



Designing Innovation

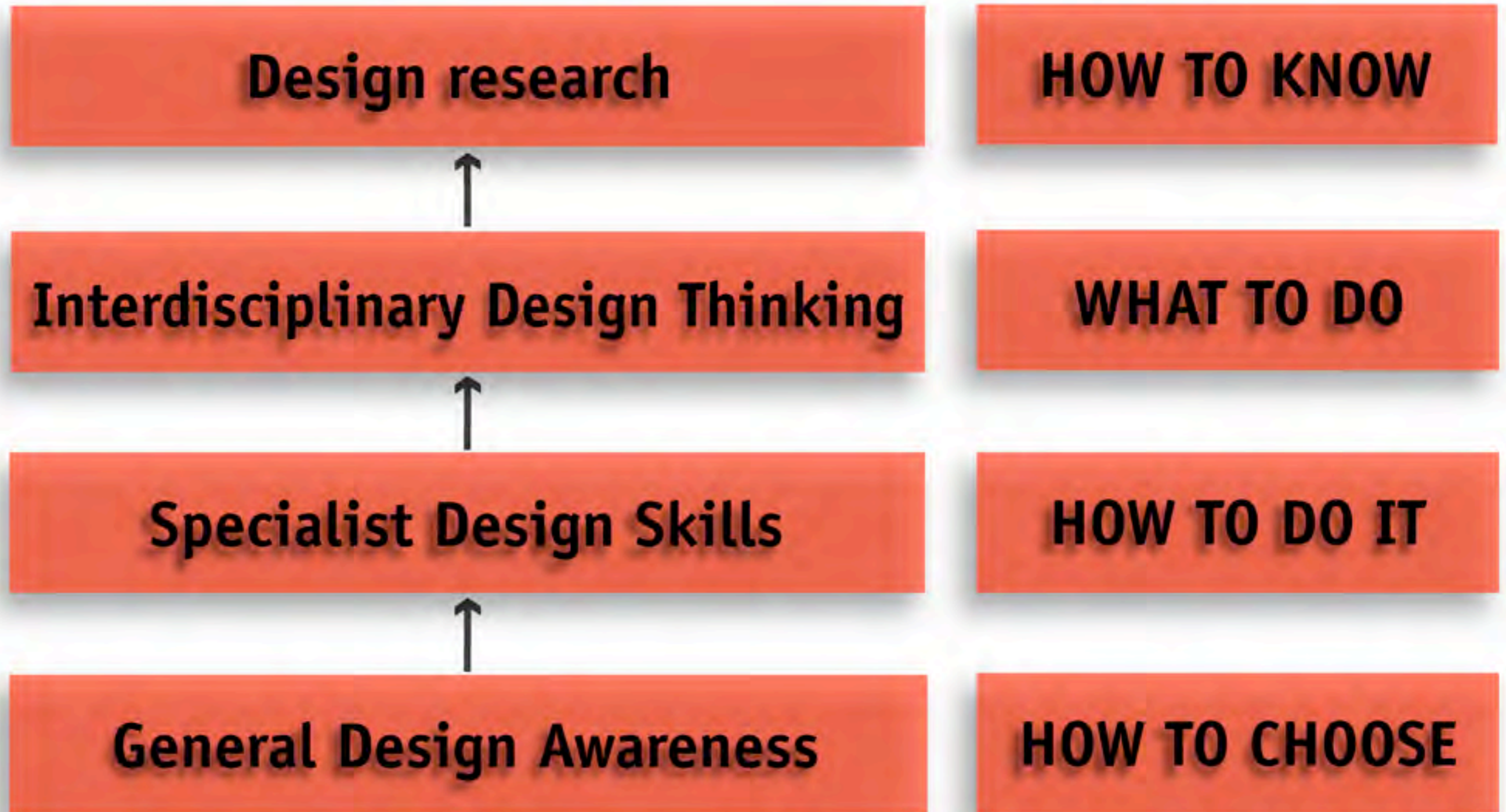


- ~ Higher Level Design
- ~ Services and Systems
- ~ People and Prototypes
- ~ Expanding Contexts



Higher Level Design - 4 Levels

Four Levels of Design



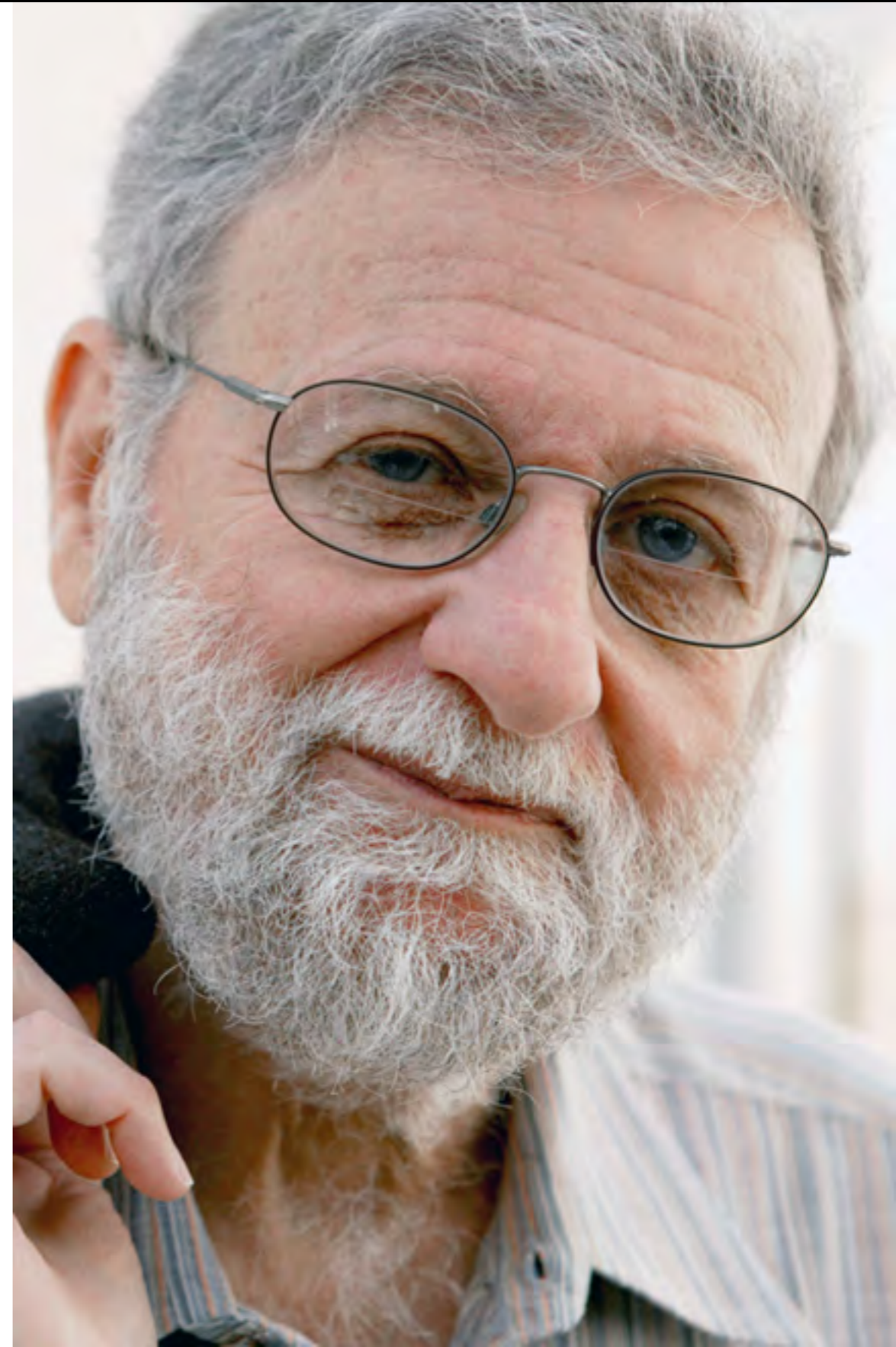


General Design Awareness

How to Choose

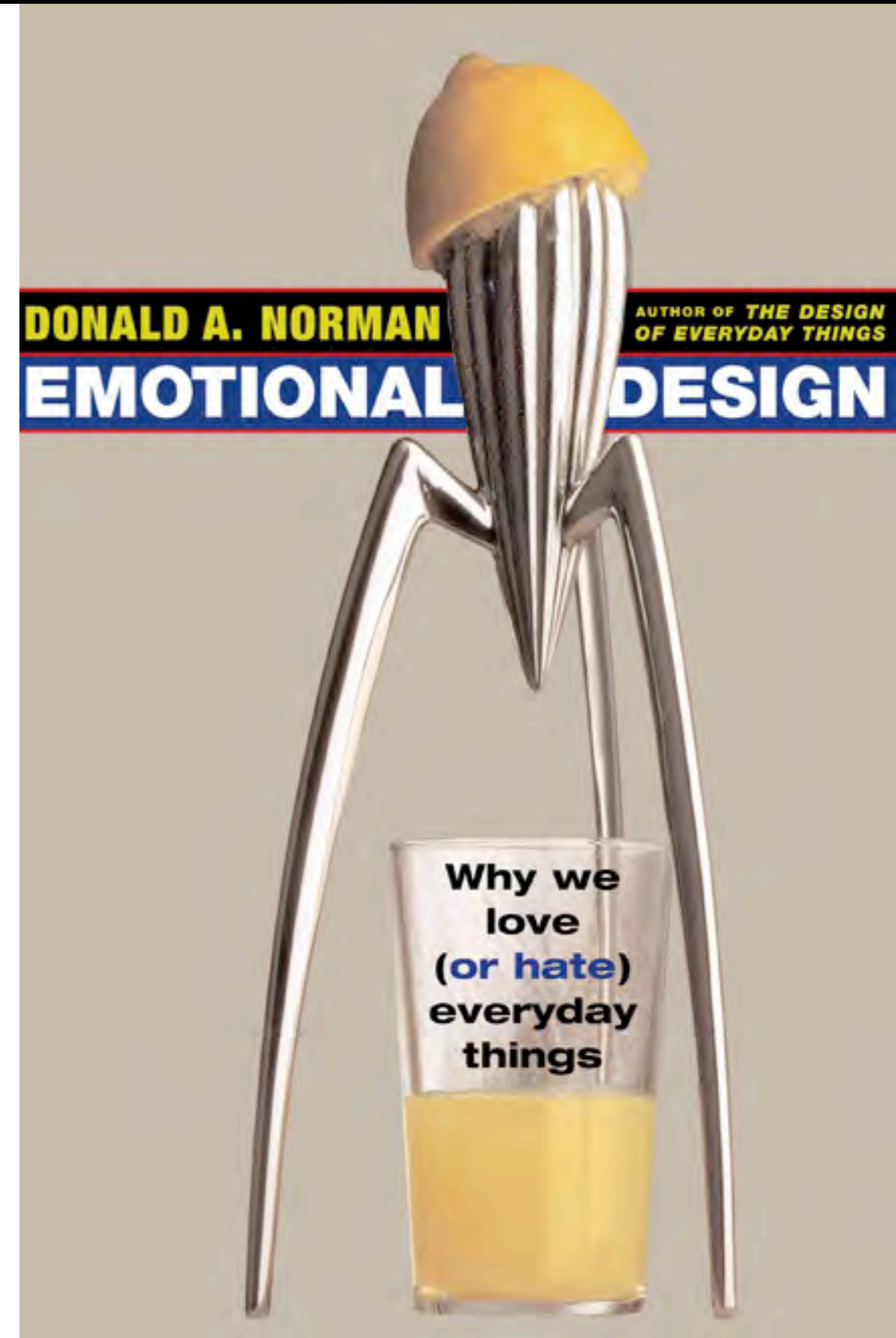
We are all designers. We manipulate the environment, the better to serve our needs. We select what items to own, which to have around us. We build, buy, arrange, and restructure: all this is a form of design. When consciously, deliberately rearranging objects on our desks, the furniture in our living rooms, and the things we keep in our cars, we are designing.

Epilog to Emotional Design, Don Norman,
2003



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Epilog to Emotional Design, Don Norman,
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General Design Awareness

Helped by Tradition



Leonardo da Vinci's Ornithopter



General Design Awareness

Helped by Education





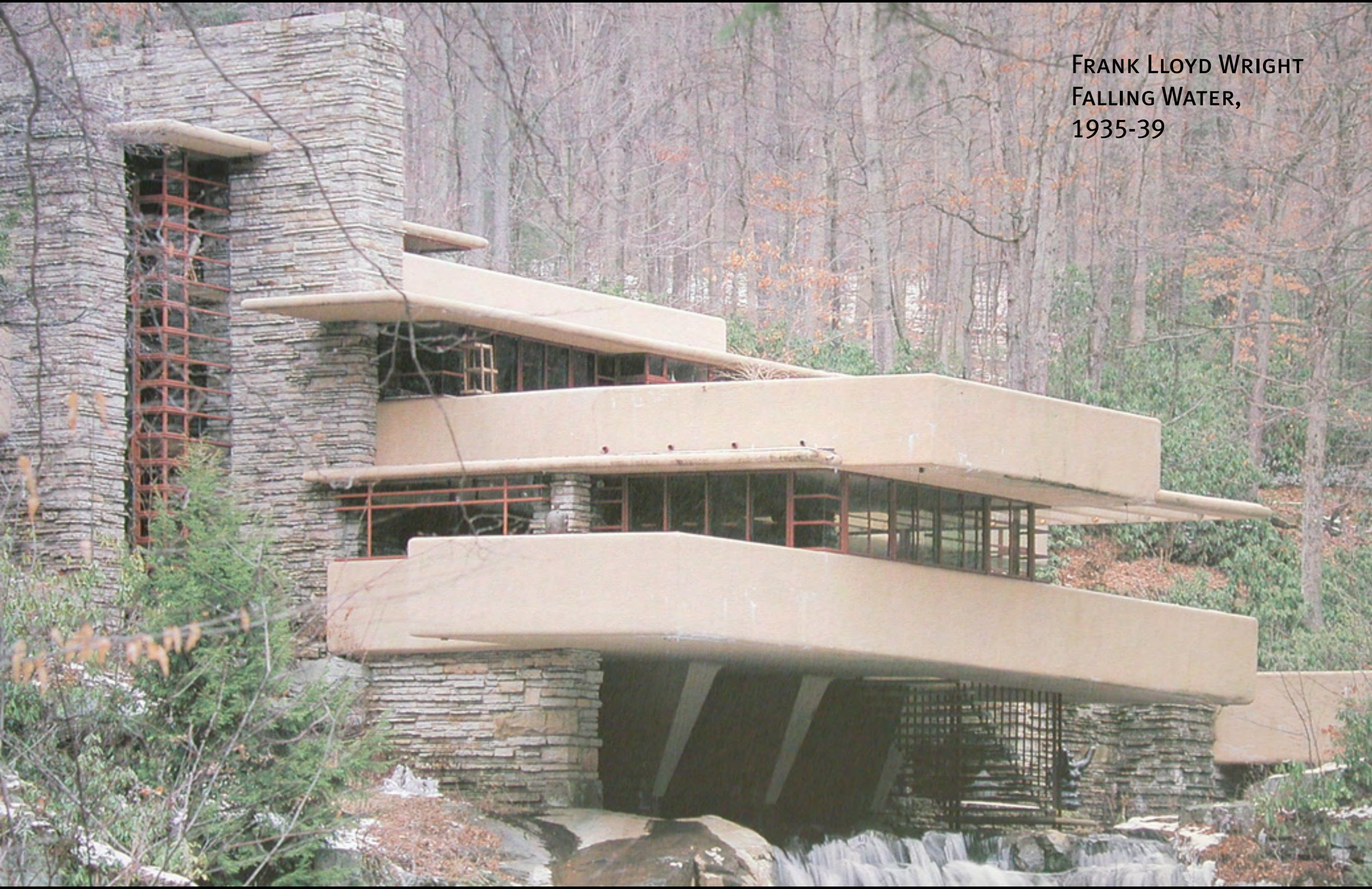
Specialist Design Skills How to Do It

Design Skills - Architecture



MIES VAN DER ROHE
FARNSWORTH HOUSE
1946-50

Design Skills - Architecture - Modernism, expression



FRANK LLOYD WRIGHT
FALLING WATER,
1935-39

Design Skills - Industrial Design - Modernism, less is better



BRAUN COFFEE MAKERS

Design Skills - Ettore Sottsass

OLIVETTI VALENTINE, 1969



Design Skills - Post-Modernism: Ettore Sottsass

MEMPHIS



Design Skills - Post-Modernism: Ettore Sottsass



Vases en verre soufflé
Memphis, 1983

De gauche à droite : Sirio, Mizar, Alcor, Alioth

Design Skills - Archetypes

TIZIO - RICHARD SAPPER



LEAF - YVES BEHAR



Design Skills - Interaction Design

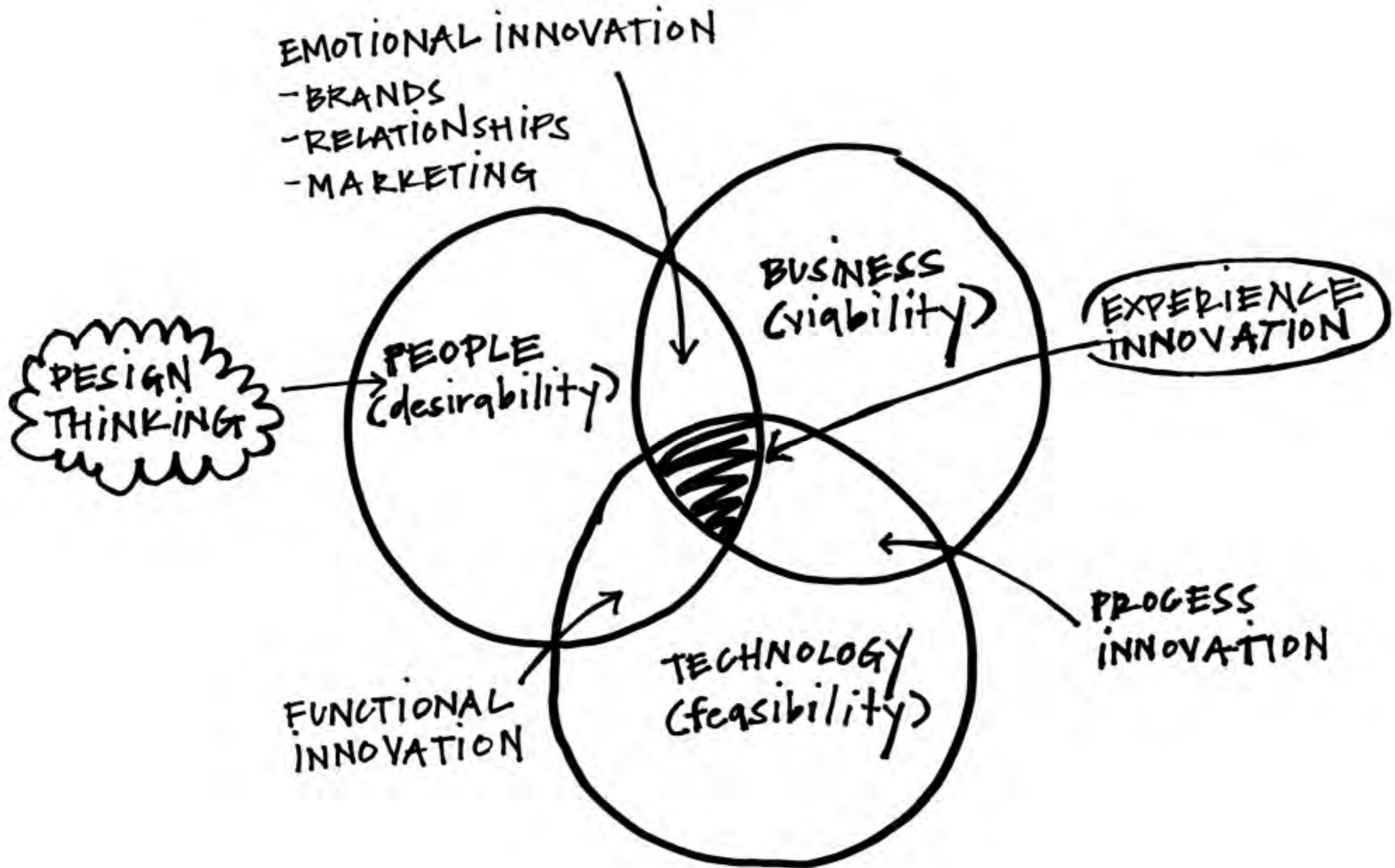




Interdisciplinary Design Thinking

What to Do

An Innovation Framework



Design Thinking - What Should Shimano do in the USA?



Shimano *Coasting* - Some of the Components



Shimano *Coasting* - 4 Manufacturers in the First Year



Shimano Coasting - Website Design - Homepage



coasting
SHIMANO

Shops
and Routes

366

Coasting
Bikes

Story of
Coasting

DEMO TOUR

Hi! Welcome
to Coasting.com
I'm Skwirl. Nice to meet you.
Hey, check out those bikes!



Chill. Dawdle. Lollygag.
Coasting is a casual bike experience for the millions of Americans who remember riding a bike as a kid and want to relive that experience effortlessly. The bikes are designed around the casual user's needs: easy to ride, with hidden technology.

BIKETOWN

Shimano Coasting - Website Design - Dealers



Rider Safety Tips

Dealer Locator:

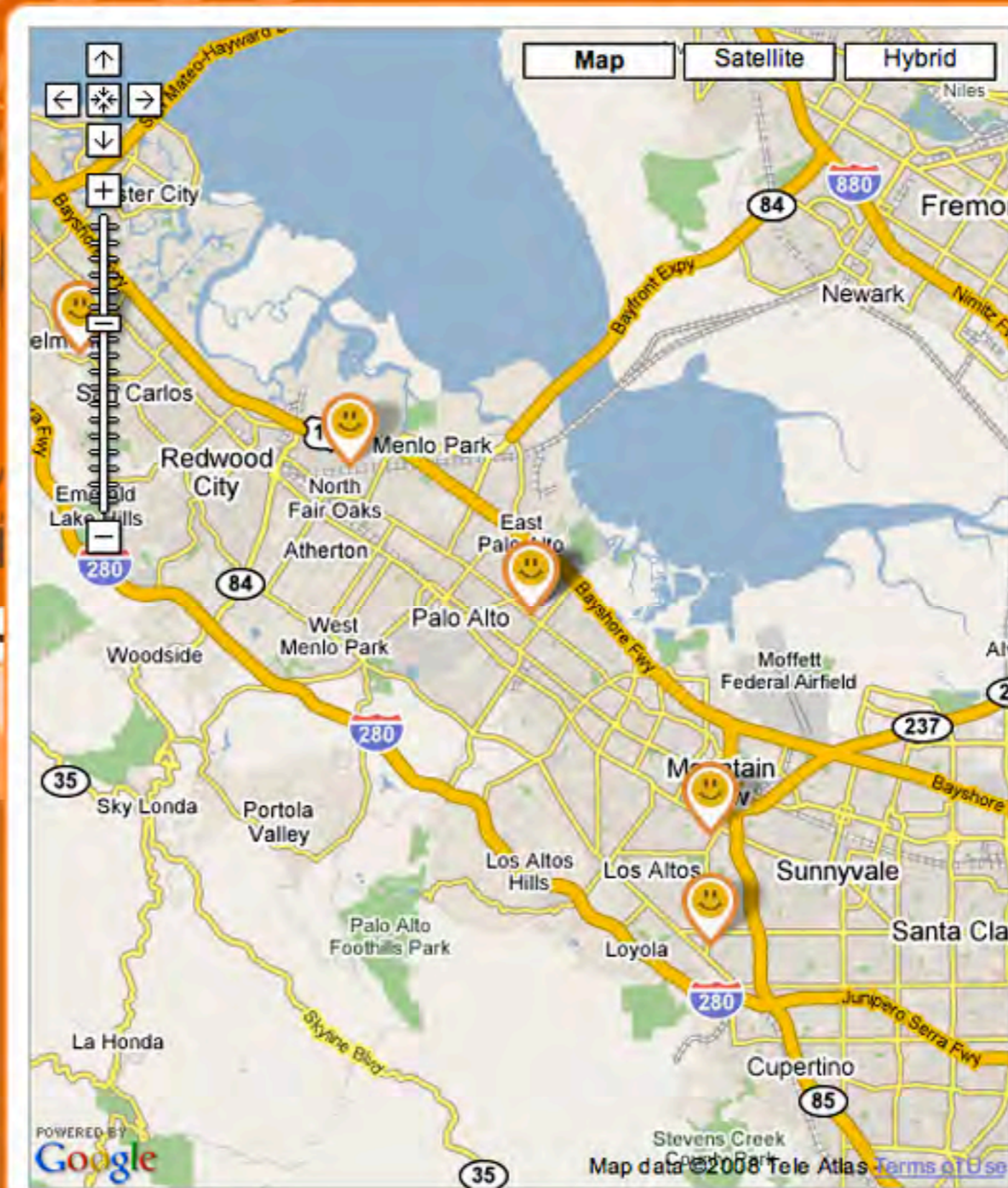
94301 Miles

View Routes:

94311 Miles

Plan/Submit a Route

BIKETOWN



Dealers Near You:

PALO ALTO BICYCLES

171 UNIVERSITY AVE
PALO ALTO, CA 94301
650 - 3287411

CARDINAL BIKE SHOP

1955 EL CAMINO
PALO ALTO, CA 94301
650 - 3288905

CHAIN REACTION BICYCLES

1451 EL CAMINO REAL
REDWOOD CITY, CA 94063
650 - 3666620

OFF RAMP, THE

2320 EL CAMINO REAL
MOUNTAIN VIEW, CA 94040
650 - 9682974

CHAIN REACTION BICYCLE

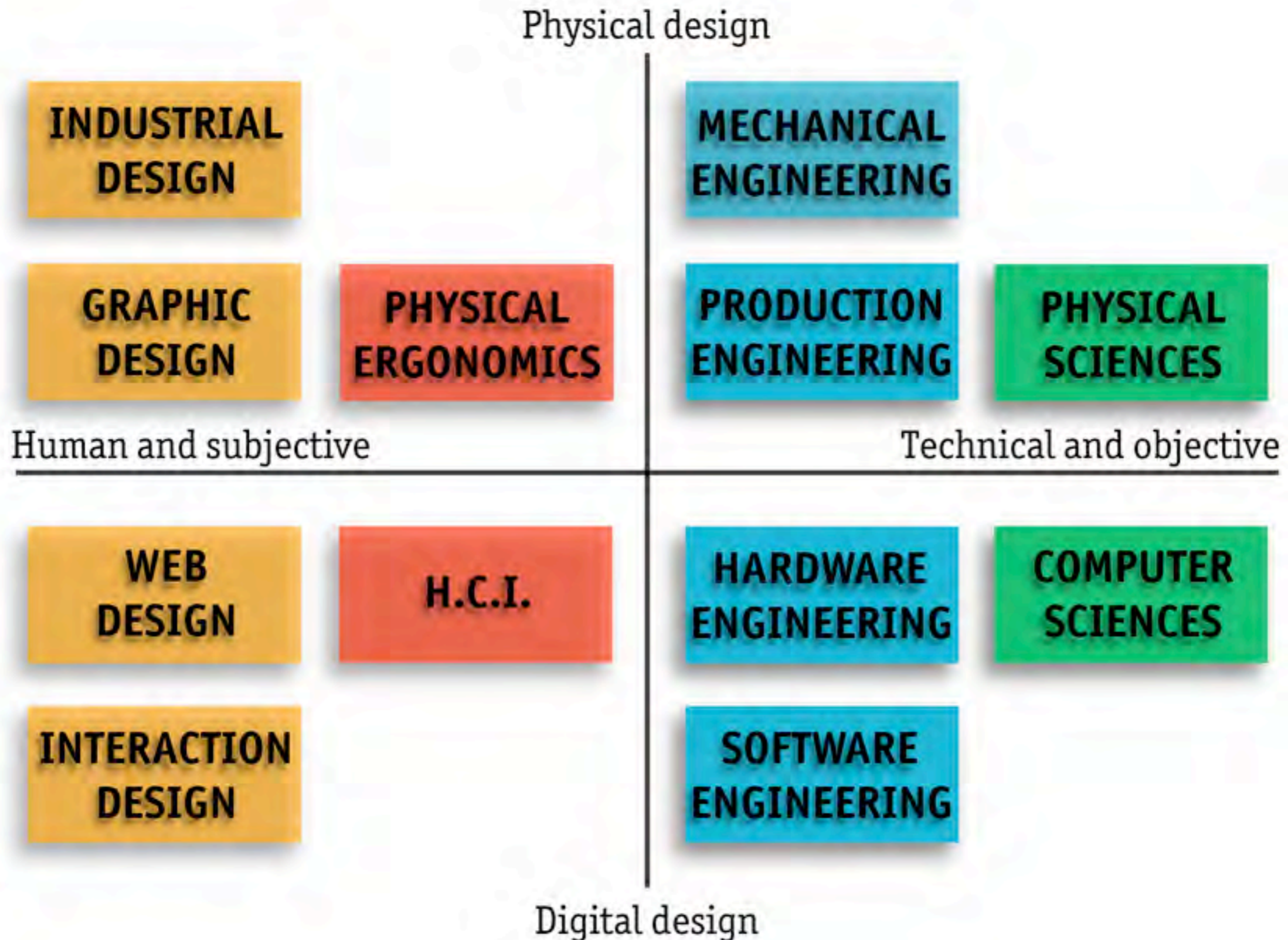
2310 HOMESTEAD ROAD
LOS ALTOS, CA 94024
408 - 7358735

CALIFORNIA SPORTS & CYCLE

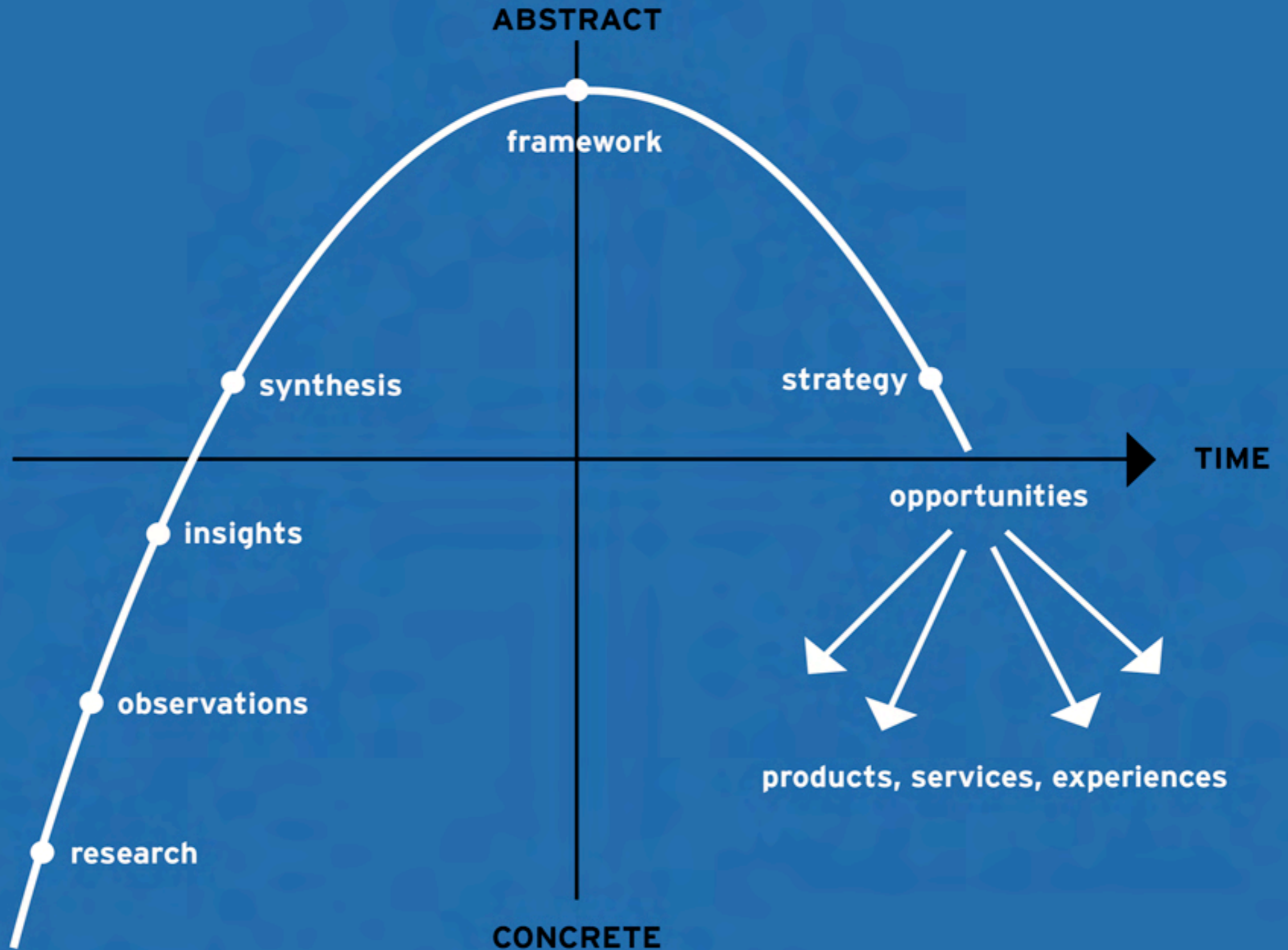
1464 EL CAMINO REAL
BELMONT, CA 94002
650 - 5938806

Check with the dealers in your area to find out which brands they carry

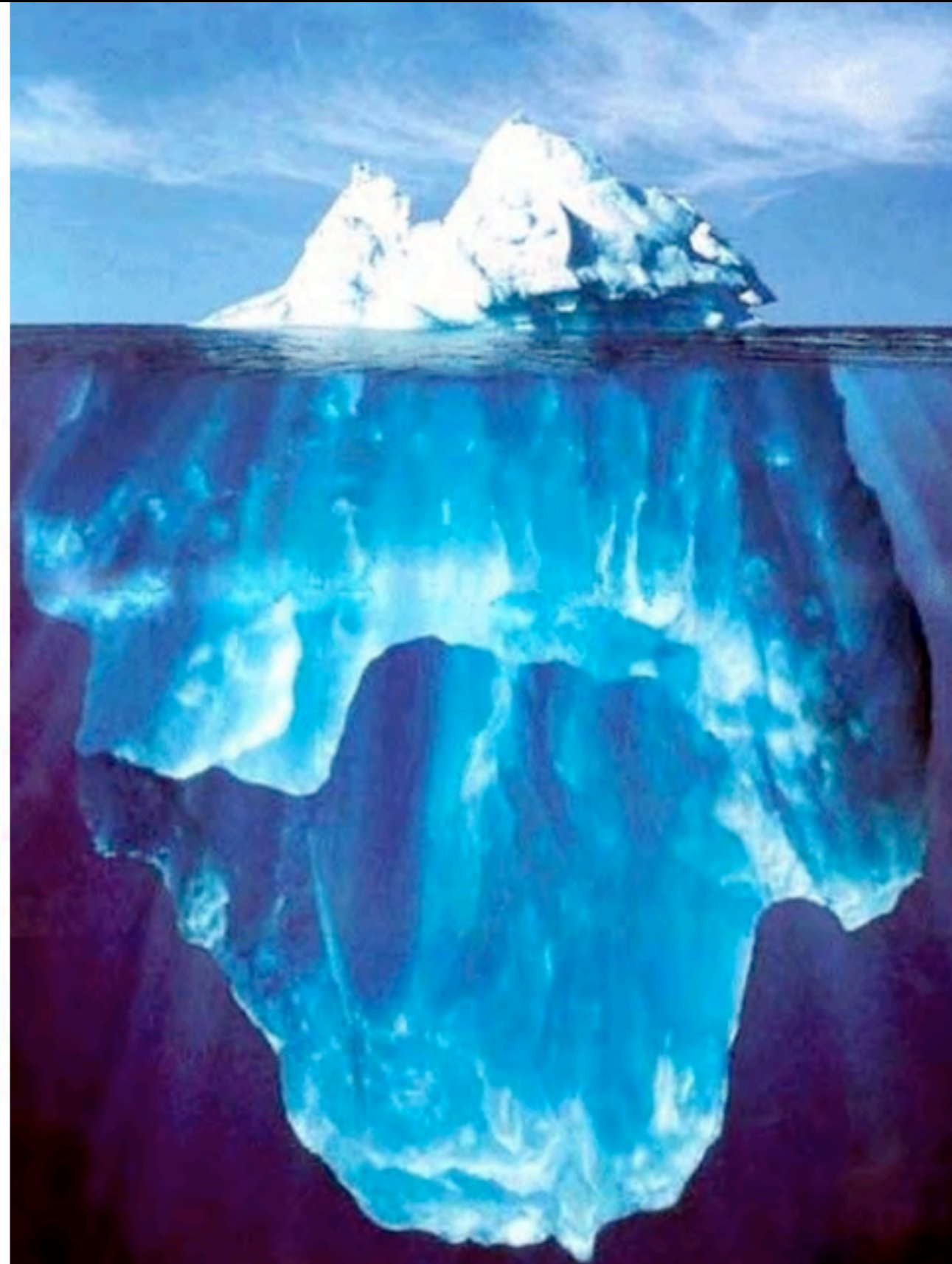
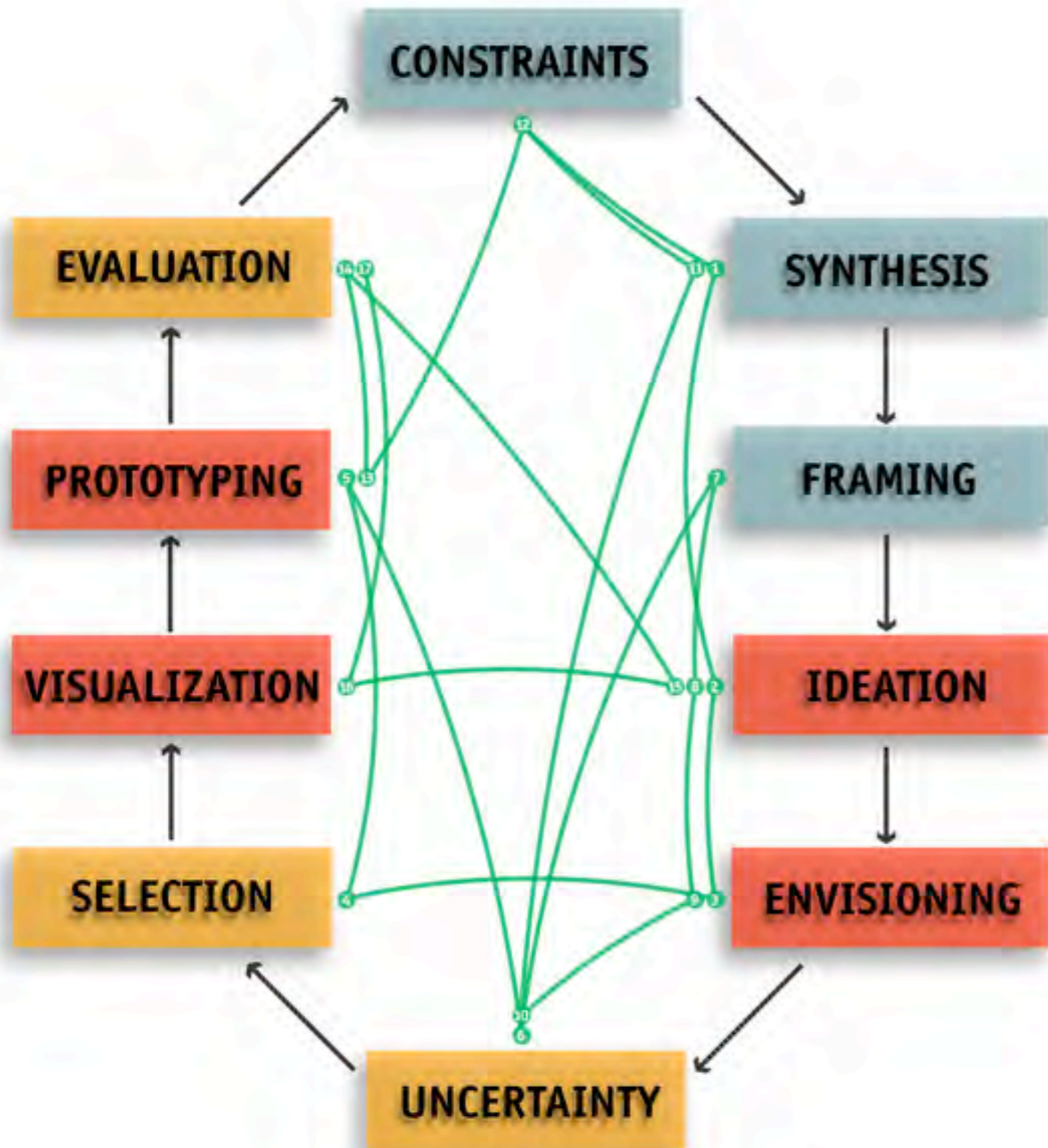
Disciplines - & Business, Brand & Sustainability Factors



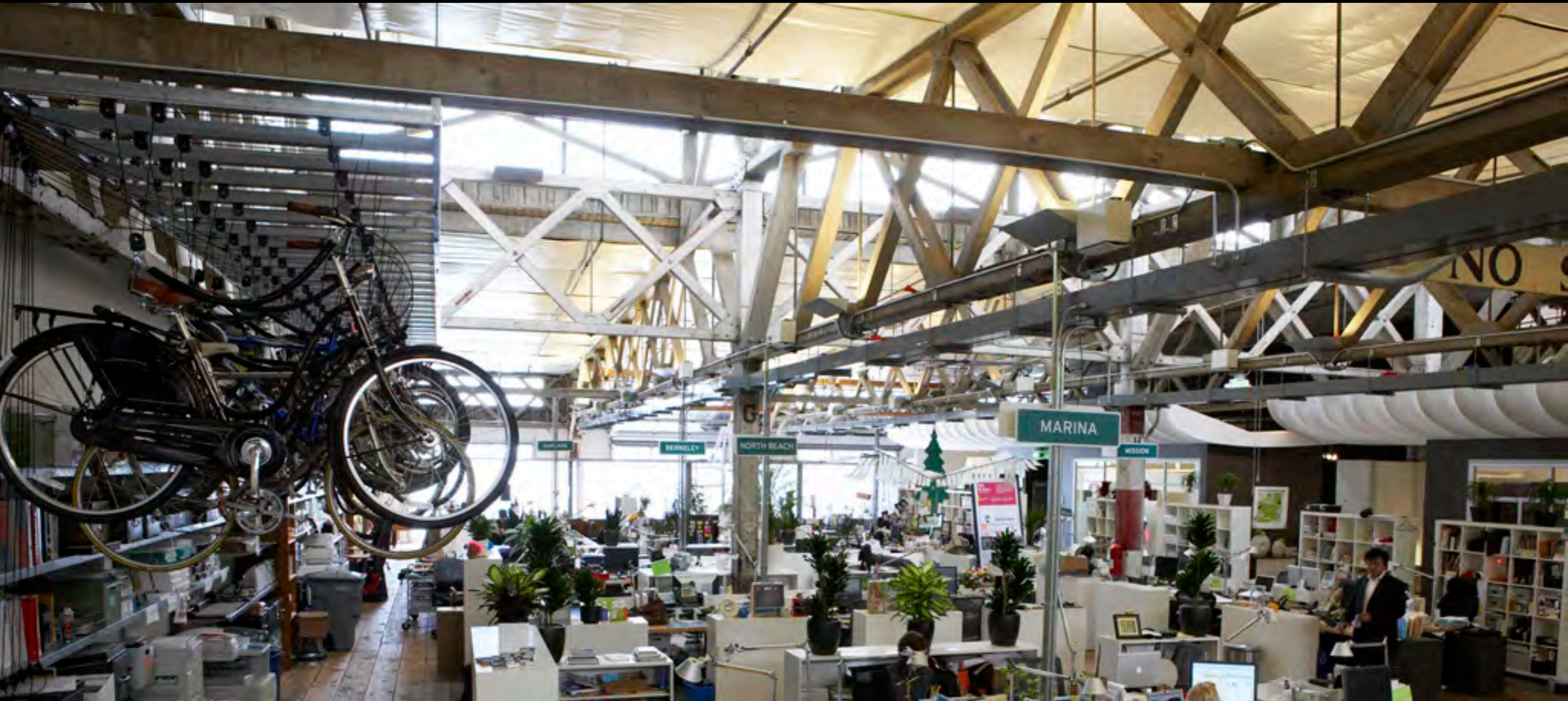
Design Research - IDEO's Innovation Process



Design Harnesses Tacit Knowledge, or Learning by Doing



IDEO San Francisco



Design Thinking - Project Room - Shared Mind





Design Research How to Know

Professor Ezio Manzini

“Design research is an activity that aims to produce knowledge useful to those who design.”

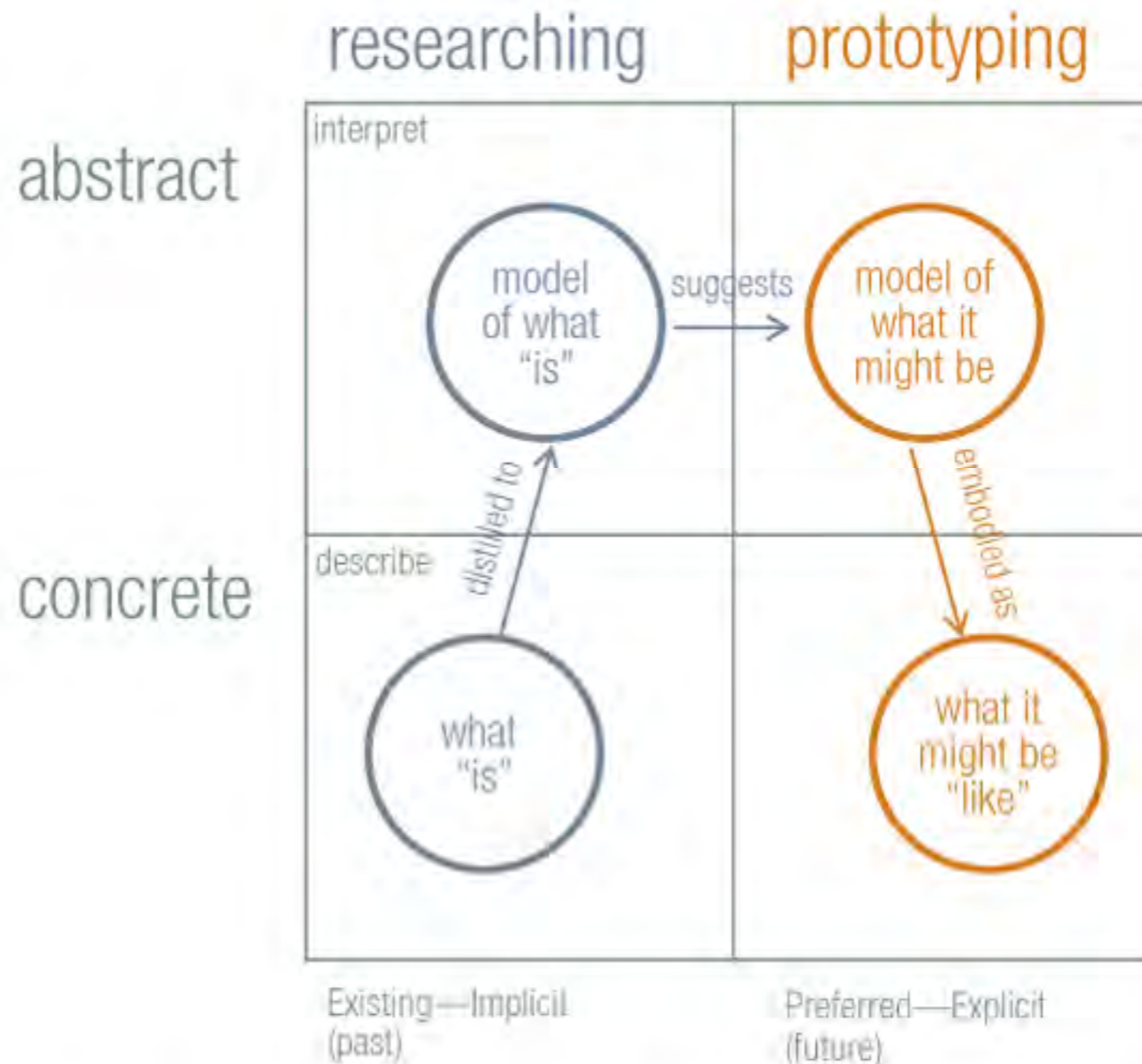


Jane Fulton Suri

“Design research . . . means getting out of the office, being where customers are, becoming aware of and sensitive to social trends and the broad ecology of stakeholders, rolling up our sleeves to try out unfamiliar things first hand.”



Design Research - Model for Innovation



Hugh Dubberly
(with modifications
by Shelley Evenson)

after:
Rick Robinson, Stafford Beer,
and Christopher Alexander



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Services and Systems

Phone Services



Services and Systems

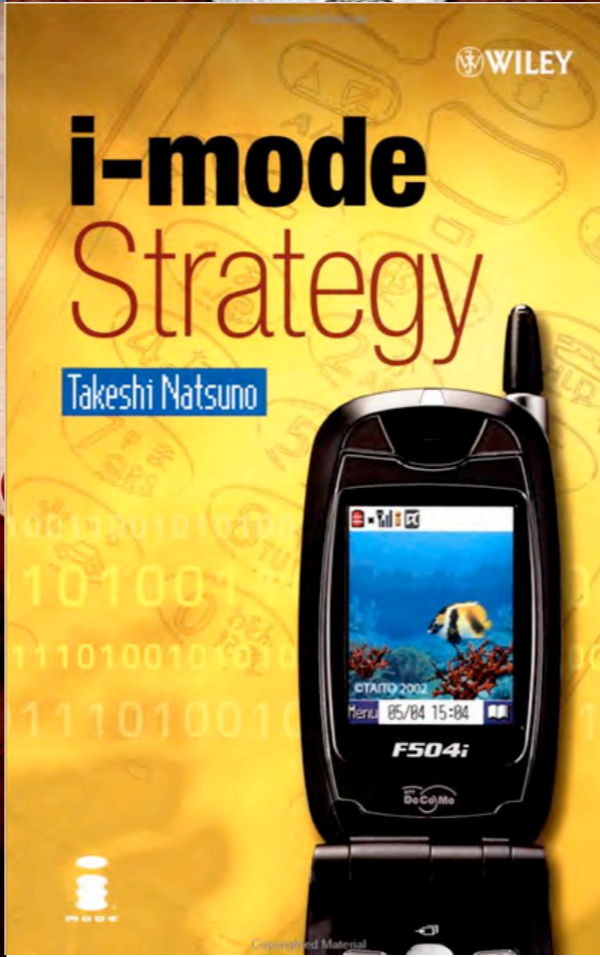
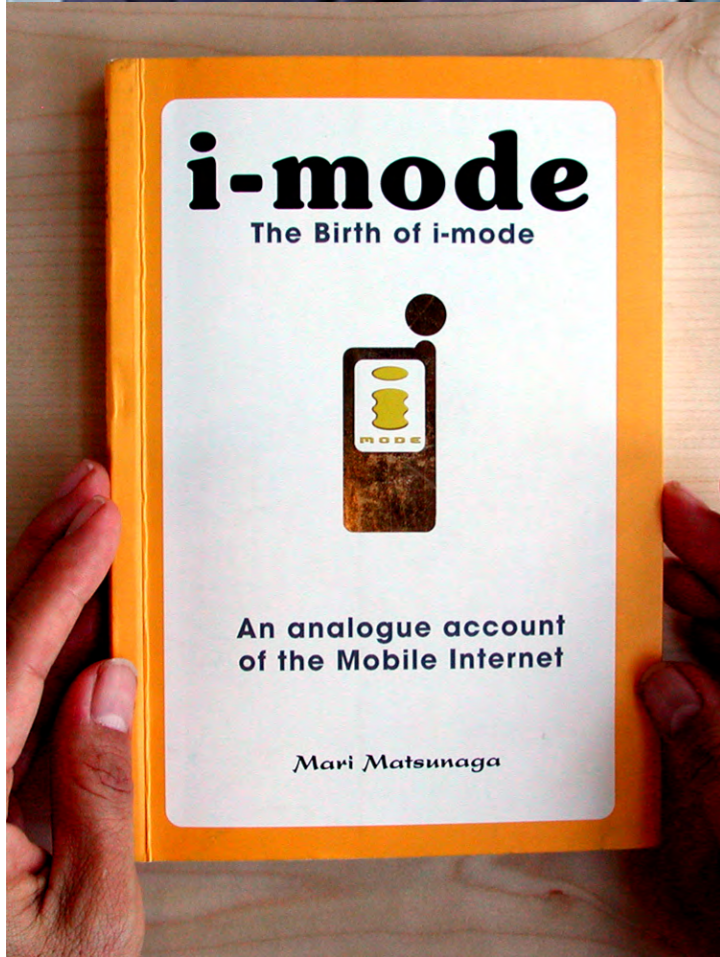
Phone services used to be simple



Not any longer



The i-mode service



Shibuya, Tokyo



Takeshi Natsuno



The little bear



Applications

TRANSACTIONS

e.g. Banks

INFORMATION

e.g. Train Timetables

DATABASE

e.g. Yellow Pages

ENTERTAINMENT

e.g. Entertainment

Differences between Japan and the USA

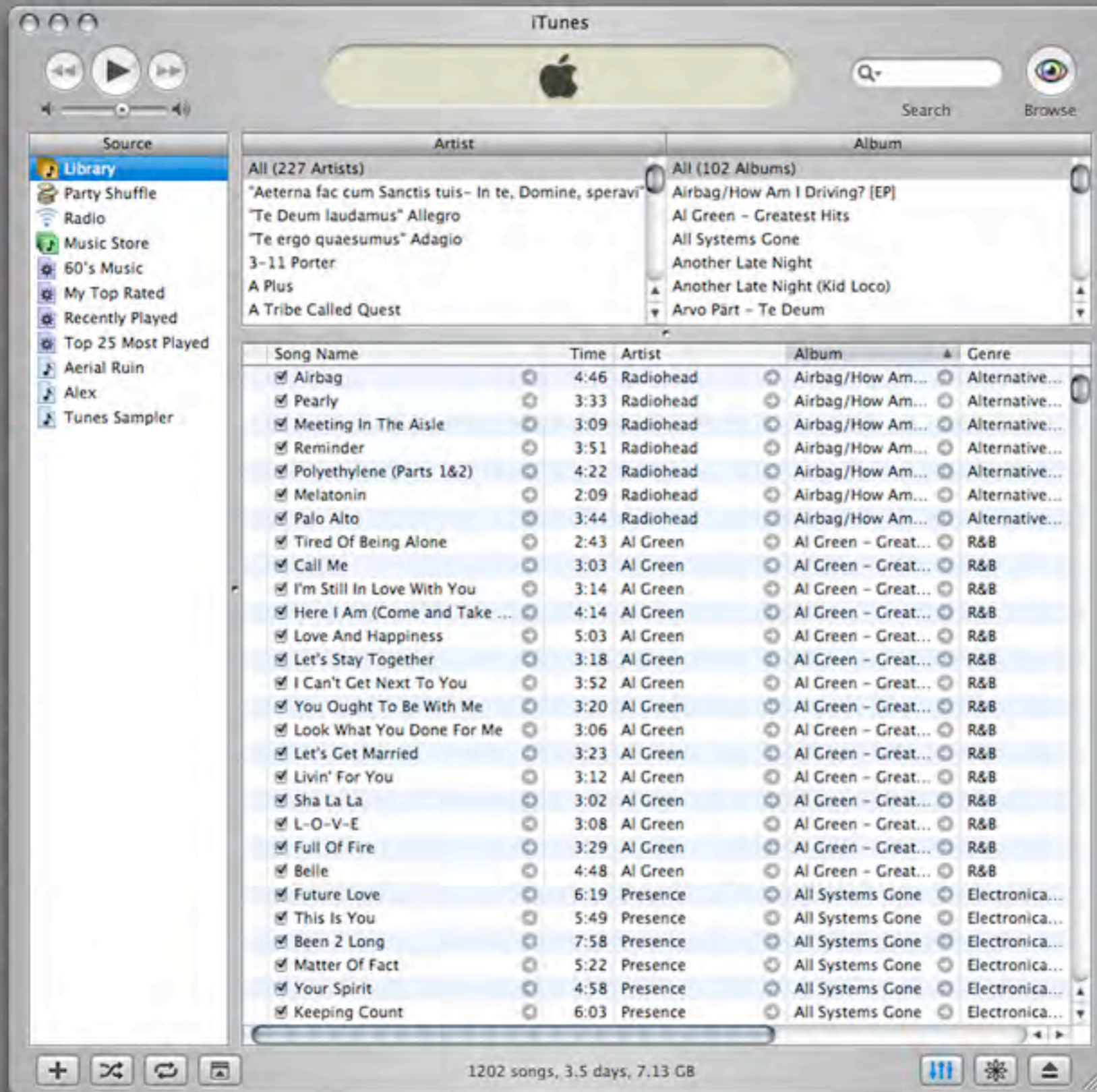




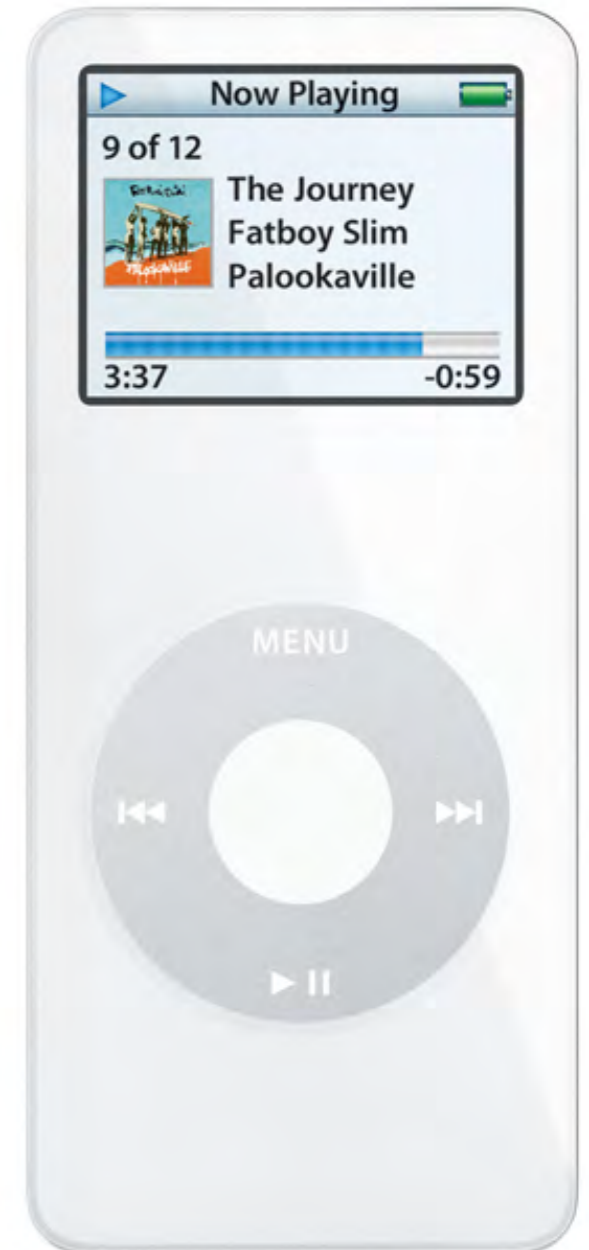
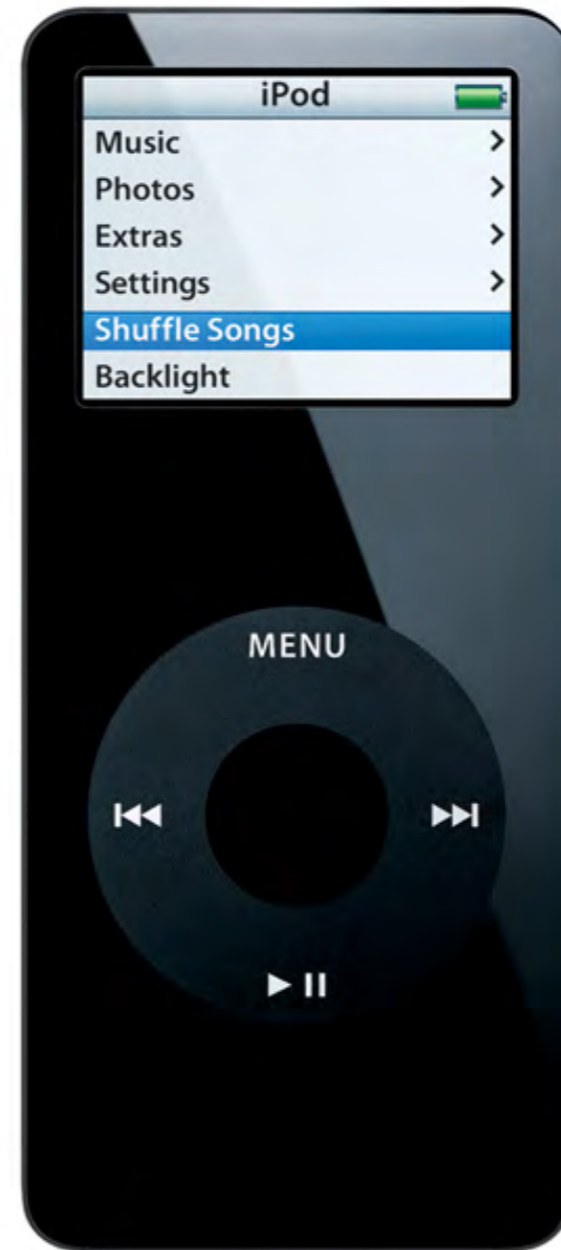
Services and Systems

Apple Music System

iTunes came first



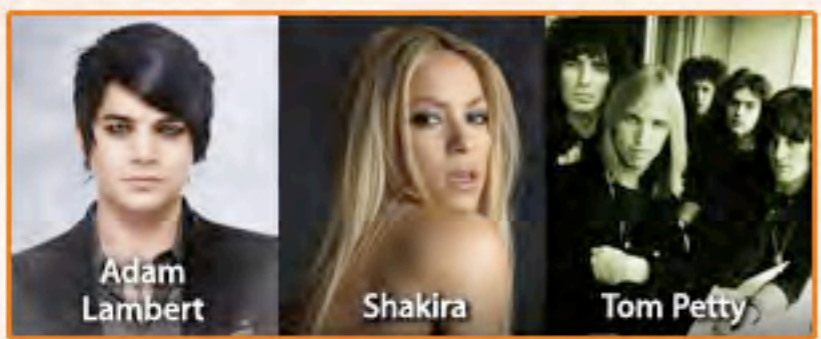
... then came the iPods (portable music players)



... then came the iTunes Music Store

PRE-ORDER

TOMORROW'S HITS TODAY



Music Albums Singles See All >

- | | | | | | | | | |
|----------------------------------|--|-------------------------------|---|------------------------------------|----------------------------------|--|--|----------------------------|
| | | | | | | | | |
| Before I Self Des...
50 Cent | The Circle (Bonu...
Bon Jovi | Tyrese Gibson's ...
Tyrese | Attention Deficit ...
Wale | Hello Hurricane (...
Switchfoot | Jason Mraz's Be...
Jason Mraz | Reality Killed the...
Robbie Williams | Paraiso Express
Alejandro Sanz | Defying Gr...
Glee Cast |
| | | | | | | | | |
| Last Night On Ea...
Green Day | Alter the Ending ...
Dashboard Confe... | Tyrese Gibson's ...
Tyrese | Get Yer Ya-Ya's ...
The Rolling Stones | Memento Mori (E...
Flyleaf | Midwinter Grace...
Tori Amos | Jack and Coke
Artie Lange | Britney - The Sin...
Britney Spears | Live Sessio
Brooke Whit |

... and even later, the iPod touch



Paul Mercer



... and at last the phone functionality!



... and at last the phone functionality!



Wii Tennis



Epoc - brainwave input sensors



The screenshot shows the Emotiv Systems website homepage. At the top left is the Emotiv logo, a stylized orange 'E' inside a circle, followed by the text 'Emotiv Systems'. To the right of the logo is a navigation menu with links for 'DEVELOPERS', 'PRODUCTS', 'NEWS', and 'COMPAN'. Below the navigation is a large banner image featuring a glowing orange wave pattern and a 3D rendering of the Epoc headset. Below the banner are three columns of content:

- EMOTIV IN THE MEDIA**: A small video thumbnail showing a woman speaking.
- GET EMOTIVATED!**: A dark area with the text 'Download SDKLite' and a link 'Click here to go to the download page'.
- NEWS C**: A list of news items, including 'San Diego Source : GDC 2008', 'CNET : Emotiv's headset gives digital objects', 'SF Chronicle : New interfaces', 'Wall Street Journal : Videogame Phase Of Full-Body Playing', and 'Sunday Times (UK) : I'm Harry Move'.

At the bottom of the page is a footer with links for 'Developers', 'Products', 'News', 'Company', and 'Contact'.



- ~ Higher Level Design
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People and Prototypes



People



Human Factors in Design



Human Factors in Design

To design for connectivity

^ User Experiences

To design user interfaces

^ Cognitive Psychology

To design physical behaviors

^ Physiology

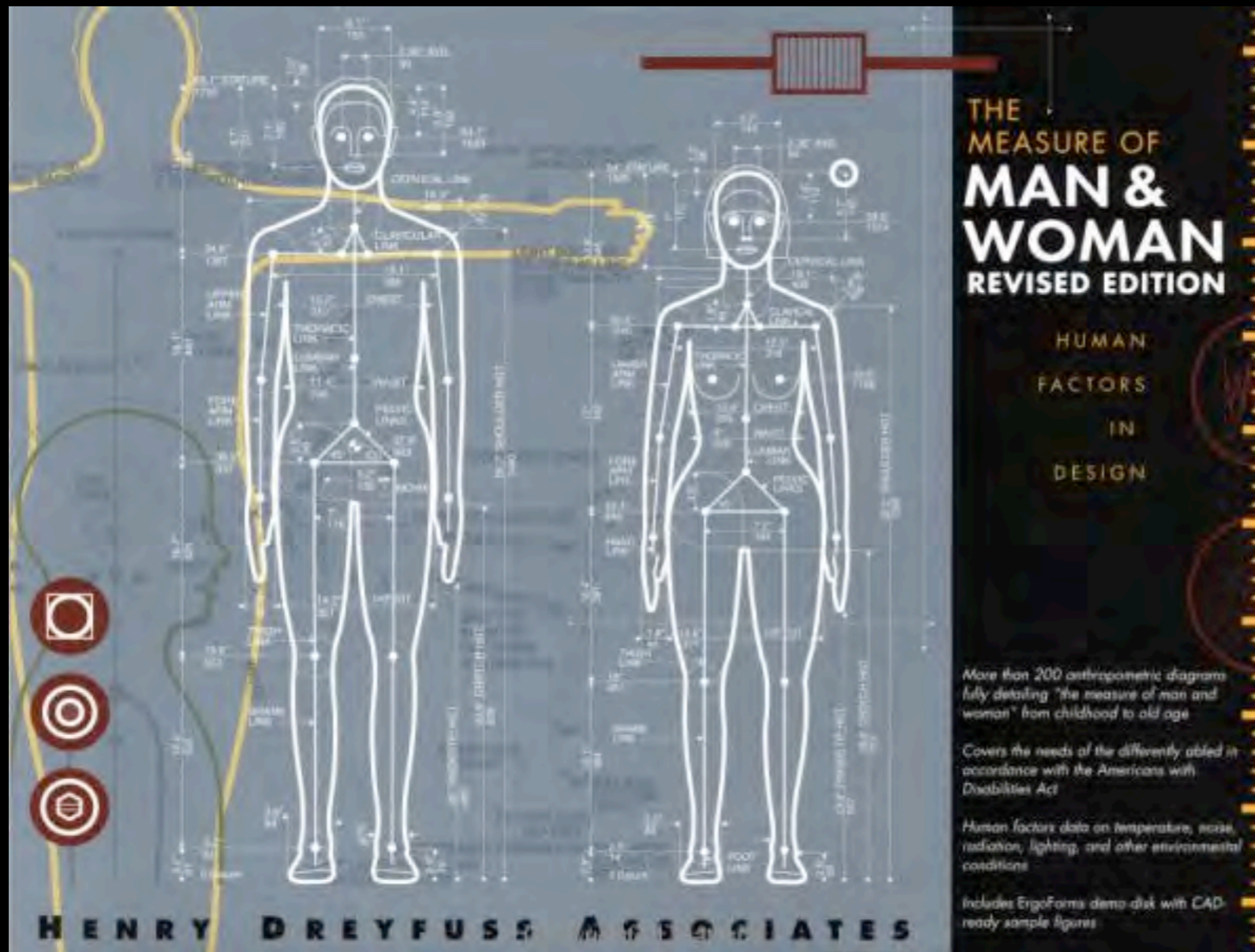
To design physical objects

^ Anthropometrics

To design a physical object like these sun glasses for Nike,



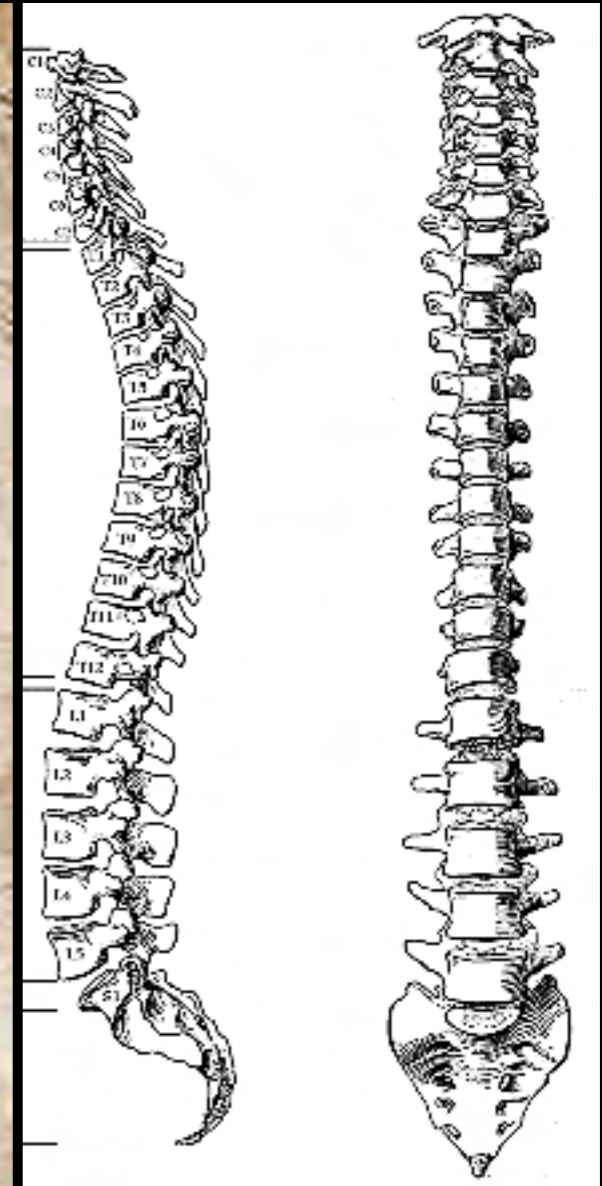
We have to know how big we are (anthropometrics)



To design a comfortable chair like this for Steelcase,



We have to know how the spine moves (physiology)



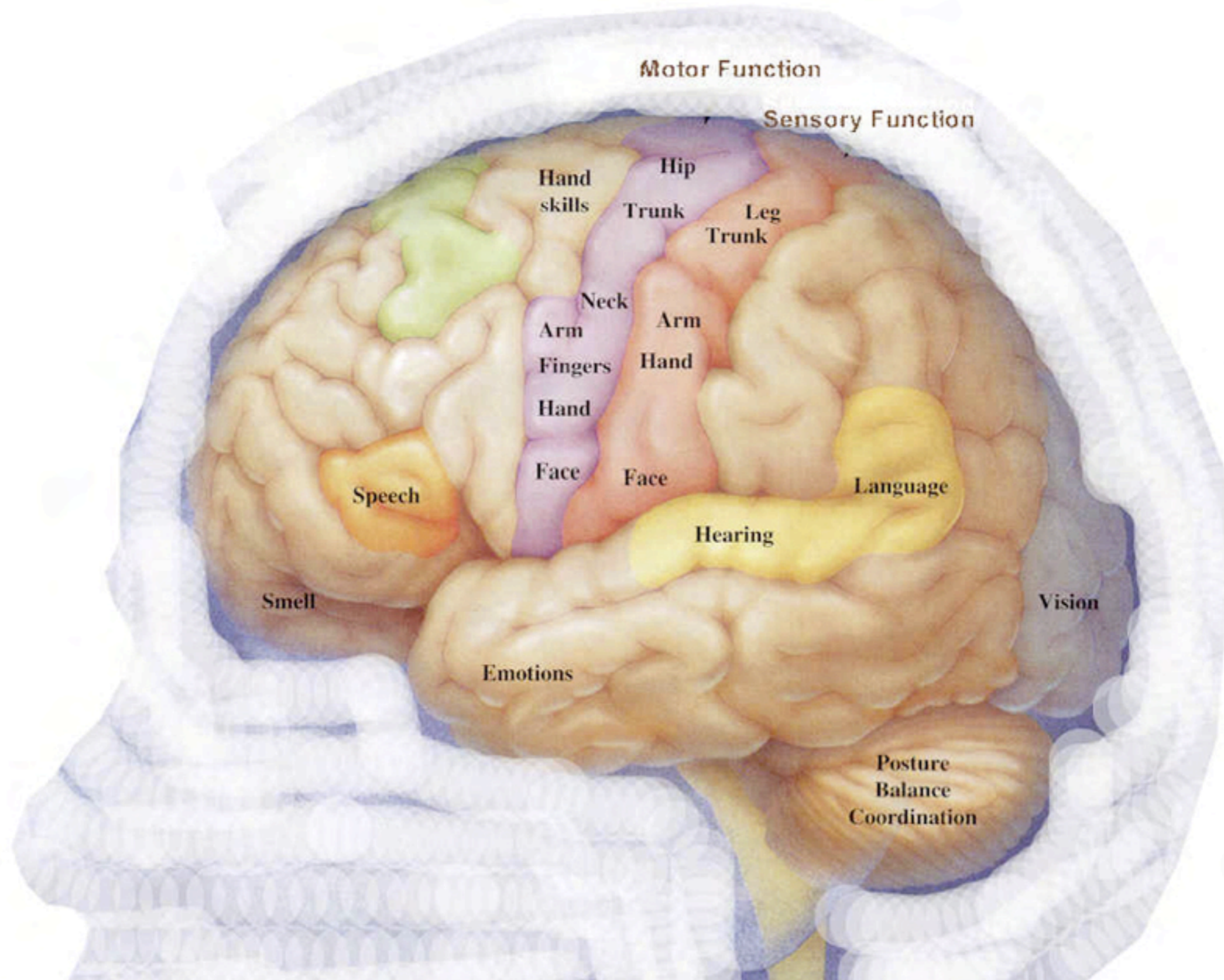
To design the user interface for this underwater camera,



You need to control both camera and submarine



And to know how people think (cognitive psychology)



To design services, we must consider the whole experience



Smart Phone Service - UMPC (Ultra Mobile PC) for Intel



Design for Different People



Design for Different People



51 Ways of Understanding Latent Needs and Desires



IDEO Methods Cards - 4 Categories

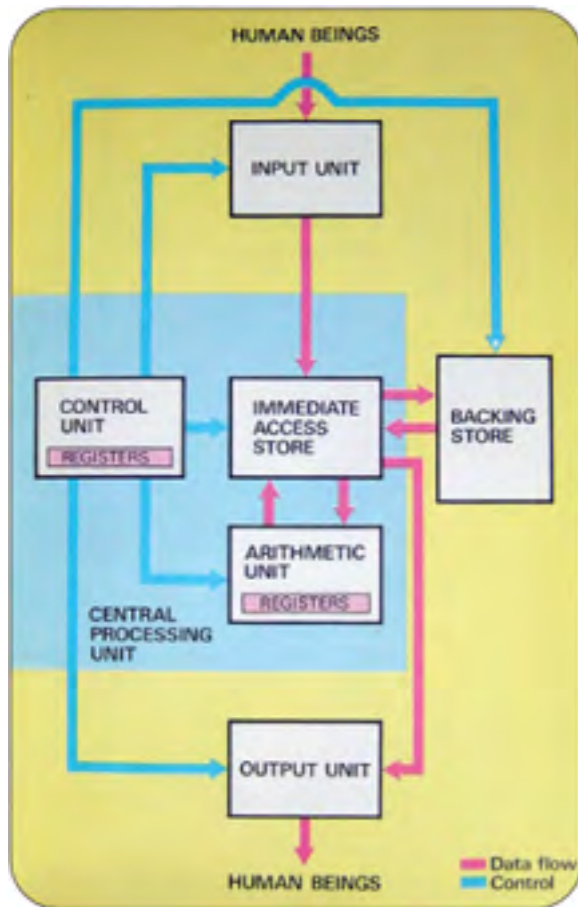
LEARN - Analyze the information you've collected.

LOOK - Observe people to find out what they do.

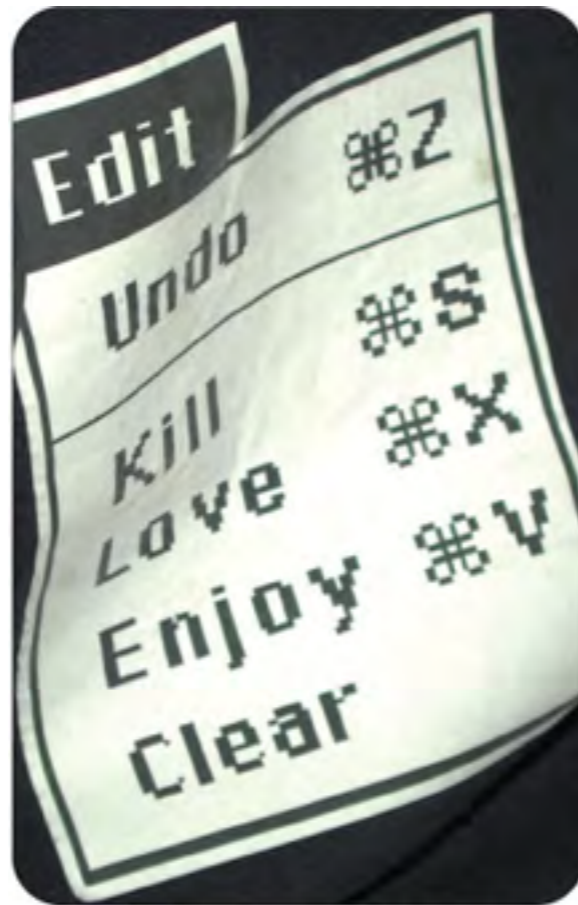
ASK - Enlist people's participation to elicit insights.

TRY - Create simulations to help empathize with people.

LEARN ~ Analyze the information you've collected.



Flow Analysis



Cognitive Task Analysis



Historical Analysis



Affinity Diagrams

LOOK ~ Observe people to find out what they do.



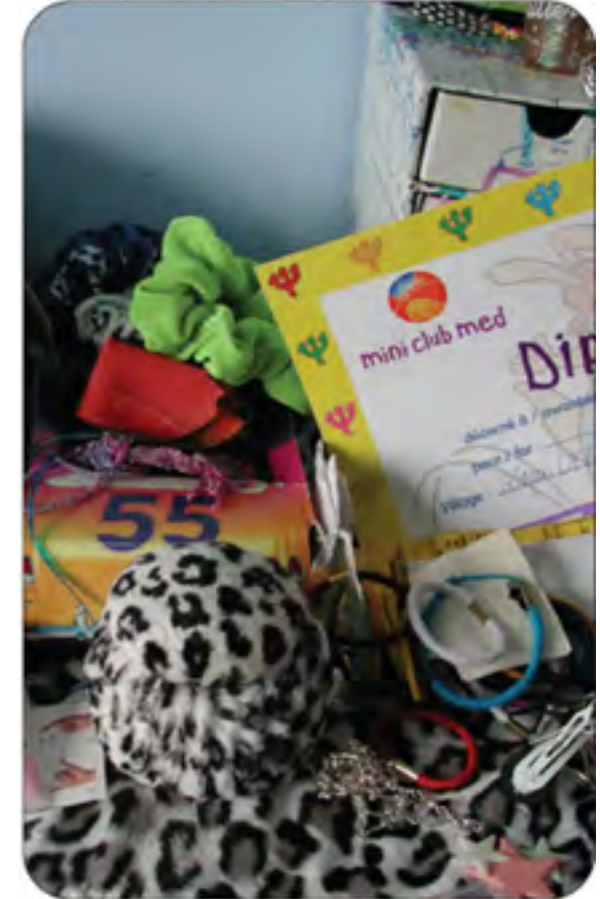
Fly on the Wall



A Day in the Life



Shadowing



Personal Inventory

ASK ~ Enlist people's participation to elicit insights.



Conceptual Landscape



Collage



Foreign Correspondents



Draw the Experience

TRY ~ Create simulations to help empathize with people.



Empathy Tools



Scenarios

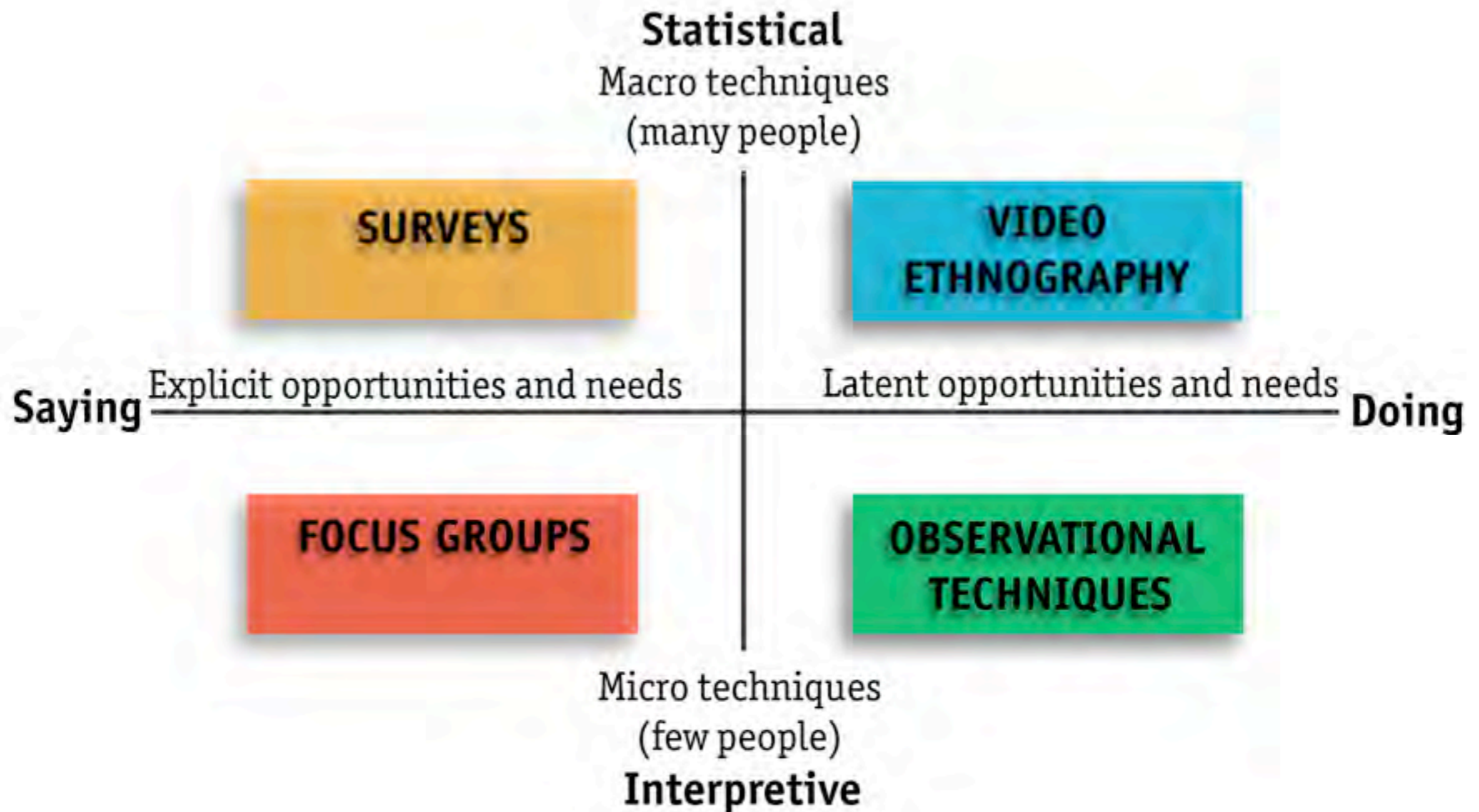


Next Year's Headlines



Informance

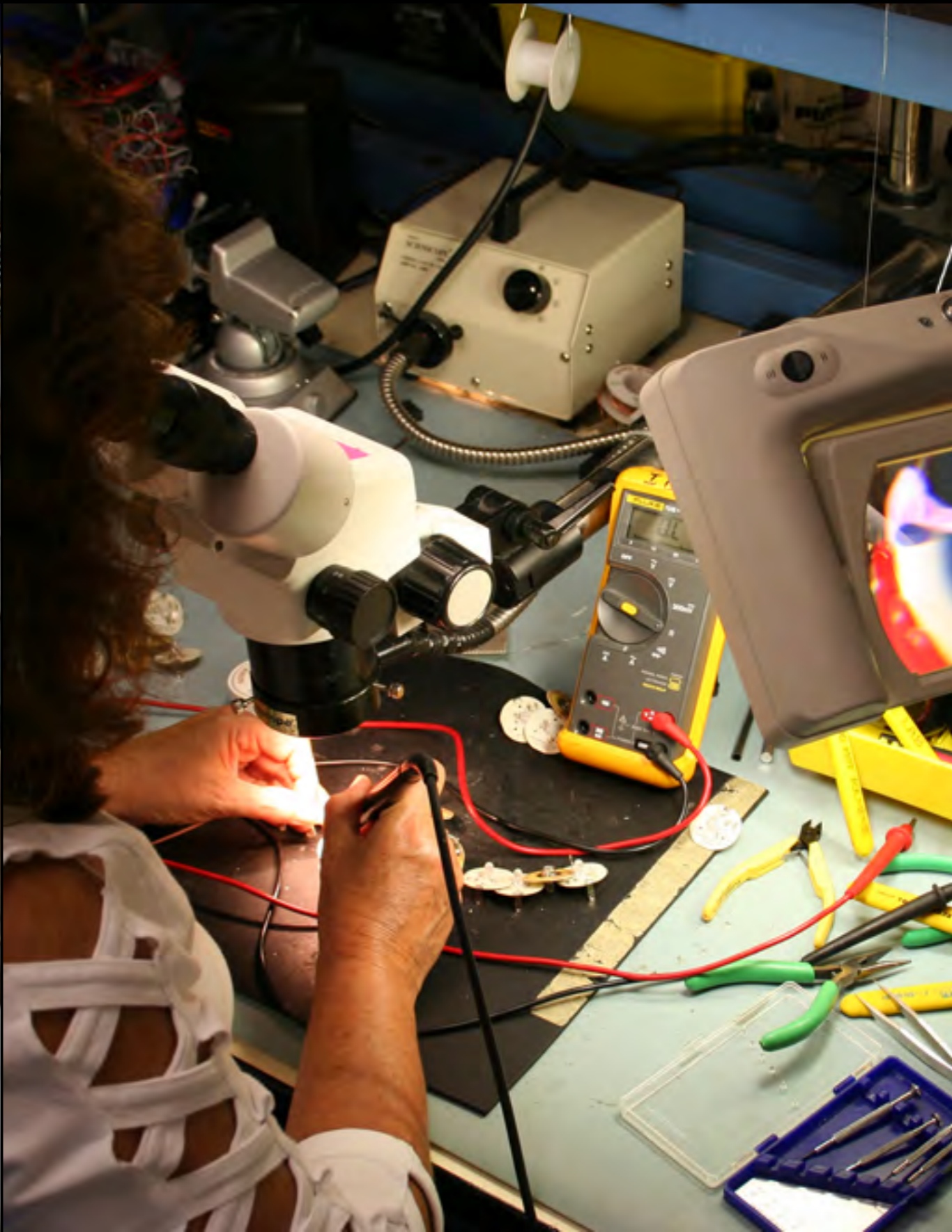
Complimentary to Market Research Methods



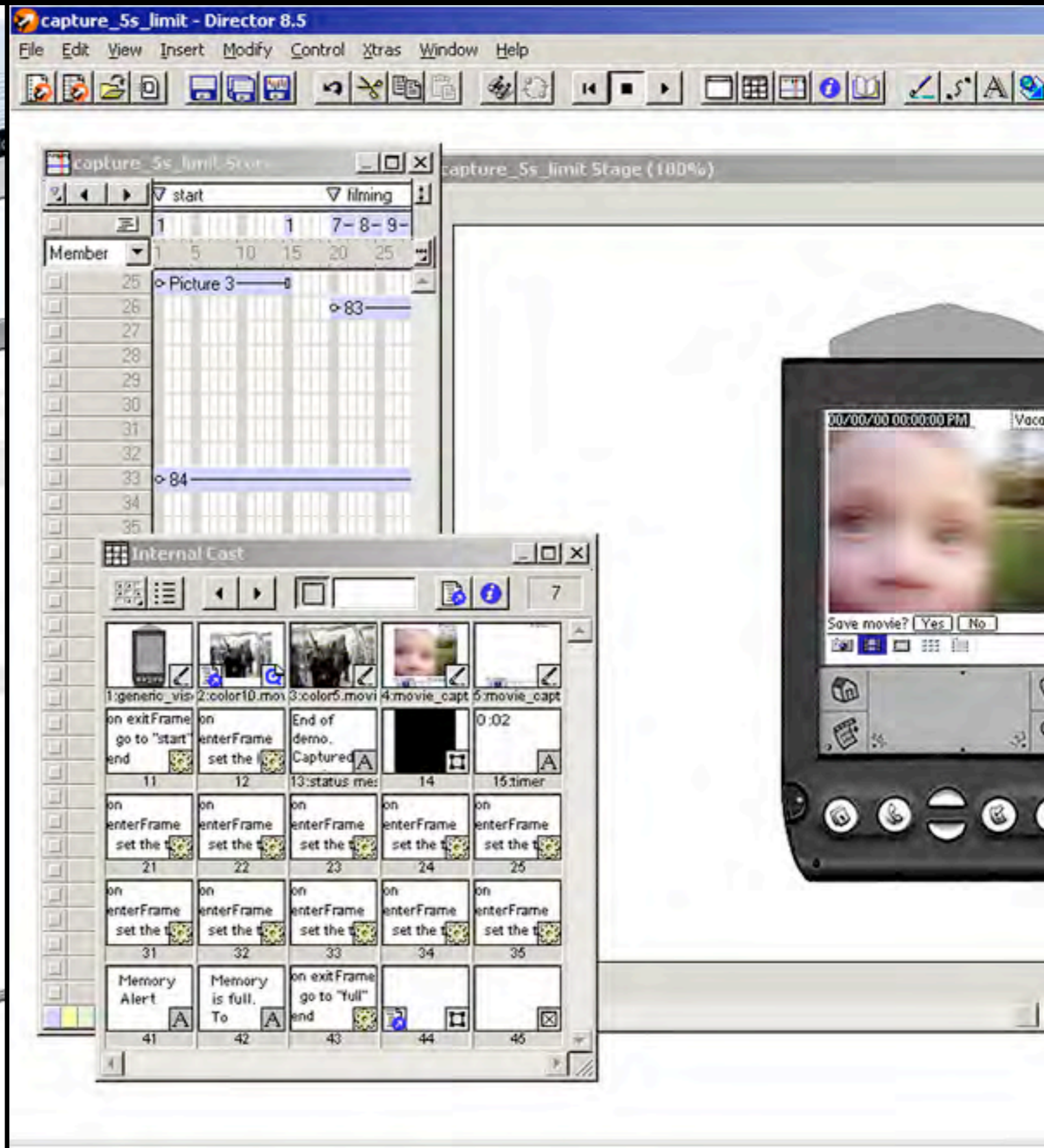


Prototypes

For objects you prototype in a shop, for electronics in a lab



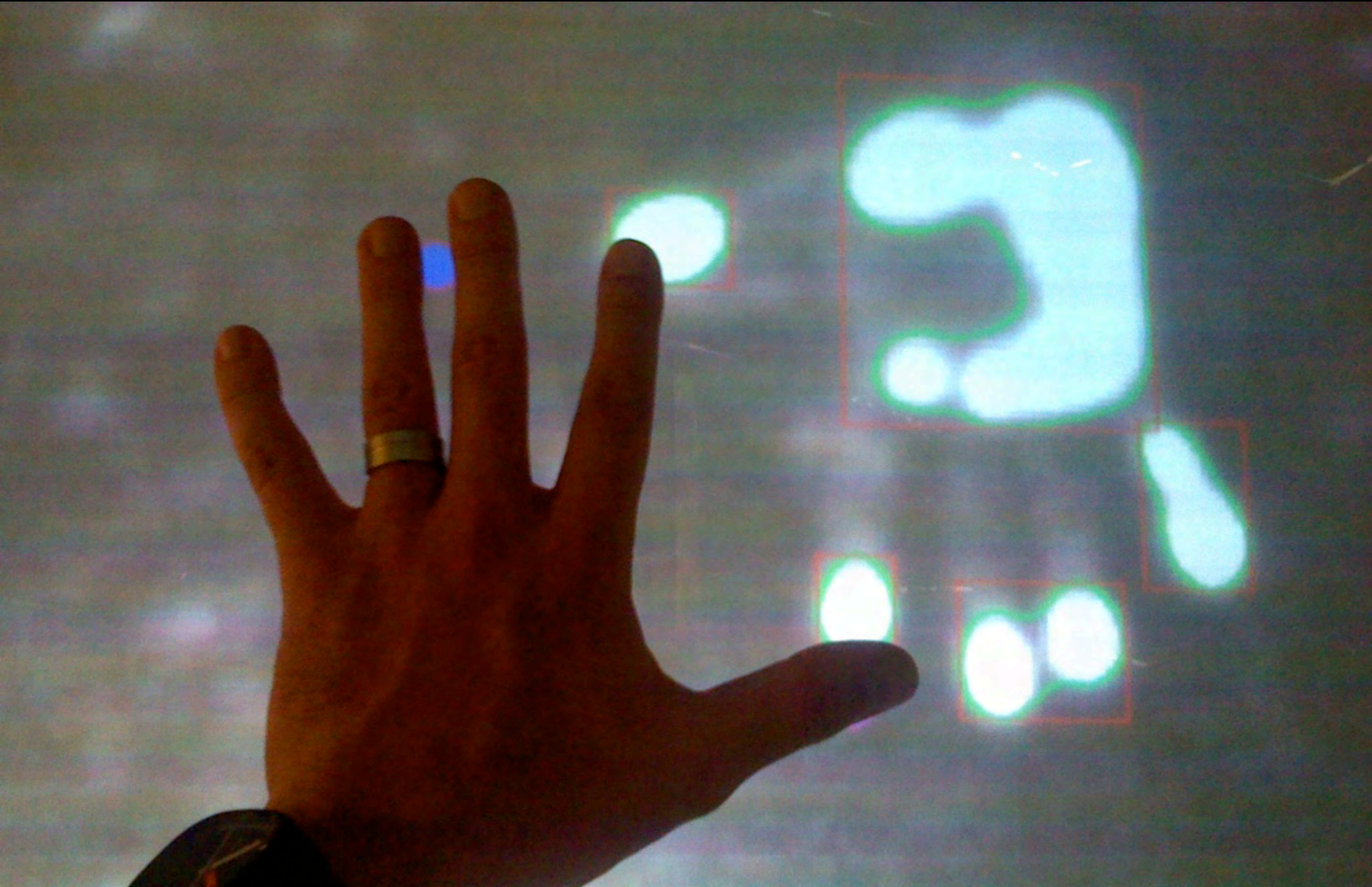
For screen design, you prototype in Macromedia or Flash



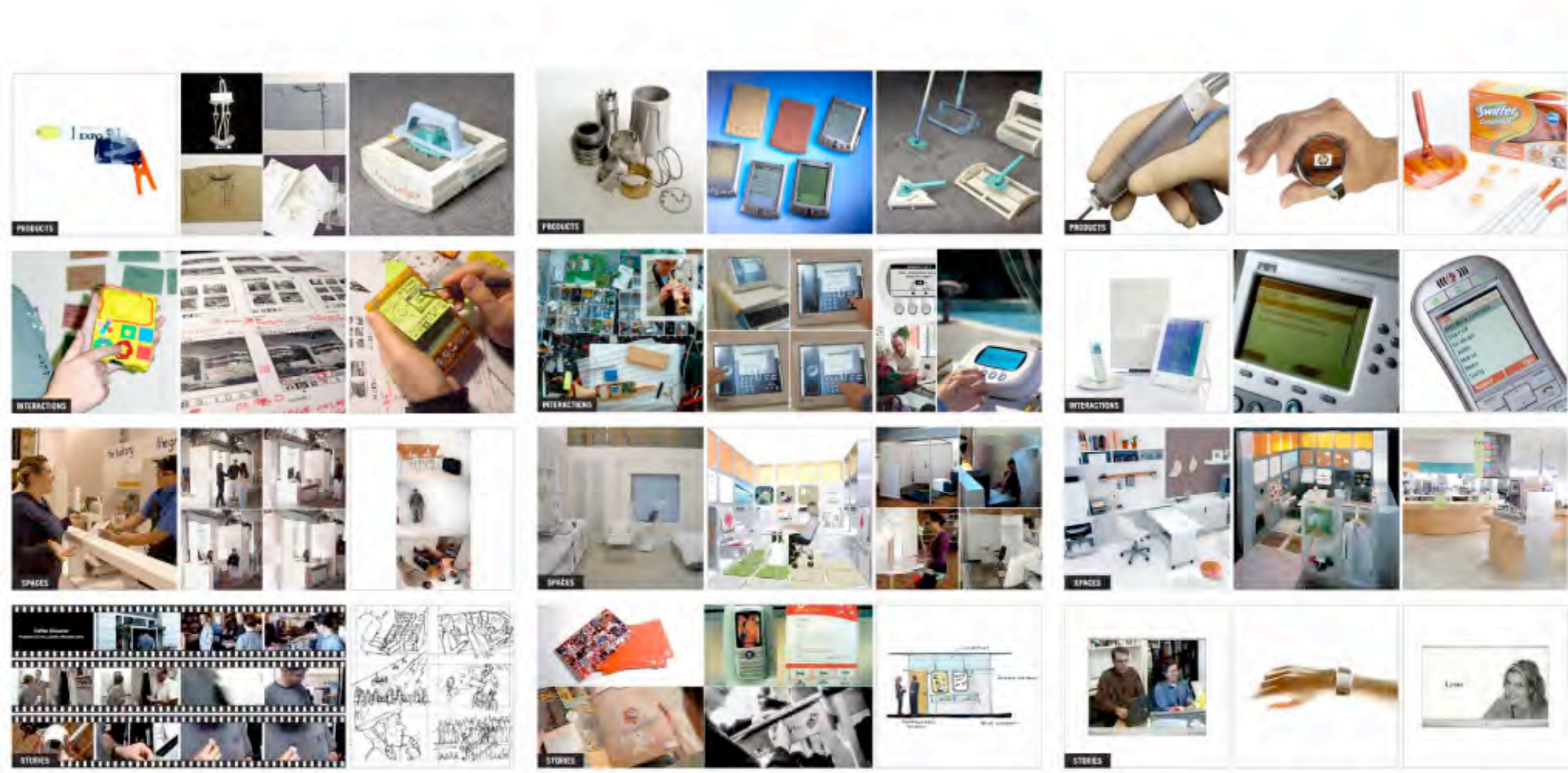
For services you prototype with stories



Experiential prototype



3 Stages of Prototyping



INSPIRE

what could be • embrace failure • build to think • low-resolution prototype • build it yourself

EVOLVE

what should be • expect change • build to experiment • targeted prototype • build it with a specialist

VALIDATE

what will be • manage changes • build to specification • integrated prototype • have a specialist build it

Inspire - Interactions



PRODUCTS



INTERACTIONS



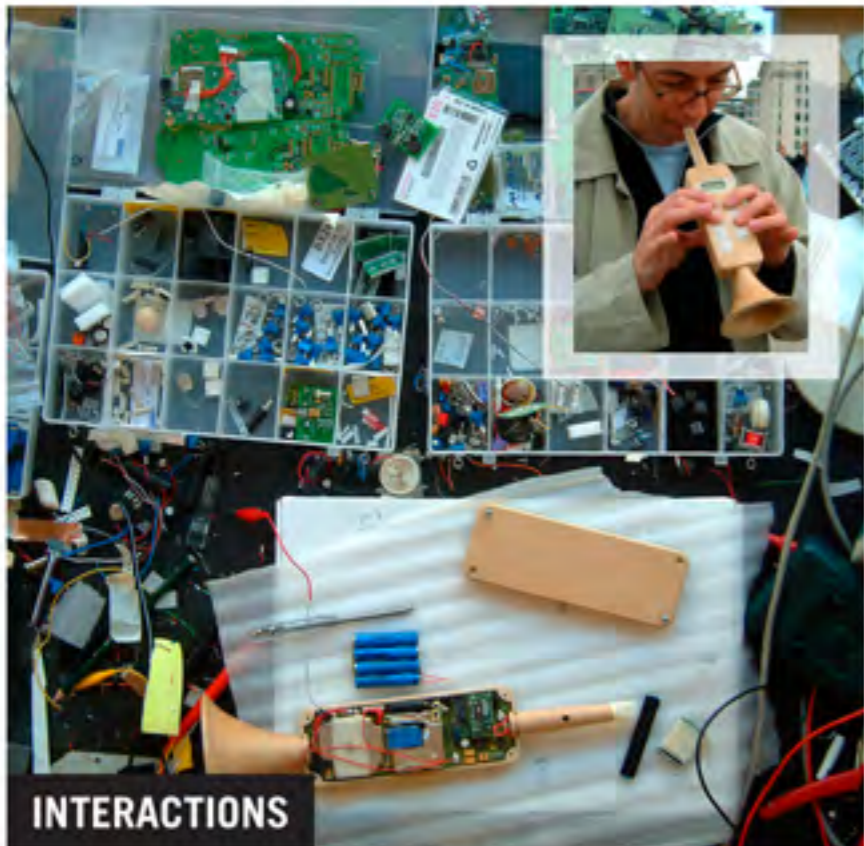
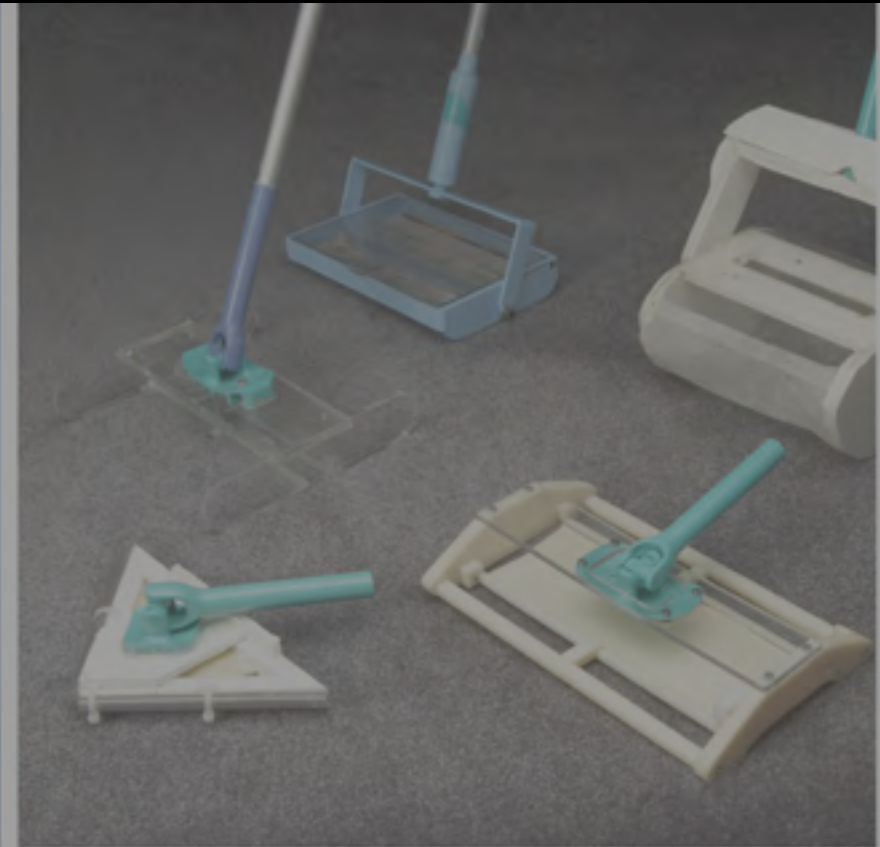
Inspire - Interactions



Inspire - Stories - Enactment



Evolve - Interaction



Evolve - Interactions - Office IP Phone for Cisco



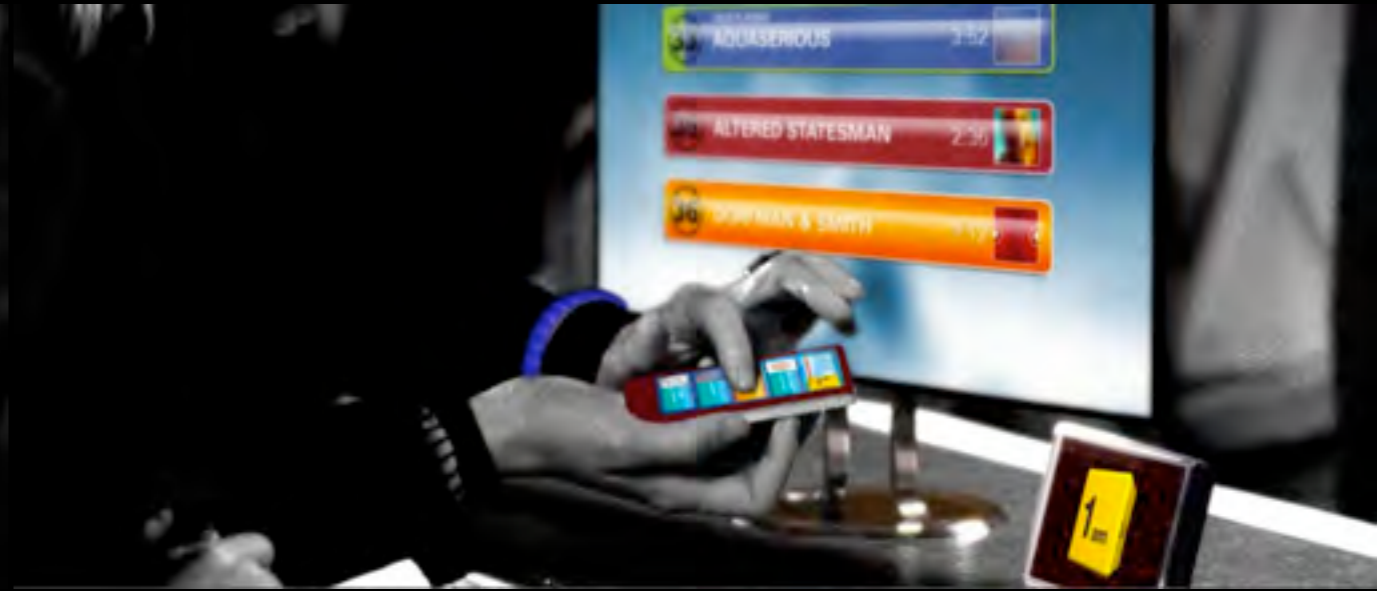
Validate - Interactions as Stories



Validate - Stories - Intel UMPC - Social Networking Service



Validate - Stories - Intel UMPC - Social Networking Service



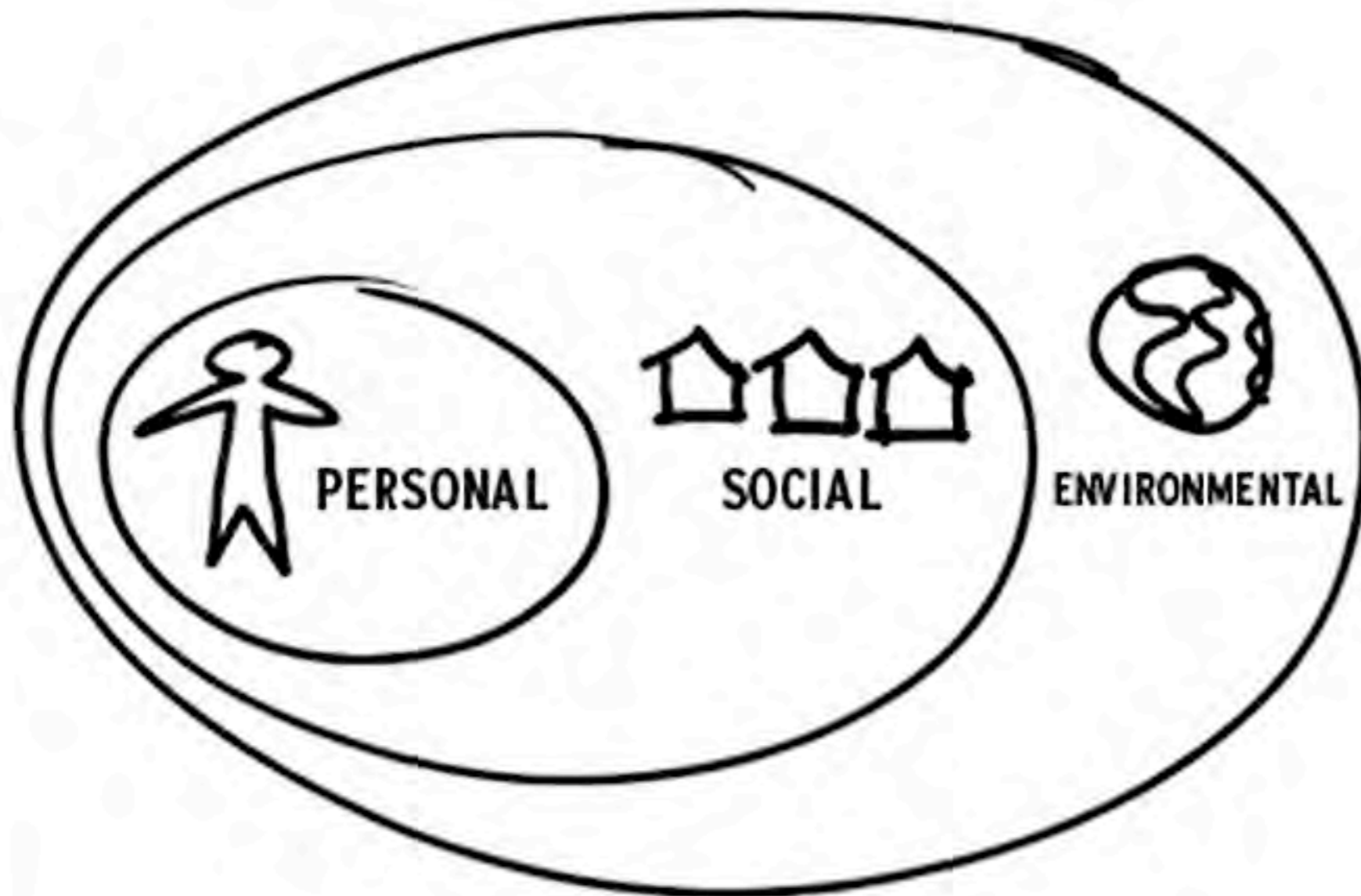


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Expanding Contexts

Expanding Contexts for Design in a Connected World





Personal Products expand to Health and Well Being

Personal Products - Western Digital - *My Passport*



Health and Well Being - Kaiser Permanente - *Thrive*




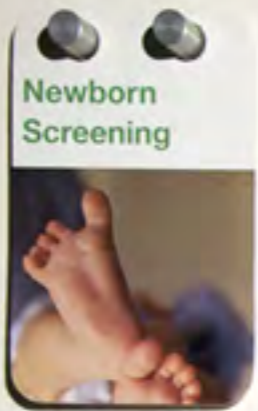
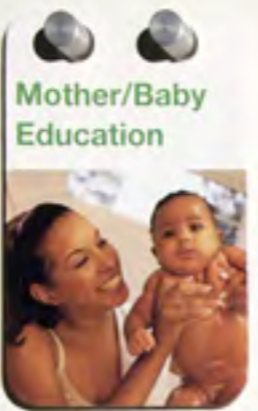


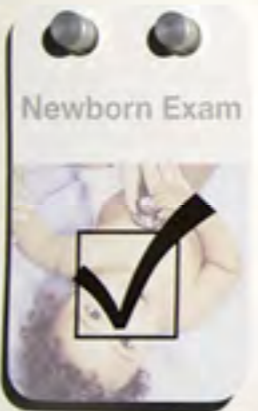
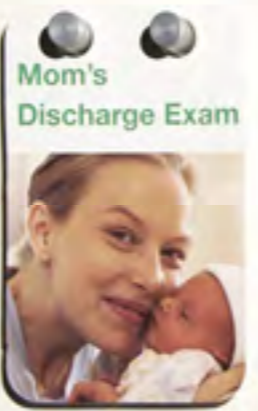

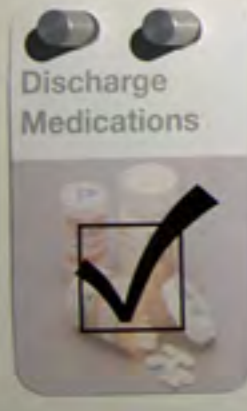



KAISER PERMANENTE®



Kaiser Permanente - Perinatal Journey Home - Study



Kaiser Permanente - Perinatal Journey Home - Board

 <p>C-Section Care</p>	 <p>Newborn Screening</p>	 <p>Mother/Baby Education</p>	 <p>Transportation Home</p>
 <p>Circumcision</p>	 <p>Newborn Exam</p>	 <p>Mom's Discharge Exam</p>	 <p>Hearing Screening</p>
 <p>Discharge Medications</p>	 <p>Birth Certificate</p>	 <p>Newborn Photos</p>	 <p>Immunizations</p>

Your Journey Home

Nurse Denise

x 3428

Journey Home Partner name / number Sandra


Your projected departure date / time:

May 05 / 08
10 Am.

To assist you in preparing for your journey home, we will:

- Help you complete all of the activities listed on this board
- Let you know what time you will be ready to leave so you can arrange transportation
- Answer any questions you have regarding your care

SELF ORGANIZING!



Room 513

Phone # 3400



Smart Space Design expands to Social Impact Programs

Smart Space Design - UC Irvine



Smart Space Design - UC Irvine



TOWN SQUARES

Landing areas on each floor with balcony connections to pair floors. These spaces form natural gathering places in the building's traffic flow by helping people find and bump into each other. They have plasma screens and comfortable furniture to support people gathering and working.



Smart Space Design - UC Irvine



LAB LOUNGES

Flexible graduate student group workspaces that combine individual office space with group work zones. They support a range of activities, from solo work to meetings with professors to lunchtime chats to playing Wii.



Design for Social Impact



Design for Social Impact

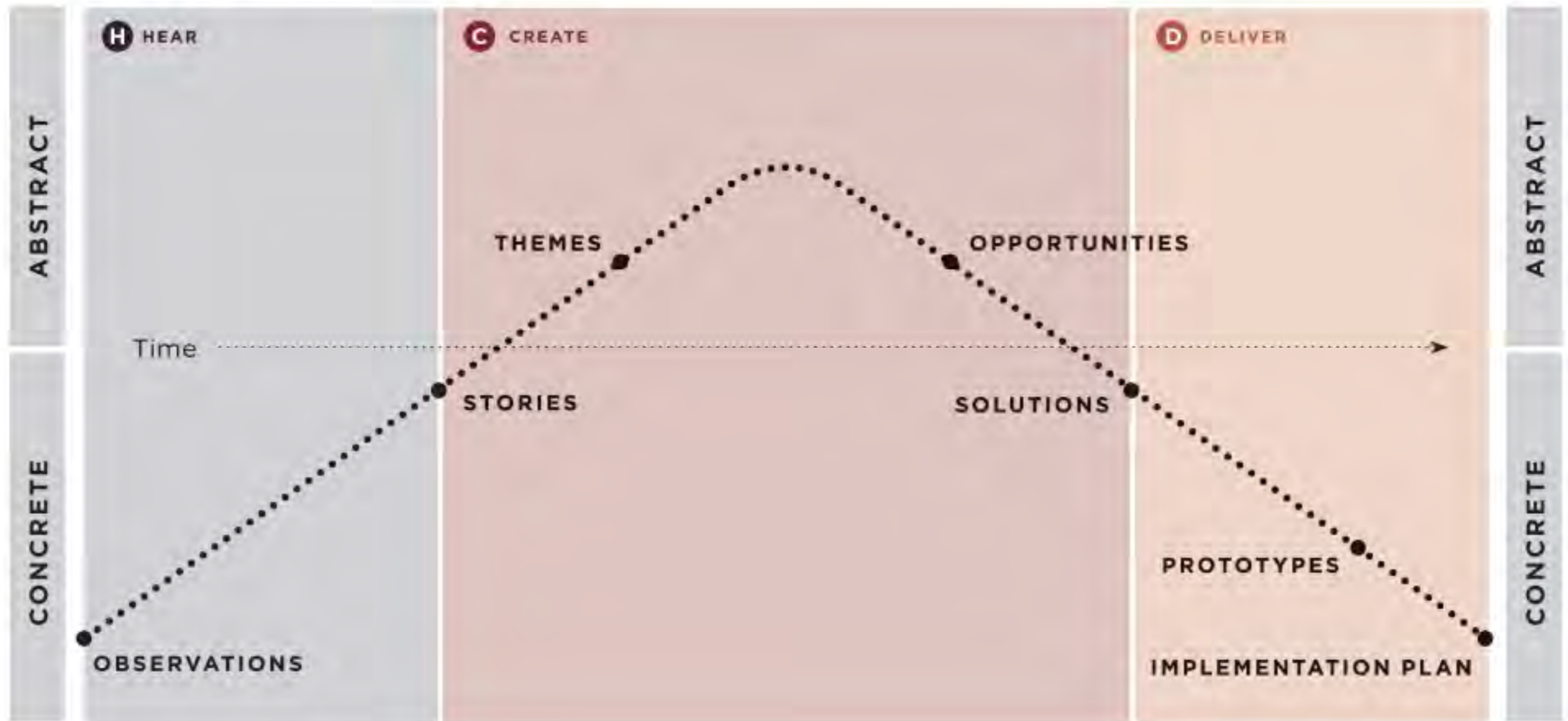


Design for Social Impact



Design for Social Impact

To recall these phases, simply remember H-C-D.



Trying to plow after an overnight stay



Delivering water in India as part of an observation



Prototyping products and services during a workshop





Sustainable Products expand to Global Sustainability

Sustainable Products - Material Selection



A Scandinavian Milk Container with an air handle, . .



.. very little material ..



.. that bio-degrades to water, chalk and CO₂ ..

Osted Ust
Hovedvejen 184,
4000 Roskilde
Tel: 46 49 66 22
AUT. NO 4598

ecolean
sustainable packaging

Emballagen til denne mælk består af naturligt kridt og laupolymerer, således at der spares på jordens ressourcer. Denne emballage beskytter mælkens friske smag! Ved forbrænding eller opbevaring i naturen nedbrydes emballagen til kuldioxid CO₂, vand H₂O og kalciumkarbonat CaCO₃.
www.ecolean.com

Næringsindhold
Energi 270 kJ/100 g
Protein 3,5 g
Kulhydrat 4,5 g
Fedt 3,5 g

Vitaminer
Riboflavin (B2) 0,18 mg
Mineraler
Kalcium 100 mg
Fosfor 100 mg
* Anbefalet dagligt indtag



.. from *Ecolean*.

MATERIAL

Material

Packages

Filling Machines

The complete solution

CAPS

Calymer

Chalk is one of nature's own materials. No chemical processes are necessary to extract the raw materials and only limited amounts of expensive energy are required.

Calymer™, the Ecolean packaging material, consists of at least 40% (by weight) calcium carbonate - nature's own mineral and building material - and of plastic binding agents (PE and PP). The calcium carbonate provides Calymer with strength and stiffness, and the binding agent provides toughness and flexibility. Calcium carbonate is a very abundant natural mineral, available all over our globe.

After disposal, a used Calymer package can either be material recycled as plastics materials or recovered as energy by incineration. At the end of a Calymer package life cycle, the calcium carbonate is returned to nature and the binding agent is transformed into water vapour and carbon dioxide after complete degradation, e.g. after incineration.

The Ecolean Calymer material comes with a full Food Contact Approval Certificate.

The Ecolean Calymer material is not only a resource efficient material with low environmental impact, but also a new packaging material with improved organoleptic properties. It will preserve the freshness and protect your products longer.

The Ecolean Calymer material itself is not for sale.

Download [Product Sheet Calymer \[PDF\]](#)



Calymer



Ecolean LA



Ecolean LB

Global Sustainability - Shinichi Takemura - Media Producer



Tangible Earth Demonstration

地球シミュレータによる
降水量のシミュレーション 6月23日~7月7日
Simulation of the Precipitation on the Earth Simulator 06/23 - 07/07

30分ごとのデータ
30min/frame

国立地球科学データセンター 地球シミュレータ
11号機 地球科学データセンター
東京都国立 国立地球科学データセンター



Tangible Earth Installation - G8 Summit - Hokkaido





Designing Innovation
Thank You!