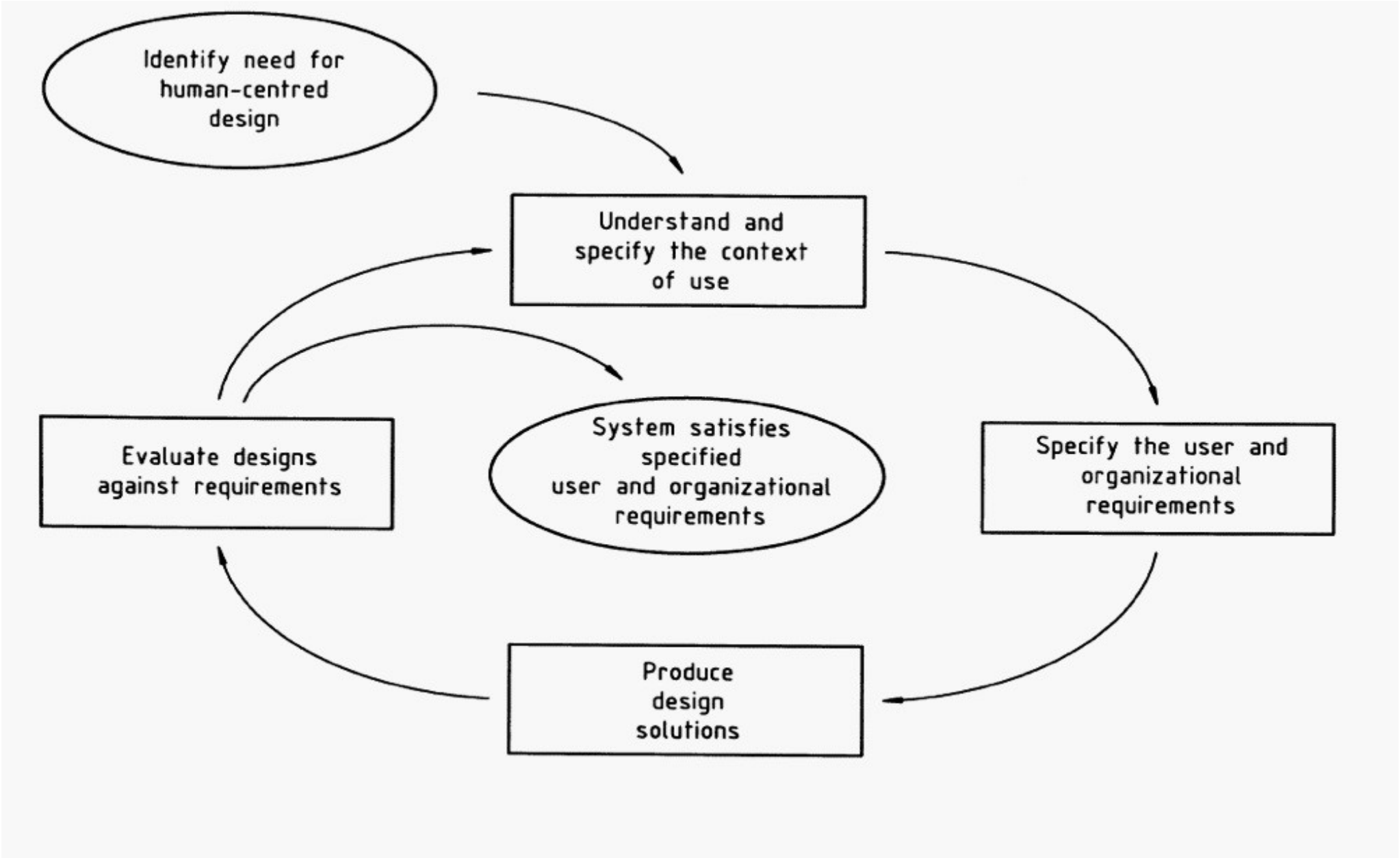
ISO 13407

- ISO 13407 is the standard for procedures and methods on **User Centered Design** of interactive systems.

Phases


Identify need for human-centred design
Understand and specify the context of use
Specify the user and organizational requirements
Produce design solutions
Evaluate designs against requirements
System satisfies specified user and organizational requirements

Identify need for user-centered design

- Why we need to use this methods?

- Users can determine the success of an application. The best application may fail if it can't be used properly.

- Productivity (work that a user can do in an hour) of the application can be greatly increased if the interface is well designed.

Identify need for user-centered design

- A systematic set of methods to reach such interface is desirable. Such method, while being specific and well designed, can be easily applicable on usual projects.

- It should be general, so it can be used to design a wide variety of systems. In this case, this standard establishes the methods that should be used to design interactive systems.

- ISO 13407 tries to comply with this two purposes.

Understand and specify the context of use

- The objective in this phase is to know carefully the environment in which the system is going to be used. At the end, we have to know:
  - How the user is.
  - What is the user going to do with the system.
  - The environment in which the system is going to be used. That includes hardware characteristics.

Understand and specify the context of use

- In this phase, the physical and social context of the user is really important. You should take into account where the user uses the system and the social context of the user.

- The output of this phase should be a description of the relevant characteristics that the system should have for the user in the form of report.

- This document is not static, and may be redone or extended during the life cycle of the software.

Specify the user and organizational requirements

- There is a major activity specifying the functional and other requirements for the product or system

- The following aspects should be considered in order to identify relevant requirements:
  a) Required performance of the new system against operational and financial objectives
  b) Relevant statutory or legislative requirements, including safety and health
  c) Cooperation and communication between users and other relevant parties
  d) The user's job (including the allocation of tasks, user's well-being, motivation)

Specify the user and organizational requirements

e) Task performance
f) Work design and organization
g) Management of change, including training and personnel to be involved
h) Feasibility of operation and maintenance
i) The human-computer interface and workstation design

User and organizational requirements should be derived and objectives set with appropriate trade-offs identified between the different requirements.

Produce design solutions

Design solution are produced by drawing of the established state of the art, the experience and knowledge and the result of the context of use analysis.

This process involves:

a) use existing knowledge to develop design proposal

Produce design solutions

b) make the design solution more concrete using simulation, models, etc.

c) present the design solution to users and allow them to perform tasks

d) alter the design in response to the user feedback and iterate this process until human-centered design goals are met

e) manage the iteration of design solutions

Evaluate designs against requirements

- Evaluation is essential step in UCD and should take place in all steps of system life cycle
- Main goals of Evaluation
  - Provide feedback to improve design
  - Assess whether user and organizational objectives have been achieved
  - Monitor long-term use of product or system
- Price of changes during lifecycle

Evaluate designs against requirements

- Evaluation plan – goals, responsible persons, procedures, resources, scheduling
- Design feedback – output of evaluation – organizational goals, diagnose problems and identify needs in user interface, pick best design option, elicit new requirements from users
- Expert evaluation, user-based evaluation and cooperative evaluation

System satisfies specified user and organizational requirements

- Short-term evaluation and Long-term evaluation
- Evaluation criteria are chosen based on UCD requirements and organizational needs
- Criteria objective can relate to primary or secondary goals
- Primary goals - e.g. “to produce a document”
- Secondary goals – e.g. maintainability

System satisfies specified user and organizational requirements

- Field validation – performance data, real users
- Plan for Long-term monitoring – some features of the system are not recognizable until the system has been used for a longer period of time
- Evaluation results should be in form of a report describing objectives, context, methods and summary of evaluation

References

- [1] ISO 13407, Human-centered design processes for interactive systems

PARTICIPATORY DESIGN

User Centered Design, 2009

Participatory Design (PD)

- Pioneered in Scandinavia
- a variant of user-centered design that emphasizes the direct involvement of users in analysis and design activities *[Brief HCI Glossary]*
- Represents new approach towards CS design in which people who are ***using*** the system play vital role in ***designing*** it.[**Participatory Design,** Douglas Schuler, Aki Namioka]

How PD differs from *traditional design? (1)*

- attempts to give workers a better tools rather than *automating* the skills of human workers
  - Exception in the expert systems.
- assumes workers are best to determine how to improve their work
  - Designers are consultants

How PD differs from *traditional design?(2)*

- User view and attitude towards the technology are as important as the success with the use of technology.
- Technology should be considered as processes in context of workplace
  - Not as individual product

Participatory design – Why (1)

- Lack of control if not thinking about needs of user
- Technical difficulty for non-technical people.
  - user groups
- Sw designed without regard to impact on user
- User Distraction.

Participatory design – How (1)

- Provide the system developers to meet and understand their users

- Give users a voice in the design process
→ increases the probability of usable design

- Enable all participants to participate equally
→ every one has probably something to say

Participatory design – How (2)

- In effort to enable users in design

→ Developers should create an environment where users can feel empowered to express their ideas

→ Developers should take active role enabling users to use their knowledge in their decision making within their tasks

→ Developers need to be active helping users to become involved in defining and using new computer systems

Participatory design – How, methods (1)

- Siting / observation – bring designers to the work place
  → users tend to feel more at ease on their ”home ground”

  → tools and environment are physically present and easier to refer to

Advantages
- Better understanding of the working environment and tasks the system needs to be able to cope with.

Participatory design – How, methods (2)

- Workshops
  → stakeholders communicate and commit to shared goals, strategies and outcomes
  → usually held in neutral place
  → usually introduce new procedures to the conventional working practices
  → Participants can be generative e.g. by brainstorming or talking about their own needs

Advantages
→ Developed concept have direct and practical value for product design
→ Stakeholders get engaged to the project

Participatory design – How, methods (3)

- Stories / photographs
  → can be triggers for conversation in a group
  → end-users can tell their opinion of the product's opportunities and what the product should do.
  → stories can also be used to tell how the product will be used, what it will do and what changes will occur as a result

Advantages
- serve multiple purposes

Participatory design – How, methods (4)

- Games
  → good way to activate and to produce enjoyment within the design group
  → e.g. Layout kit, scenario-based games

Advantages:
- Enhanced teamwork through shared enjoyment
- enhanced commication between participants

Participatory design – How, methods (5)

- Constructions
  → descriptions of work, low- or high-tech prototypes for analysis, design or evaluation

Advantages:
- Enhanced understanding of one anothers' perspectives
- Improved communication within the design team and clients/stakeholders

Participatory design – methods (1)

- Two participatory methods: [1]
  - CARD - Collaborative Analysis of Requirements and Design) (for analysis):
  - PICTIVE(for design): a participatory design technique for increasing the direct and effective involvement of users and other stakeholders in the design of software.
  - Icon Design Game — Small Group Exercise: designing usable icons is a notoriously difficult task,

Participatory Activities in SW Lifecycle

- participatory design practices have been used for participatory analysis and participatory assessment.

- PANDA Participatory Analysis, Design, and Assessment)

- depends upon theoretical insights from anthropology,cultural criticism, feminism, and post-modernism.

Unsolved Problems in PD:

- Participation by non-organized workforce.
- Evaluation and metrics
- Universal usability and “universal participation?”

Thank you...

PERSONAS

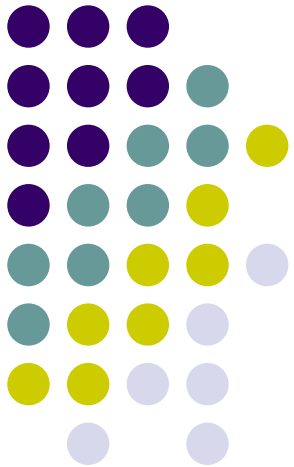
Group members

Shahram Eivazi

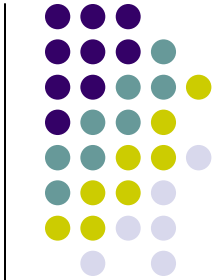
Robert Koskey

Jinhua Chen

19-Jan-2009



Topics



- Introduction
- How to build personas
- Example
- Characteristics
- Benefits
- Conclusions

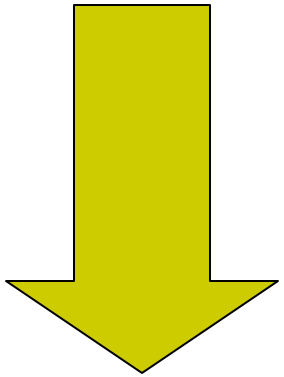
Introduction

- **Personas** are fictitious characters created to represent the different user types within a targeted demographic that might use a site or product.

- A **user persona** is a representation of the goals and behavior of a real group of users.

Introduction

Personas Helps us to decide about a product



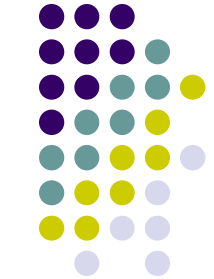
features

interactions

visual design

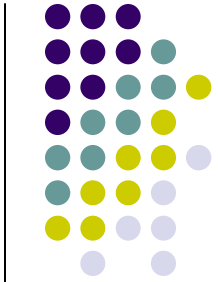
,…

Goal



- Guide you for requirement
- Guide your creative for design
- Guide you for marketing team

Building Personas



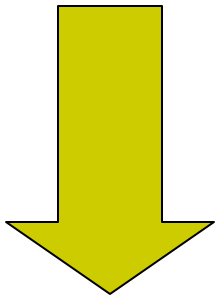
How do we get information for a persona?

By analyzing what you learned about your users from user research, including:

- Contextual Interviews
- Individual Interviews
- Surveys (Online)
- Focus Groups
- Usability Testing

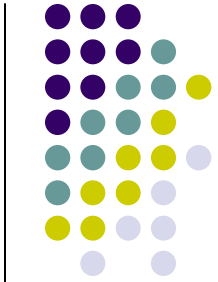
Building Personas

After getting information for a persona



You can select the characteristics which are most representative of the group and turn them into a persona

Building Personas



"10 steps" approach to Personas

Step 1 - Finding the Users:

Capture real user's data from ethnographic or other qualitative studies.

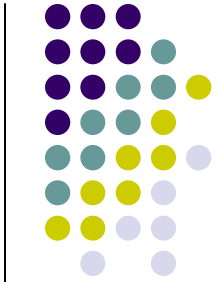
Step 2 - Building a Hypothesis:

Identify the ways and context when the real user interacts with the system.

Step 3 - Verification:

Break your information down into candidate Personas.

Building Personas



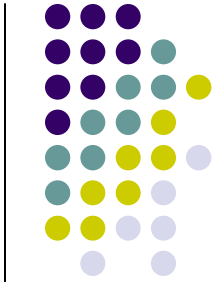
Step 4 - Finding Patterns:

Try grouping candidates, breaking down a candidate into several, and finding new ones from the real user's data.

Step 5 - Constructing Personas:

Define the physics, the psyche, the background and the traits for each candidate.

Building Personas



The following steps relate to the usage of Personas in the bigger picture of user centric design:

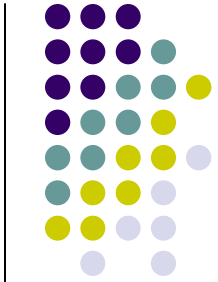
Step 6 - Defining Situations:

Identify the needs and situations, and relate them to the Personas.

Step 7 - Validation and Buy-in:

Socialize and ensure that all participants agree on the descriptions and the situations.

Building Personas



Step 8 - Dissemination of Knowledge:

Share the Personas, situations and data with all the organization; not only the design team.

Step 9 - Creating Scenarios:

Describe what happens in a given situation, when a given Persona with certain needs uses the system.

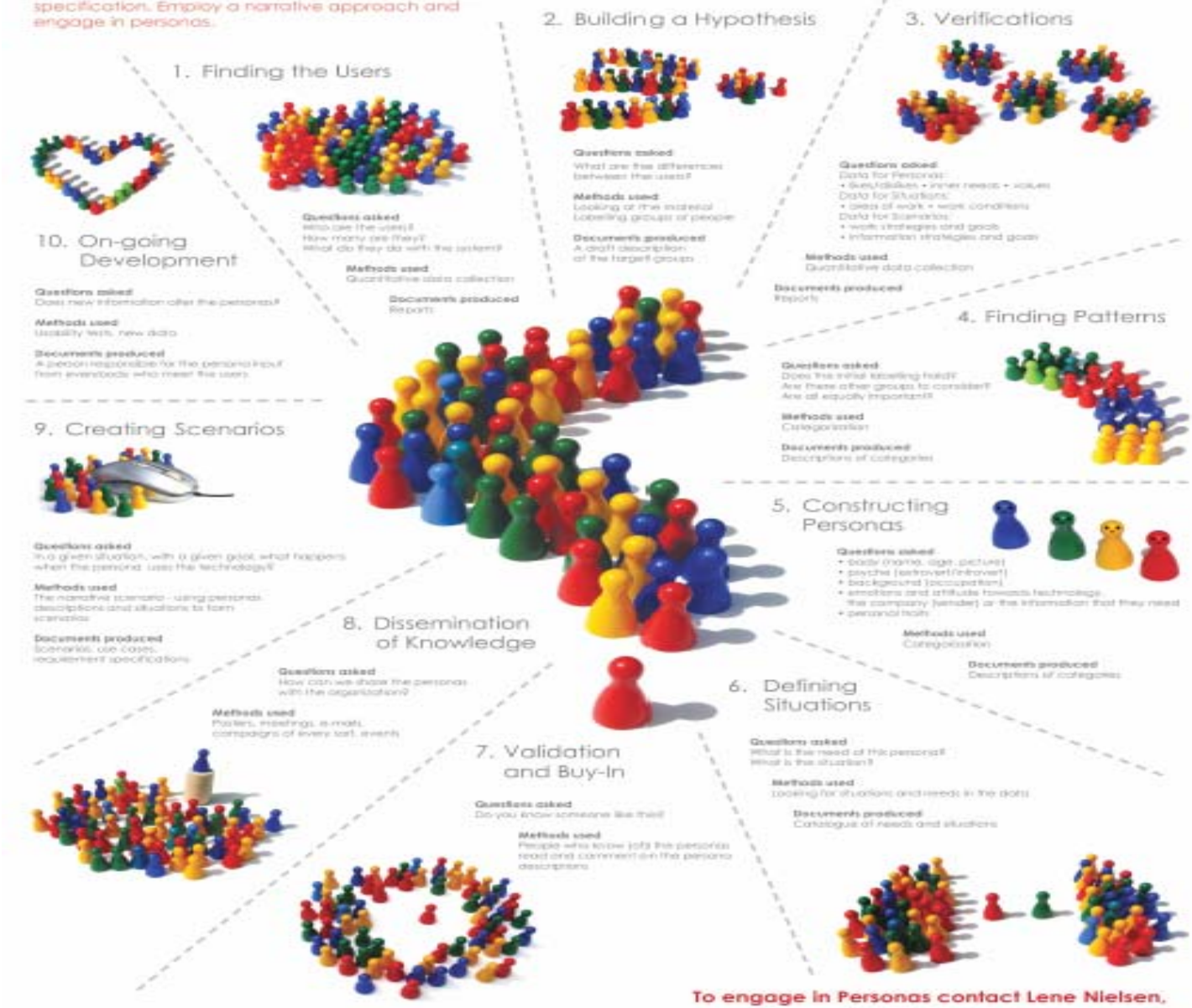
Step 10 - Ongoing Development:

Validate the Personas, needs, situations and scenarios every time new data about the users is captured.

10 steps to Personas

Based on the method "Engaging Personas and Narrative Scenarios" (2004) by Ph.D. Lene Nielsen

Enhance your process from analysis to requirement specification. Employ a narrative approach and engage in personas.



To engage in Personas contact Lene Nielsen,
ln@snitker.com

What does a persona look like?

USDA SENIOR MANAGER GATEKEEPERS

Matthew Johnson
Program Staff Director, USDA

- 51-years-old
- Married, 3 children, 1 grandchild
- Ph.D. in Agricultural Economics
- Comfortable using a computer, intermediate Internet user, with a T1 connection at work and dial-up at home
- Uses email extensively; uses the web about 1.5 hours a day for his work

---

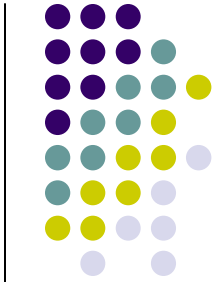
"Can you get me that staff analysis by Tuesday?"

Matthew spends most of his time at work requesting and reviewing research reports, preparing memos and briefs for agency heads, and supervising staff efforts in food safety and inspection.

Key Attributes

- Focused, goal-oriented
- Strong leadership role
- Concerned about maintaining quality across all output of program under direction

Characteristics



A persona usually includes:

- a name and picture
- demographics (age, education, ethnicity, family status)
- job title and major responsibilities
- goals and tasks in relation to your site
- environment (physical, social, technological)
- a quote that sums up what matters most to the persona with relevance for your site

Example 1:

Alex Alexy

- He is young between 15 to 25
- He has no job
- He wants to have fun
- He wants to be number one in every thing
- He has too many ideas
- He wants to try every thing

We need to establish trust in him

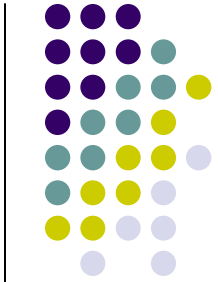
Example 2:

Anna Haie

- She is between 25 to 35 years old
- She is working for a company as the product manager
- She is top in her job
- She is very interested in marketing
- She is a very smart person

we need to show more data and information for her

Benefits

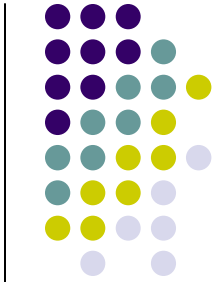


What are the benefits of personas?

Personas bring many benefits, including these:

- Users' goals and needs become a common point of focus for the team.
- The team can concentrate on designing for a manageable set of personas knowing that they represent the needs of many users.
- By always asking, "Would Jim use this?" the team can avoid the trap of building what users ask for rather than what they will actually use.
- Design efforts can be prioritized based on the personas.
- Disagreements over design decisions can be sorted out by referring back to the personas.
- Designs can be constantly evaluated against the personas, getting better designs into usability testing.

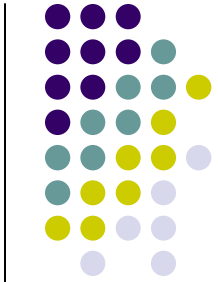
More Benefits…



According to Forrester, many companies including Ford Motor Company, Microsoft, and Staples develop and use personas and they report many benefits from doing so, including:

- a better understanding of customers
- shorter design cycles
- improved product quality

Conclusions



- Personas allow you to identify and communicate user needs efficiently and effectively. By developing ’stand in’ users, based on real user data, the design team can concentrate on designing for these archetypal users with the confidence that the needs of the broader user base will be meet.
- Personas are a useful tool to use throughout the project, from deciding upon the functionality to include in a release to evaluating the end product.
- Teamed up with other user-centered design tools and techniques, such as task analysis and usability testing, personas will place you in good stead to deliver a useful and usable solution.

References

[1] - Develop Personas

http://www.usability.gov/analyze/personas.html

[2] - Ten Steps to Personas

http://www.hceye.org/HCInsight-Nielsen.htm

[3] - Lene Nielsen's Personas

http://blog.jhincapie.com/2009/01/lene-nielsens-personas.html

[4]- Personas

http://en.wikipedia.org/wiki/