

LES TECHNOLOGIES DE L'INFORMATION ET DE LA COMMUNICATIONS

... ET LES PARAMÈTRES POUR LEUR DÉVELOPPEMENT OPTIMAL



UNIVERSITÉ
LAVAL



CHU
de Québec

Holly Witteman, Ph.D.

Human Factors

- Designing for the way people **are**, not the way **we wish they were**
- **Adapting technology to people**, rather than expecting people to adapt to technology



User

- Someone who uses something (a system/technology/thing ...)
 - ✱ to accomplish a task
 - ✱ to accomplish a set of tasks
 - ✱ in pursuit of a goal

User

- Someone who uses something (a system/technology/thing ...)
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 - ★ to accomplish a set of tasks
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“... it is important to consider whose goals the system is designed to meet.”

(Witteman 2014 JGIM)



What is "good" technology?

4 Metrics for Good Technology

- **Good functionality:**
 - ★ It works.
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- System is easy & intuitive to use.
 - User can meet his/her needs/goals.

“

Usability^{is}

like oxygen

— you don't notice it until it's missing

— Unknown





“A bad system will beat a good person every time.” – W. E. Deming



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- **Good accessibility:**

- ★ Most/all people can use it.

- System has affordances to enable people with various limitations to use it.

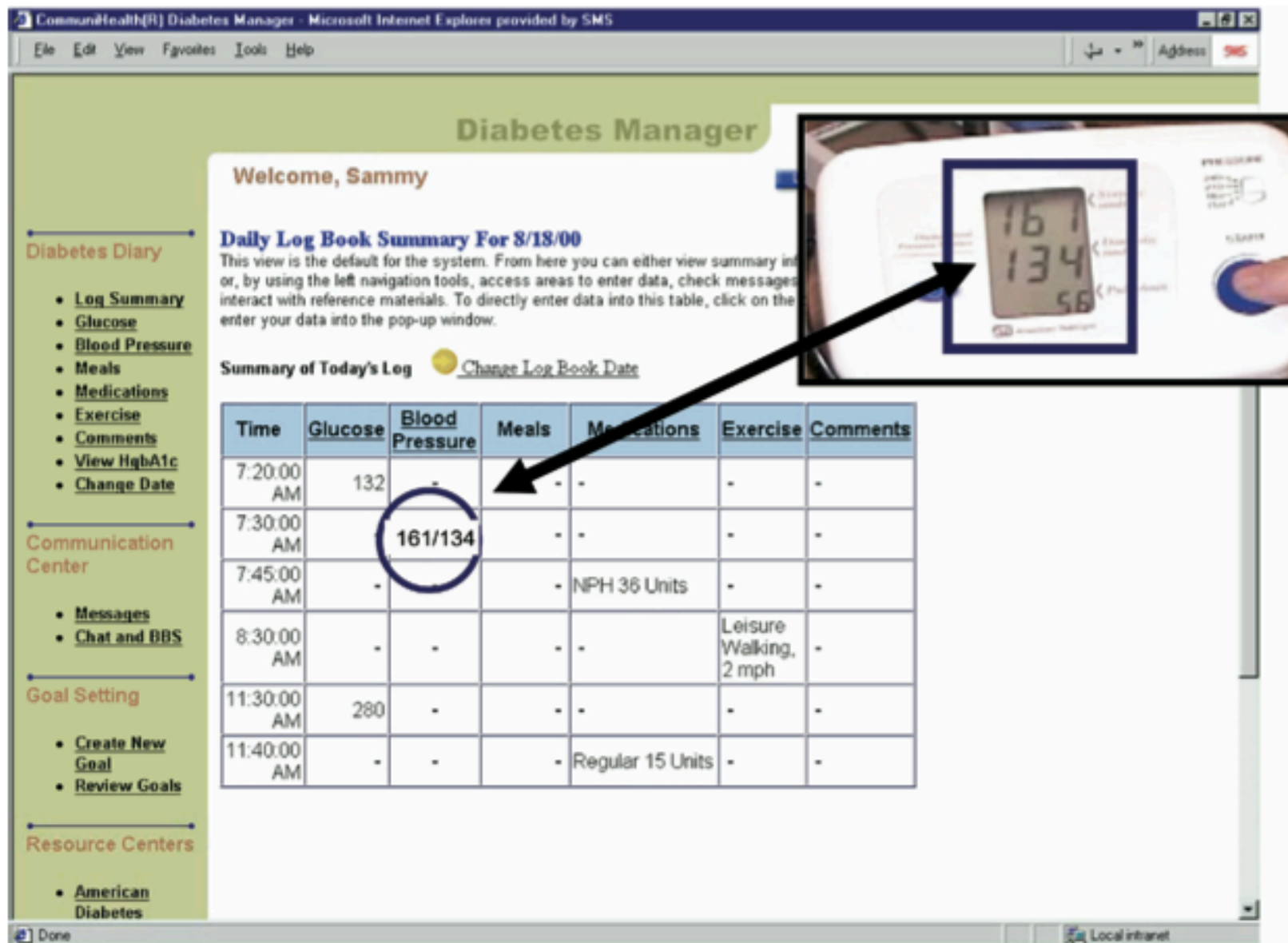


Figure 3. Systolic and diastolic blood pressure displayed in a computer-generated table as part of the IDEATel^{1,2} telehealth program, and (inset) on the blood pressure meter. Some elderly participants who had no difficulty reading the values on the meter were unable to understand the same information displayed in the table.



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- **Good user experience (UX):**

- ★ I enjoy using it.

- User feels good while using system.

[Close](#)

Big Blue Test

[Clear](#)

Before exercise: 5.50

After exercise: 0.67



UNITS OF MEASURE:

Unit:

I use insulin:



[Previous](#)

[Next](#)

[Done](#)

1

2

ABC

3

DEF

4

GHI

5

JKL

6

MNO

7

PQRS

8

TUV

9

WXYZ

.

0



Simplicity







FLiP
video™

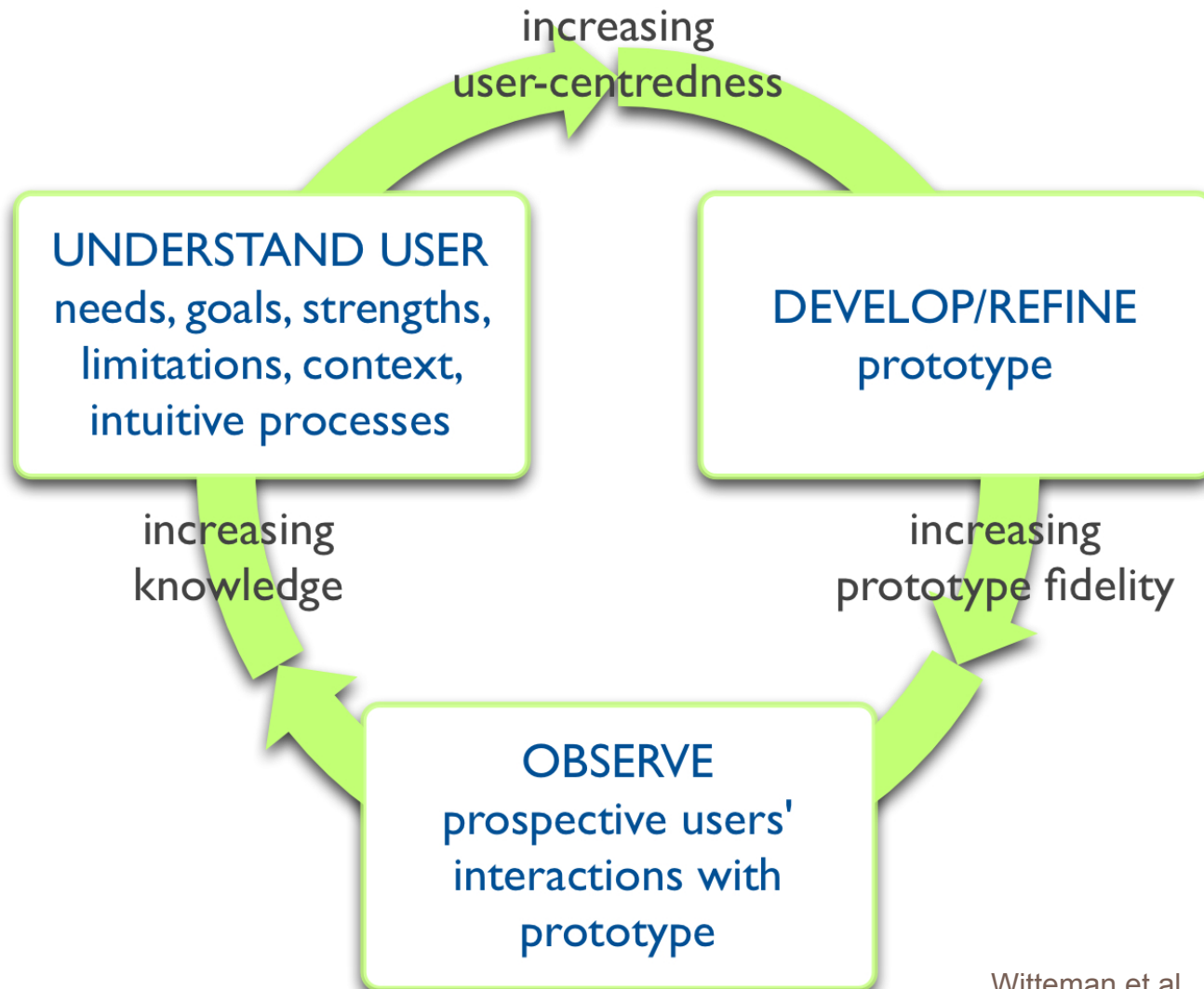




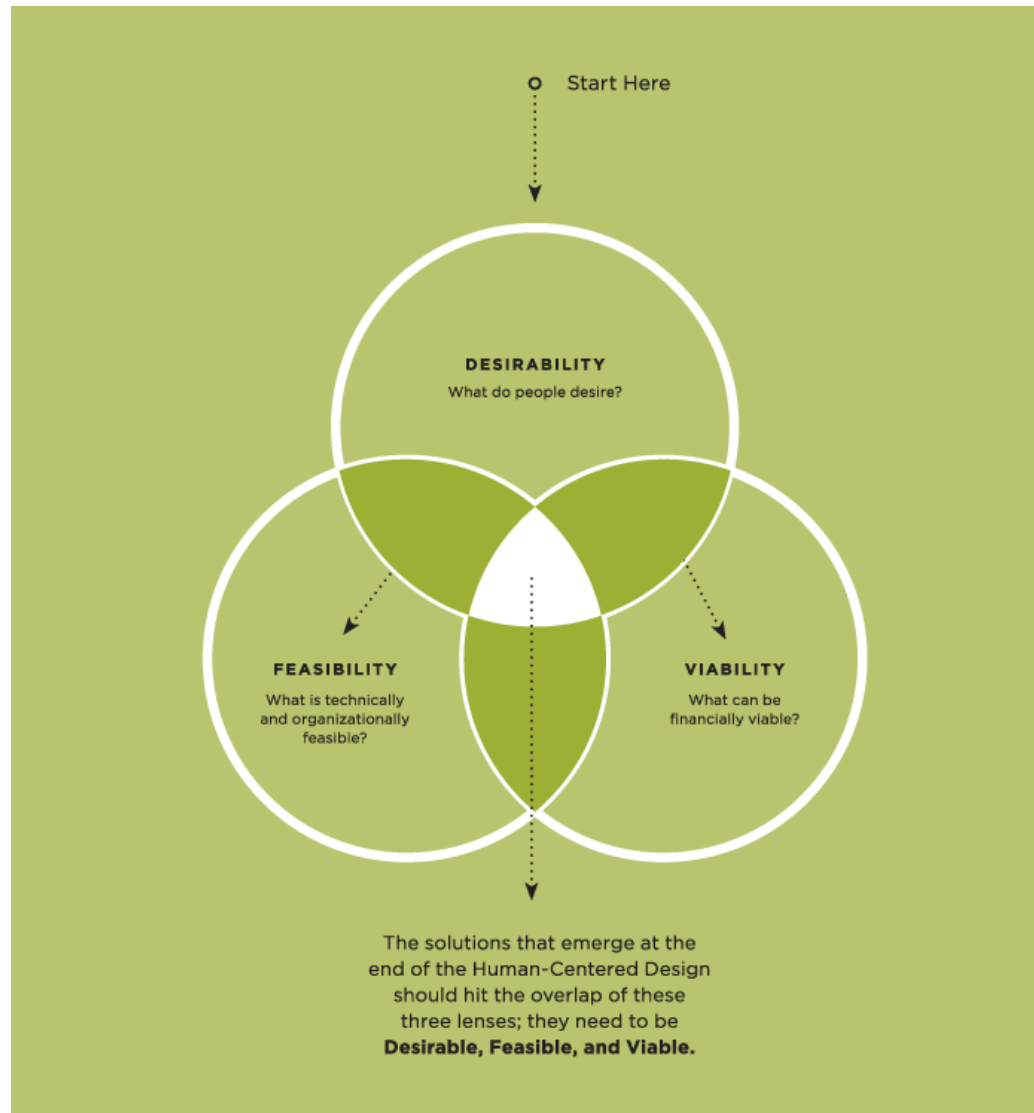
If you need people to use something,
you need to care how it makes them feel.



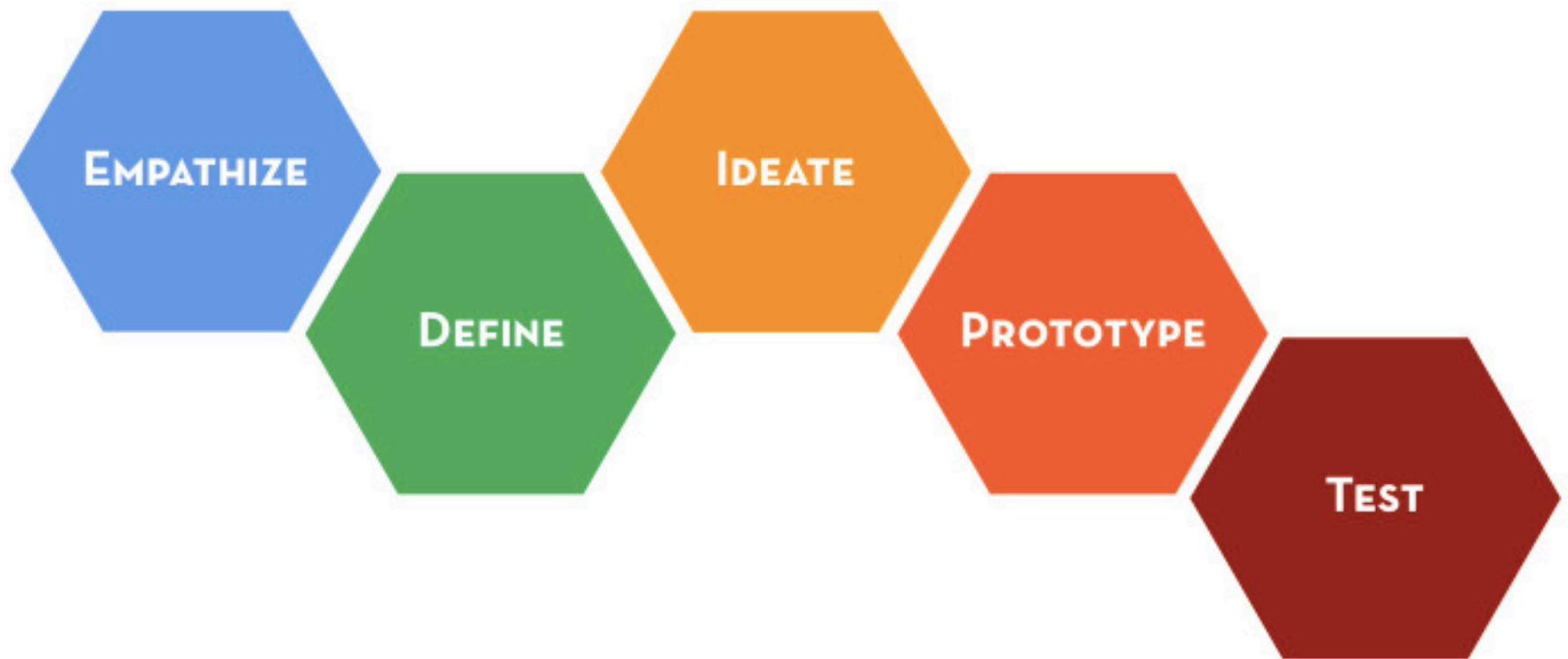
User-Centred Design



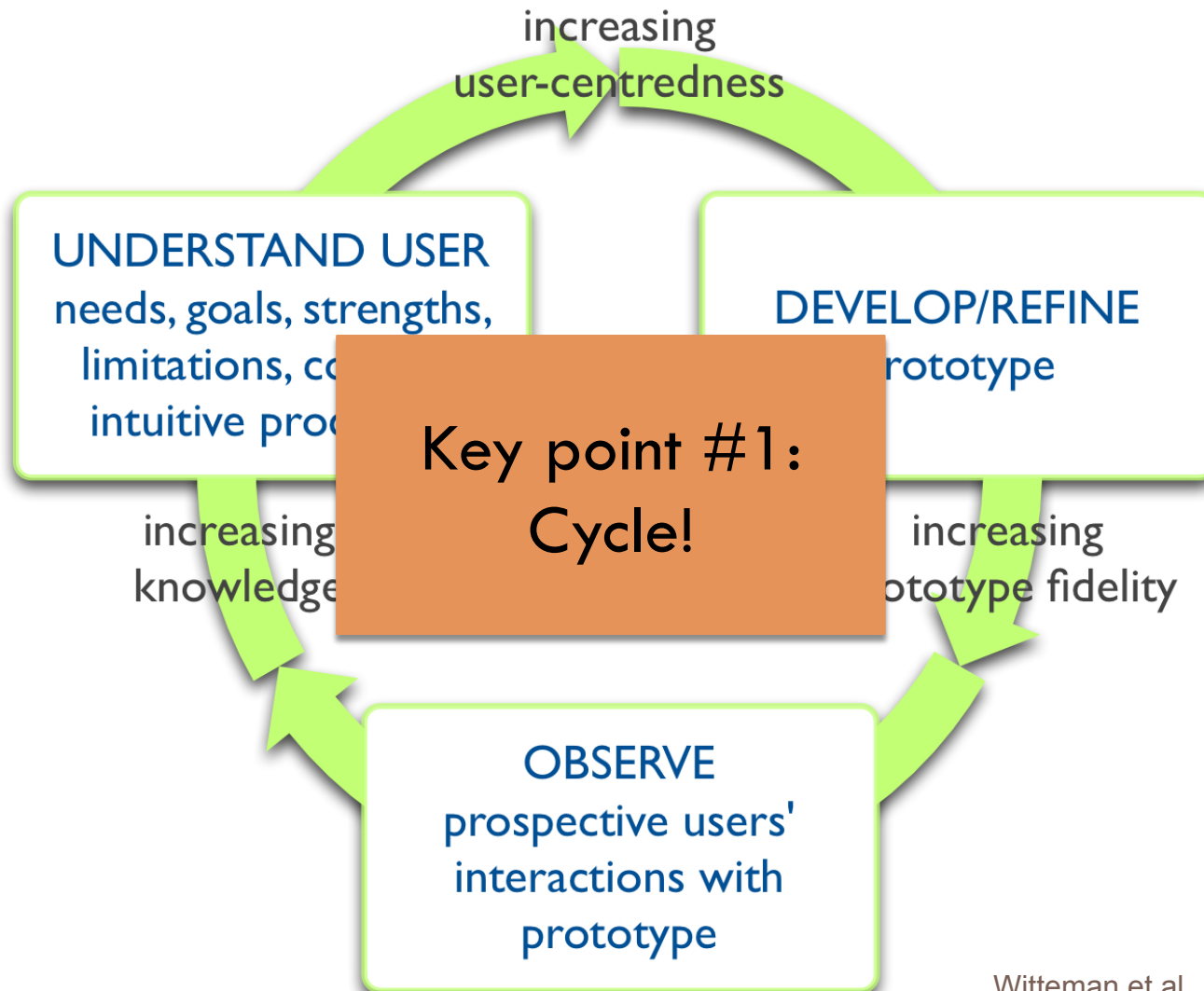
Related term: “Human-Centered Design”



Related term: “Design thinking”

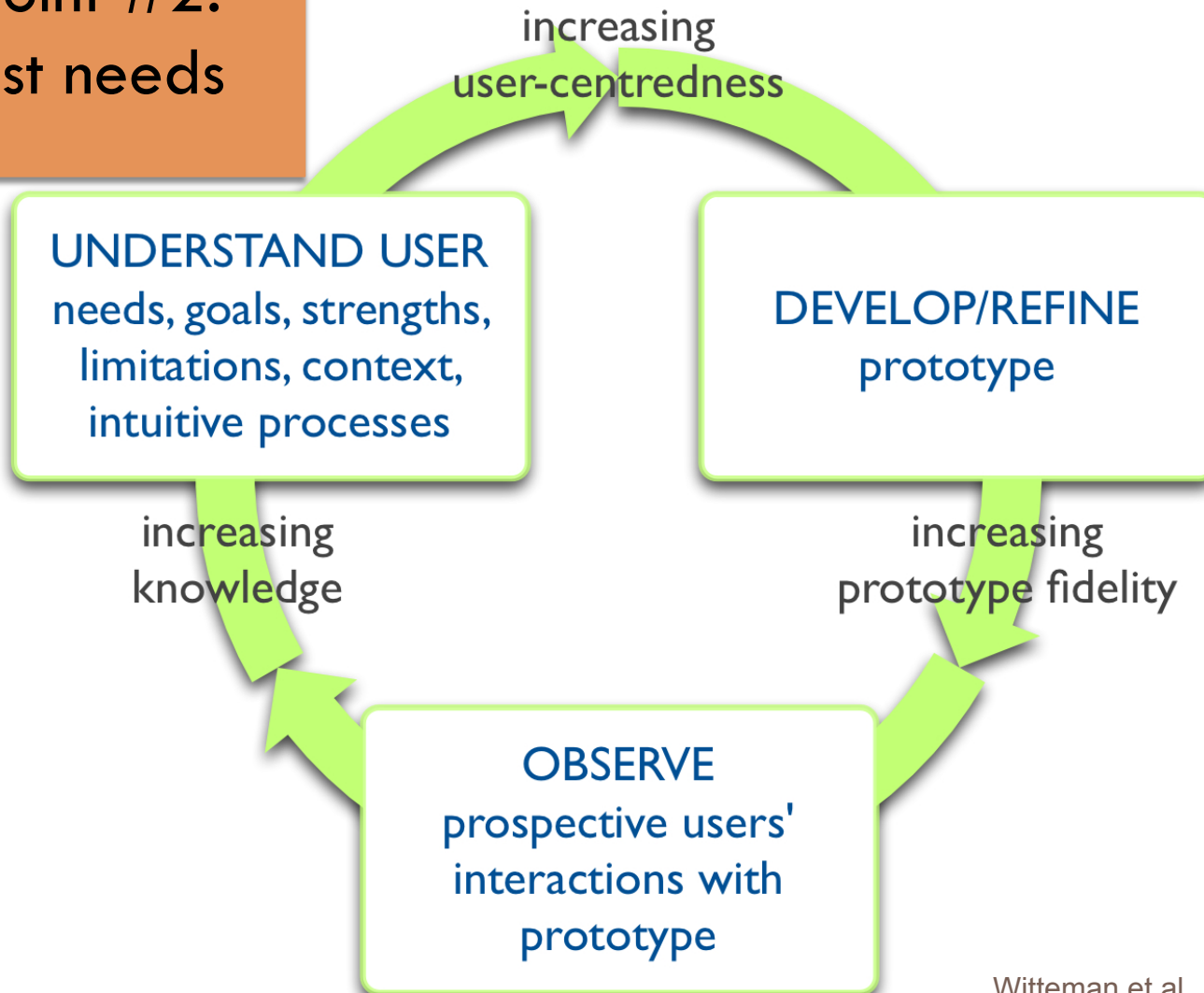


User-Centred Design

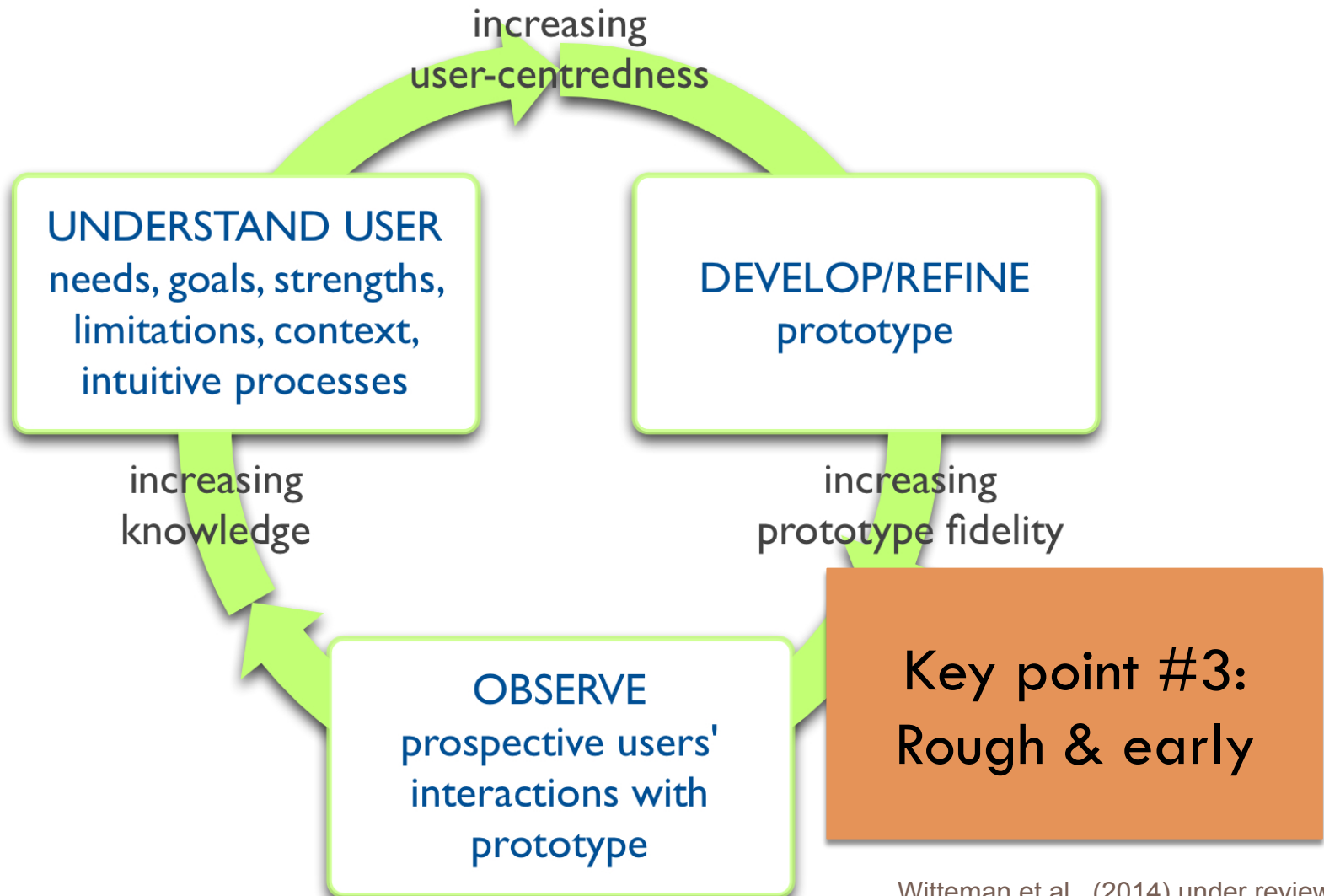


User-Centred Design

Key point #2:
Not just needs



User-Centred Design

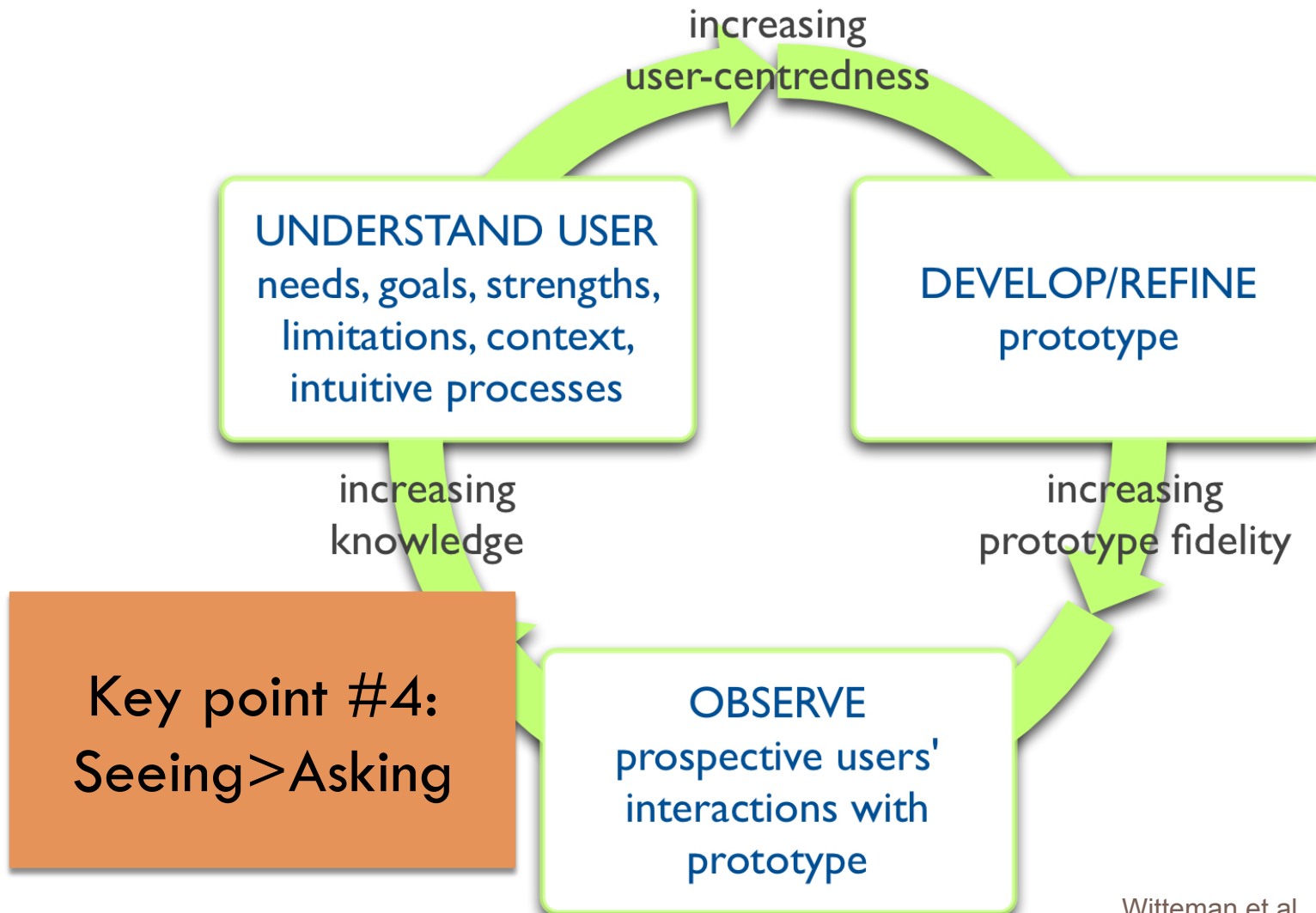


It's never too early to start testing your designs.



Image: Flickr user Diana Schnuth, Creative Commons Attribution NonCommercial

User-Centred Design



“If I had asked people what they wanted, they would have said faster horses.”

- Henry Ford



Photo: Ford Motor Co.

Methods

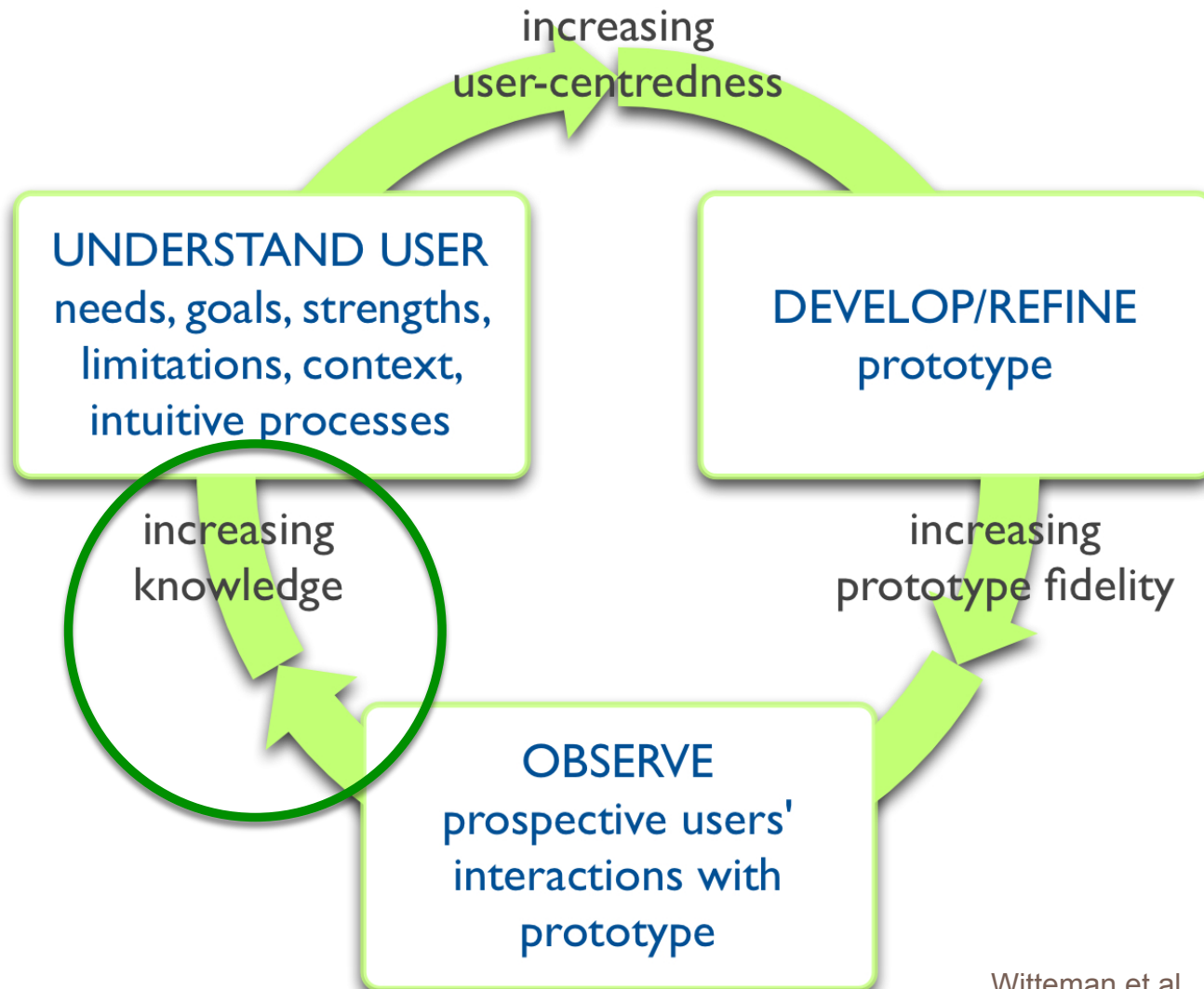
■ Ask

- ✱ Focus groups
- ✱ Interviews
- ✱ Surveys
- ✱ Card Sorting
- ✱ Diary/Camera Studies
- ✱ Etc.

■ Observe

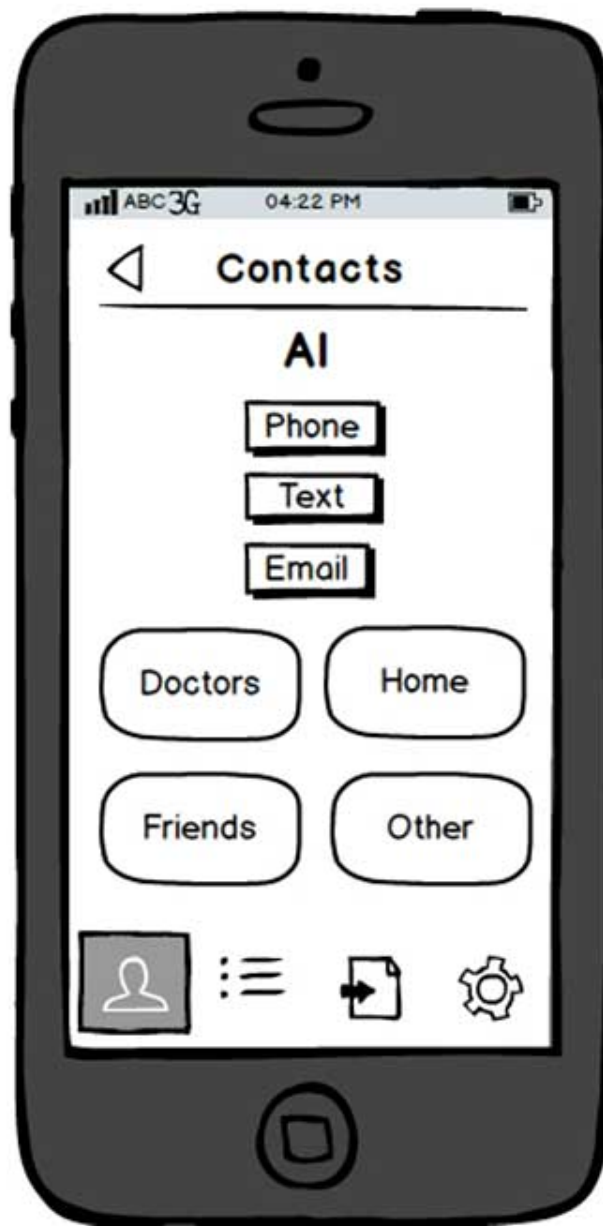
- ✱ Ethnography
- ✱ Shadowing
- ✱ Recording
- ✱ User testing
- ✱ Logfile analysis
- ✱ A/B testing
- ✱ Etc.

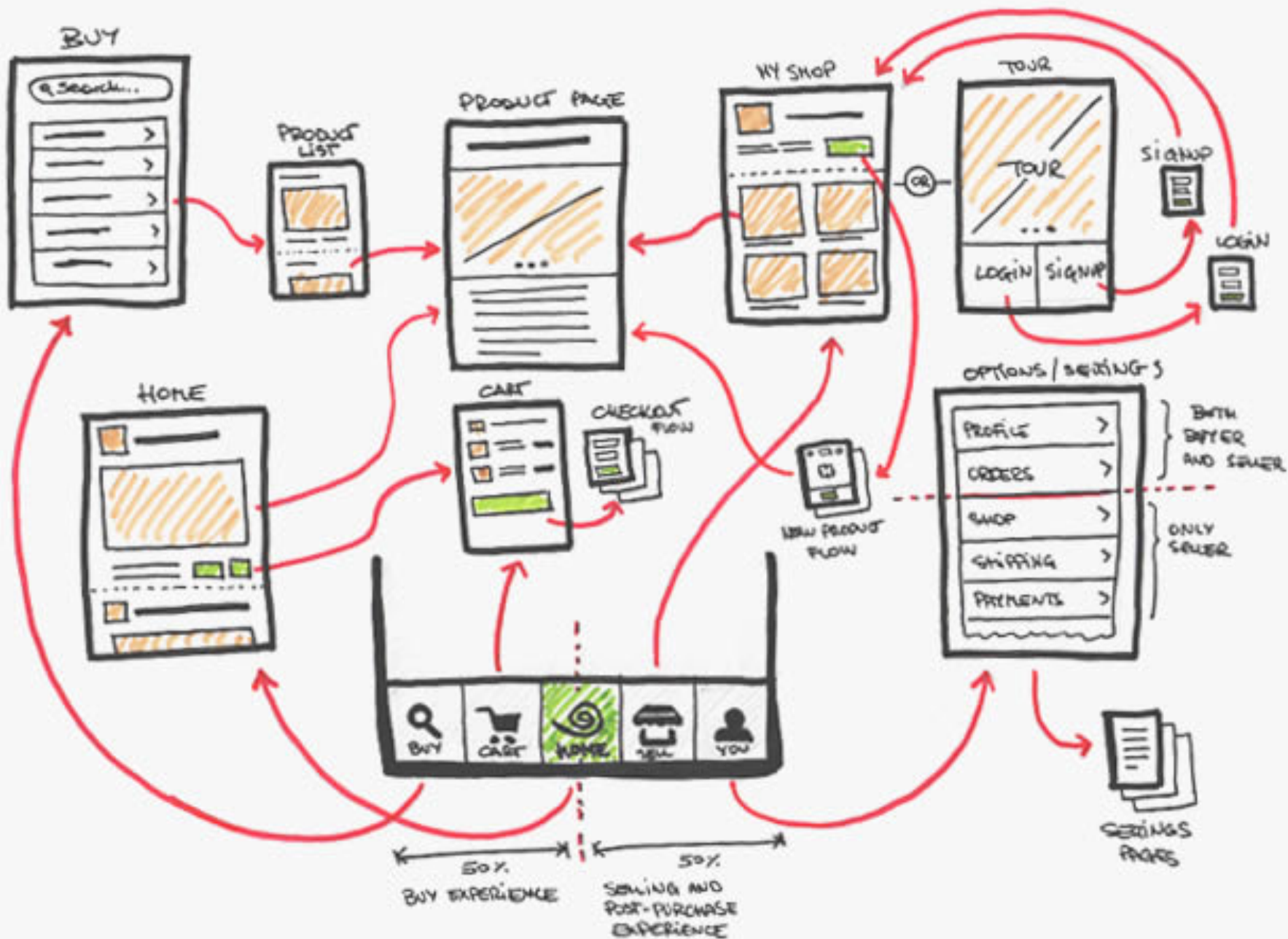
User-Centred Design



User Testing

- Do both lab and field
- Start low fidelity (paper is great!)
- Choose tasks
 - ★ Well-structured to start
 - ★ More vague and open-ended as you get closer to actual application



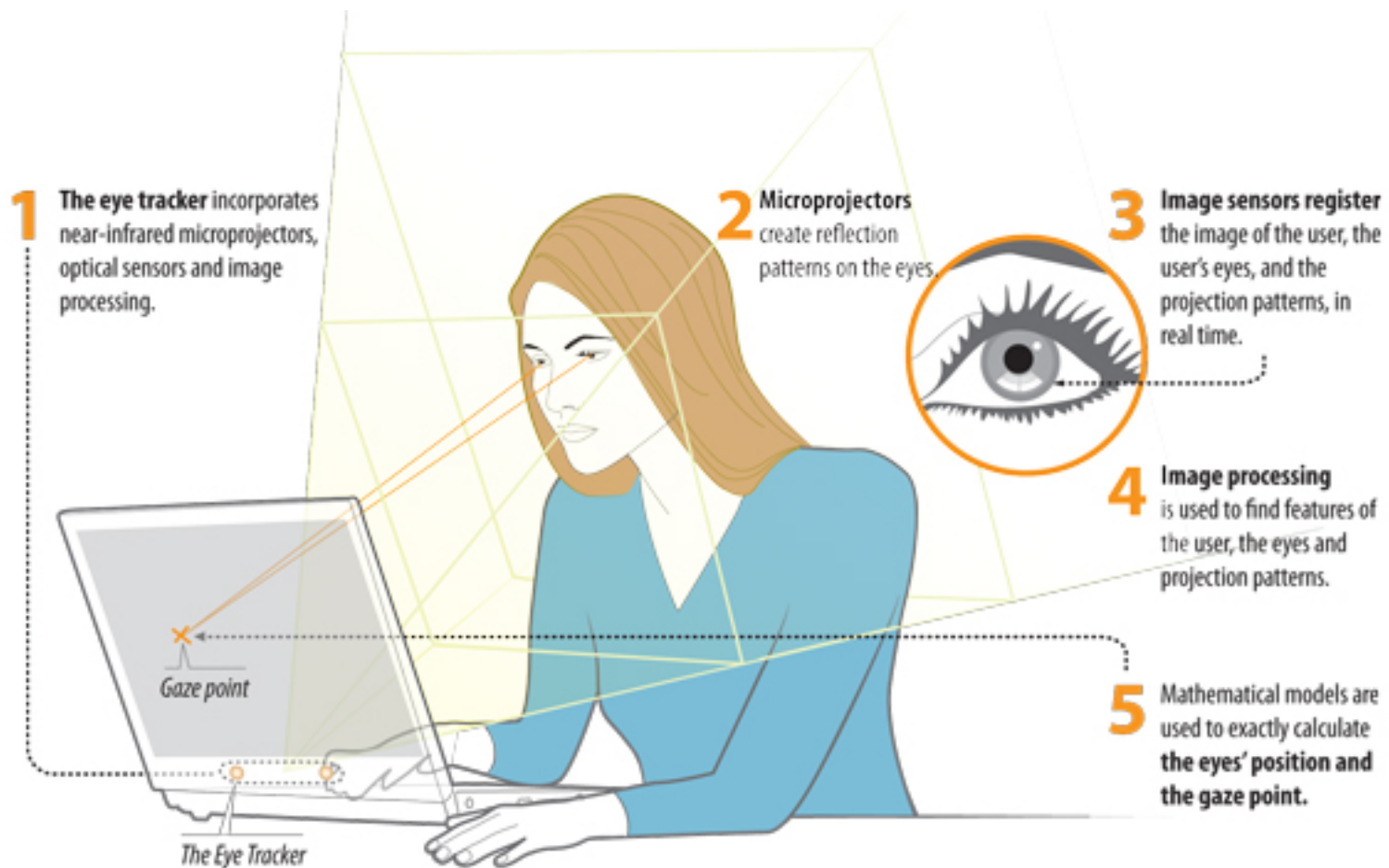


User Testing

- Techniques:
 - ★ Think aloud (during or retrospective)
 - ★ Useful tricks:
 - “What would you do if I weren’t here?”
 - “I didn’t program this.”
 - “I need your help to find problems.”

Advanced User Testing

- E.g., eye tracking



User Experience (UX)

- What a user experiences in interacting with said system/technology/thing
 - ★ user's feelings

Some UX Techniques

- Ask people
- Measurement of physiological indicators of emotion
 - ★ Galvanic skin response, heart rate variability
 - arousal, valence: basically stress
 - ★ Facial analysis software
 - happiness, anger, confusion, frustration, etc.
- Shadowing

Grille d'observation de l'expérience de l'utilisateur

Date: _____

Participant #: _____

Description de la tâche: _____

Heure de début: _____ Heure de fin: _____

Comportement verbal		Notes
	Commentaire très positif	
	Autre commentaire positif	
	Commentaire très négatif	
	Autre commentaire négatif	
	Suggestion d'amélioration	
	Question	
	Différence par rapport à l'attente	
	Déclaration démontrant de la confusion	
	Déclaration démontrant de la frustration	
	Autre	

Comportement non-verbal		Notes
	Froncement de sourcils/Grimace/Mécontent	
	Sourire/Rire/Content	
	Comportement innatendu	
	Front plissé/Concentration	
	Démonstration d'impatience	
	Apprentissage à proximité de l'écran	
	Différence par rapport à l'attente	
	Gigotement dans le fauteuil	
	Déplacement arbitraire de la souris	
	Grognement/Profond soupir	
	Frottement de la tête/yeux/cou	
	Autre	

Tâche complétée & flux de travail				
Incomplet:			Complet:	
	Abandon du participant			Complété sans assistance
	Participant demandé en clinique			Complété avec assistance
	Participant demandé pour des tâches adm.			Autre
	Considéré comme complet mais ne l'était pas			
	Autre			







It's three-clicks-to-get-to-the-donate-page tragic, but not
four-clicks-to-get-to-the-donate-page tragic.

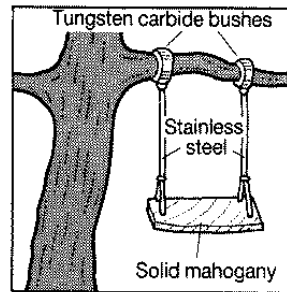
“Customers don’t care about your solution. They care about their problems.” – Dave McClure



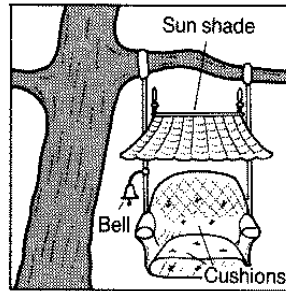
The user is always right.



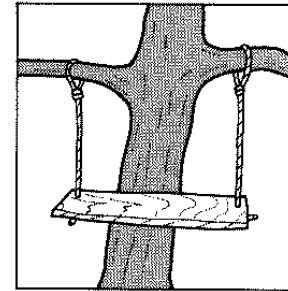
Questions : holly.witteman@fmed.ulaval.ca



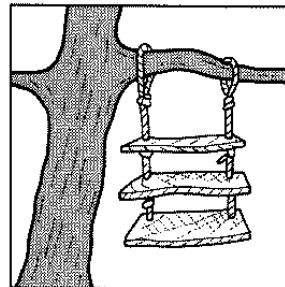
What Product Marketing specified



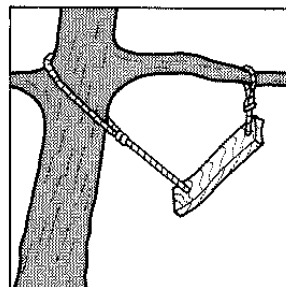
What the salesman promised



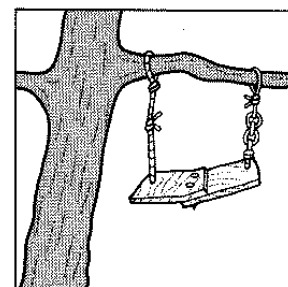
Design group's initial design



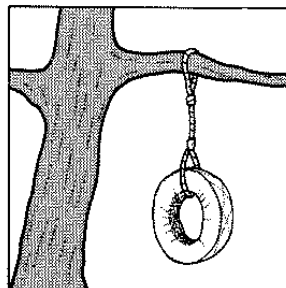
Corp. Product Architecture's modified design



Pre-release version



General release version



What the customer actually wanted

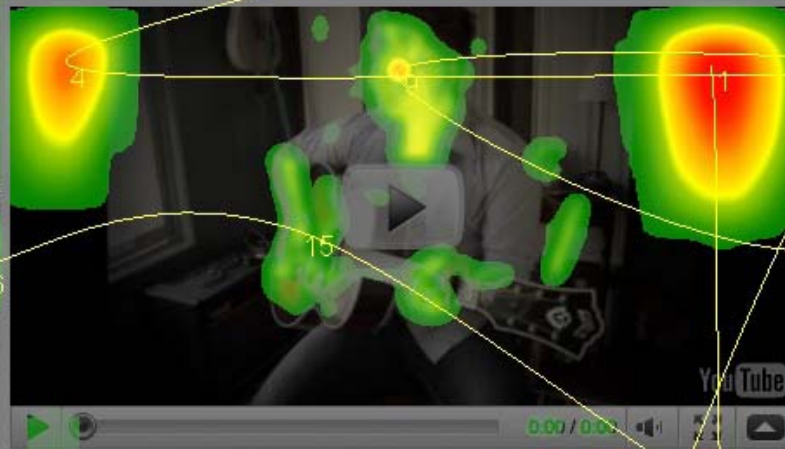
EXTRA SLIDES IF NEEDED

CASEYHURT

RT @matthires RT @tyronewells: Free download of the song "Metal & Wood" for a limited time. <http://bit.ly/91aEu3> 2010/03/05 via twitter I follow Casey

MUSIC PLAYER

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Video of the Week

Making It Real by Casey Hurt and Tyrone Wells

Oh yeah that's right this is the video of the week if you like it then...

Comment on Video

Get Social



Talk With Me

www.twitter.com/caseyhurt



Watch the Latest

www.youtube.com/caseyhurt



Be A Friend

www.facebook.com/caseyhurt



Listen to Music

www.pandora.com/caseyhurt

Upcoming Events

02.15.10 @ Cafe' Was

Feb 15, 2010 @ 9:00pm, Door open @ 8:00pm, Free Striped down acoustic set with Casey Hurt followed by Thick as Thieves. [Map](#) [Tickets](#)

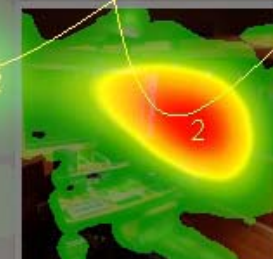
01.09.10 Goodbye Show @ Cloud 9

Jan 9, 2010 @ 9:00pm, Door open @ 8:00pm, \$5 @ the door. One last goodbye before I moved to L.A. - Special Guest Norman MacL Tickets

Latest Blog

Congratulations, it's A Studio!

March 4th 2010 [Leave a Comment \(2\)](#)



After two months, tons of man hours and more money than any of us ever thought we'd



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