

# Country-specific design

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# Outline

- *Rationale*
- *Culture or country?*
- *Attribute-based approach*
- *Empirical approach*

# *Rationale*

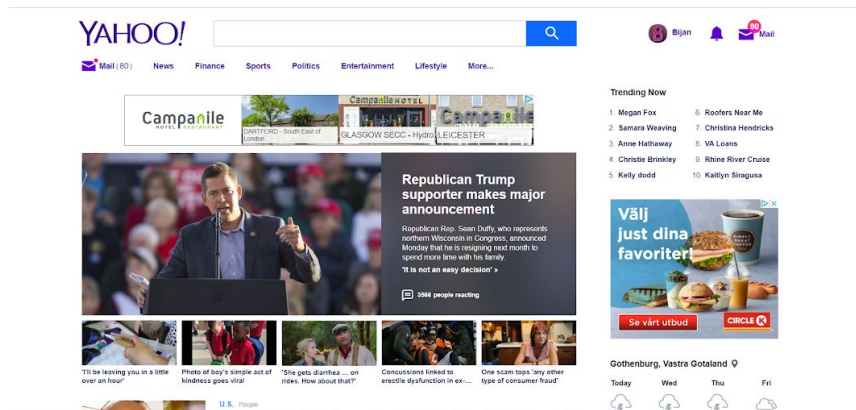
# Country-specific design

## Business advantage



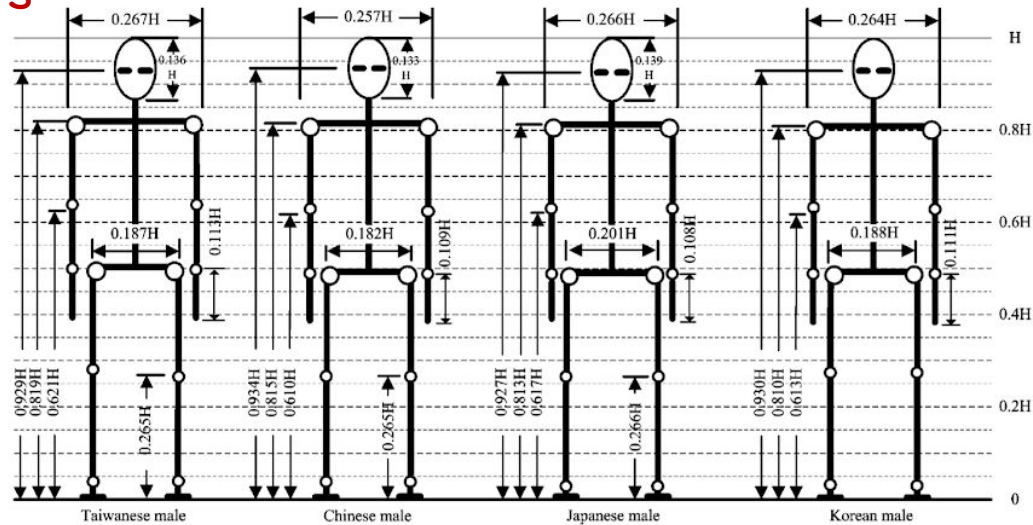
# Country-specific design

## Usability



# Country-specific design

## Human Factors



The illustration of segment proportions for East Asian male adults in standing posture.

Lin, Y. C., Wang, M. J. J., & Wang, E. M. (2004). The comparisons of anthropometric characteristics among four peoples in East Asia. *Applied Ergonomics*, 35(2), 173-178.

# Country-specific design

## Development

Evolution of international development :

### Growth:

Early definition of international development in 1960s: Economic Growth [1].

### Sustainability:

Positive changes that are sustainable [2].

### Enhancing the quality of life:

Development can be seen as a combination of parameters of different nature, which can represent the “quality of life” in different parts of the world [3].



[1] Singer, H. W. (1964). *International development: growth and change*. New York: McGraw-Hill.

[2] Fowler, A. (2000). *The virtuous spiral: a guide to sustainability for non-governmental organizations in international development*. London: Earthscan.

[3] United Nations. (2012). *The Millennium Development Goals Report 2012*. New York: United Nations.

# Country-specific design

## Development

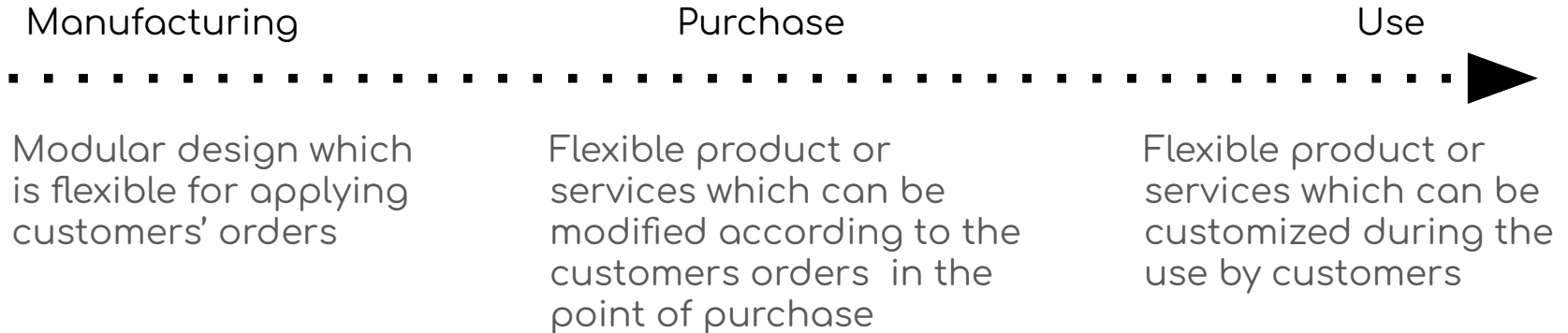




# Customization

Hard customization

Soft customization



*Culture or country?*

# Country-specific design vs culturally-specific design

What is culture?

“The patterns of thinking, feeling and acting that influence the way in which people communicate among themselves”

van Biljon, J., & Kotzé, P. (2008). Cultural Factors in a Mobile Phone Adoption and Usage Model. *Journal of Universal Computer Science*, 14(16), 2650-2679.

# Country-specific design vs culturally-specific design

Culture is hard to define  
and subjective



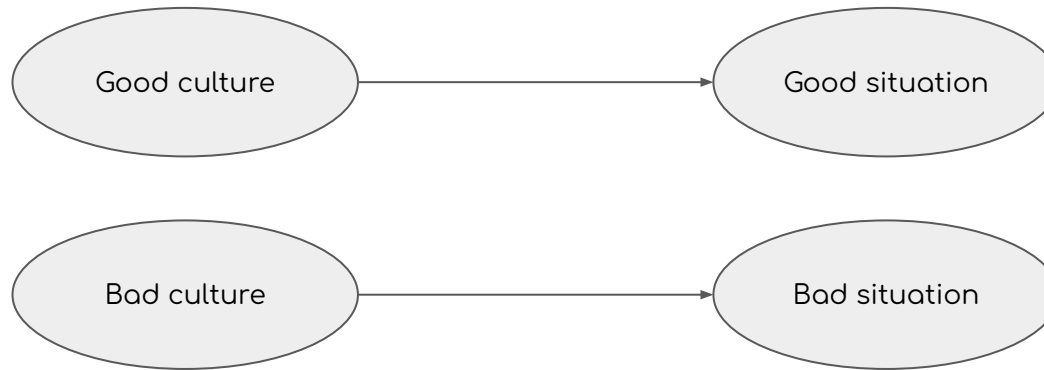
It can be mixed with  
ideologies, religion,  
politics

Culture is often being  
perceived as a set of  
static characteristics  
associated with a large  
group of people



When something is  
perceived as static,  
no one tries to  
change it

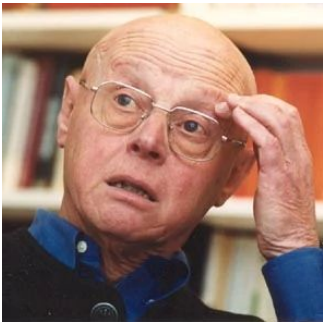
# Country-specific design vs culturally-specific design



Culture lense often fails into cause and effect way of describing systems. It also tends to dividing things into **good** and **bad**

# Cultural models

The idea of attribute-based design is based on cultural models where national cultures are represented and measured by certain attributes. Among existing models, Hofstede's model is the most famous one.



Geert Hofstede



<https://www.hofstede-insights.com/product/compare-countries/>

# Cultural models

Other similar models: Fons Trompenaars



Universalism vs. Particularism	Where a culture is based on rules and standards, or relationship and trust
Individualism vs. Collectivism	Where a culture focuses more on the group or individual
Neutral vs. Affective	Where emotions are expressed or not
Specific vs. Diffuse	Whether the public and private life closely linked or not
Achievement vs. Ascription	Whether a culture rewards according to one's performance or to one's age status, or gender
Time (Sequential vs. Synchronous)	Whether people tend to do one thing at a time or several things at once

# Cultural models

Other similar models: Edward T. Hall



Factor	High context culture	Low context culture
Overtmess of messages	Many covert and implicit messages, with use of metaphor and reading between lines	Many overt and explicit messages that are simple and clear
Locus of control and attribution for failure	Inner locus of control and personal acceptance for failure	Outer locus of control and blame of others for failure
Use of non-verbal communication Expression of reaction	Much nonverbal communication	More focus on verbal communication than body language
Expression of reaction	Reserved, inward reactions	Visible, external, outward reaction
Cohesion and separation of groups	Strong distinction between ingroup and outgroup. Strong sense of family.	Flexible and open grouping patterns, changing as needed
People bonds	Strong people bonds with affiliation to family and community	Fragile bonds between people with little sense of loyalty
Level of commitment to relationships	High commitment to long-term relationships. Relationship more important than tasks	Low commitment to relationship. Task more important than relationships.
Flexibility of time	Time is open and flexible. Process is more important than product	Time is highly organized. Product is more important than process



# Cultural models

*"National Culture cannot be changed, but you should understand and respect it."*

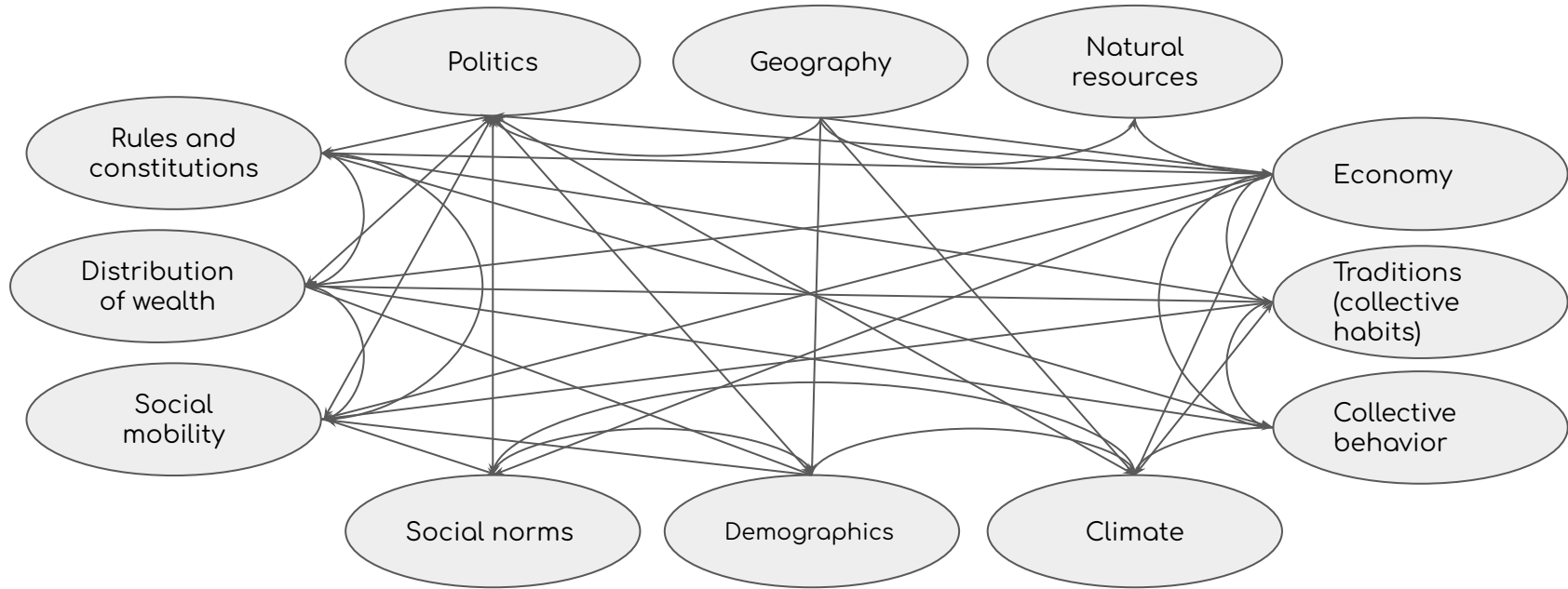
*Geert Hofstede*

*"Blue and white collar workers alike tend to look for more autonomy and variety in their positions, are far more assertive than in the past and do not hesitate to change employers. These changes can be expected given the remarkable increase of Chile's GDP and the fact that economic development fosters individualism."*

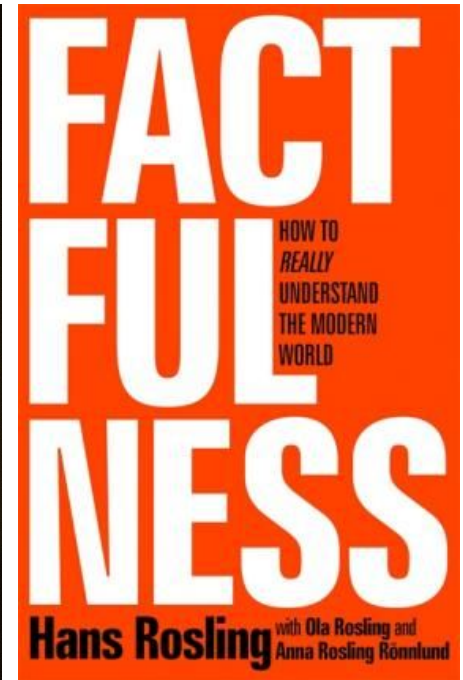
*Hofstede Insights website, Chile profile*

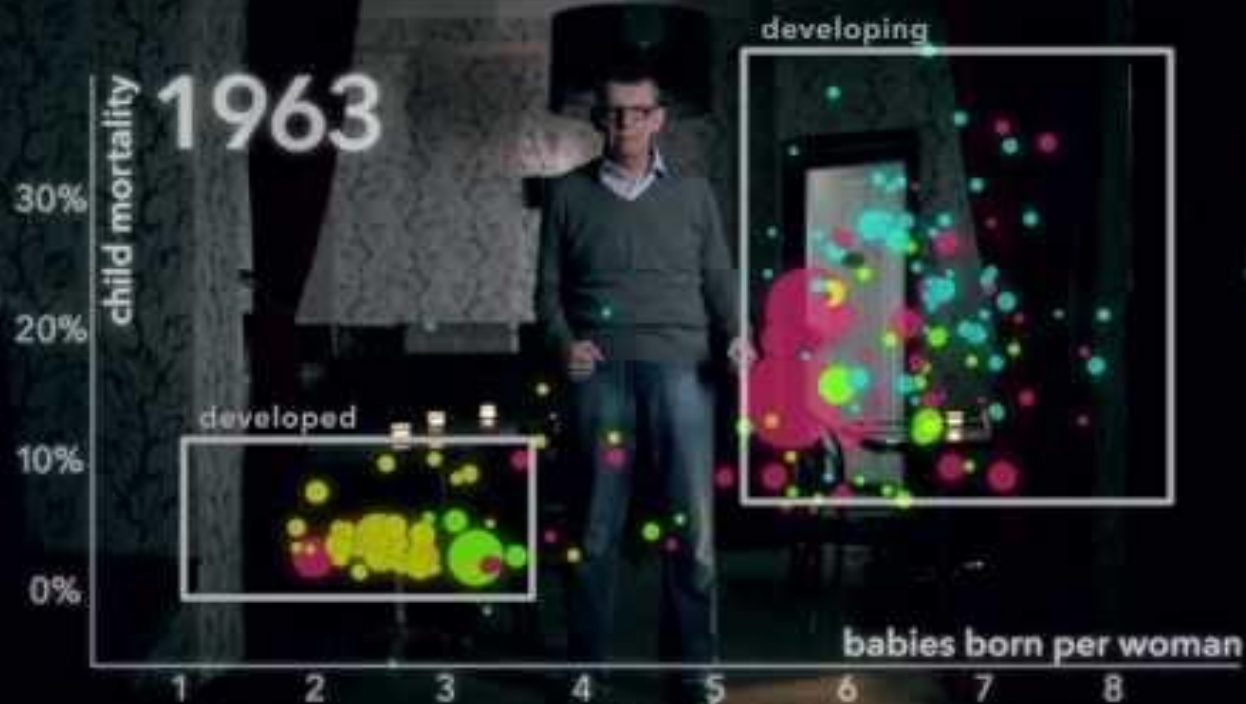
?!

# Country-specific design vs culturally-specific design



Country-specific design applies a **systemic** mindset. Country-specific design aims to make positive changes in a **dynamic** and **complex** context.

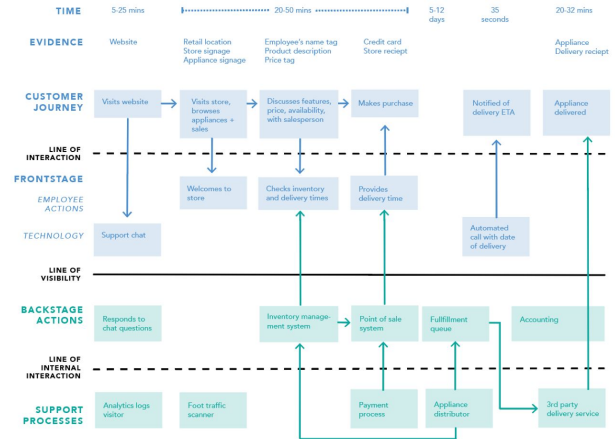
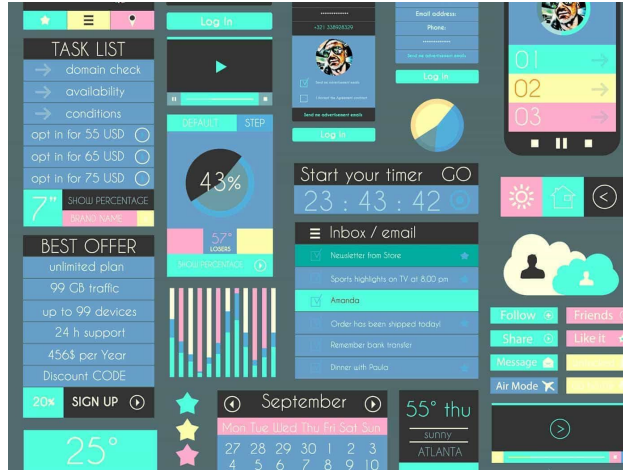
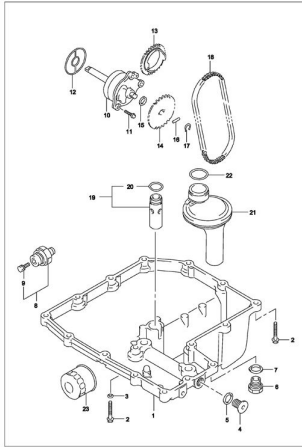




# *Attribute-based approach*

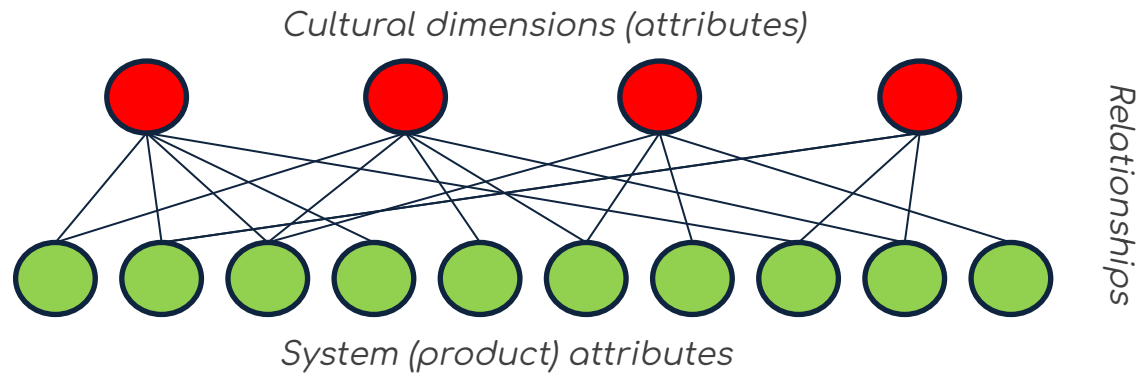
# Attribute-based design [for cultural differences]

The products and systems can be also represented by attributes

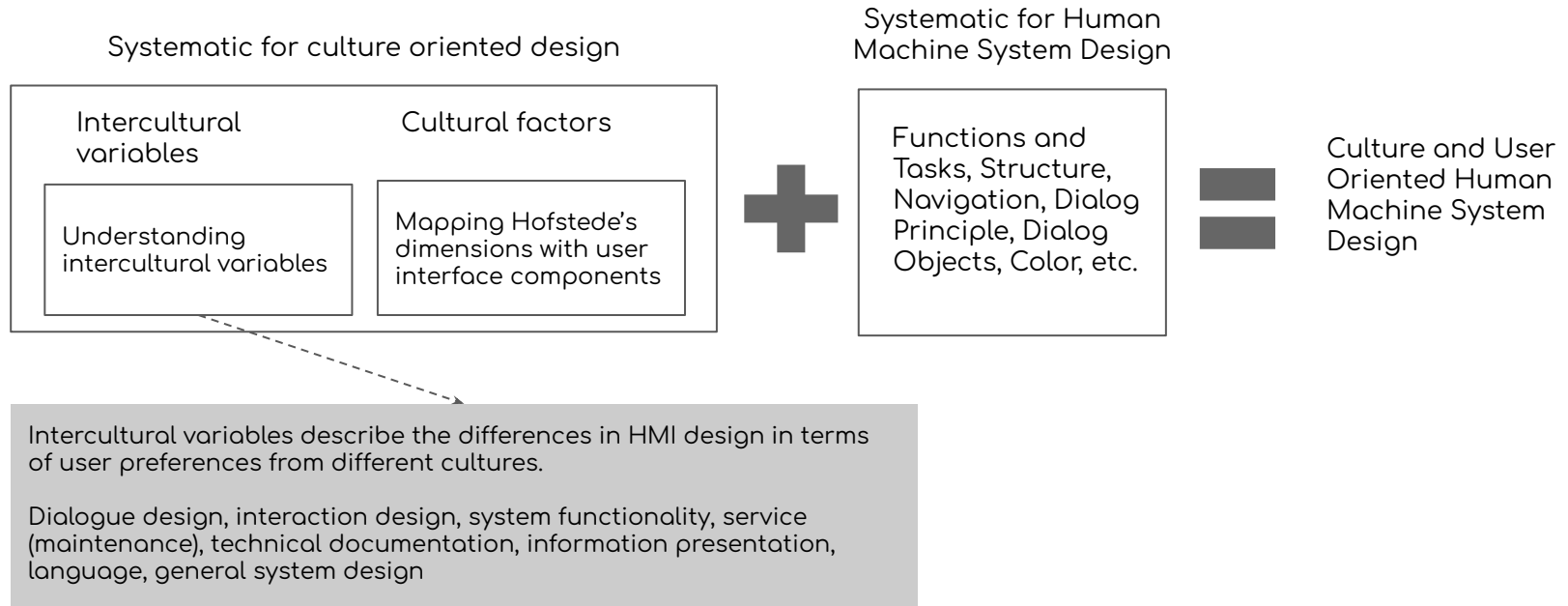


# Attribute-based design [for cultural differences]

So, perhaps looking at relationships between these attributes could be a way to design for cultural differences.



# Integrative Approach of the Culture-Oriented Design by Kerstin Röse

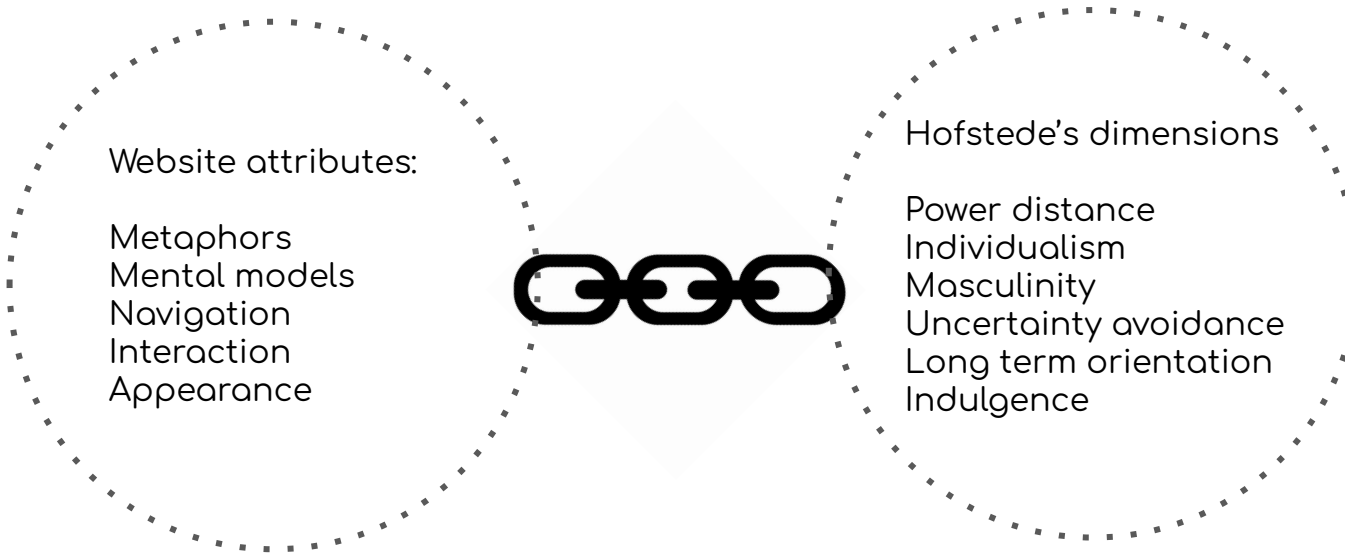


Röse, K. (2004). The development of culture-oriented human machine systems: specification, analysis and integration of relevant intercultural variables. In *Cultural ergonomics* (pp. 61-103). Emerald Group Publishing Limited.



# Attribute-based design [for cultural differences]

Aaron Marcus solution for culture oriented web design



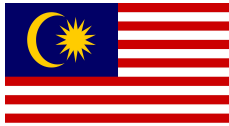
# Attribute-based design [for cultural differences]

Aaron Marcus solution for culture oriented web design

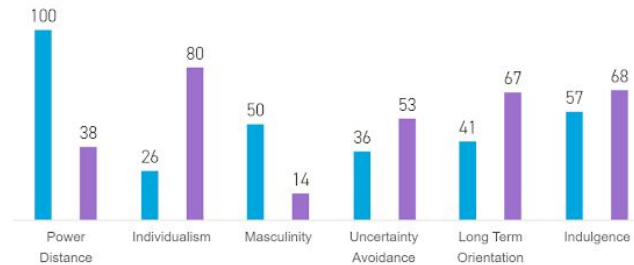
		<b>Metaphors</b>	<b>Mental Models</b>	<b>Navigation</b>	<b>Interaction</b>	<b>Appearance</b>
<b>Power Distance</b>	High	Institutions, buildings, objects with clear hierarchy: Schools, government monuments, etc.	Reference data with no relevancy ranking	Restricted access, choices, authentication, passwords, prescribed routes	Severe error messages: "Entry Forbidden," "You are wrong," wizards or guides lead usage	Images of leaders, nations, official music, anthems, formal speech
	Low	Institutions, buildings objects with equality, options: Summerhill, play/games, public spaces, etc.	Less structured data w relevancy	Open access, multiple options, stable across roles, customizable	Supportive error messages, cue cards	Images of people, daily activities, music, informal speech
<b>Collectivism</b>	Individualism	Action-oriented, stable	Product, as task-oriented	paths, popular choices, celebrity choices, stable across roles, customizable	Keyword searches, active-oriented, multiple devices, customizable	Images of products, people; low or hyperbolic, dynamic speech; many topics, imagery, language, customizable, direct, as verbs
	Collectivist	Relationship-oriented	Role-oriented	Group-oriented, official choices, changes per role	Limited, official devices, role-driven	Images of groups, organizations, roles, high context; official, static terminology, institution driven topics, imagery, language, passive
<b>Masculinity-Femininity</b>	Masculinity	Sports-oriented, competition-oriented, work-oriented	Work/business structures, high-level, "executive views", goal-oriented	Limited choices, synchronic	Game-oriented, mastery-oriented, individual-oriented	"Masculine" colors, shapes, sound
	Femininity	Shopping carts, family-oriented	Social structures, detailed views, relationship-oriented	Multiple choices, multi-tasking, polychrone	Practical, function-oriented, co-operation-oriented, team-oriented	"Feminine" colors, shapes, sound acceptance of cuteness
<b>Uncertainty Avoidance</b>	High	Familiar, clear references to daily life, representation	Simple, clear articulation, limited choices, binary logic	Limited options, simple, limited controls	Precise, complete, detailed input and feedback of status	Simple, clear, consistent imagery, terminology, sounds; highly redundant coding
	Low	Novel, unusual references, abstraction	Tolerance for ambiguity, complexity, fuzzy logic	Multiple options, varying, complex controls	General, limited, or ambiguous input and feedback of status	Varied, ambiguous, less consistent imagery, terminology, sounds
<b>Long-term Time Orientation</b>	Long	Stable family, paternalistic: Father, Mafia, Chinese state businesses, IBM in 1950s	Love/devotion, social coherence, responsibility support	Tolerance for long paths, ambiguity, contemplation oriented	Preference for face-to-face communication, harmony, personalized messages, more links to people, live chats, interaction as "asking"	Cultural markers: flags, colors, no images, soft focus, warm, fuzzy images, pictures of groups inviting participation, suggestions of intimacy and close social distance
	Short	Interchangeable roles, jobs, objects	Liberty, social incoherence, social irresponsibility, efficiency	Bread-crumbs trails, taxonomies, quick results, action-oriented	Distance communication accepted as more efficient; anonymous messages tolerated; conflict tolerated, even encouraged; performance-critical communication	Minimal and focused images; short borders, lines, edges; concentration on showing task or product

<b>Power Distance</b>		<b>Metaphors</b>
High		Institutions, buildings, objects with clear hierarchy: Schools, government, monuments, etc.
Low		Institutions, buildings objects, with equality, options: Summerhill, play/games, public spaces, etc

# Attribute-based design [for cultural differences]



Malaysia × Netherlands ×



\* estimated



# Attribute-based design [for cultural differences]



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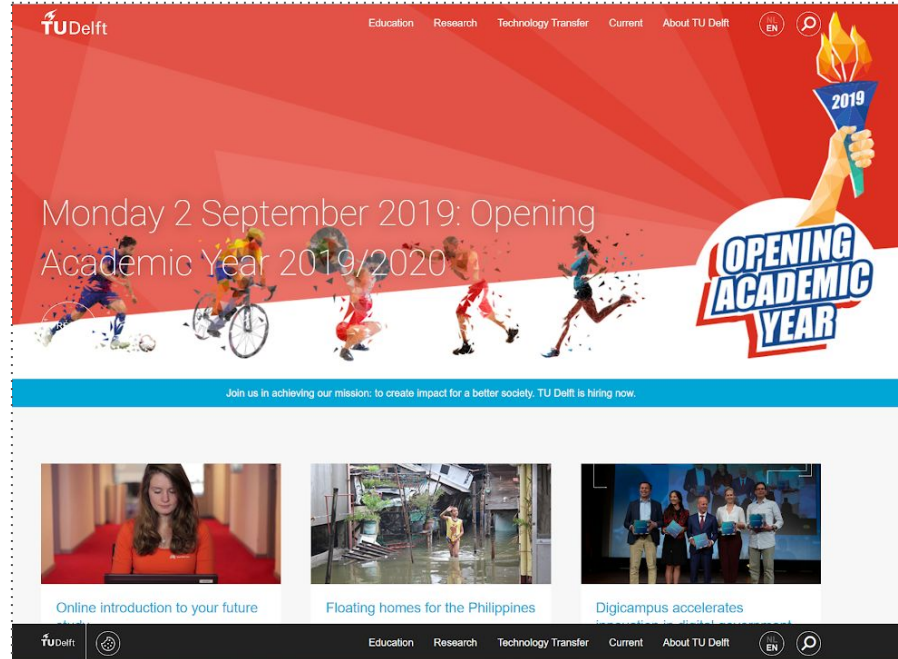
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## Attribute based models: a more recent case

# **In-vehicle Voice Assistants in Different Markets**

Understanding region-specific user preferences

Master's thesis in Industrial Design Engineering

ZHICONG LU

# Attribute based models: a more recent case

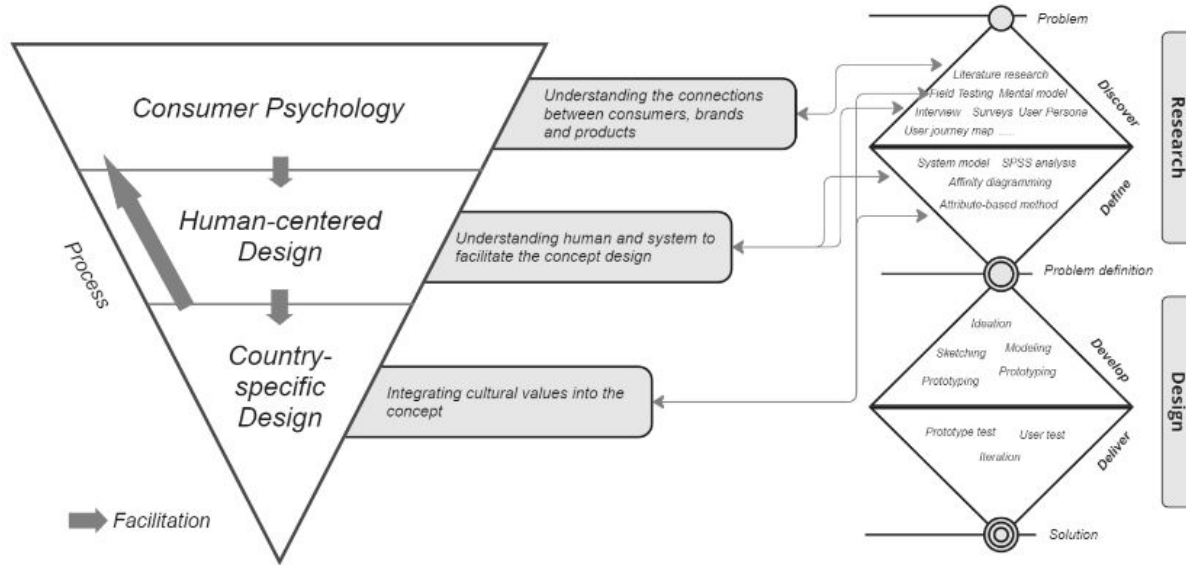


Figure 8. Combining the research framework with Double diamond process model

# Attribute based models: a more recent case





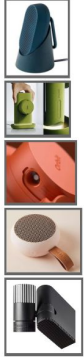


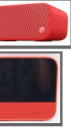






*Figure 19. Products with high power distance design features*



*Figure 21. Products with Masculinity design features*

# Attribute based models: a more recent case

Table 6. The results of the Supplemented survey

Factors	Main body+Base					User interface
	Color	Material	Design style	Decoration	Interaction	Threatening
Products that contain design features or elements that represent different cultural values.						
Description	Colours represent traditional Chinese aesthetics.	Representative materials, metal, glass, leather, plaster, plush	Design languages and design directions	The degree of decorativeness.	The degree of interactivity	Which one is less threatening and aggressive?
Survey results						
User preference	70%	79.6%	69.3%	40%	70.1%	77.4%
Design features	1. Elements of traditional aesthetics, craftsmanship or cultural symbolism. 2. Rough textures, prominent subject features, dark or warm neutral materials, artistic accessories, geometric forms. 3. Richly emotive motifs (expressions), materials and forms. 4. Remove smooth black screens and replace them with mild materials.					



# Attribute based models a more recent case



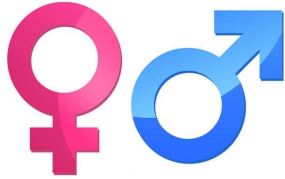
Figure 31. Rendering for exhibiting the concept



Figure 32. Different IVA styles

# An experiment with an attribute-based method [2009]

Can we customize a mobile phone according to cultural dimensions?

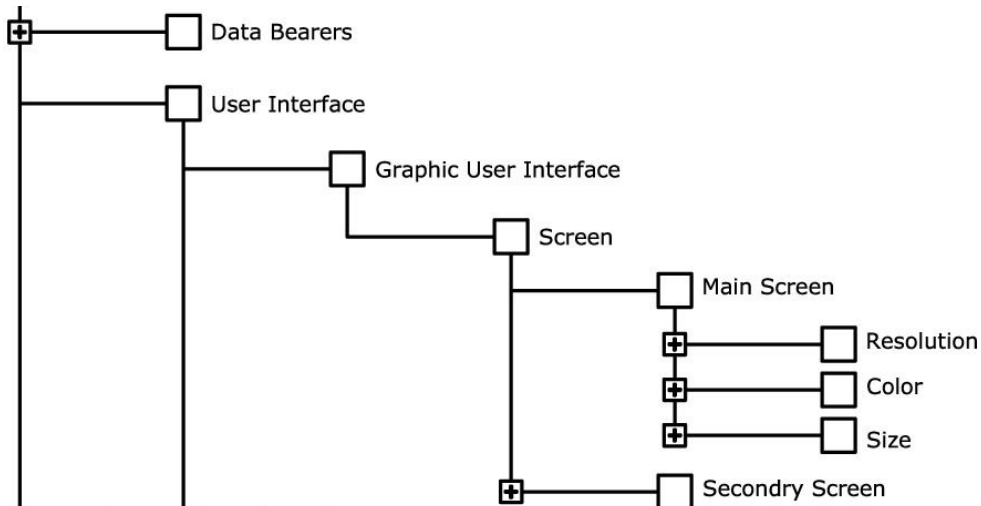


## Scope:

- Masculinity vs Femininity dimension of Hofstede's model
- Female mobile users from one culture
- Range of mobile phones from one brand

# An experiment with an attribute-based method [2009]

Step 1: breaking down the product into its attributes



# An experiment with an attribute-based method [2009]

Step 2: we asked participants to tell us what they think about female and male preferences in phone attributes.

The results more or less were reflecting stereotypes e.g. slide phones with red or pink colors are more attractive for women.

	Users																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Color	F1	-	F3	F1	-	F2	F2	F3	F3	F3	F1	F3	F2	F1	F3	F3	-	-	F3	F2
Brightness	F2	F3	F3	F2	-	F3	F1	F2	F2	F1	F1	F3	F2	F3	F3	F1	-	M1	-	F3
Color temperature	-	-	M3	-	-	M3	M1	M3	-	F3	M1	M3	M1	-	-	M1	-	M3	-	M2
Bar formfactor	F1	F3	F3	-	-	F3	-	-	-	M2	F2	F3	F1	-	M3	-	-	M3	F1	F2
Swivel Form Factor	-	F3	F3	F1	-	F3	F1	F3	F2	M2	-	-	M2	F2	F3	F1	-	F3	-	F1
Slide Form Factor	-	-	F3	-	-	F3	F1	-	-	F2	-	-	M2	F3	-	-	-	F3	-	-
Flip up	-	-	M3	-	-	F2	F1	-	M1	M2	-	-	F1	F3	M3	-	-	-	-	M1
Flip down	-	M3	F3	-	-	F2	F1	-	F1	M3	-	-	M2	M3	M3	-	-	-	-	M1
Fold out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# An experiment with an attribute-based method [2009]

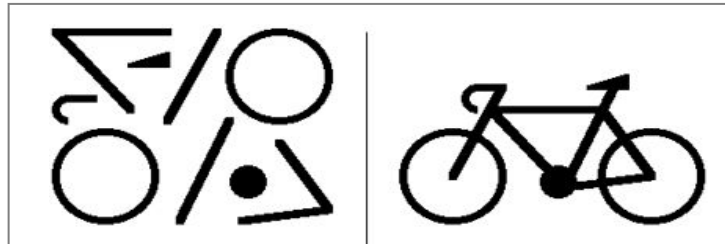
Step 3: we asked female participants to choose a phone from the brand. They were able to choose from a range of colours and form factors. The most attractive models were the ones with dark colours and a bar form factor.

There was a big different their attribute preferences and their overall choice

The products with most feminine attributes were not evaluated as feminine mobile phones: Users' ideas about the attributes were not enough for predicting their ideas about the product as a "whole"



The whole is different from the sum of its parts



# *Empirical approach*

# Empirical approach for country-specific design

The attribute-based methods try to **model** users and systems

The **empirical methods** try to **test users and systems in actual settings**

Most research studies with attribute-based methods used **quantitative methods**, large number of samples, not much user research

Most research studies with empirical methods used **qualitative methods**, small number of samples, user research

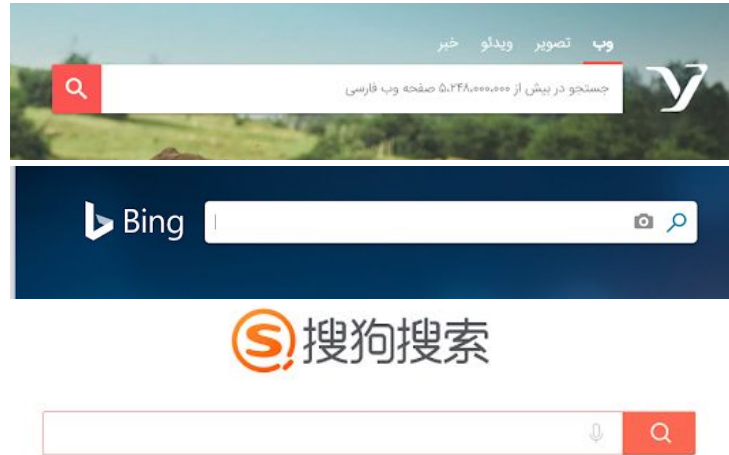


# Empirical approach for country-specific design

## 1. What do we want to achieve?

Is there any need to customize the system to the specific context?

Remember: some universal designs work really well all around the world. Don't reinvent the wheel!



*Search bar became an international design understandable in most cultures*

# Questions to ask

## 2. Is this a sustainable change?

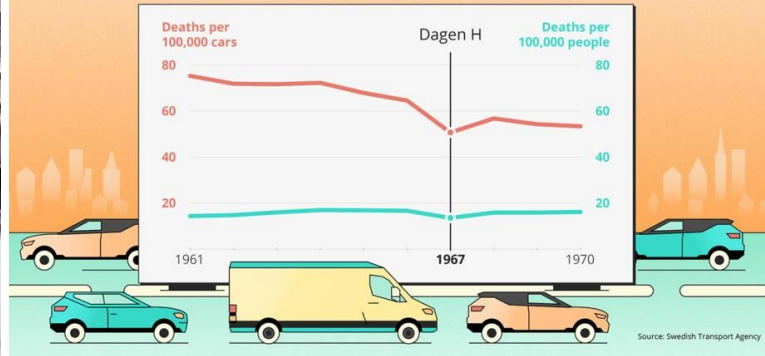
Sometimes users have difficulties in the early stages of introduction, but issues will disappear after they get familiar with the new system



### A surprisingly safe switch

Road deaths dropped in Sweden the year of Dagen H

BBC  
capital



**Dagen H**: The right-hand traffic diversion in Sweden - 3 September 1967,

# Questions to ask

2. Do we have the right method for the context? Is there a mutual understanding between designers and their audiences?

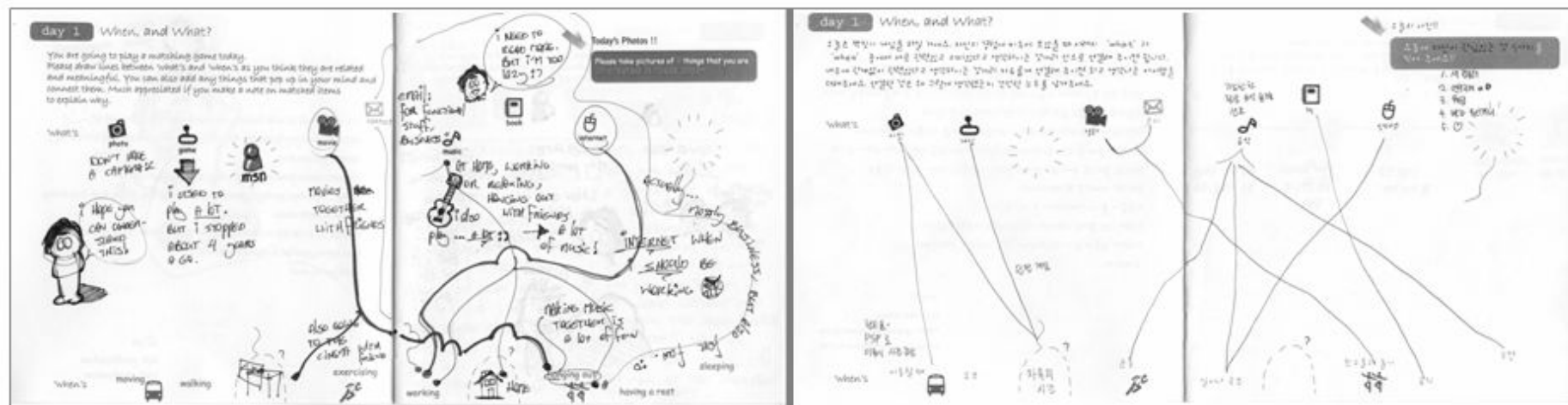
Cultural probes





2. Do we have the right method for the context? Is there a mutual understanding between designers and their audiences?

Cultural probes workbook Dutch (left) vs Korean (right)



Lee, J. J. (2009, July). Culture and co-experience: Cultural variation of user experience in social interaction and its implications for interaction design. In International Conference on Internationalization, Design and Global Development (pp. 39-48). Springer, Berlin, Heidelberg.

# Questions to ask

2. Do we have the right method for the context? Is there a mutual understanding between designers and their audiences?

Indian users tended to highlight more problems when they asked to evaluate websites using a bollywood critique style

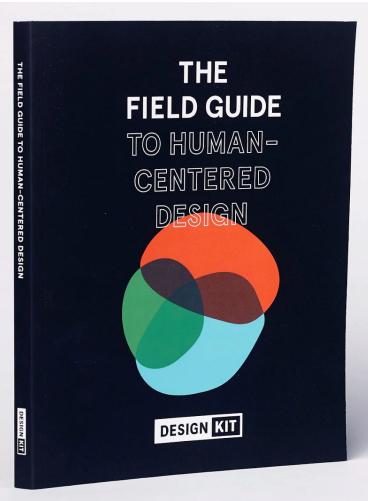


Chavan, A. L. (2005, July). Another culture, another method. In *Proceedings of the 11th International Conference on Human-Computer Interaction* (Vol. 21, No. 2). Mahwah, NJ.: Erlbaum.

# Questions to ask

3. Are we biased? [ I'm sorry, but yes.]

Design for other cultures is not design for the poor and the illiterate



# IDEO

IDEO is a global design company.



# Questions to ask

3. Are we biased? [ I'm sorry, but yes.]

World can be different from what we think



BBC Sign in News Sport Reel Worklife Travel Future Mo

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### Poverty in the UK is 'systematic' and 'tragic', says UN special rapporteur

22 May 2019

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BASSAM KHAWAJA

Prof Alston met people across the UK, including these Belfast residents

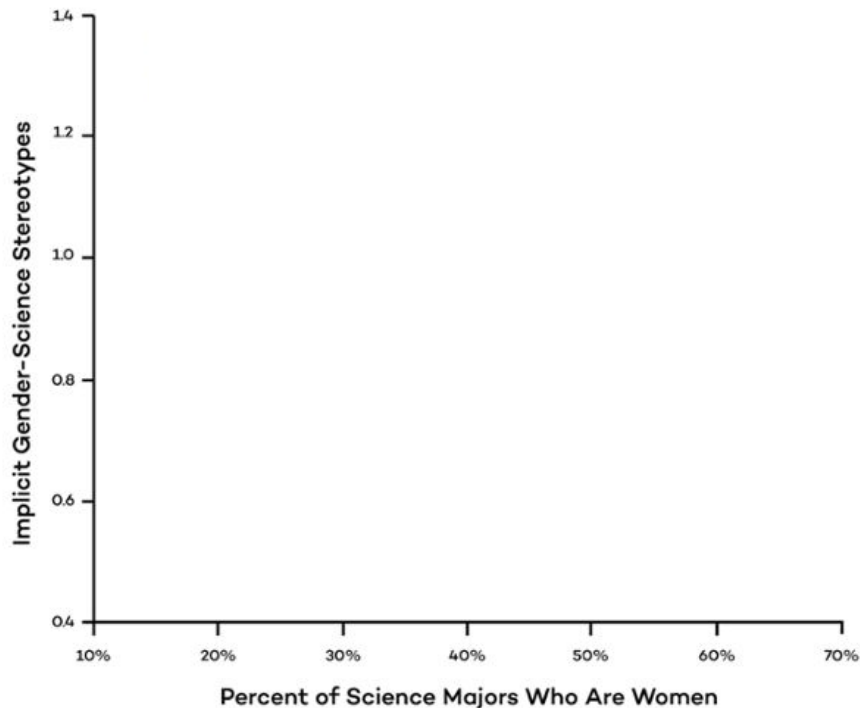
The UK's social safety net has been "deliberately removed and replaced with a harsh and uncaring ethos", a report commissioned by the UN has said.





## Gender-Science Stereotypes in 66 Nations

Northwestern graduate student David Miller and IPR psychologist Alice Eagly tie implicit stereotypes to women's representation in science



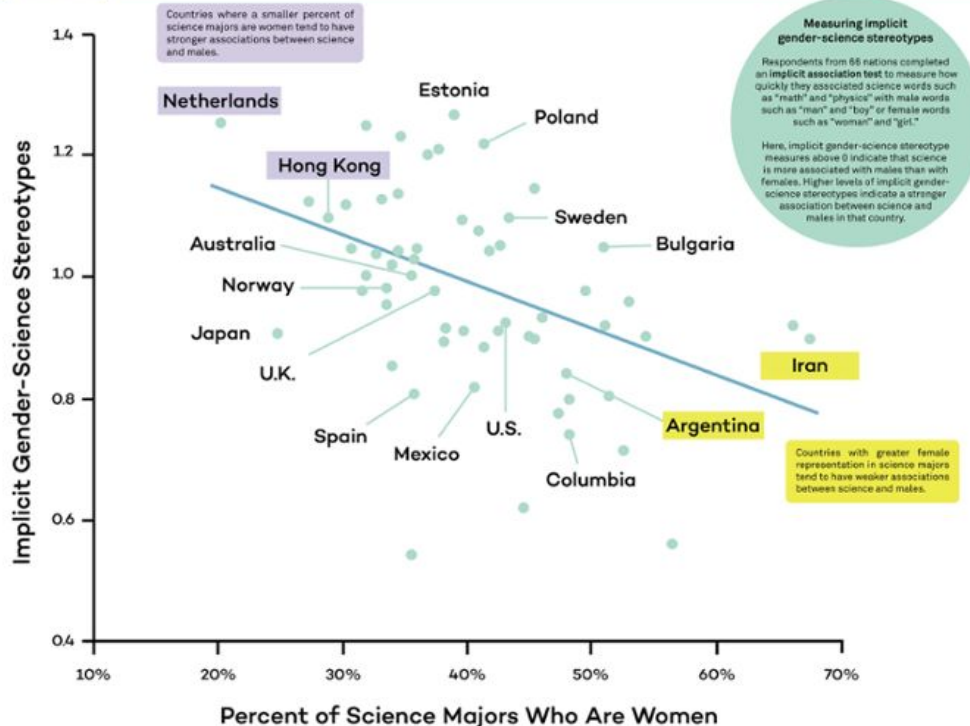
Source: Miller, D., A. Eagly, and M. Linn. 2015. Women's representation in science predicts national gender-science stereotypes: Evidence from 66 nations. *Journal of Educational Psychology* 107(2): 621-44.

Based on your assumptions, locate Netherlands, Sweden, Norway, Colombia, Argentina, and Iran on this diagram

*Implicit gender-science stereotypes refer to the automatic, unconscious associations people make between science and gender, usually attributing science-related fields, topics, or professions more to men than to women. These stereotypes are a component of implicit bias, where individuals attribute specific traits or roles to others based on their gender, without being consciously aware of doing so*

## Gender-Science Stereotypes in 66 Nations

Northwestern graduate student David Miller and IPR psychologist Alice Eagly tie implicit stereotypes to women's representation in science



Source: Miller, D. I., Eagly, A. H., & Linn, M. C. (2015). Women's representation in science predicts national gender-science stereotypes: Evidence from 66 nations. *Journal of Educational Psychology* 107(3), 631-644.

Miller, D. I., Eagly, A. H., & Linn, M. C. (2015). Women's representation in science predicts national gender-science stereotypes: Evidence from 66 nations. *Journal of Educational Psychology*, 107(3), 631.

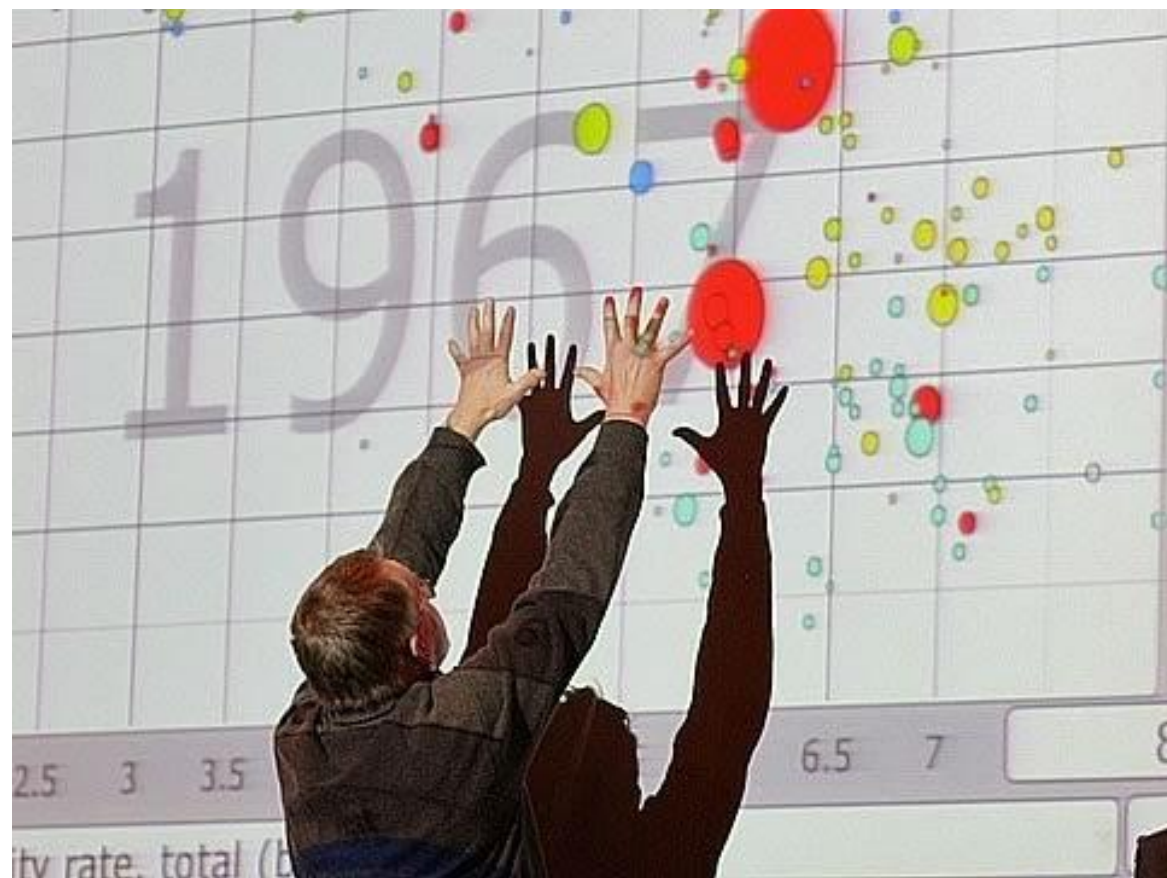
# Questions to ask

3. Are we biased? [ I'm sorry, but yes.]

World can be different from what we think



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# Questions to ask

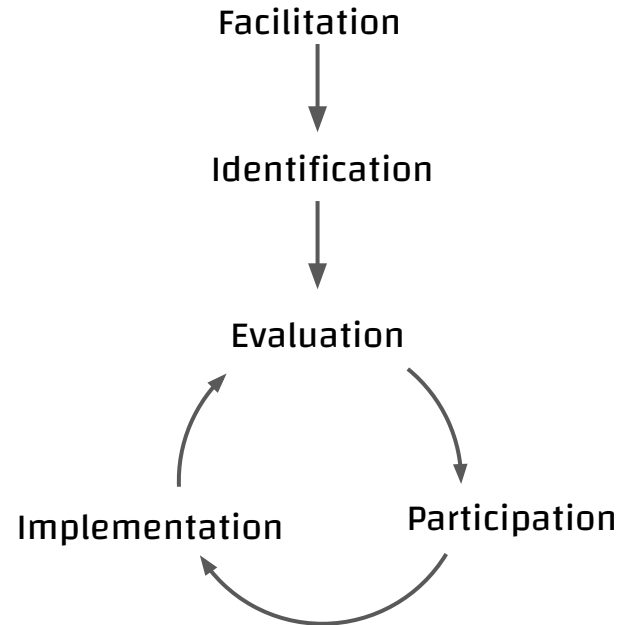
4. Is this an informed process? people can solve the problems, designers can facilitate the process

Informed participation:

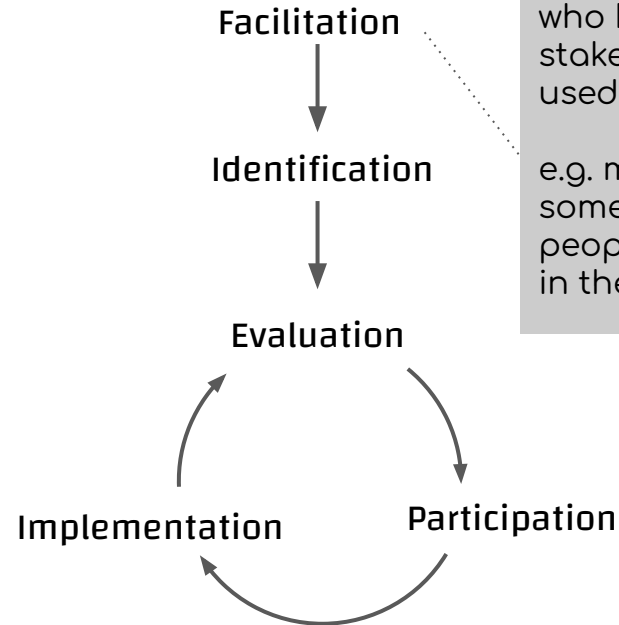
- Participants are the owners of problems and solutions
- Participants have a full control on the process and information
- Participants are fully aware of the objectives of the intervention



# A framework for design



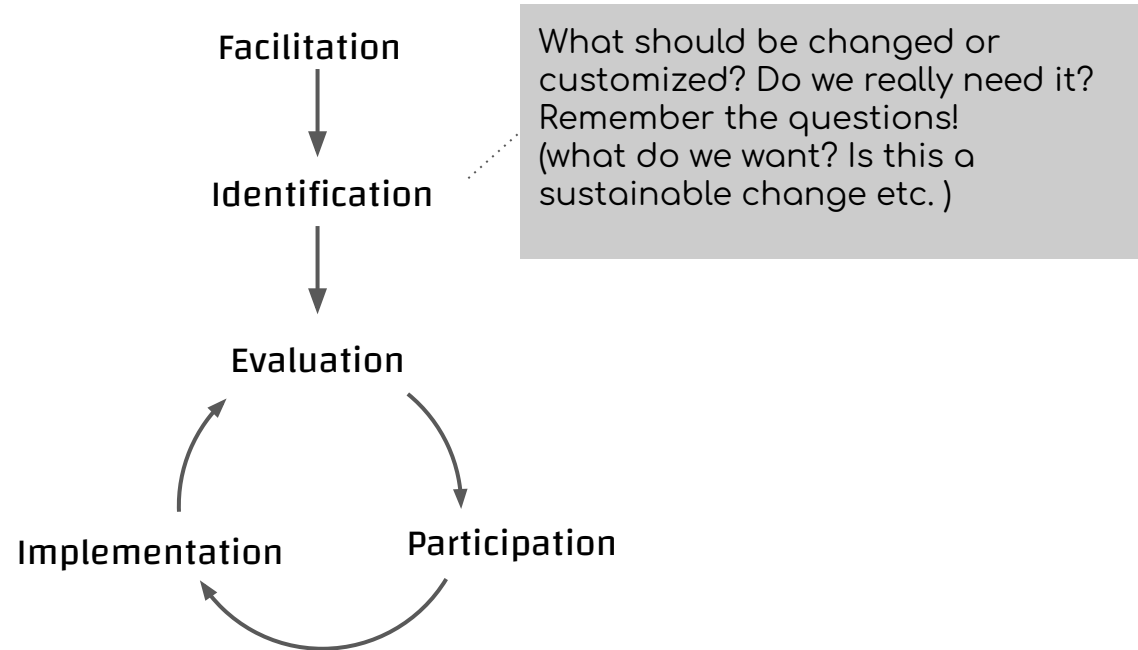
# A framework for design



who knows what? How existing stakeholders and facilities can be used for design or customization?

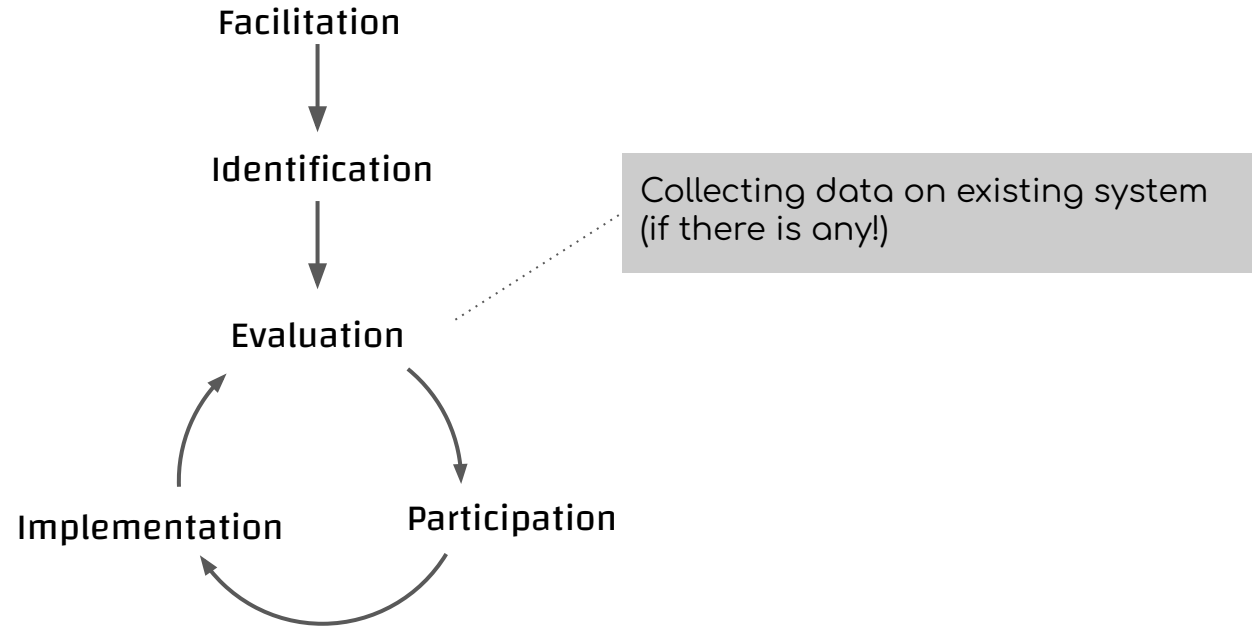
e.g. marketing team already have some data  
people from the target culture work in the organization

# A framework for design

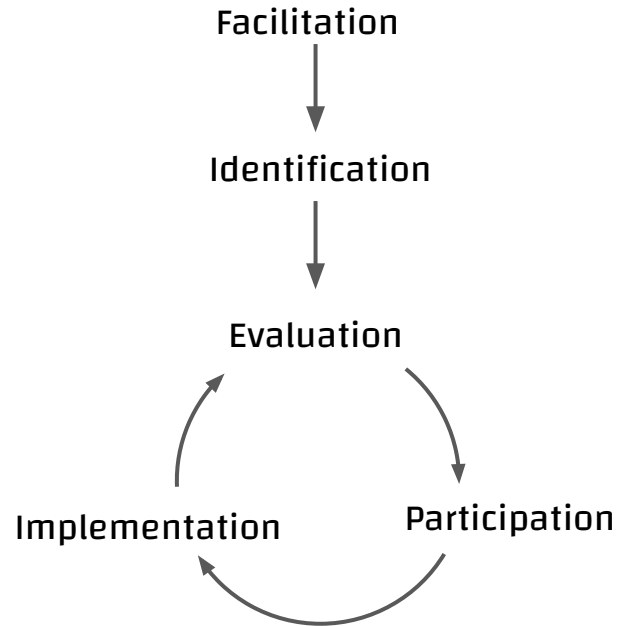




# A framework for design

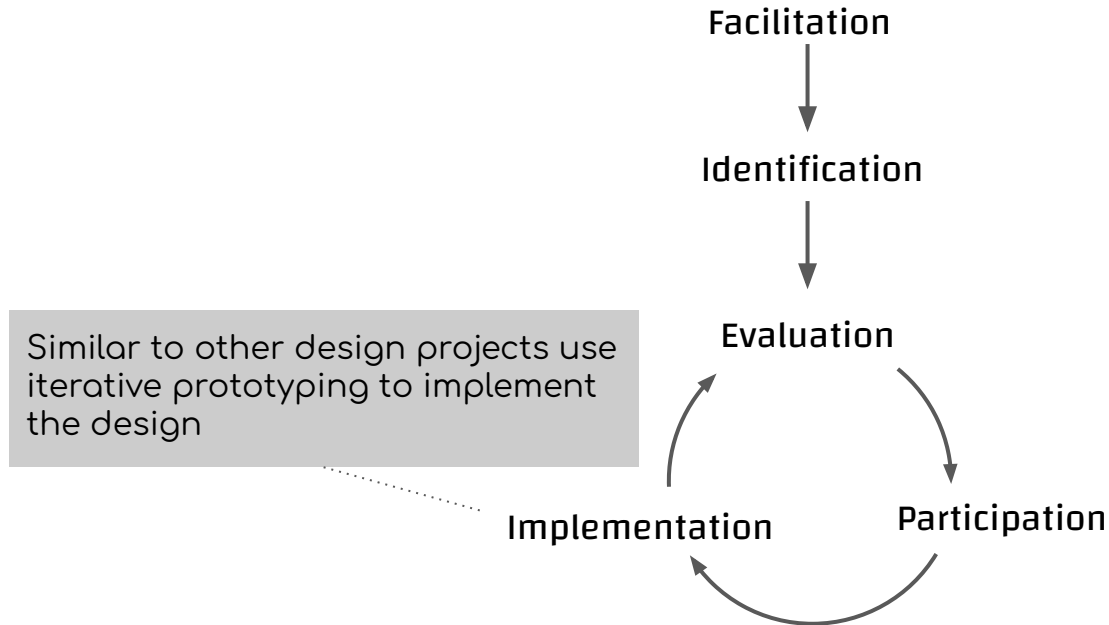


# A framework for design



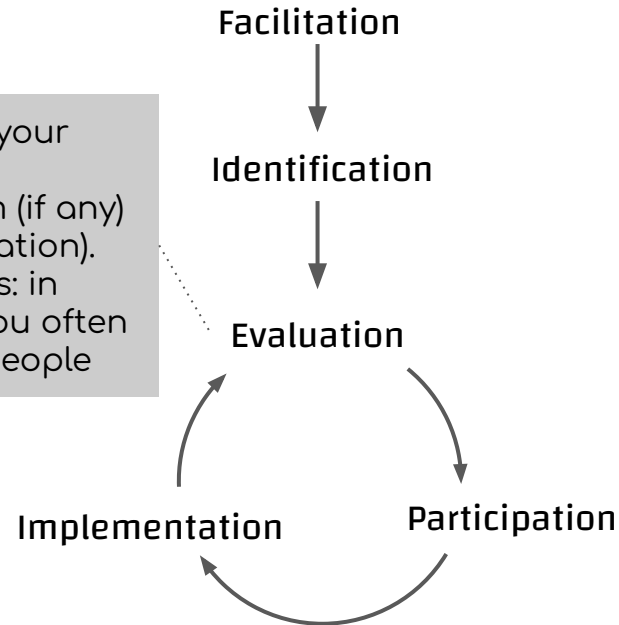
Use findings of identification and evaluation phases to set-up participatory requirements workshops or other similar participatory techniques. Remember the principles of informed participation

# A framework for design



# A framework for design

Evaluate the design using: your initial goals (identification), problems of existing system (if any) and requirements (participation). Be aware of potential issues: in participatory techniques you often work with small groups of people



## Notes about the references:

1. Check the “Country-specific Design - References” link on Canvas to see the folder with files and links.
2. The references we use for the activity are old, but they are straightforward and easy to grasp.
3. There are links to more recent references in the folder mentioned in item 1.
4. Please have a look at Aaron Marcus paper before tomorrow’s activity to save some time!

**Thank you!**