User Experience Design

## Chapter 2. The Wheel: A Lifecycle Template

The Wheel

- **Iterative, evaluation-centered, UX lifecycle template**

- **Why need a process?**

- **Lifecycle is structured framework consisting of a series of stages and corresponding activities**

- **Iteration: All or part repeated for purpose of exploring, fixing, or refining design**
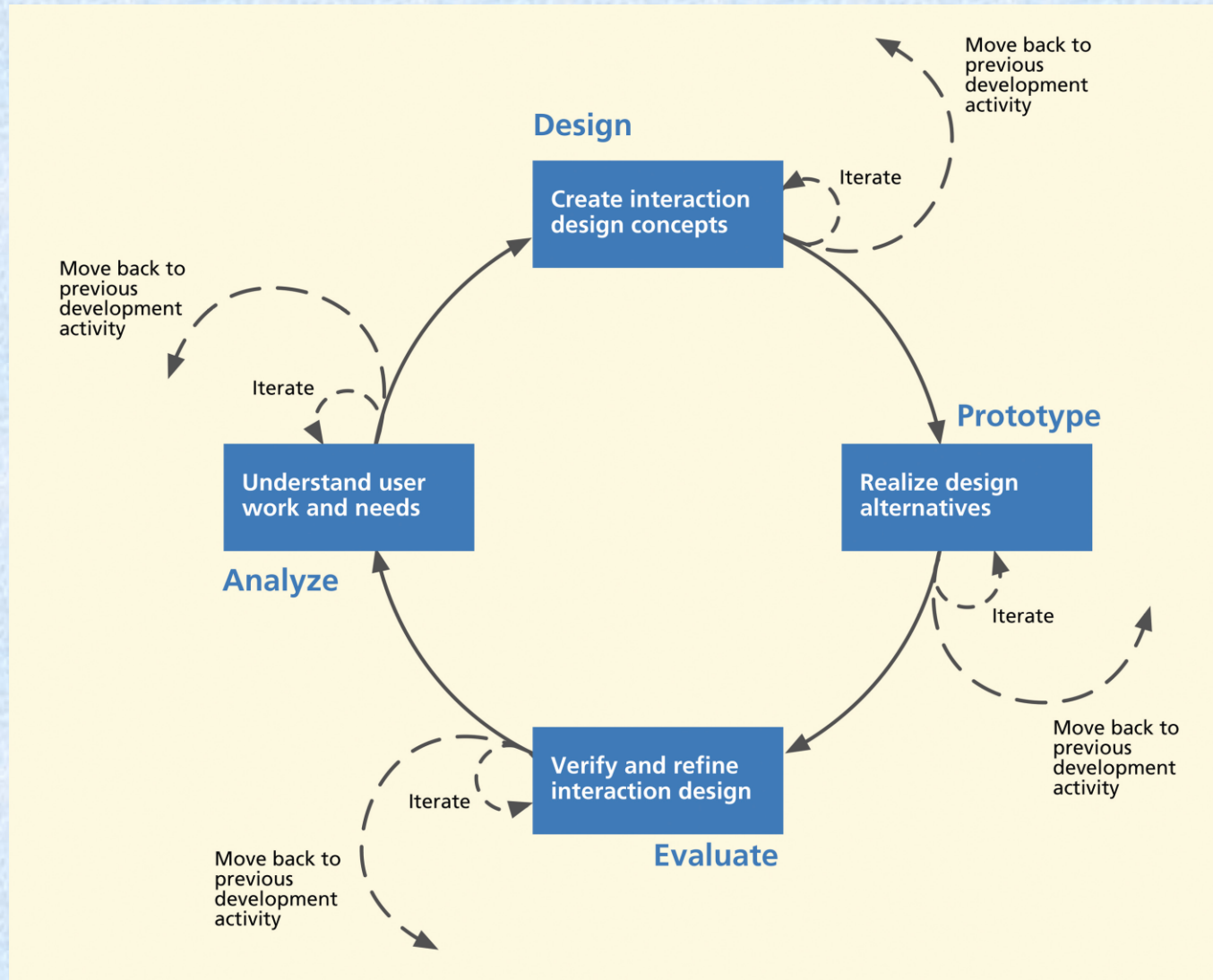
The Wheel

- **Characterizes course of evolution of an interaction design**

- **Template: a skeleton of development activities that must be instantiated within each project**

  – **Based on project resources, goals**

Four basic abstract activities
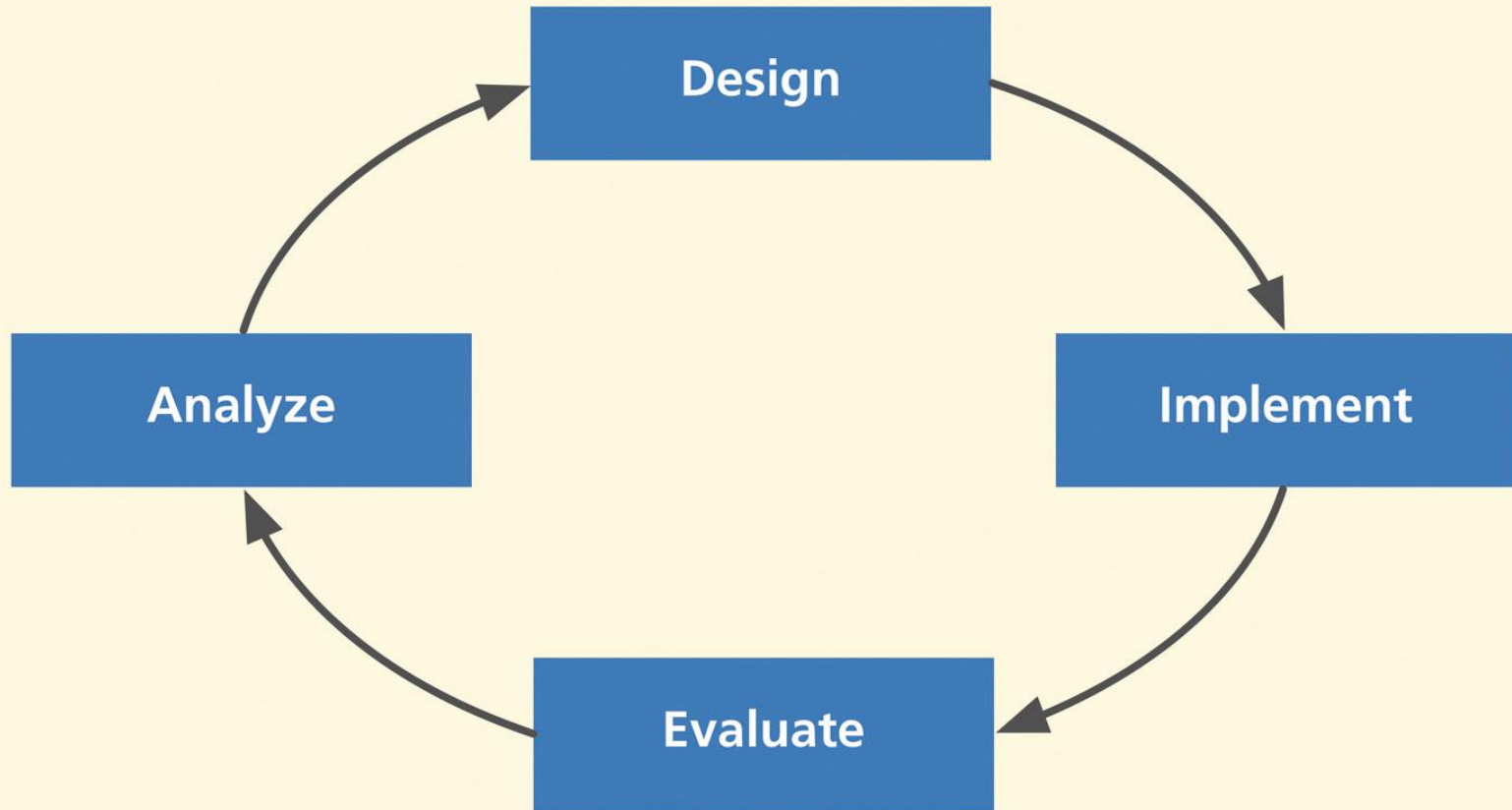
How these fit into the Wheel

The process activities for UX

- **Analyze**

  – **Understanding work/play domain, user work, and user needs**

    - **Chapter 3: Contextual inquiry**

    - **Chapter 4: Contextual analysis**

    - **Chapter 5: Extracting requirements**

    - **Chapter 6: Synthesizing design-informing models**

The process activities for UX

- **Design**

  – **Creating conceptual design, interaction behavior, and look and feel**

    - **Chapter 7: Design thinking, ideation, and sketching**

    - **Chapter 8: Mental models and conceptual design**

    - **Chapter 9: Design production**

The process activities for UX

- **Prototype**

  – **Realizing design alternatives**

    - **Chapter 11**

The process activities for UX

- **Evaluate**

  – **Verifying and refining interaction design**

    - **Fully rigorous methods: Chapters 12, 14-17**

    - **Rapid evaluation methods: Chapter 13**

Flow among activities for UX

- **Activities can iterate, overlap**

- **Process managed with activity transition criteria**

- **Main goal: Move forward to production**

Managing progress within lifecycle

- **Team must be able to decide:**
  - **When to leave an activity**
  - **Where to go after any given activity**
  - **When to revisit a previous process activity**

Managing progress within lifecycle

- **Team must be able to decide:**

  – **When to stop making transitions and proceed to production**

    - **Answers depend on transition criterion at end of each process activity**

    - **Based on whether designers have met goals and objectives for current iteration**

Managing progress within lifecycle

- **Resources limits**

  – **Especially time and budget**

  – **Can trump other criteria for stopping process**

Project parameters influence choice of process

- **Tolerance for risk**

  - **Of things going wrong**

  - **Of features or requirements being missing**

  - **Of not meeting needs of users**

- **The less tolerance for risks—the more need for rigor and completeness in process**

Project parameters influence choice of process

- **Project goals: goal-oriented process choices**

- **Project resources: budget, schedule, person power, skills (people with extensive experience and maturity need less rigorous process)**
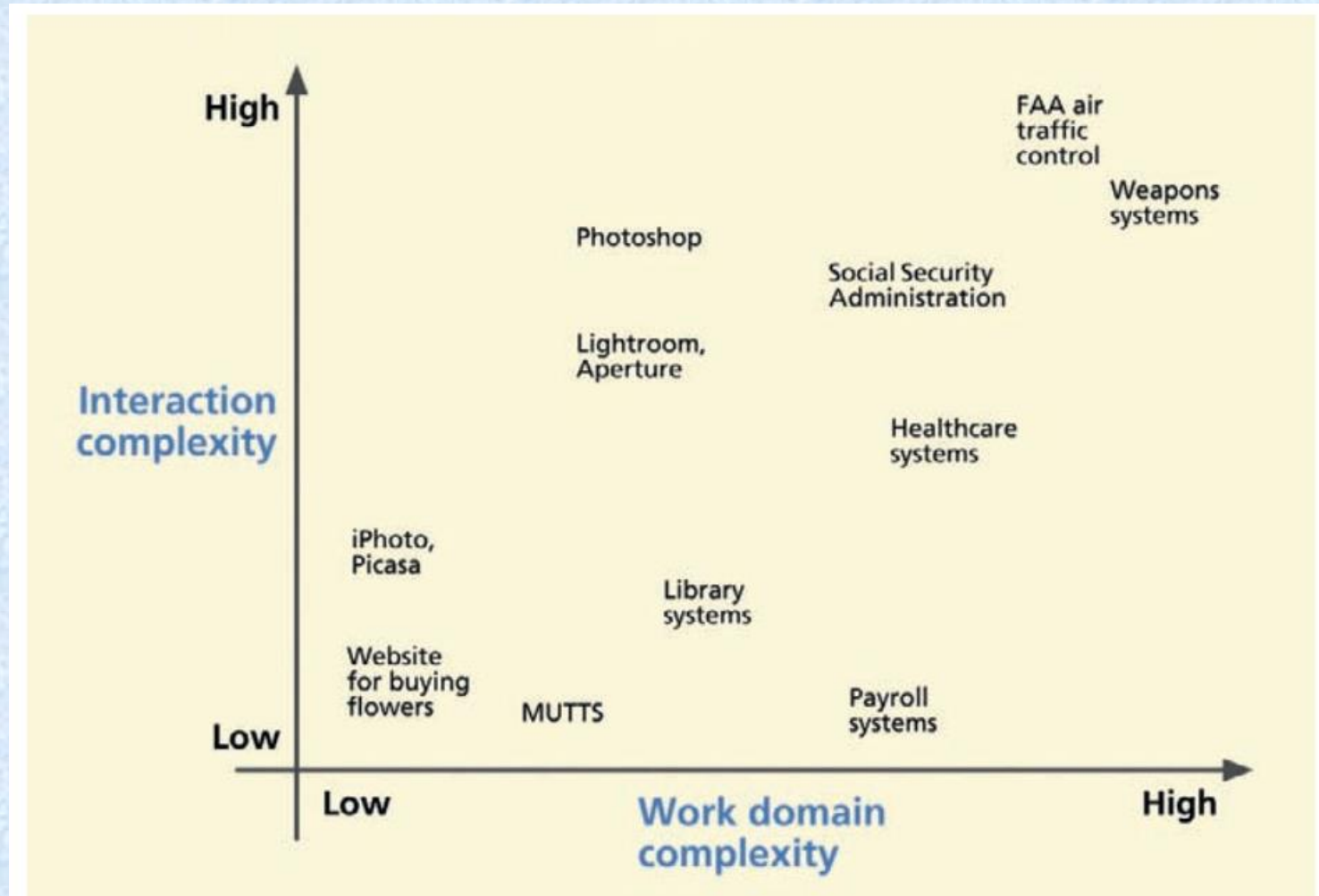
Project parameters influence choice of process

- **Type of system being designed (for example, mp3 player vs. air traffic control system)**

- **Development organizational culture (organizational history, traditions, market position, urgency to market)**

- **Stage of progress within project**

Mapping project parameters to process choices
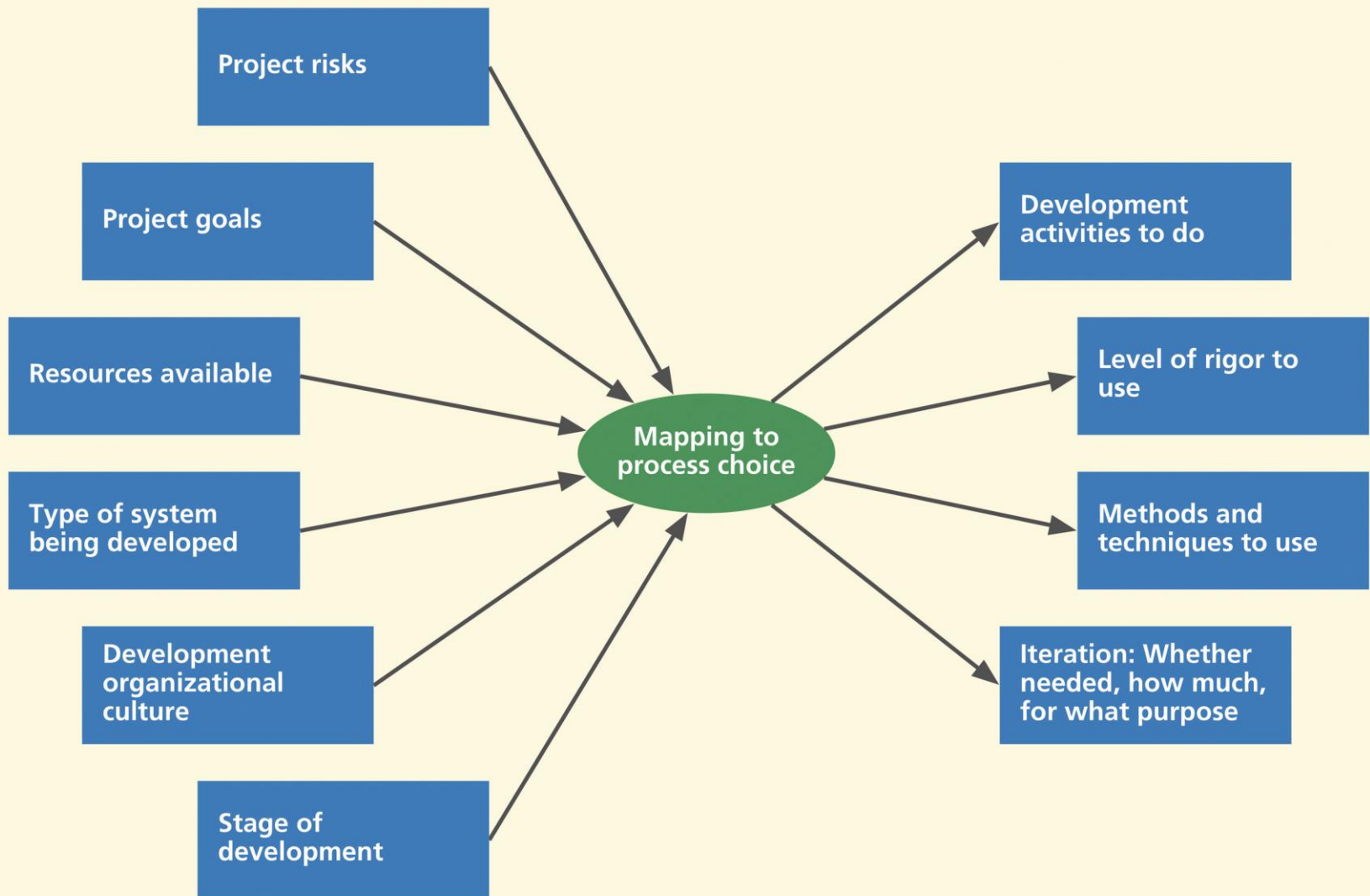
The system complexity space

Interaction complexity

- **About intricacy or elaborateness of user actions**

- **Includes cognitive density**

Interaction complexity

- **Difficulty of tasks with system**

  - **Low interaction complexity - smaller, easier tasks (example, ordering flowers from a Website)**

  - **High interaction complexity is – larger, more difficult tasks, often requiring special skills or training (example, manipulating a color image with Adobe Photoshop)**

Work domain complexity

- **About intricacy and technical nature of corresponding field of work**

Work domain complexity

- **High work domain complexity**
  - **Convoluted and elaborate work flow mechanisms**
  - **Collaborative work flow**
  - **Dependencies and constraints**
  - **Example, geological fault analysis for earthquake prediction**

Work domain complexity

- **Low work domain complexity**
  - **Way system works within setting relatively simple**
  - **Example, Website for buying flowers**

Influence of system type on process choice

- **Complex interaction, complex work domain ➔ strong requirement for rigorous process**

  – **Example, air traffic control system, air traffic controller deciding landing orders for incoming airliners**

Air traffic control domain

- **Would likely have complex interaction**

- **Complex work domain**

- **Work flow and collaboration among large number of work roles and user types**

- **Extreme focus on error and risk avoidance**

- **Emphasis on compliance to rules**

항공교통관제

- **https://ko.wikipedia.org/wiki/%ED%95%AD%EA%B3%B5_%EA%B5%90%ED%86%B5_%EA%B4%80%EC%A0%9C**

Influence of system type on process choice

- **Simple interaction, complex work domain**

  - **User tasks relatively simple and easy to understand**

  - **But domain complexity calls for more attention to contextual inquiry and analysis, modeling, and requirements**

Influence of system type on process choice

- **Simple interaction, complex work domain**

  – **Need insight into internal system complexity and complex rules and compliance requirements**

 – **Example, tax preparation software**

Influence of system type on process choice

- **Simple interaction, simple work domain**
  - **Smaller Websites, certain interactive applications, some commercial products**
  - **Can be need for focus on emotional impact factors such as aesthetics, fun, joy of use**
  - **Example, designing a new mp3 music player**

Influence of system type on process choice

- **Complex interaction, simple work domain**

  - **Emphasis on design, ideation, and sketching, plus evaluation within real usage**

  - **Example, designing a digital watch**

  - **Attention needed for interaction design: task interaction structure, screen layouts, user actions, metaphors**

Meet the user interface team
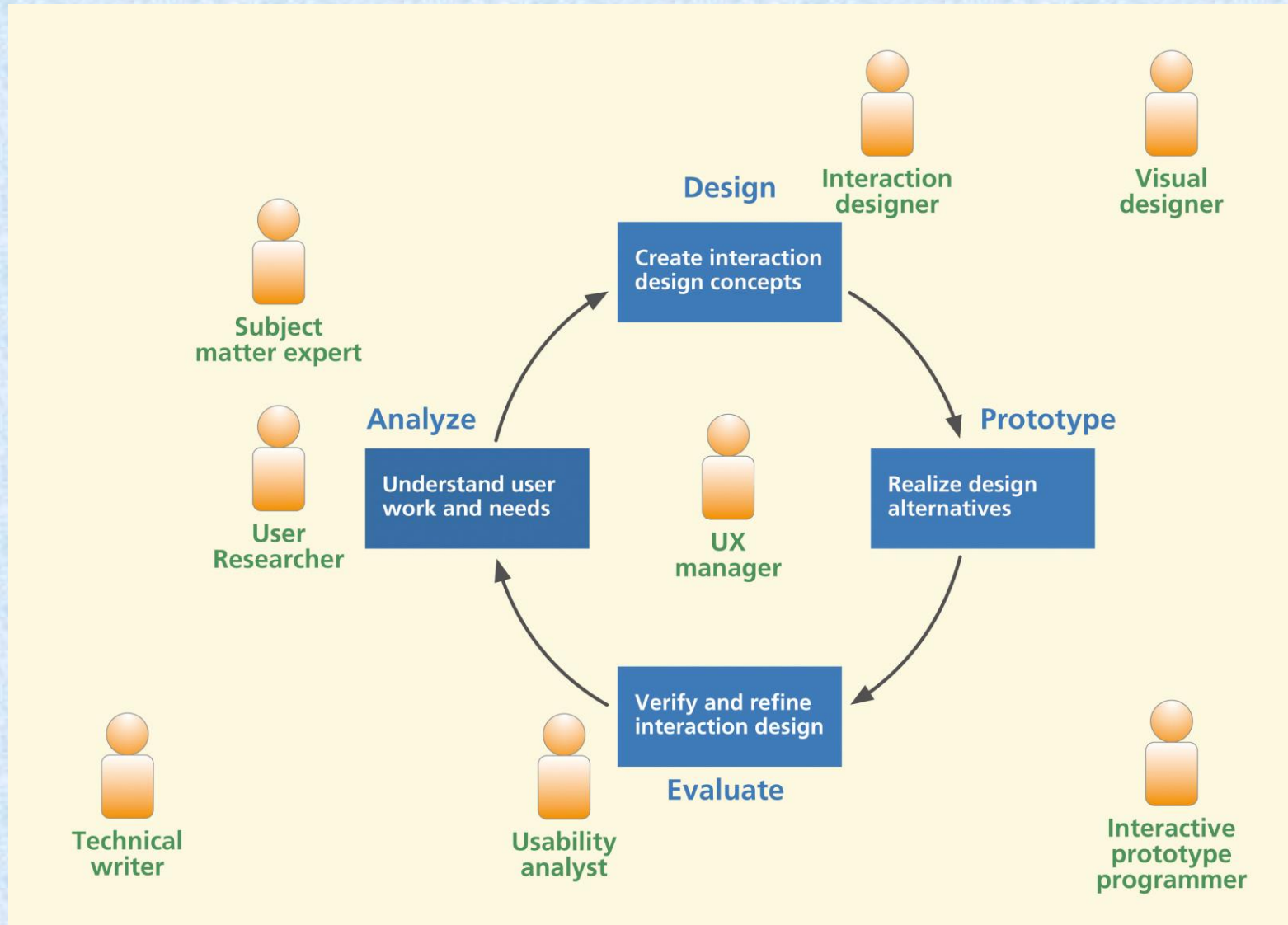
Meet the user interface team

- **Project manager**

- **Lead UX designer**

- **User researcher**

  – **For contextual inquiry and other work domain analysis activities**

- **Users, user representatives, customers, and subject matter experts**

Meet the user interface team

- **Interaction designer**

  - **For ideation and sketching, conceptual and detailed design, and low-fidelity prototyping activities**

- **UX analyst or evaluator**

  - **For planning and performing UX evaluations, analyzing UX problems, and suggesting redesign solutions**

Meet the user interface team

- **Visual/graphic designer**
  - **For designing look and feel and branding and helping interaction designers with visual aspects of designs**

- **Technical writer**
  - **For documentation, help system design, and language aspects of interaction designs**
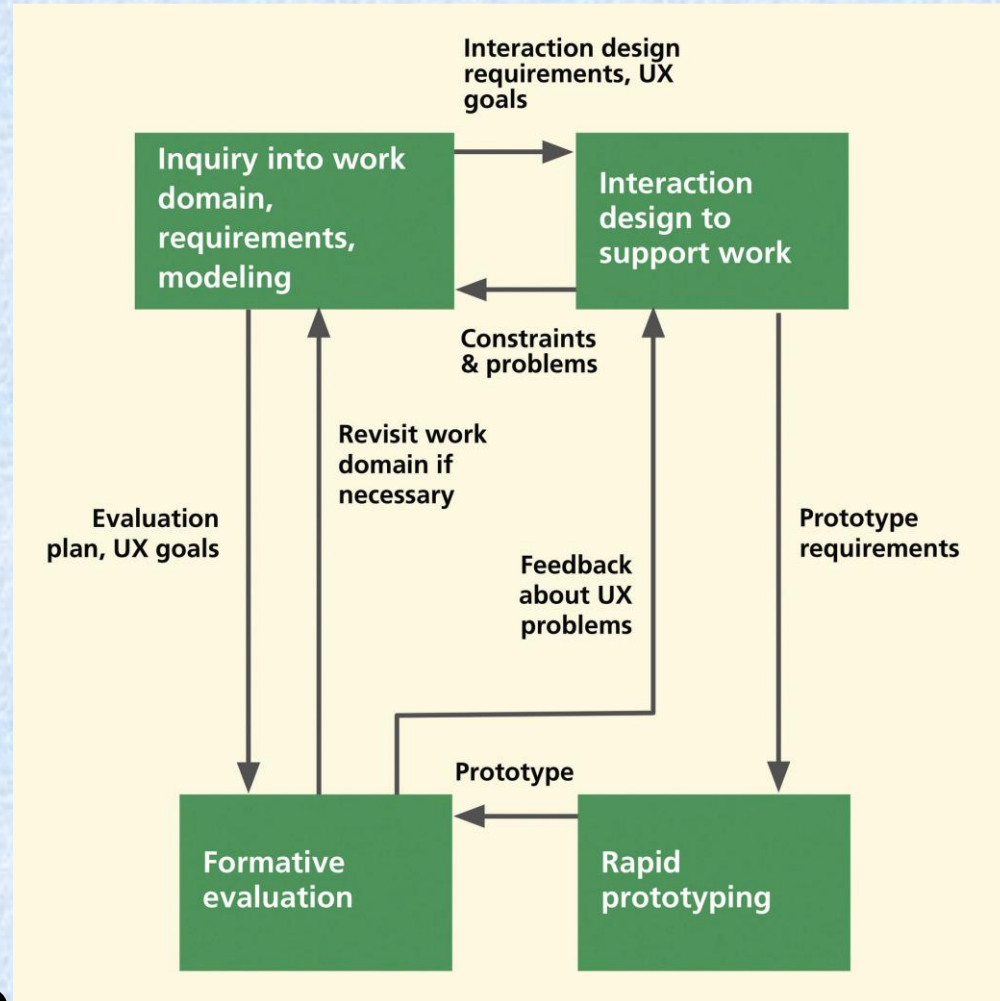
Meet the user interface team

- **UI programmer**

  – **For programming interactive high-fidelity UX design prototypes**

  – **To implement interaction designs in system software**

- **UX manager**

  – **Overall responsibility for UX process**

Iteration

- **Iteration is good, but not enough**
  - **Iteration can help you converge locally**
  - **Cannot just start with any old design and iterate yourself to quality user experience**

UX iteration scope limited

- **UX iteration not same as multiple passes through whole development**

- **Limited to small, early, lightweight, inexpensive part of overall lifecycle process**

Here is where we are going