User Modelling

ID 405: Human-Computer Interaction
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http://info-design-lab.github.io/ID405-HCI/

problem or goal

How I'd like to feel, or what I'd like to achieve

goal evaluation

is my goal met or problem resolved?

take some
action

action evaluation

did that action deliver that results I expected?

the world
information and tools

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Goals

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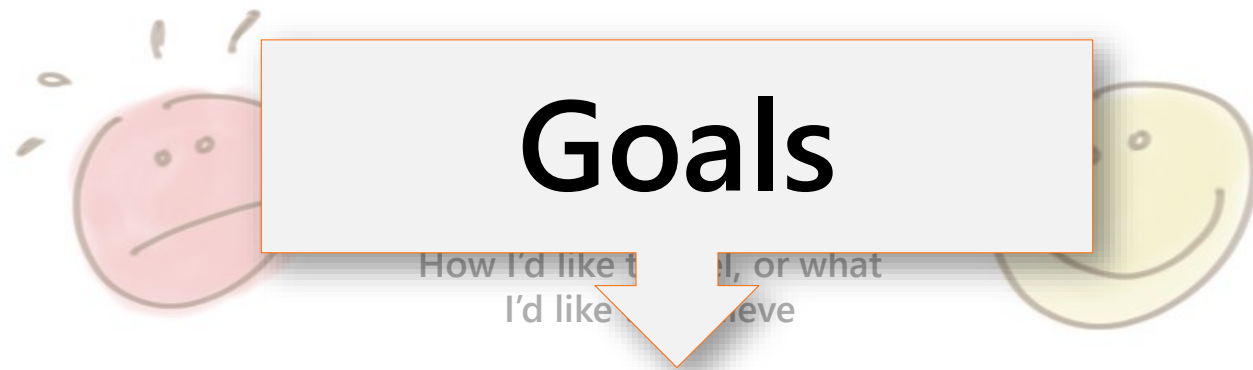
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Goals

How I'd like to feel, or what I'd like to achieve

Tasks

evaluation

met or problem resolved?

take some

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did that action deliver that results I expected?

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Goals

How I'd like to feel, or what I'd like to achieve

Tasks

evaluation

met or problem resolved?

take some action

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action evaluation

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Source: Jeff Patton

www.agileproductdesign.com

Knowing your user is important to design for them

But how do we go about describing users in the most relevant way?

User Models

Modelling users is the simple first step to clearly communicating your design target to everyone involved in the business, design and development

User Models

o   Novice
o   Advanced Beginner
o   Competent Performer
o   Expert

From User and Task Analysis for Interface Design by Joann T. Hackos, Janice C. Redish

Novice

- ○ **Everybody is a novice first**
  - Fear of failure and unknown

- ○ **Focus on achieving 'real work'**
  - Impatient with learning concepts
  - Want to perform tasks

- ○ **Types of novices**
  - Product novices
  - Platform novices
  - Domain novices

- ○ **Theoretical understanding**
  - No practical experience

Advanced Beginner

o **Novices become advanced beginners with practice**

o **Focus on getting the job done**
      Impatient with learning concepts
      Want to perform tasks quickly and painlessly

o **Are 'cognitive misers'**
      Follow the path of least resistance to the mind

o **Focus on a few, random tasks and ignore the rest**
      Will learn new tasks strictly on need-to-do basis
      "Don't have time to learn the conceptual model"

o **Over time**
      Develop usage habits automatically
      Develop a partial conceptual model

Advanced Beginner

- **Compared to novices**
  - Perform several given tasks well

- **Compared to competent performers**
  - Do not have a well-formed conceptual model
  - Can do fewer tasks
  - Perform tasks by rote learning, without understanding why
  - Cannot solve problems easily
  - Have no interest in learning to use a product

Competent Performers

o   **Have formed a reasonably accurate conceptual model**

o   **Can perform many complex tasks that require many coordinated actions**

o   **Can plan beforehand to achieve a goal**

o   **Have interest in solving problems and tracking down errors**

o   **Are willing to learn how new tasks**
          Improve their conceptual model

o   **Consciously develop "good" product usage habits**

o   **Can identify significant and insignificant differences between similar products**

Competent Performers

o **Compared to advanced beginners**
  - Perform more and diverse tasks
  - Have a well-developed conceptual model
  - Can solve problems
  - Have interest in learning new tasks and developing the conceptual model

o **Compared to experts**
  - May not know "all" parts of the product
  - Are usually interested in the domain than the product

Expert Performers

o **Competent performers become experts when**
        They are highly motivated
        They use the product frequently
        Use it as an integral part of their jobs / hobbies

Expert Performers

o   Do more, faster and better than competent performers

o   Have a greater ability to understand complex functionality

o   Have the ability to find solutions

o   Are interested in networking with other expert users

o   Are identified by others (competent performers) as experts

Expert Performers

o Focus on developing a comprehensive and consistent conceptual model

o Have a well-developed set of habits

o Have interest in concepts and theories behind a product's design and optimized use

o Compared to competent performers, give more importance to the product than the domain

Task

- o Don't know
- o Novice
- o Advanced Beginner
- o Competent Performer
- o Expert

- List 5 cities/towns for which you fall in different categories
- Draw a matrix of 5 people that you know well and 5 products they may be familiar with. Classify them in the above categories

Pathway

- o **Novices**
    - Can be a short-lived experience
- o **Advanced beginners**
    - Many people remain at this level for the rest of their lives (65-80%)
    - Perpetual Intermediates

- o **Competent performers**
    - Fewer than advanced beginners
- o **Expert performers**
    - Fewest

NOVICE GROUP

ADVANCED BEGINNERS

COMPETENT USERS

EXPERT USERS
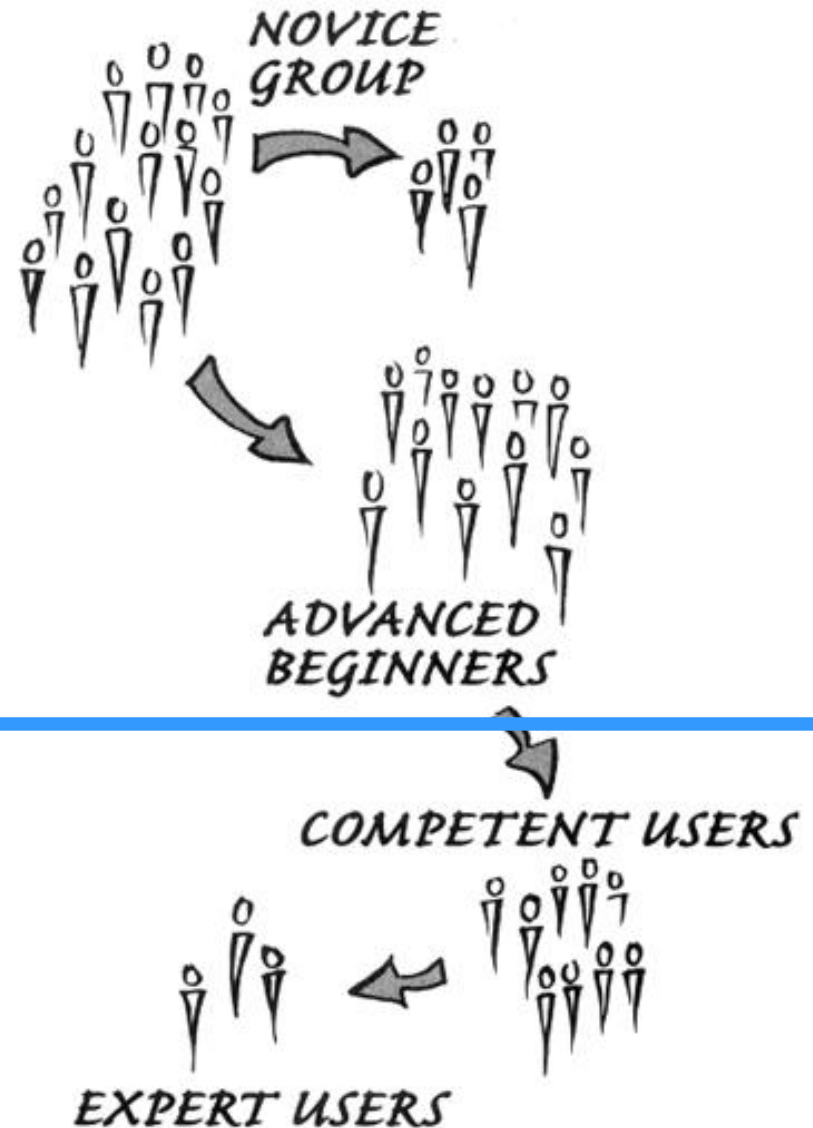
Tech-savvyness vs. Stages of Use

	Novice	Advanced beginner	Competent performer	Expert
Loves Linux				
Installs apps from a CD				
Checks mail every day				
Can save contacts				
Can't save contacts				

ATM, Browser, Facebook, Camera Phone, Map

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Word, Excel, Calendar, Intranet App, Scanner

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Photoshop, SPSS, MRI Machine, Flash, Router

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1990 – 1995 (Desktops)

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1995 – 2005 (Web, ATMs, Email, Phones, Toys, E-learning, Search, IVRs)

2005 – 2015 (Web 2.0, Smartphones, Netbooks, Emerging Economies, Smart Cards)

Personas

o Personas are archetypes that describe various goals and observed behaviour patterns among your potential users and customers

o A persona encapsulates and explains the most critical behavioural data in a way that designers and stakeholders can understand, remember and relate to

o Personas use storytelling to engage the social and emotional aspects of our brain, which helps us to visualise and empathise with the user in a vivid and direct manner

Personas

- o **Are descriptions of fictitious but realistic characters**
    - Archetypal, not average

- o **Are derived from contextual data**
    - Are NOT a shortcut to meeting users

- o **Are used for data consolidation**

- o **Are useful for design**
    - Particularly when using scenarios

- o **Are useful to communicate user stories**

Personas contain

- **Demographic variables**
  Financial status (Low, low-mid, mid, high-mid, high)
  Age (<20, 20-30, 30-40, 40-50, >50)
  Education (0, 1-4, 5-7, 8-10, 11-12, graduate, graduate+)
  Family members (1, 2, 3, 4, 5, 6)
  Responsibilities, role, job (home maker, teacher, doctor, DJ, bank employee)

Personas contain

- Demographic variables
- Behavioural variables
    - Frequency of banking
    (frequent, occasional, infrequent, never)
    - Desire to shop
    (hates shopping, tolerates shopping, loves shopping)
    - Buying preference
    (bargain hunting, value for money, premium shopping)
    - Attitude towards technology
    (fears technology, tolerates technology, likes technology)
    - Target skill with product
    (Novice, Advanced Beginner, Competent Performer, Expert)

Personas contain

- Demographic variables
- Behavioural variables
- User goals
  - Life goals
    (be the best engineer, make lots of money, be rich and famous)
    Experience goals
    (spend least time planning, have fun, be flexible)
    End goals
    (have a successful trip, save money, make informed decisions)

Personas contain

- **Demographic variables**
- **Behavioural variables**
- **User goals**
- **Persona narrative**
  - Name, photo
  - Introduction (demographics)
  - Fictional events and reactions reflecting goals and behavioral variables (flow, culture, artefact, sequence)
  - Typical, routine, exceptional before and/or after scenarios (sequence)
  - Peeves, concerns and interests (culture, physical)

Personas contain

- **Demographic variables**
- **Behavioural variables**
- **User goals**
- **Persona narrative**
- **Persona types**
  - Primary persona (Main user, with tough challenges)
  - Secondary personas (main user + additional needs)
  - Supplemental personas (other actors)
  - Customer persona (buyer, client)
  - Served persona (affected party, passenger, visitor)
  - Negative persona (not a target user)

Personas contain

Katie Bennet, digital camera user
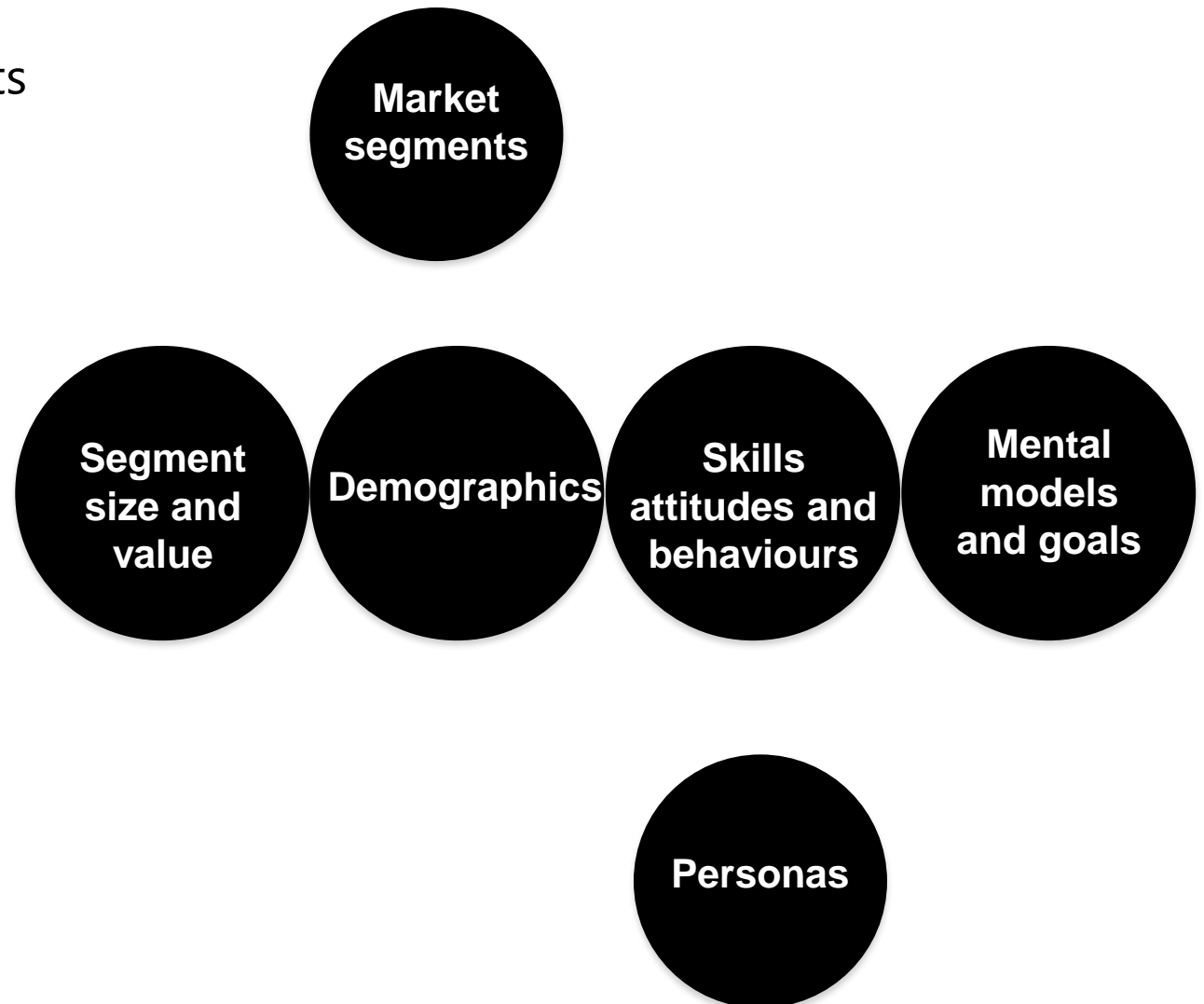from *Designing for the Digital Age: Creating Human-Centred Products and services* by By Kim Goodwin (pp.230)

- o Set of goals
- o Mental model
- o Environment
- o Skills
- o Frustrations
- o Likes & dislikes
- o Attitudes
- o Typical tasks
- o Behaviour patterns
- o …

What personas are

o Personas are fictional characters but distilled from real data you gathered from actual users (data driven & not based on assumptions)

o They are based on what users do and why they do them (actions, goals, motivations & behaviours)

o Sound personas emerge from good data, rigorous analysis, and compelling human presentation

What personas are not

o Creative writing exercises with photos and fictitious biographical details
o Market segments
o Averages

Market segments

Segment size and value

Demographics

Skills attitudes and behaviours

Mental models and goals

Personas

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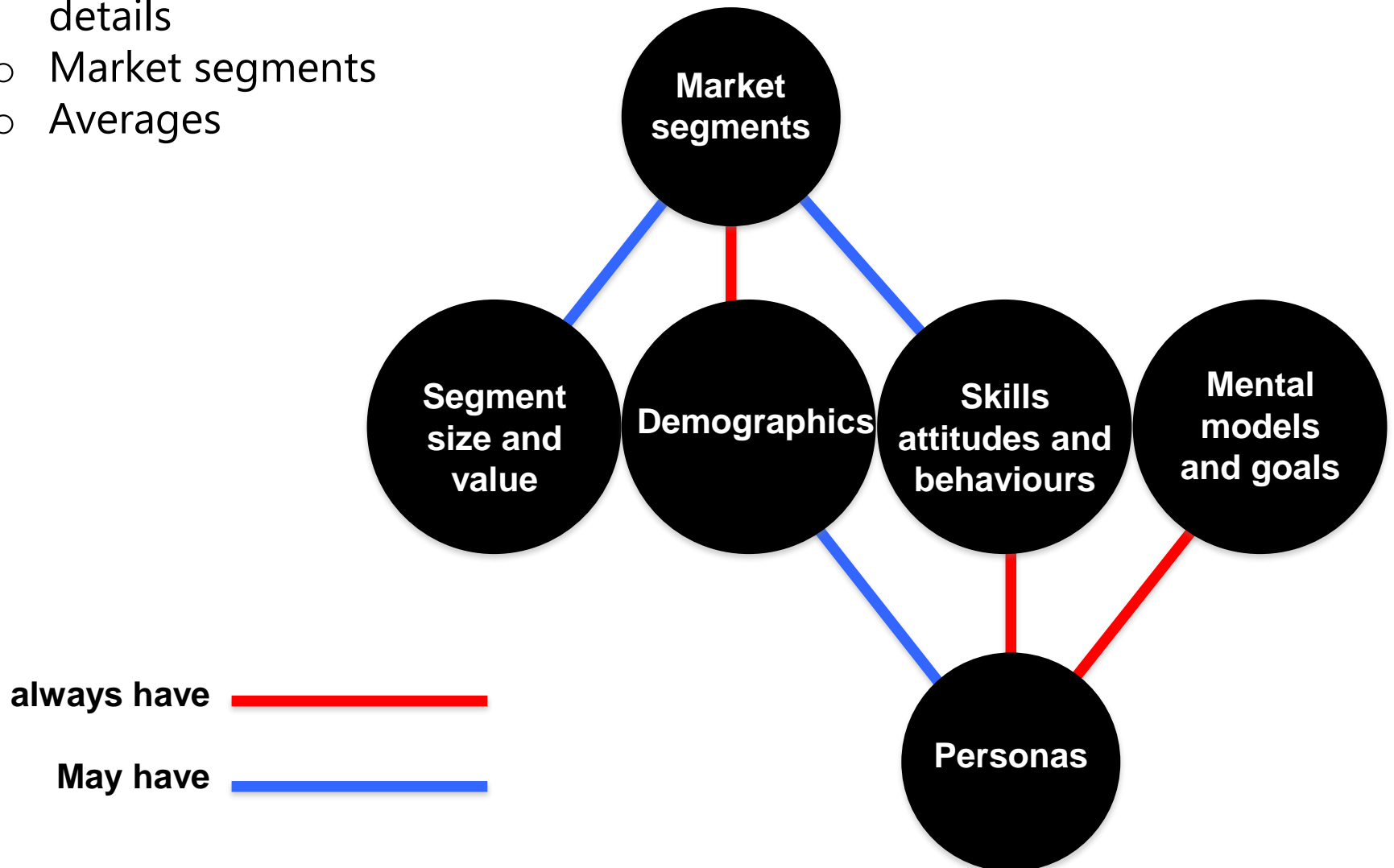
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5. Provide key statements in the persona's voice. This statement might be something you heard in a research interview, or it might be a fabrication. The quote will allow others to see a distinct person.

Persona summary

o   User research is primarily about empathy — getting designers and developers to have empathy for their users, and be able to deliver products and services that really appreciate the users' needs and goals

o   Personas are perhaps the best tool in the user-centered design toolbox for communicating empathy — they feel like real people with real concerns, and when crafted well, can transfer insights realized through research to other members of the project team

Task

- o Based on the data you obtained from your CI interview, model a user persona.