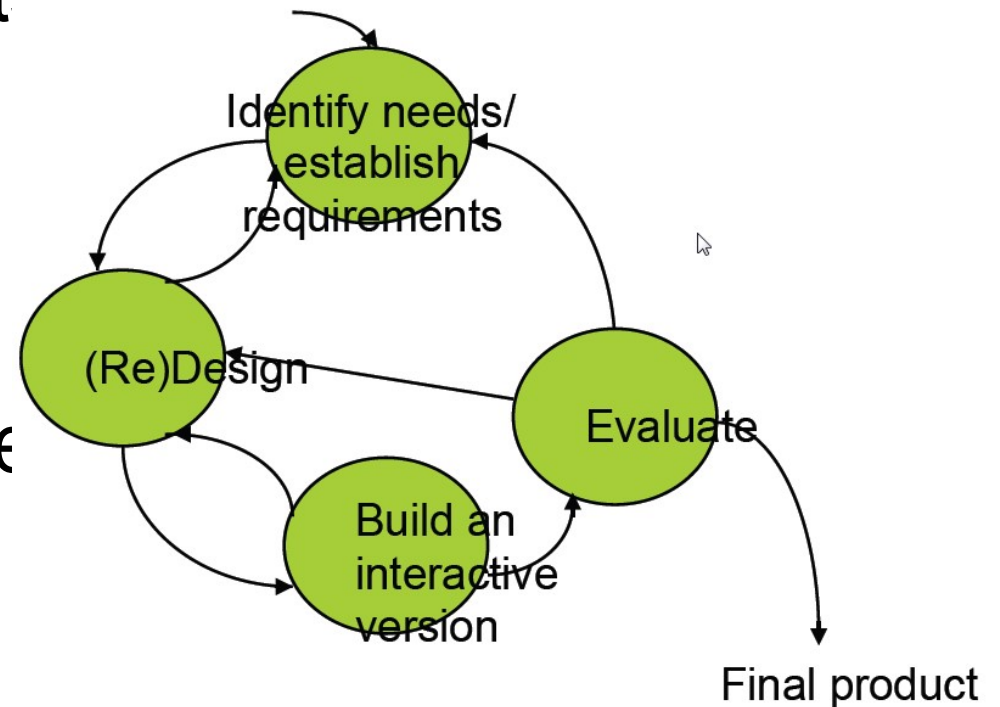# User Center Design and Development of Interactive Environments and the WEB

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2018-2019

User-centered design process

1. Identify needs and establish requirements
2. Generate alternative solutions/designs
3. Build interactive prototypes that can be communicated and assessed
4. Evaluating design

User centred design

Key characteristics

- Focus on users early in the design and evaluation of the artifact

- Identify, document and agree specific usability and user experience goals at the beginning of the project

- Iteration is inevitable. Designers never get it right first time
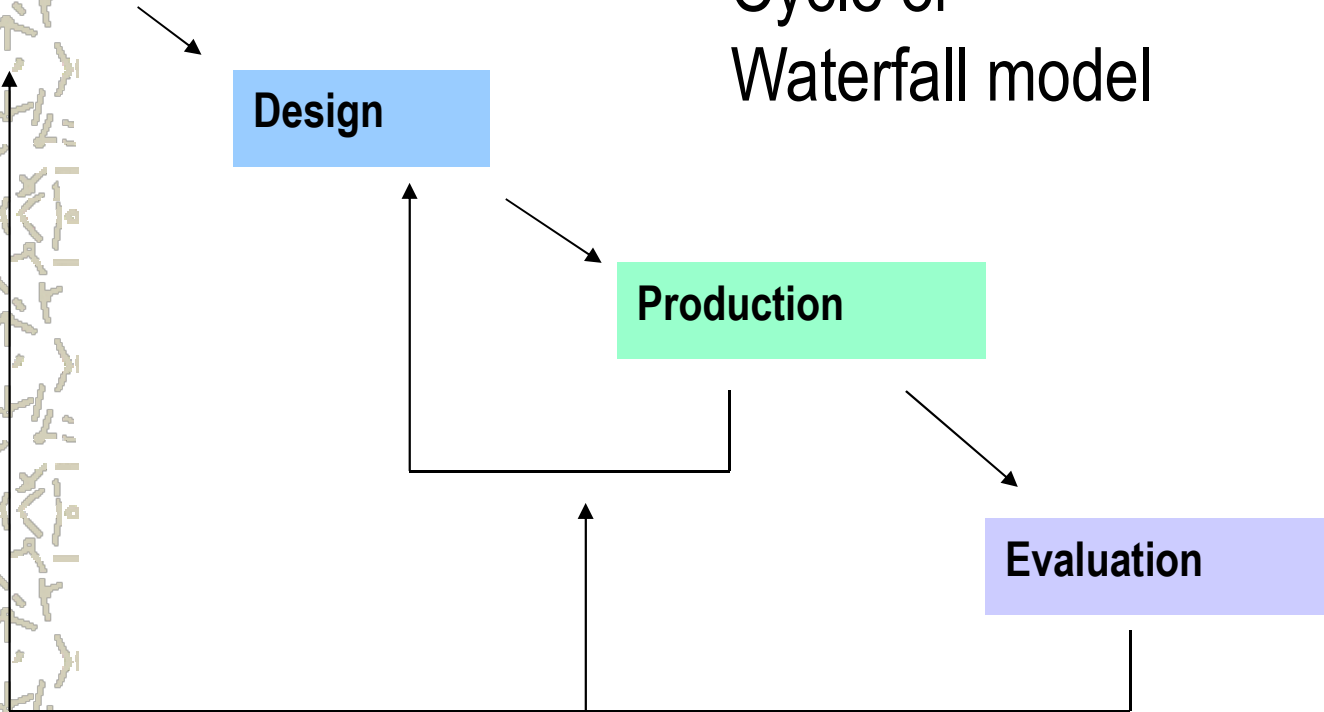
Traditional Development of IS

Analysis
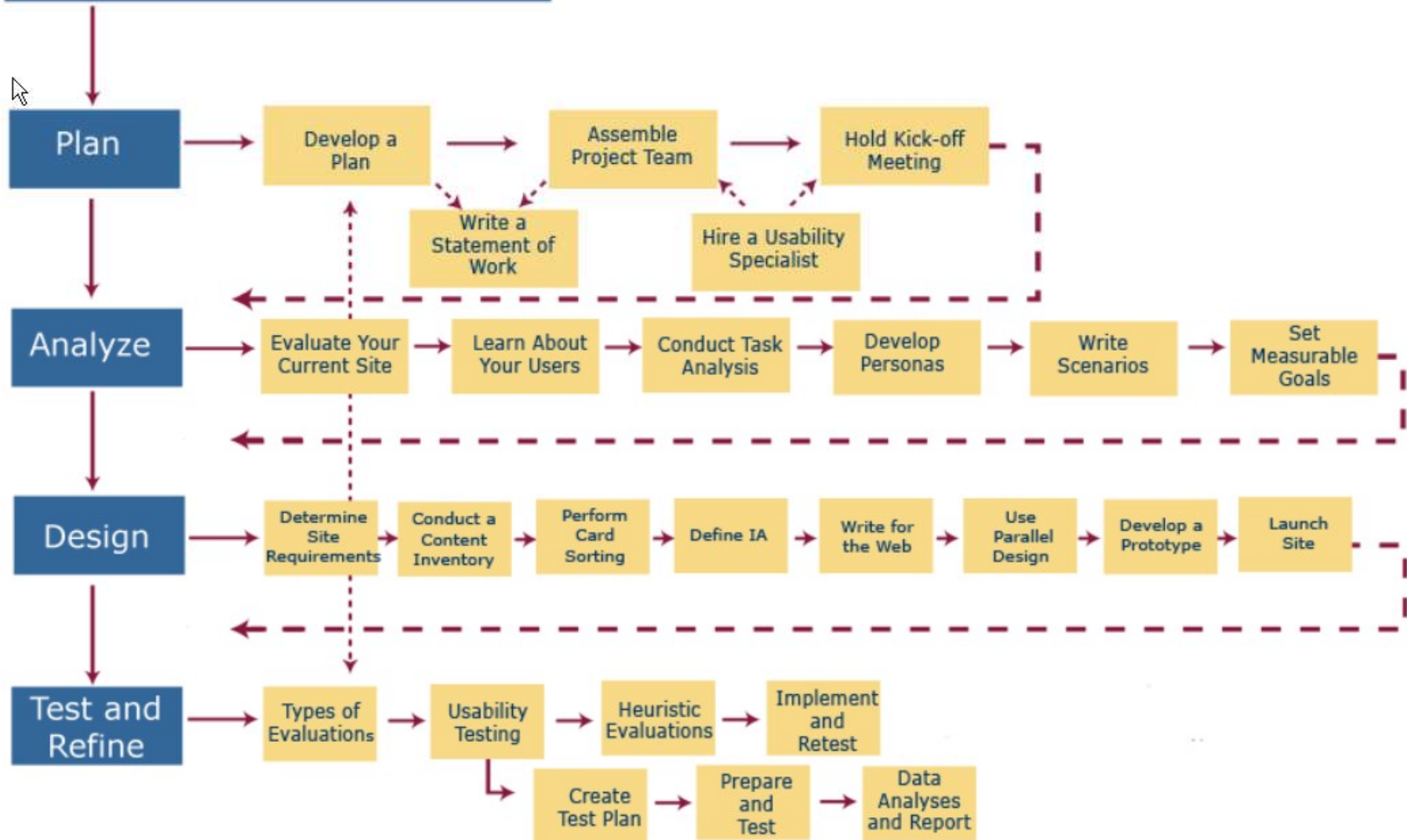
Systems Development Life Cycle or Waterfall model

Design

Production

Evaluation

Step-by-Step Usability Guide

Plan
- Develop a Plan → Assemble Project Team → Hold Kick-off Meeting
- Write a Statement of Work
- Hire a Usability Specialist

Analyze
- Evaluate Your Current Site → Learn About Your Users → Conduct Task Analysis → Develop Personas → Write Scenarios → Set Measurable Goals

Design
- Determine Site Requirements → Conduct a Content Inventory → Perform Card Sorting → Define IA → Write for the Web → Use Parallel Design → Develop a Prototype → Launch Site

Test and Refine
- Types of Evaluations → Usability Testing → Heuristic Evaluations → Implement and Retest
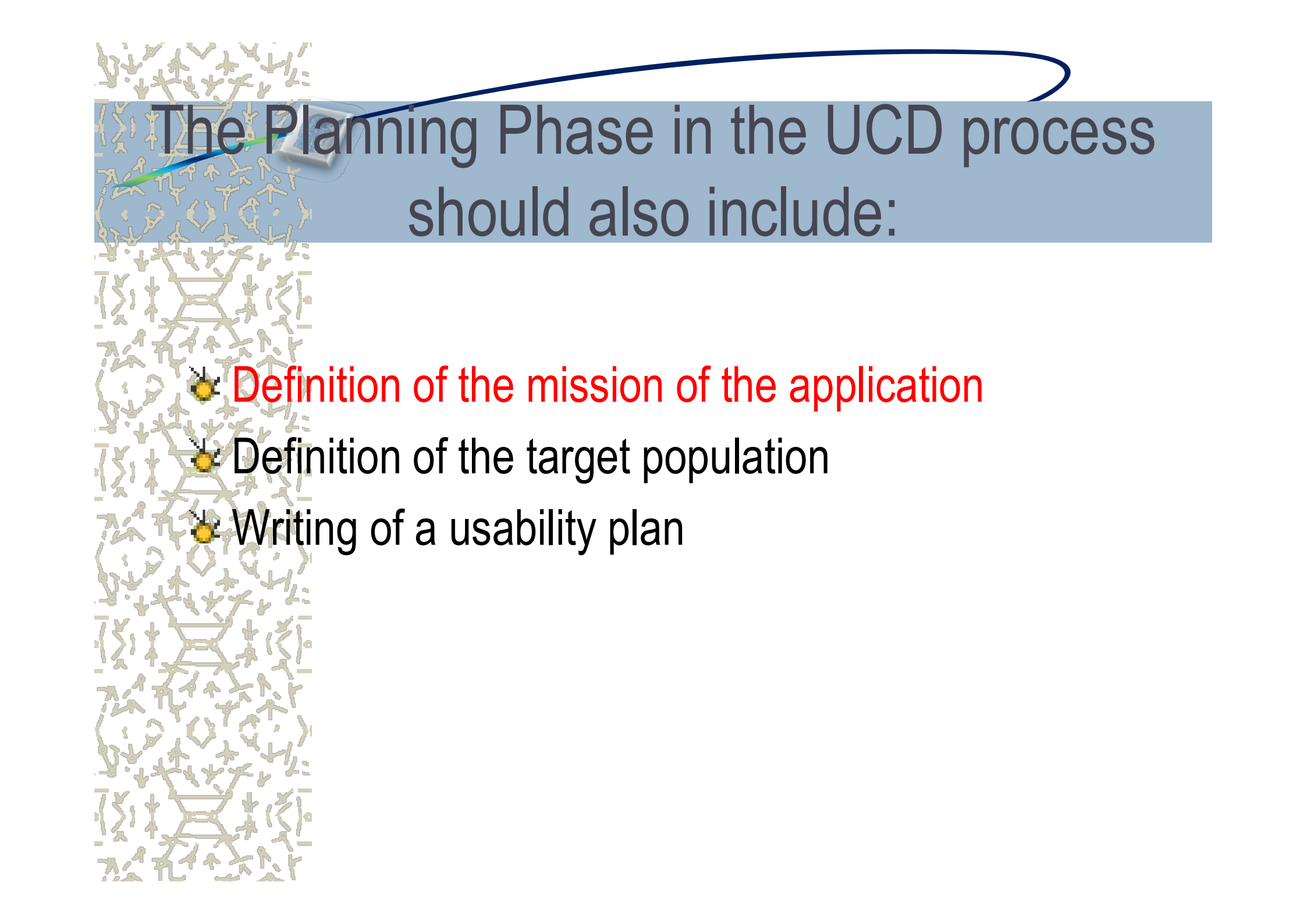- Create Test Plan → Prepare and Test → Data Analyses and Report

Planning

- The (traditional) Planning Phase includes:
  - Define Clear Objectives
  - Define the development team and the responsibilities
  - Provide documentation of every step of the development
  - Write progress report

The Planning Phase in the UCD process should also include:

- Definition of the mission of the application
- Definition of the target population
- Writing of a usability plan

Mission of the (web) application

- Should be defined by client organization
- Is depended from the type of the web site: informational, e-commerce, entertainment, community, intranet?
- Write a mission statement
- "Company X will develop a Web Site to advertise our products, with the goal of increased sales"
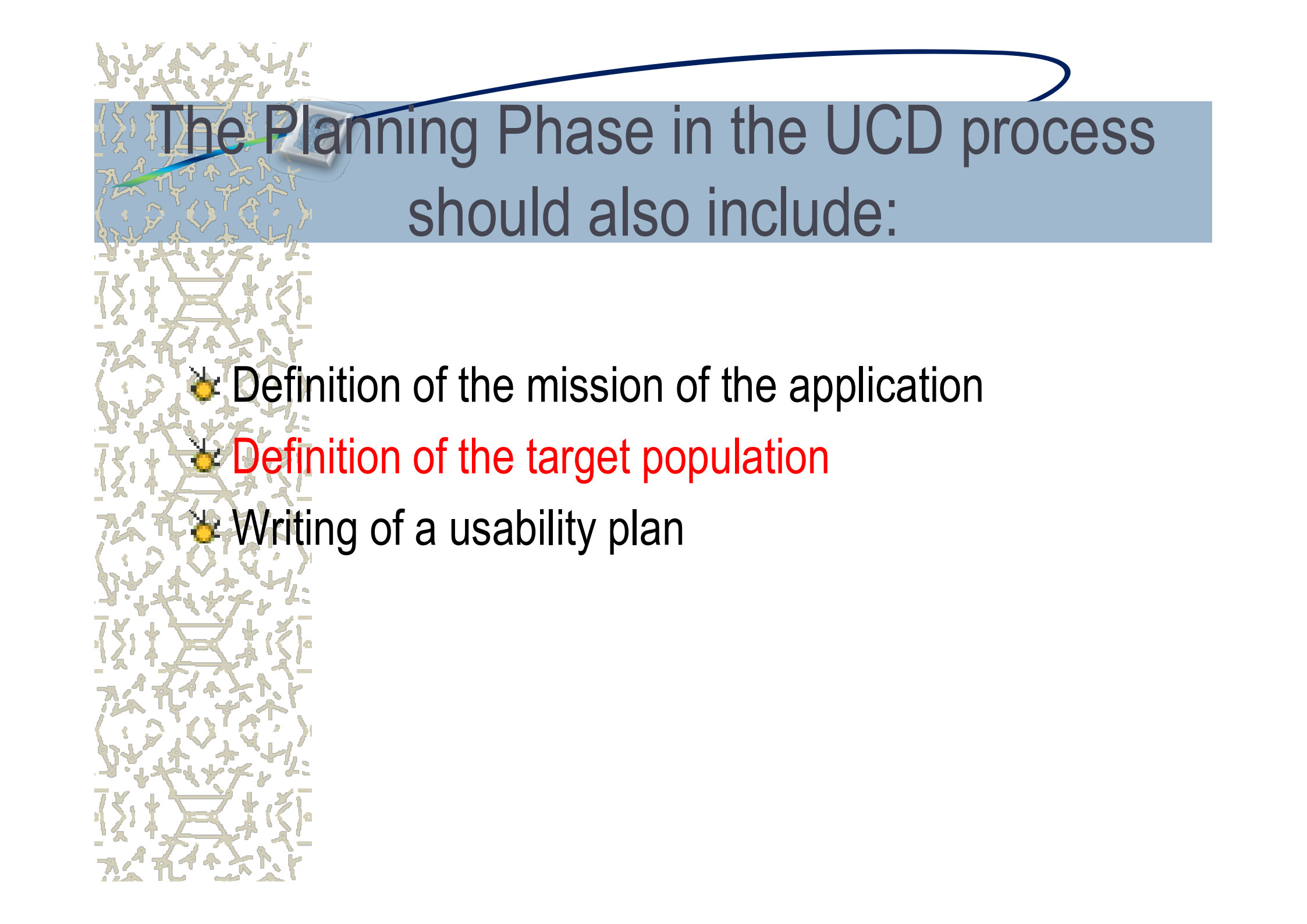
Mission Statements

"Community group Y will develop a Web Site to keep our community members informed, with the hope that the attendance at community meetings will increase"

"Organization Z will develop a Web site to increase awareness about the need for recycling in our community"

Mission (cont.)

- A good mission statement is short, easy to measure, and relates the web site to the organizational mission and goals.

- The mission statements can be used to evaluate the Web site after a year or two, to determine if the site is really supporting the organization as defined in the mission statement.

- Define the success criteria: page visits, products sold, satisfied customers, public recognition,…

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Targeted User Population

- Only a few types of Web Sites (Amazon, Ebay, CNN, Google, Yahoo!,…) are actually targeted toward the entire population of Web users!

- If you don't know the users you cannot meet their needs!

- You need to find Content, Functionality and Usability Constraints

Who are the users/stakeholders?

- Not as obvious as you think:
  - those who interact directly with the product
  - those who manage direct users
  - those who receive output from the product
  - those who make the purchasing decision
  - those who use competitor's products
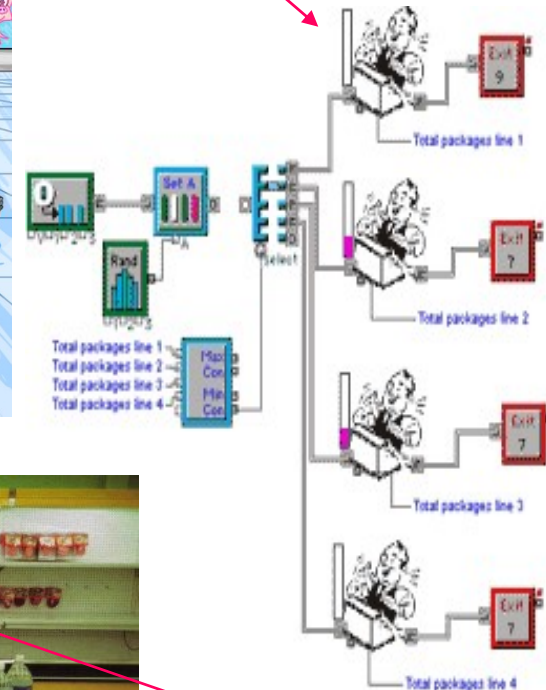- Three categories of user (Eason, 1987):
  - primary: frequent hands-on
  - secondary: occasional or via someone else
  - tertiary: affected by its introduction, or will influence its purchase

Who are the stakeholders?

Check-out operators

- Suppliers
- Local shop owners

Customers

Managers and owners

www.ictbook.com

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Targeted User Population

- A web site could be targeted to different user groups
  - A University Site: current students, potential students, parents/siblings, faculty and staff members

Targeted User Population

- Well Define Groups:
  - Under 14
  - 65 and older
  - Sensory disabilities
  - Motor impairments
  - Low level computer experience

Targeted User Population

- Developing User Profiles
  - General Demographic Information (age, gender, education, job, language)
  - Domain Knowledge or previous knowledge(adults know about banking, accounts, etc but children not, which is terminology of the users?)
  - Don't assume : "everyone knows about X and Y"
  - User Computing Experience (low, medium, high?)
  - User Computing Environment (browser, screen size, mobile devices, network speed)

Personas

- A persona is a fictional person who represents a major user group for your site.

- Personas help you identify major user groups of your Web site. You select the characteristics that are most representative of those groups and turn them into a persona.

Personas

- Capture user characteristics

- Not real people, but synthesised from real user characteristics

- Should not be idealised

- Bring them to life with a name, characteristics, goals, personal background

- Develop multiple personas

Personas

BACKGROUND

- 15, Female
- Ongoing Private Education
- Ambitious
- Comfortable using technology to communicate

MOTIVATIONS

- Keeping in touch with her network
- Fashion/street cred
- Keeping up with peers.

FRUSTRATIONS

- Sad people trying to be 'friends' on Facebook
- Having to be in bed @ 11pm
- Being swamped in friends updates
- Missing important status updates

Ginnie

Receives private tutoring in Maths and English as these are not her strong subjects. Enjoys playing for the school's 2nd teams for netball and Lacrosse and is good at art.

She loves recording her favourite shows: ER and Sun Valley High on Sky+ and spends some of her time on her Laptop that Daddy bought her watching videos on YouTube, downloading music, keeping up to date with her friends on Facebook and chatting via MS IM to her cousin who is at University in Leeds.

She loves Ugg boots and Abercrombie & Fitch and uses the Internet to shop and find the cheapest prices.

CAPLIN

"I want to easily hook up with my friends whilst watching TV"
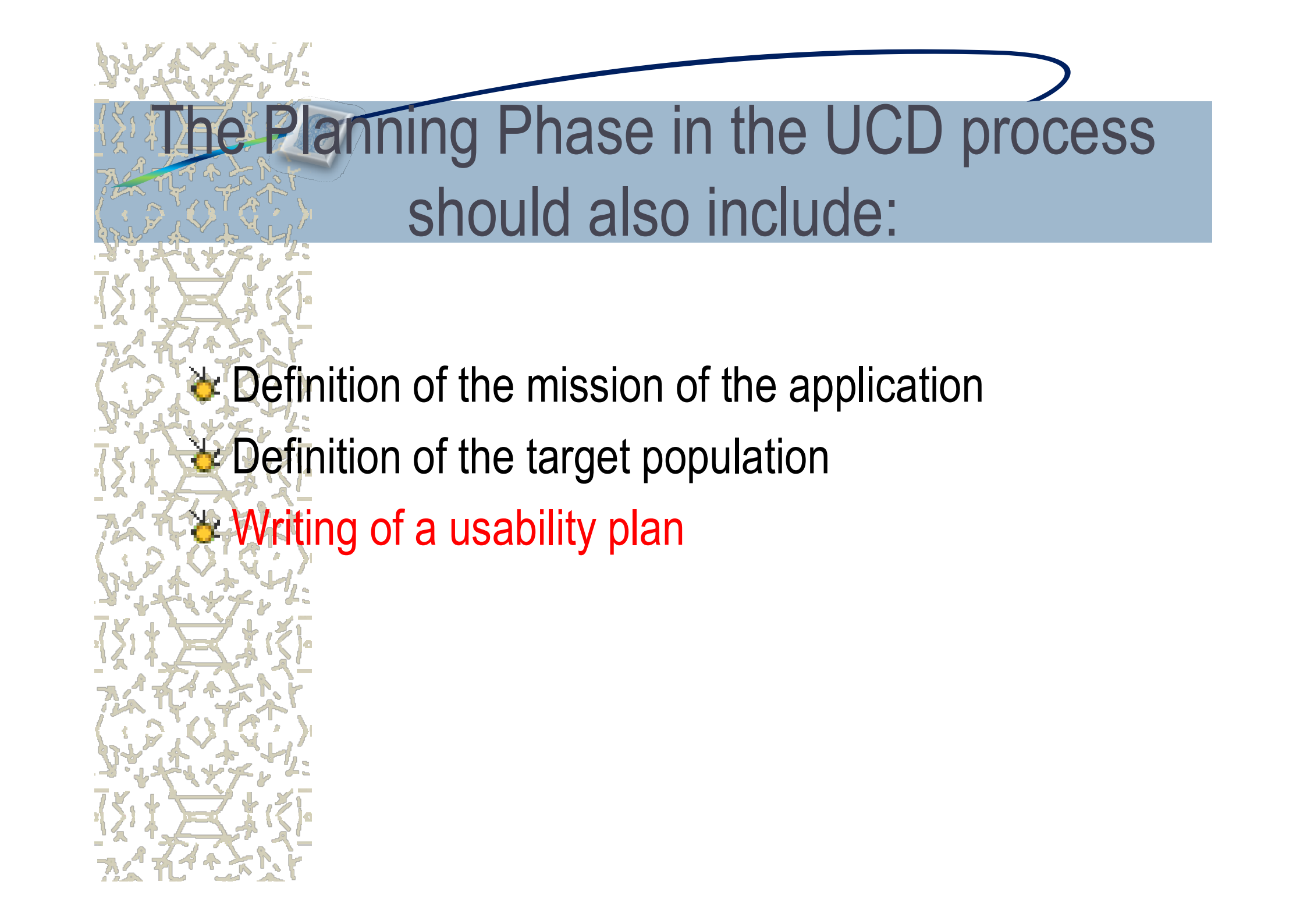
Example of a Persona

The following example is only a small portion of a larger persona developed by the U.S. Department of Agriculture's (USDA) Economic Research Service (ERS).

USDA Senior Manager Gatekeepers Matthew Johnson

Program Staff Director, USDA

Matthew is 51-year-old married father of three children and one grandchild. He has a Ph.D. in Agricultural Economics who spends his work time requesting and reviewing research reports, preparing memos and briefs for agency heads, and supervising staff efforts in food safety and inspection. He is focused, goal-oriented within a strong leadership role. One of his concerns is maintaining quality across all output of programs. He is comfortable using a computer and refers to himself as an intermediate Internet user. He is connected via a T1 connection at work and dial-up at home. He uses email extensively and uses the web about 1.5 hours during his work day. He is most likely heard saying: "Can you get me that staff analysis by Tuesday?"

Persona developed by the U.S. Department of Agriculture's (USDA) Economic Research Service (ERS).

The Planning Phase in the UCD process should also include:

- Definition of the mission of the application
- Definition of the target population
- Writing of a usability plan

Usability Plan

- Planning is a way to understand and get agreement on what you are going to do, in what timeframe, with what resources, and at what cost.

- By including usability activities in your project plan, you build in the time and resources to carry out those activities.
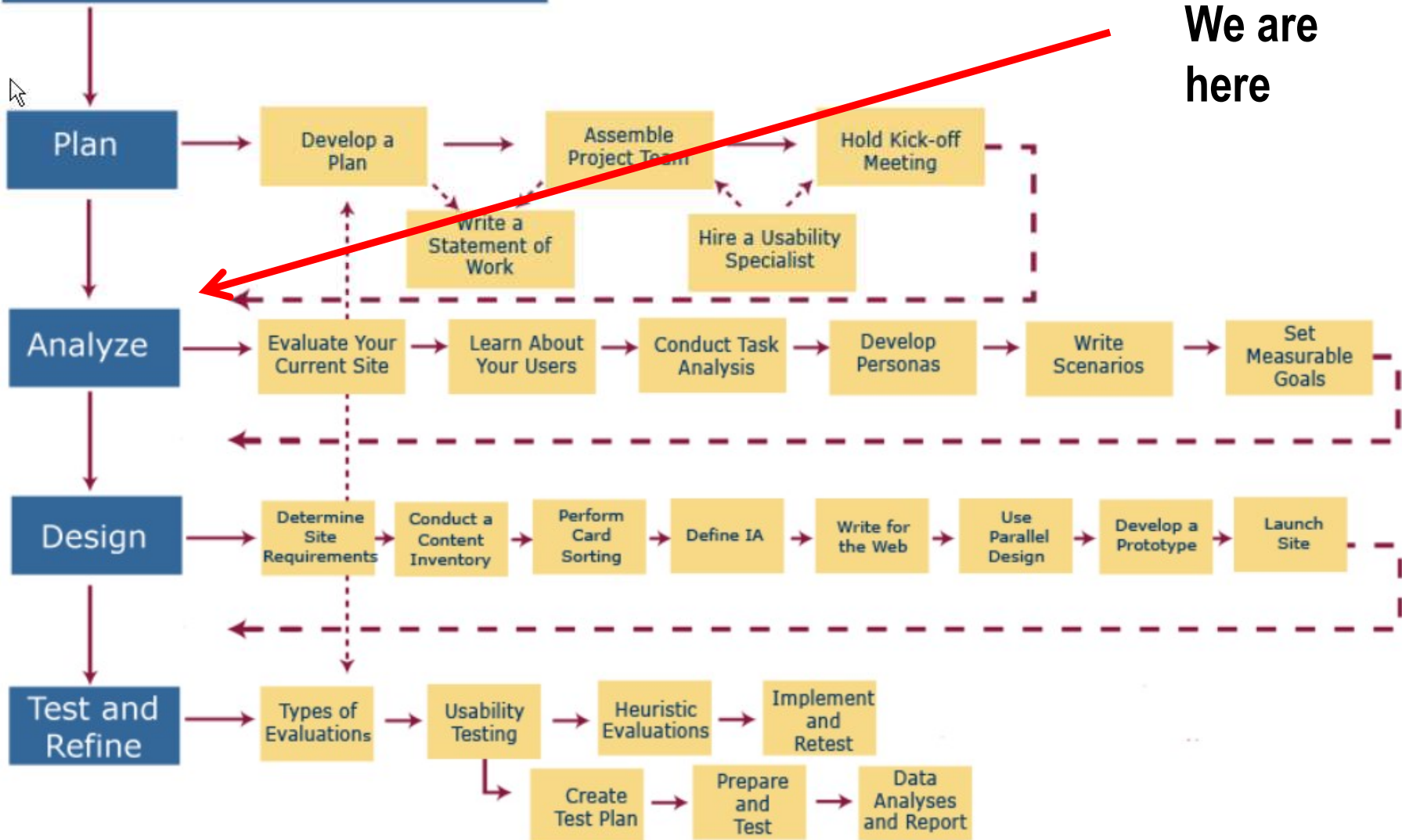
Usability Plan

- Having defined the Mission and the Targeted Audience you can define the Usability Methodology :
  - Usability methods (card sorting, prototyping, evaluations, redesigns, parallel prototyping, heuristic evaluations, …)
- Evaluate and define required Resources, Time and Cost

The UCD Methodology

Step-by-Step Usability Guide

We are here

Plan → Develop a Plan → Assemble Project Team → Hold Kick-off Meeting

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Design → Determine Site Requirements → Conduct a Content Inventory → Perform Card Sorting → Define IA → Write for the Web → Use Parallel Design → Develop a Prototype → Launch Site

Test and Refine → Types of Evaluations → Usability Testing → Heuristic Evaluations → Implement and Retest

Create Test Plan → Prepare and Test → Data Analyses and Report

Our Next Steps

- Analysis: User Requirements Analysis
  - Task Analysis ⟹ Functionality
  - Content requirements ⟹ Content

- Design: define navigation, visual design, prototypes, generate alternatives, evaluate

- Test and Refine

- Implementation

- Final Evaluation

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