:

- Iterative user interface design, prototyping, testing
- UI specification, evaluation
- Cross-suite style guide

Value:

- Continuous user focus keeps design usable and aligned with requirements
- Cross-team coordination to ensure unified design

Case Study: Designing a Complex Application Suite



Iterative Development

Challenges:

- Meeting users' requirements?
- Unanticipated design issues

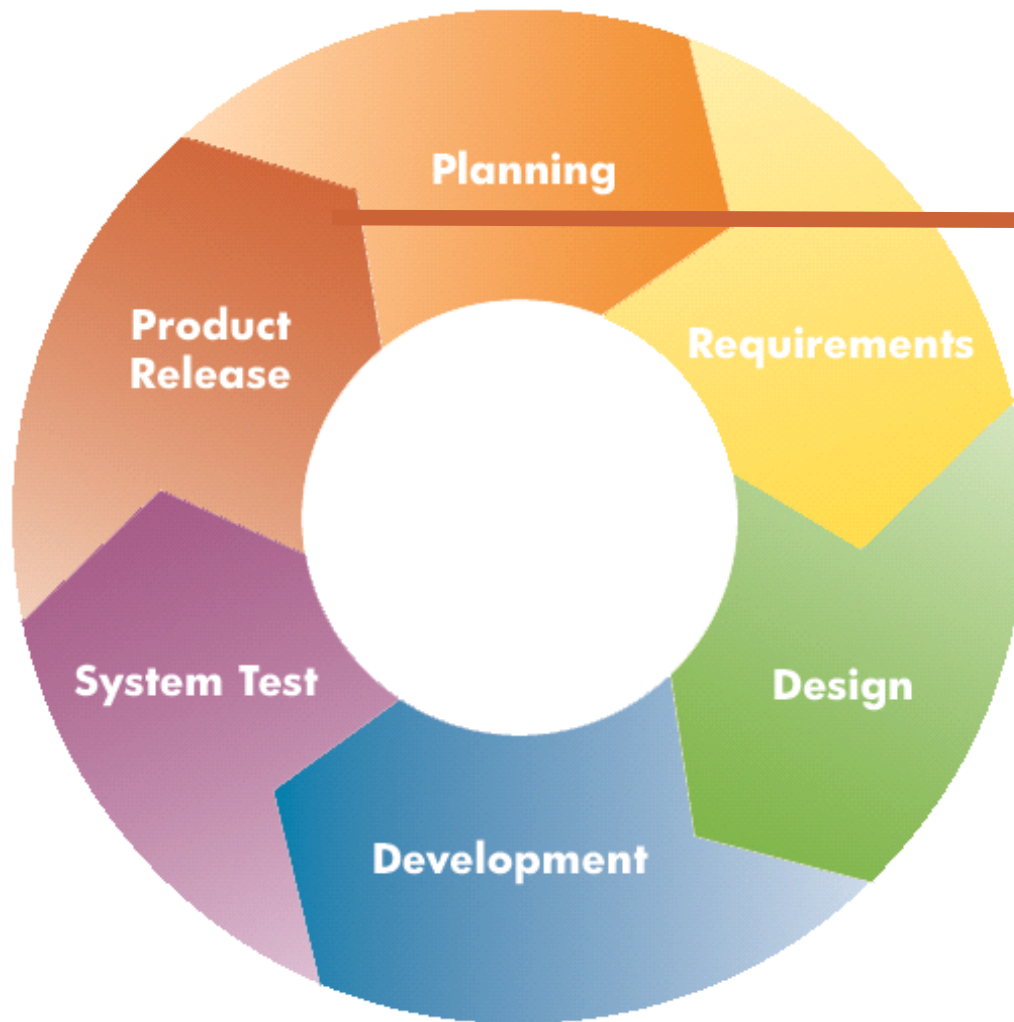
Solutions:

- User interviews: key features
- Numerous usability tests
- Structured expert review
- Ongoing design consulting

Value:

- Customer-centered answers to design questions
- Usability evaluation of actual product

Case Study: Designing a Complex Application Suite



Post-Release

Challenges:

- Is the product easy to install and use?
- Does it meet customers' real world needs?

Solutions:

- Interviews with HP specialists in the field
- Customer visits, interviews

Value of Usability Data:

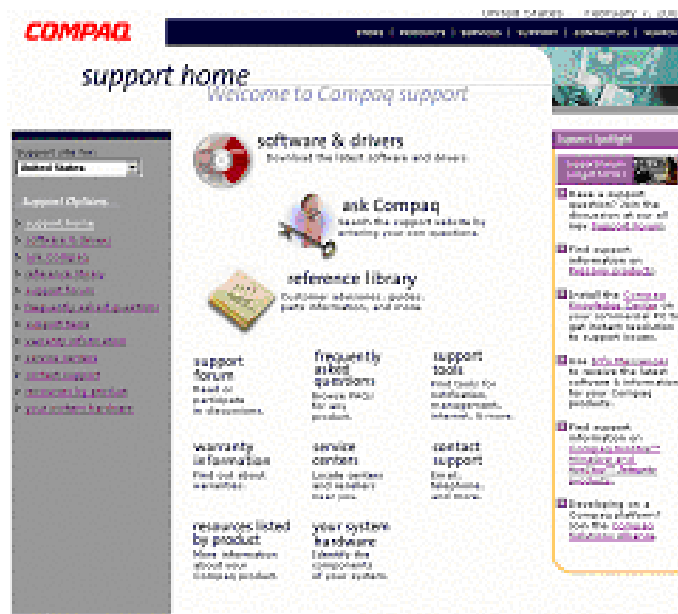
- Identify gaps between user needs and actual product
- Focuses next version requirements on customer needs

Case Study: HP.com Support



The Challenges:

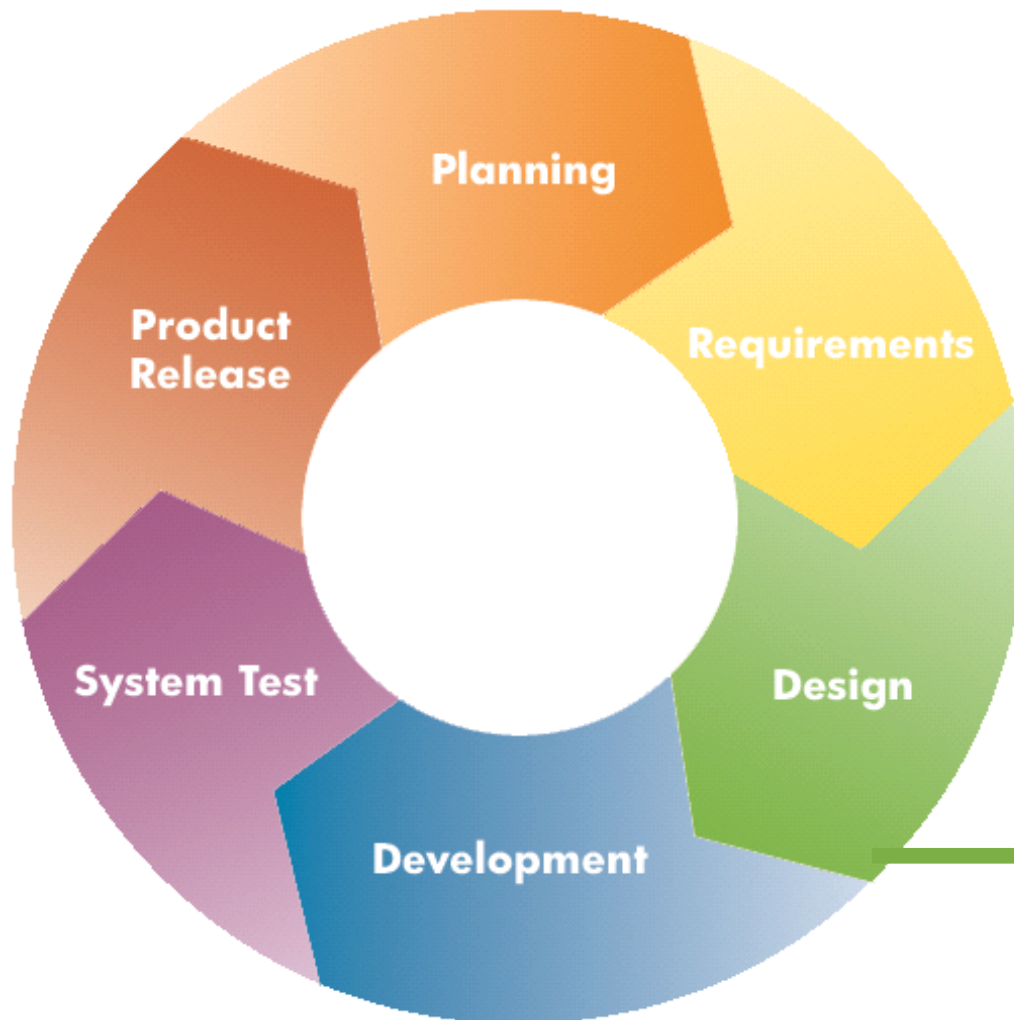
- Provide continuous, reliable, unified web access to tech support from HP and Compaq
- Combine two approaches to online support delivery via the web while meeting expectations of both groups of customers



- Combine independent HP and Compaq Usability Groups as part of overall merger of eSupport program

- Focus on customer needs, not political and technical challenges

Case Study: HP.com Support



Design

Challenges:

- Requirements handed down by merger planners
- 2 distinct interaction models

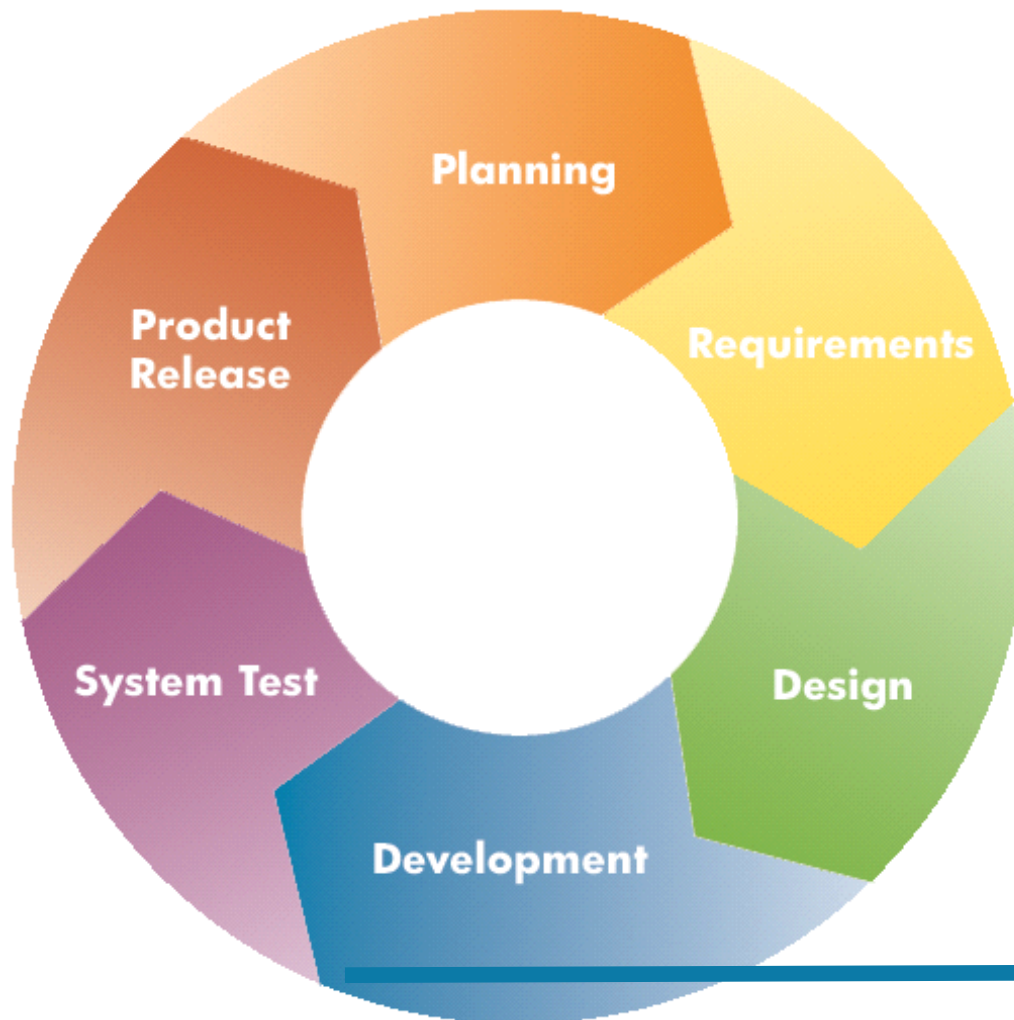
Solutions:

- Validate requirements via fast prototyping, early testing
- Iterative design & testing
- Combined team, web repository for shared work

Value:

- Retain customer loyalty by working toward a single, unified support site as an indication of HP's focus on the customer

Case Study: HP.com Support



Development

Challenges:

- Meeting requirements?
- Integration of new design with other sites on HP.com
- Will new design support the functionality?

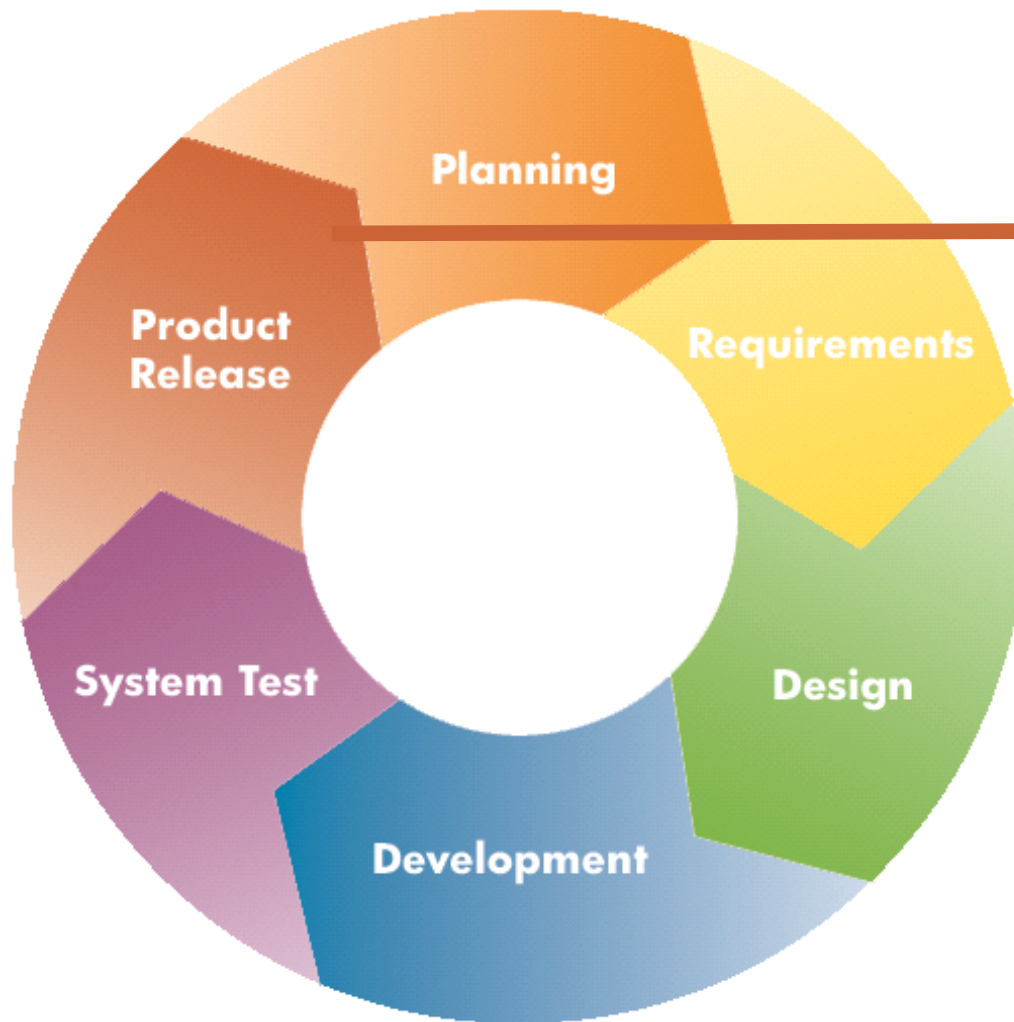
Solutions:

- Relationships across HP.com
- Ongoing design updates based on customer feedback
- Iterative development, test

Value:

- Kept design aligned with both sets of customer needs and expectations
- Integration with HP.com

Case Study: HP.com Support



Product Release

Challenges:

- Does this site meet the customers' real world needs?
- Constant or improved customer satisfaction, usage?

Solutions:

- Large customer survey
- Remote web-based usability testing, large number of users
- Usability testing in lab

Value:

- Customer-focused approach to evaluating support site
- Validates if the content is useful, meets customer needs

HP.com summary



- **Fully integrated site released in August, 2003**
- **Initial usability data show this performs as well if not better than the previous sites across user types**
- **The designers formerly from HP and Compaq now work together as one group**
- **Continue to update and improve the support content to our customers**

<http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp>

select locale - language | Worldwide-English

» hp home » products & services » support & drivers » solutions » how to buy

» contact hp search: [] more options

business support all of hp

hp business support

printable version

business support home

tasks

- » download drivers and software
- » troubleshoot a problem
- » setup, install, and configure
- » discover and use my product
- » perform regular maintenance
- » upgrade and migrate my product
- » recycle and dispose my product

support resources

- » contact support
- » diagnose product problem
- » discussion groups
- » frequently asked questions
- » manuals
- » parts information
- » warranty information

IT professionals

- » developers

help

site map

get answers that make sense for your business

tasks:

- » download drivers and software
- » troubleshoot a problem
- » setup, install, and configure
- » discover and use my product
- » perform regular maintenance
- » upgrade and migrate my product
- » recycle and dispose my product

support resources:

- » contact support
- » diagnose product problem
- » discussion groups
- » frequently asked questions
- » manuals
- » parts information
- » warranty information
- » register your product
- » signup: driver & support alerts/notifications

hot topics

- » Important Virus Information

hp instant support chat with an hp support expert click here

- Customer-centered focus can unify diverse stakeholders and be the basis for common process definition
- Customer-centered design activities can and should be incorporated into every phase of product design and development
- CCDS activities are tailored to the needs of each project
- CCDS activities:
 - Decrease development time and cost by “getting it right the first time”

- www.hfes.org – Human Factors & Ergonomics Society
 - Mission: to promote the discovery and exchange of knowledge concerning the characteristics of human beings that are applicable to the design of systems and devices of all kinds.
- www.upassoc.org – Usability Professionals Association
 - Supports those who promote and advance the development of usable products, reaching out to people who act as advocates for usability and the user experience.
- www.acm.org/sigs/sigchi – ACM Special Interest Group in Computer-Human Interaction
 - Brings together people working on the design, evaluation, implementation, study of interactive computing systems for human use.
- www.baddesigns.com – Examples of things that are hard to use because they do not follow human factors



i n v e n t