

University of Washington  
7 November 2011

# Service Design: 12 Principles

Hugh Dubberly  
Dubberly Design Office

**The opportunity  
to delight customers—  
to garner their love—  
lies in delivering  
not just a quality product  
but a quality experience.**

*“... commercial products are best treated as though they were services.*

*It's not what you sell a customer, it's what you do for them.*

*It's not what something is, it's what it is connected to, what it does.*

*Flows become more important than resources. Behavior counts.”*

—Kevin Kelly

**In 2002,  
IBM bought Price Waterhouse's  
IT consulting business**

**In 2004,  
IBM sold its PC business to Lenovo**

**In 2005,  
service was 35% of IBM's income**

**In 2010,  
service was 68% of IBM's income**

**In 2007, Philips sold its chip division**

**Philips then acquired Health Watch Holdings and Lifeline Systems, another health services company**

**In 2011, Philips bought Med Sage, a chronic care management service**

**80% of the US GDP  
is in service**

**39% of China's GDP  
is in service**

Source: Mary Jo Bitner, ASU

ONE

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**Value is in the experience**

# Staging experience

## —Pine & Gilmore

coffee beans > coffee > coffee shop > Starbucks

### Commodity

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**1¢–2¢** Per Cup

Beans

### Goods

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**5¢–25¢** Per Cup

Roasted and ground

### Service

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**75¢–\$1.50** Per Cup

Brewed and served

### Experience

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**\$2–\$5.00** Per Cup

Treating yourself  
to something special

# Defining marketspaces

## —Rheinfrank & Murrell

motor > blender > kitchen > dining experience

### Components



Motor

### Tools



Appliance

### System



Kitchen

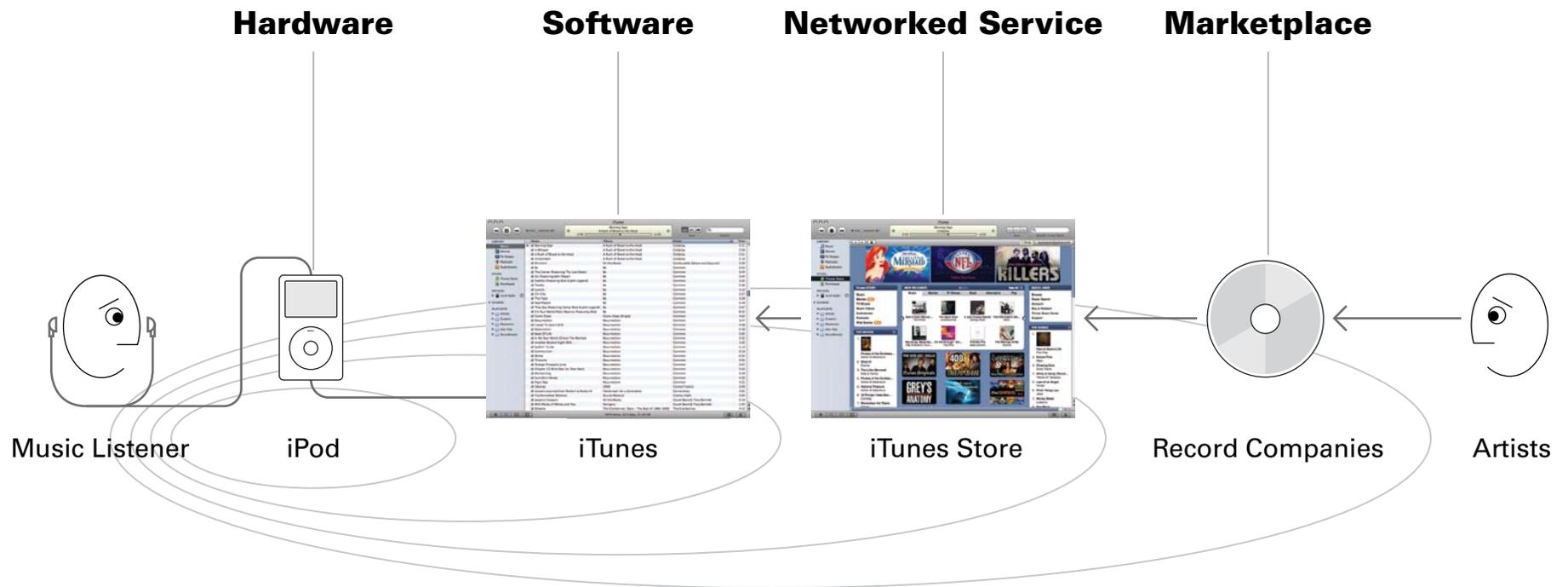
### Experience



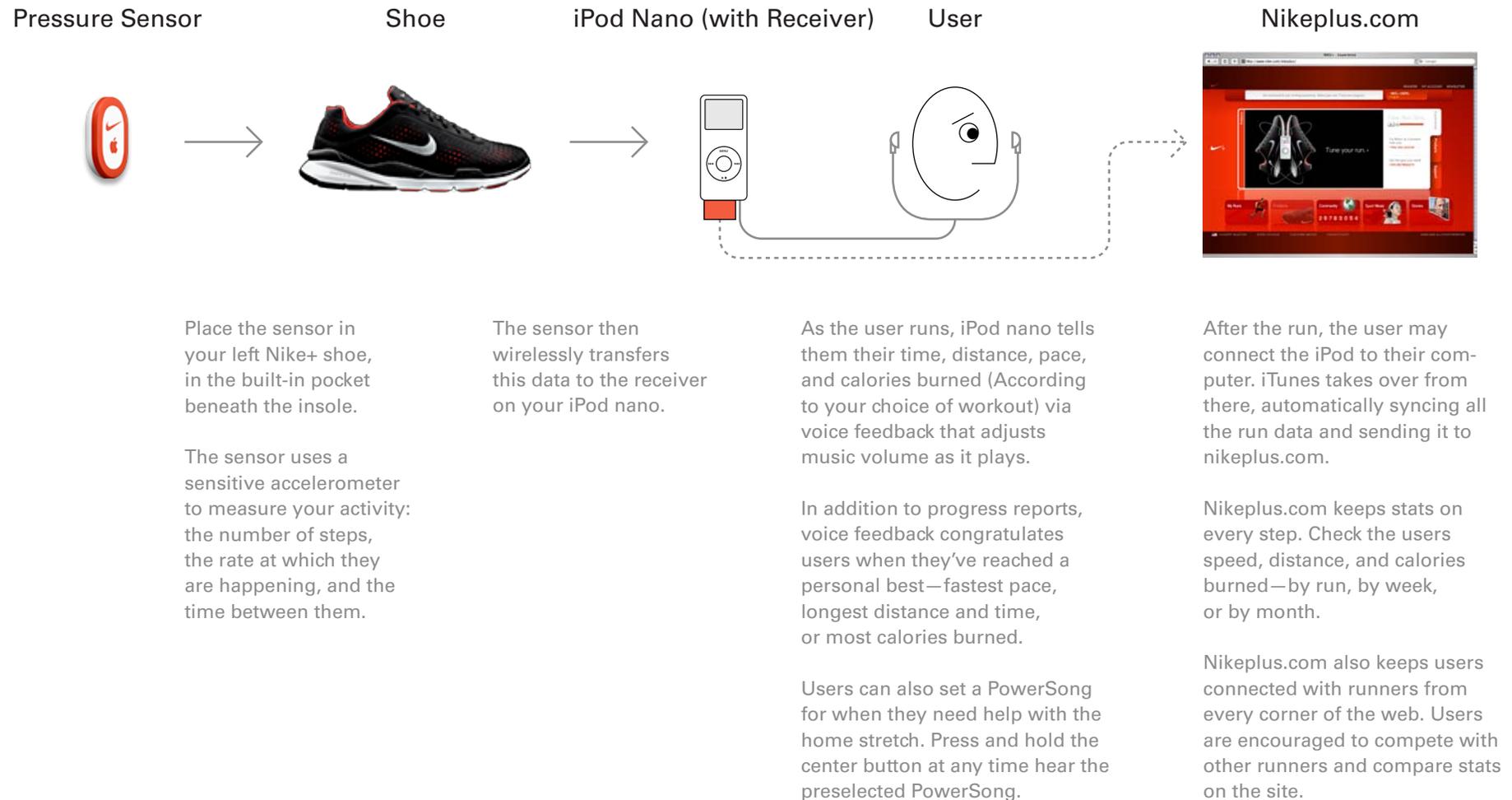
Cooking

# iPod—integrated system of products and services

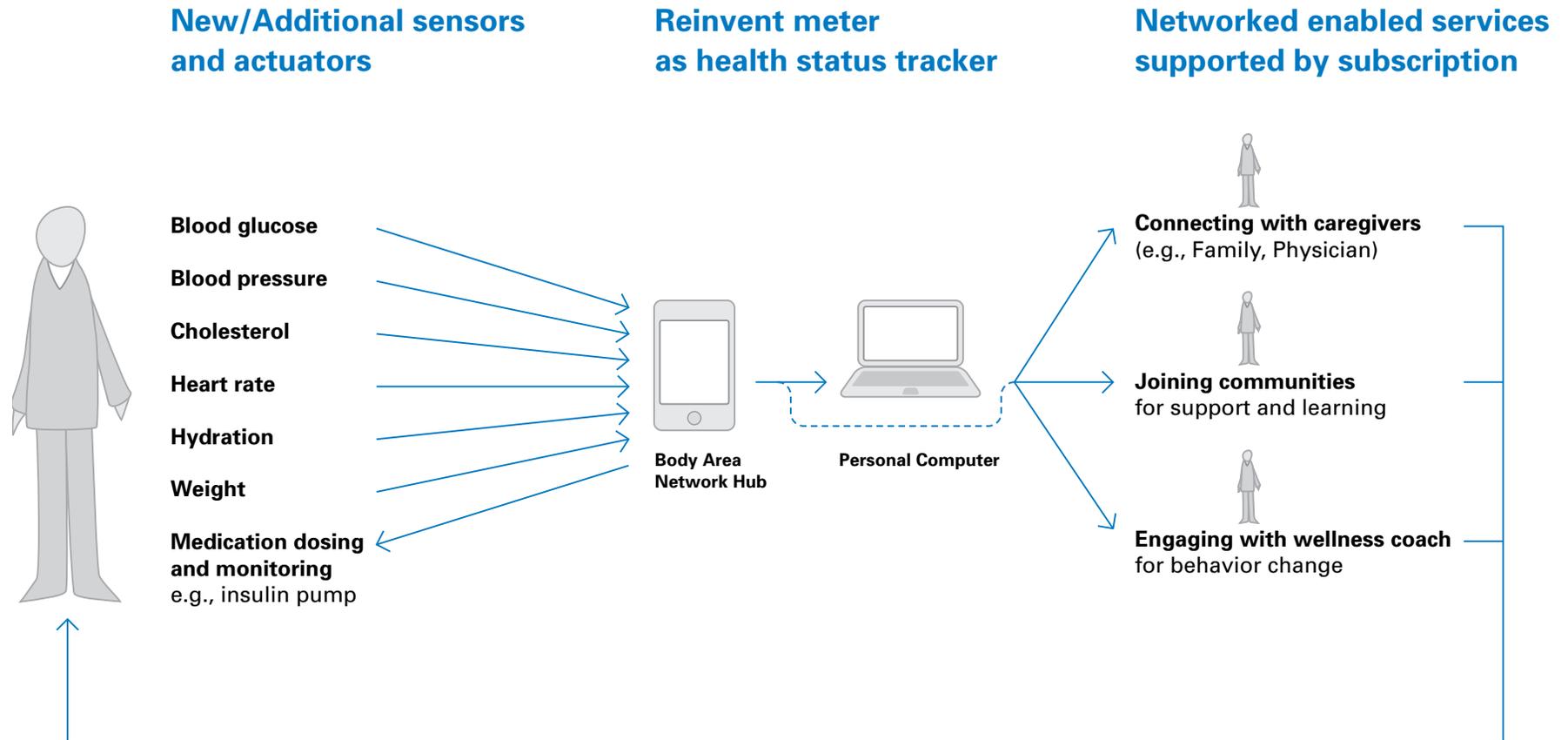
DRAM > mp3 player > music sharing service > my music



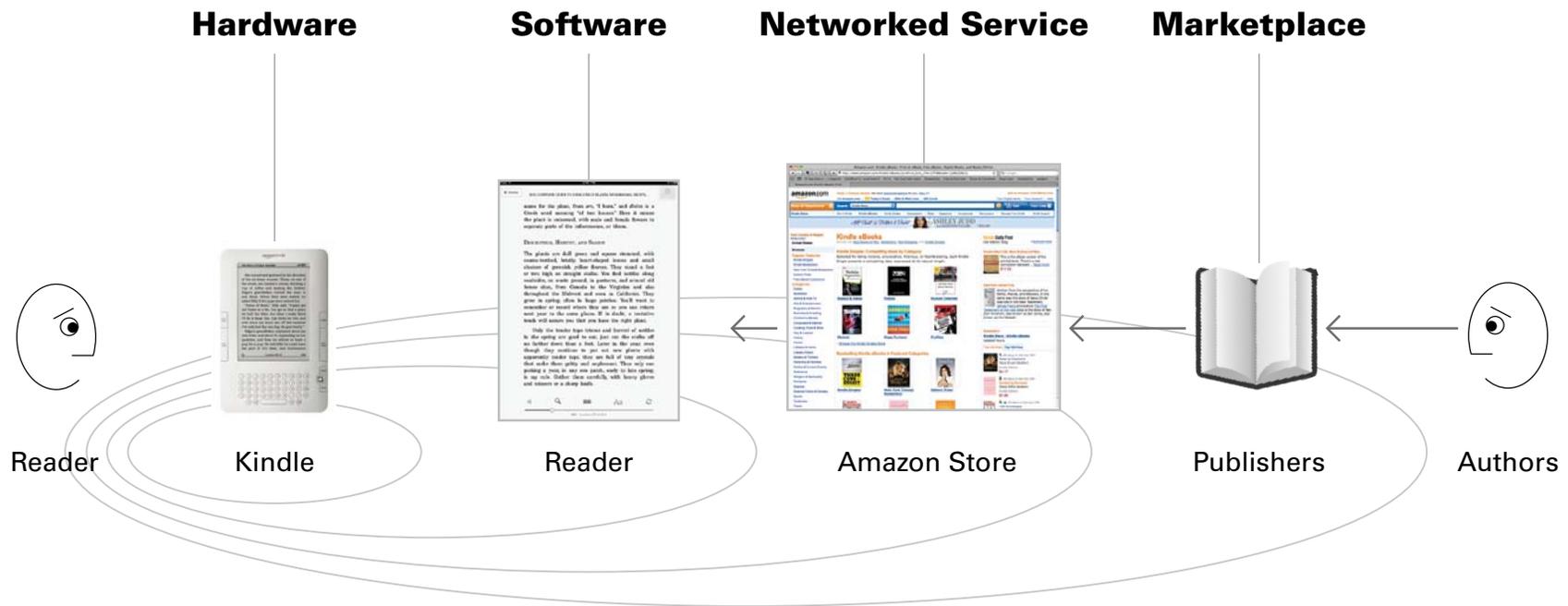
# Apple is a systems company— teamed up with Nike to extend the iPod systems



# In just a few years, iPhone and other smart phones will become hubs of body-area networks



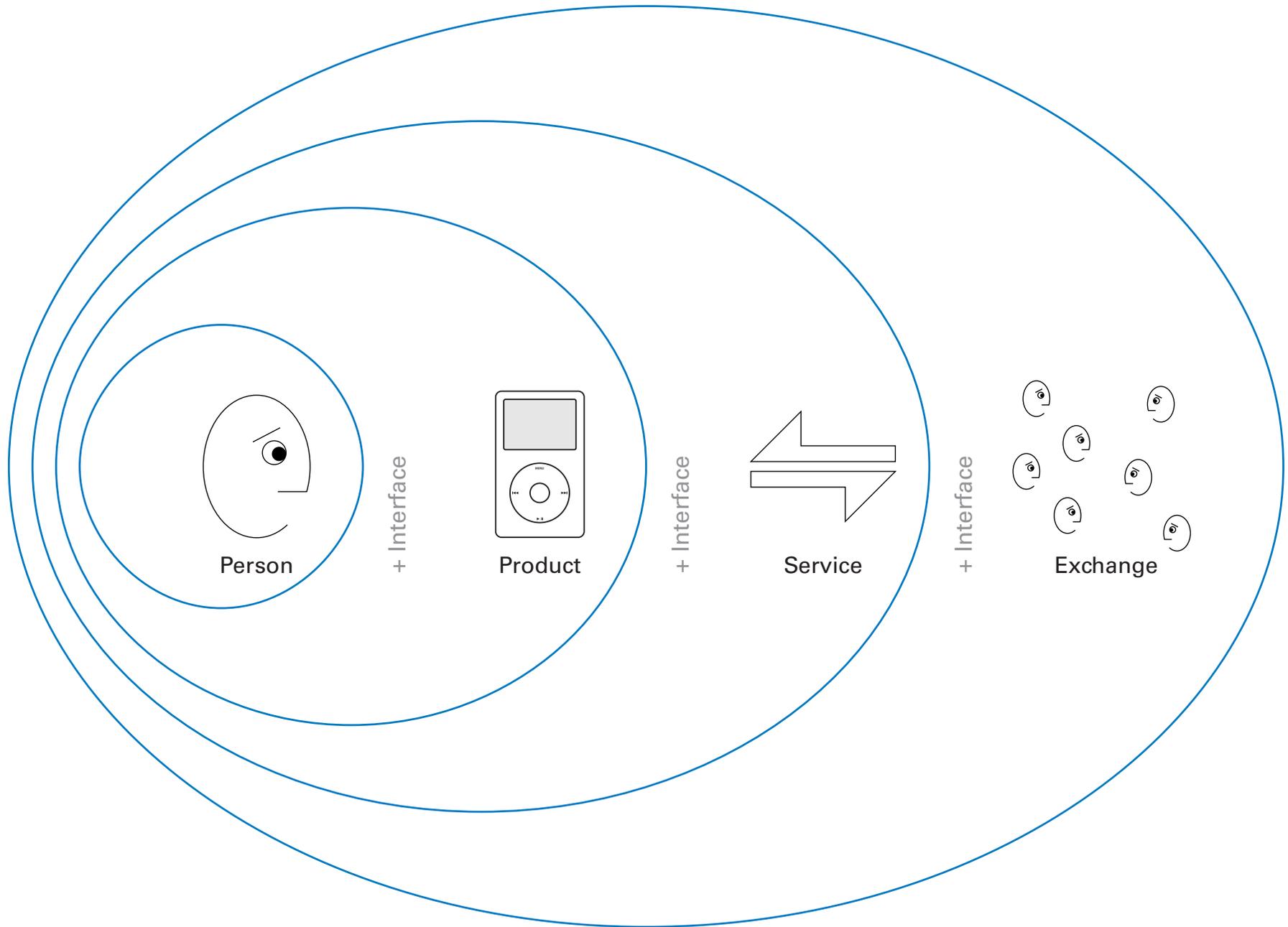
# Amazon's Kindle-Reader-Whispernet-Store system is another networked-service ecology



*“I think of [the Kindle] as a service.  
Part of [it] is of course the hardware,  
but really, it’s the software, the content,  
it’s the seamless integration of those things.”*

—Jeff Bezos

# Each step expands our potential



# TWO

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**Experience = Reputation**

**Reputation = Brand**

**Reputation** = How people think of  
**“what you offer”**

**Quality**

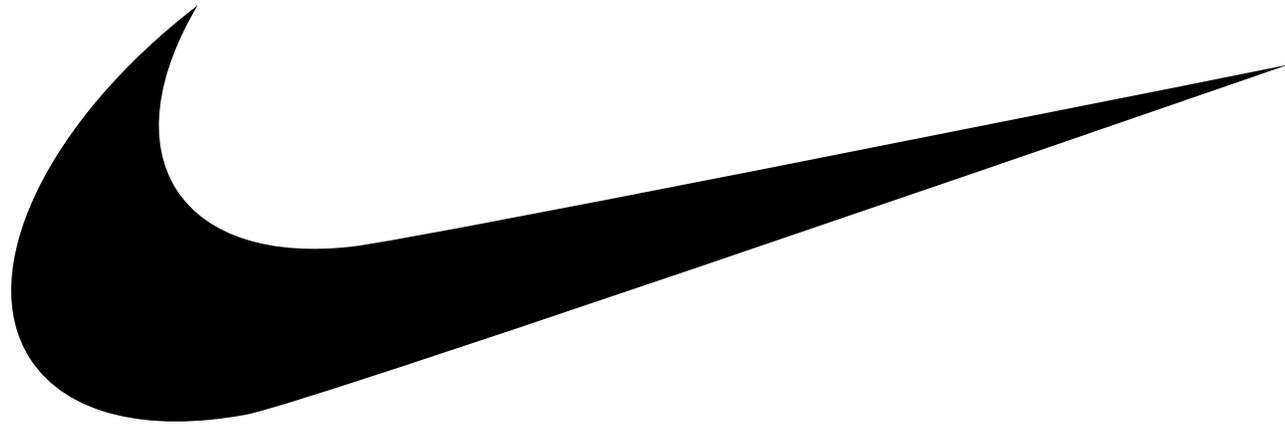
respected? liked? loved?  
dependable? good value?

**Reach**

well-known?  
frequently encountered?

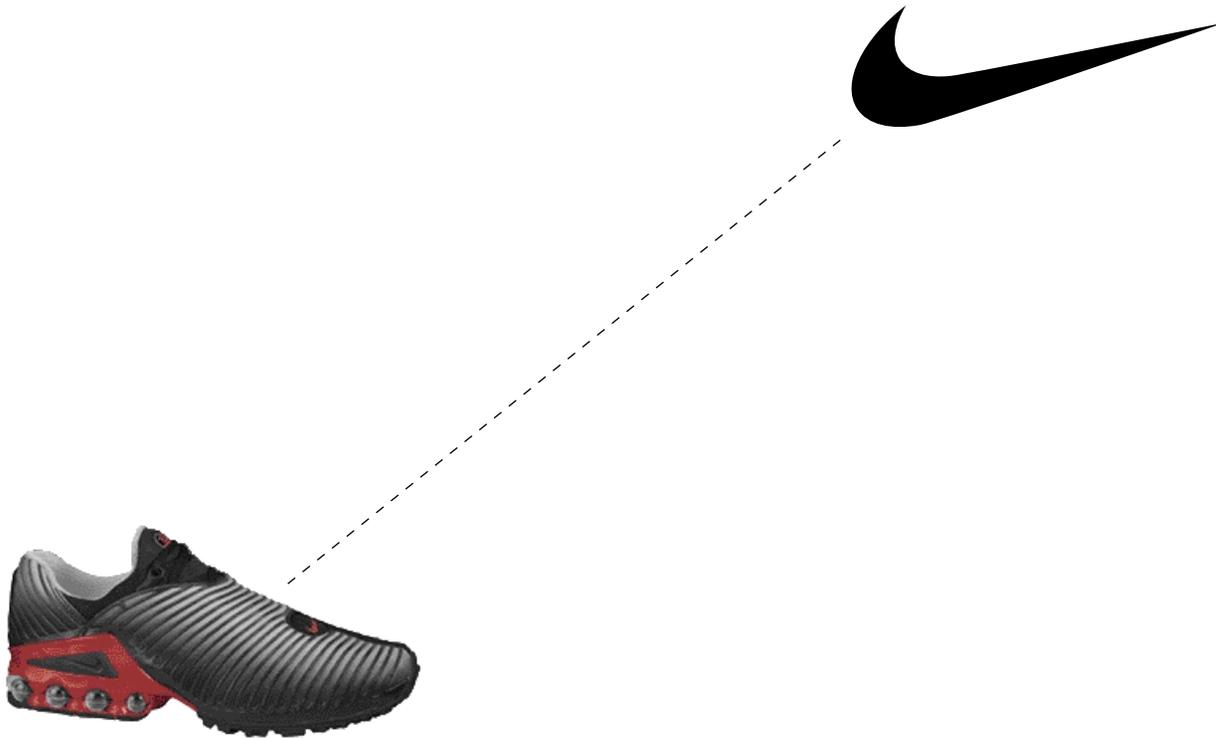
**Position**

relevance?  
relation to alternatives?



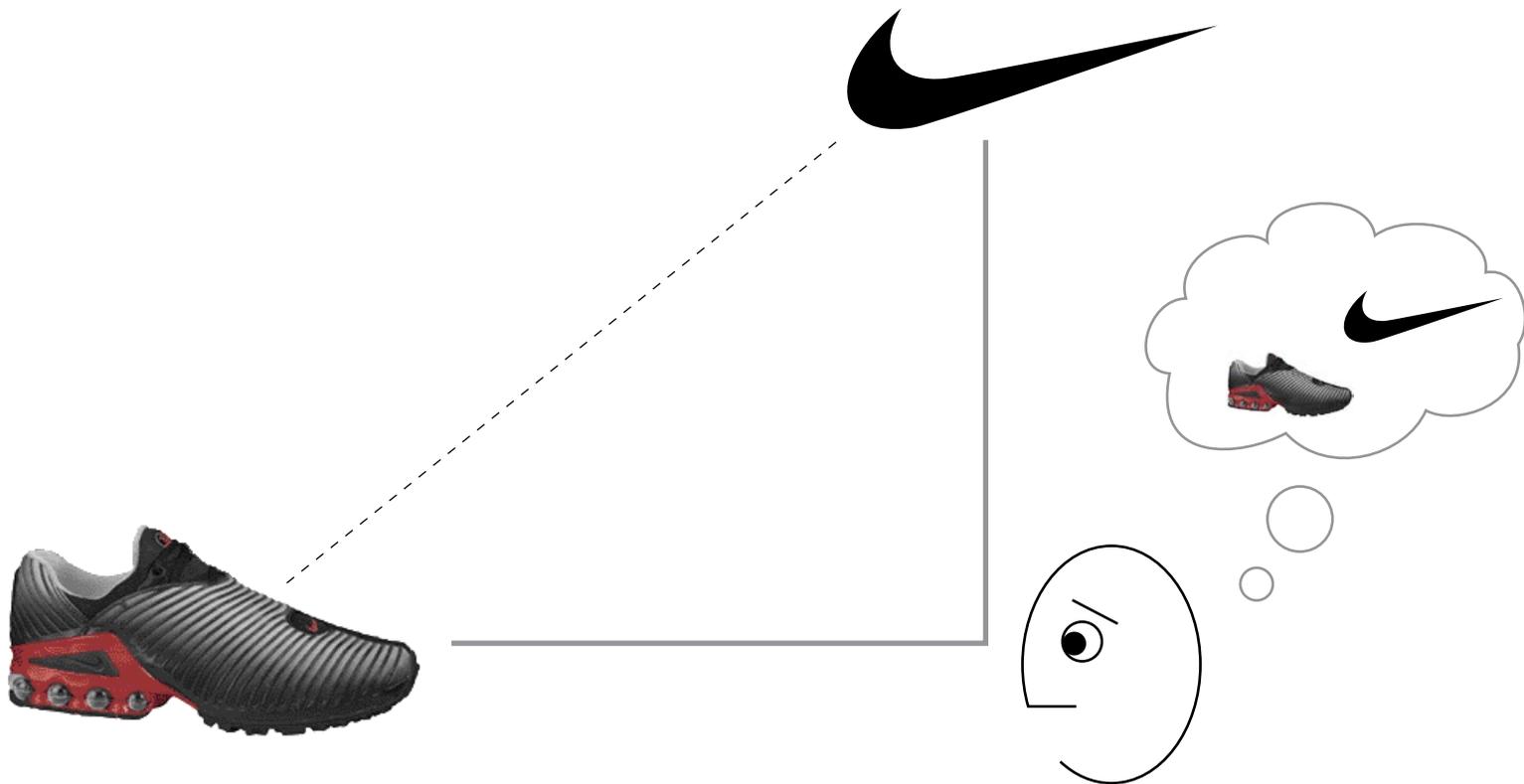
**This is not a brand.**

# A logo is a sign of the quality of a product



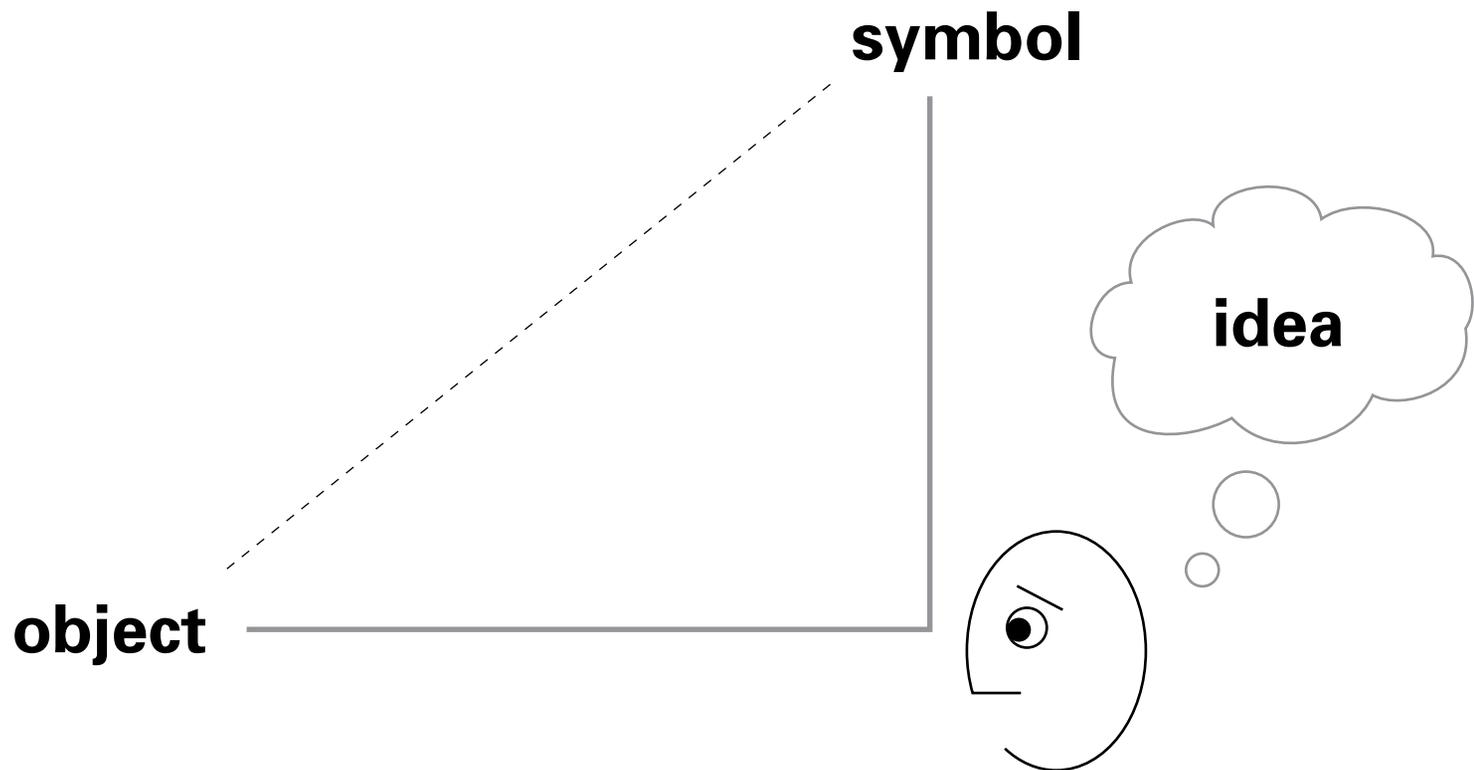
# A brand exists in our minds

It links a symbol  
and the things which we associate with it—  
based on our experience



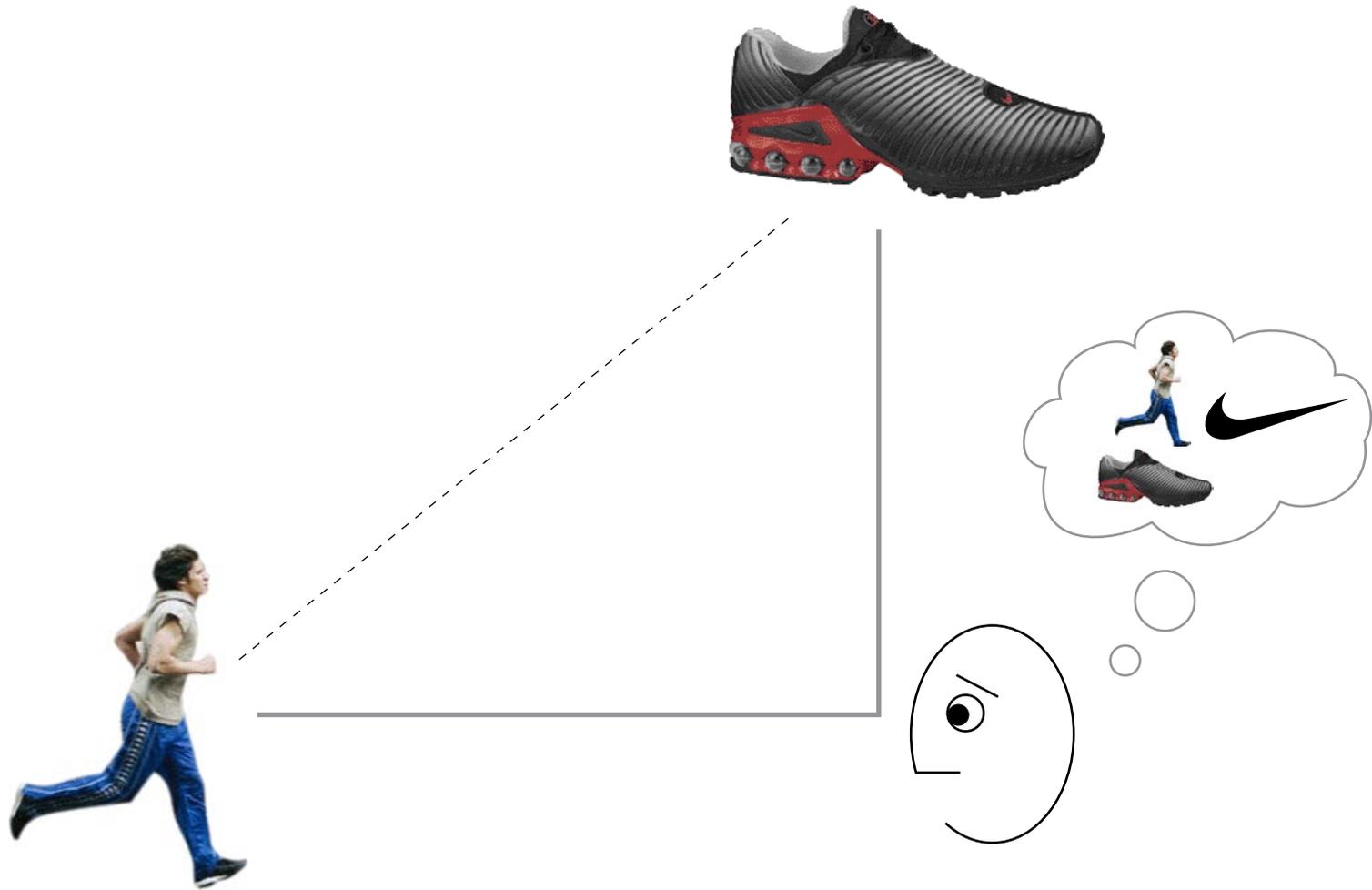
# Brands are a special type of "sign"

sign = object + symbol + idea



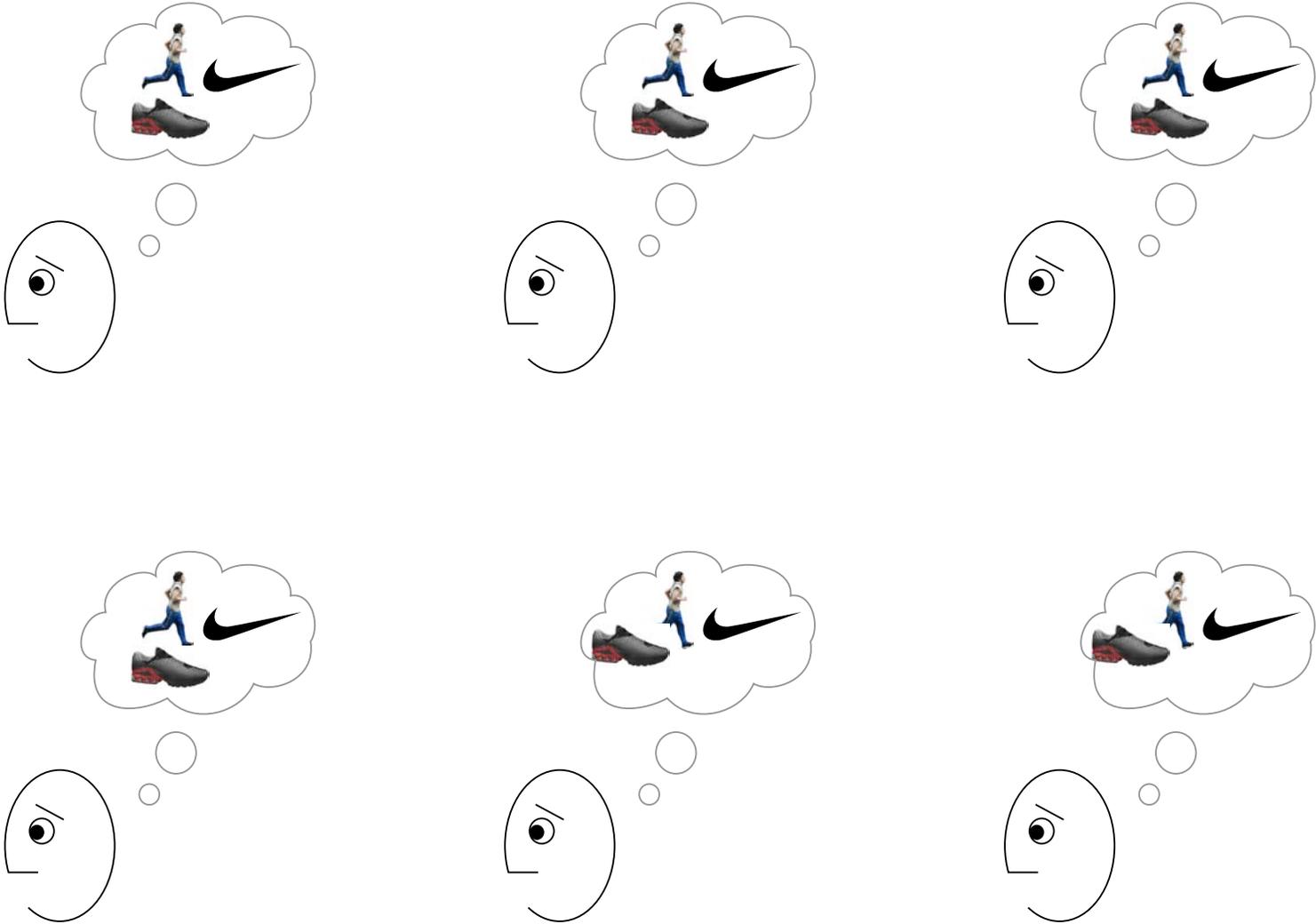
# A product is also a symbol

Both the logo and the product evoke a brand—  
and its associated experiences



# A brand belongs to no one individual

## A brand is the sum of a community's experiences



**A brand is what everyone thinks  
of the quality of a product**

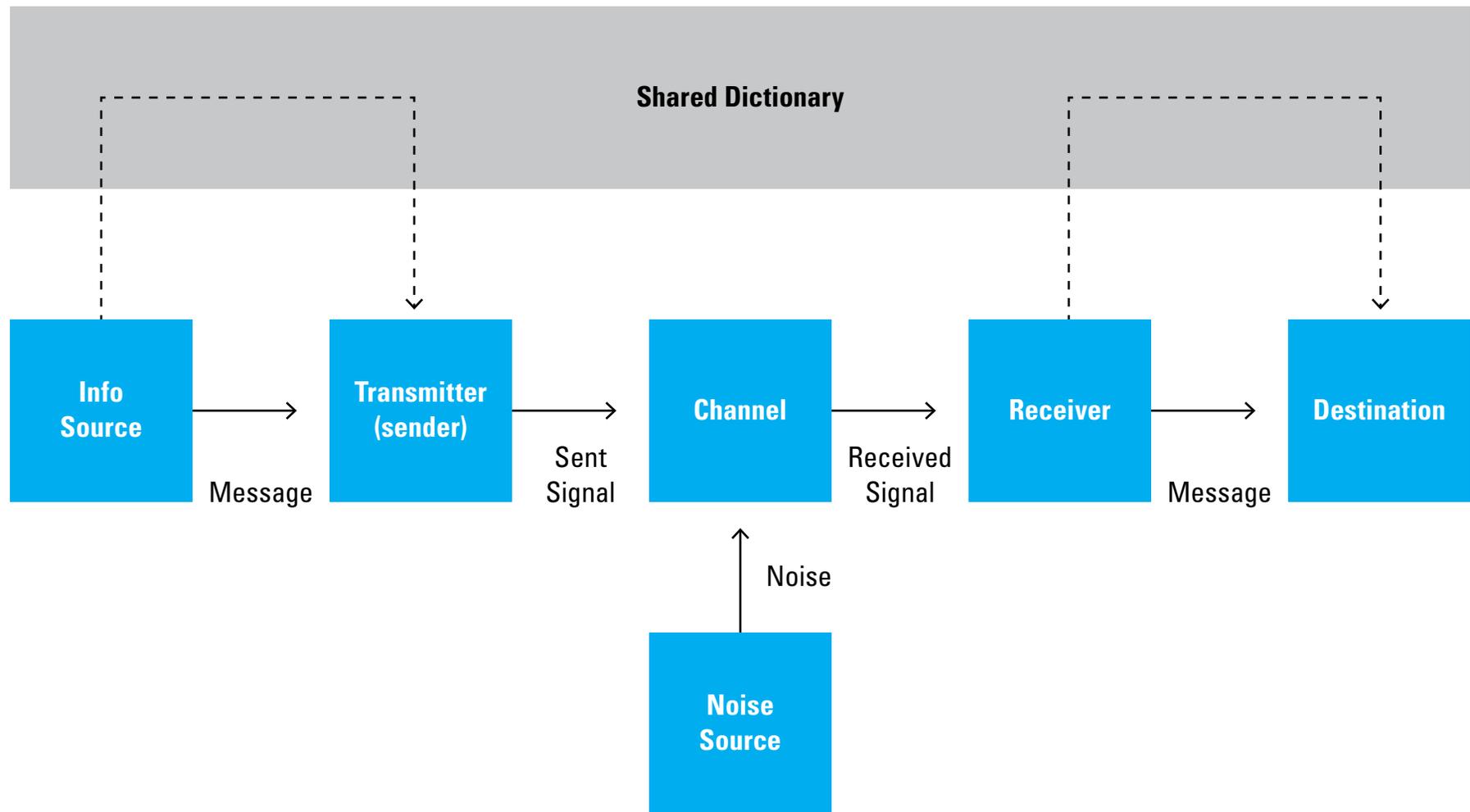


# THREE

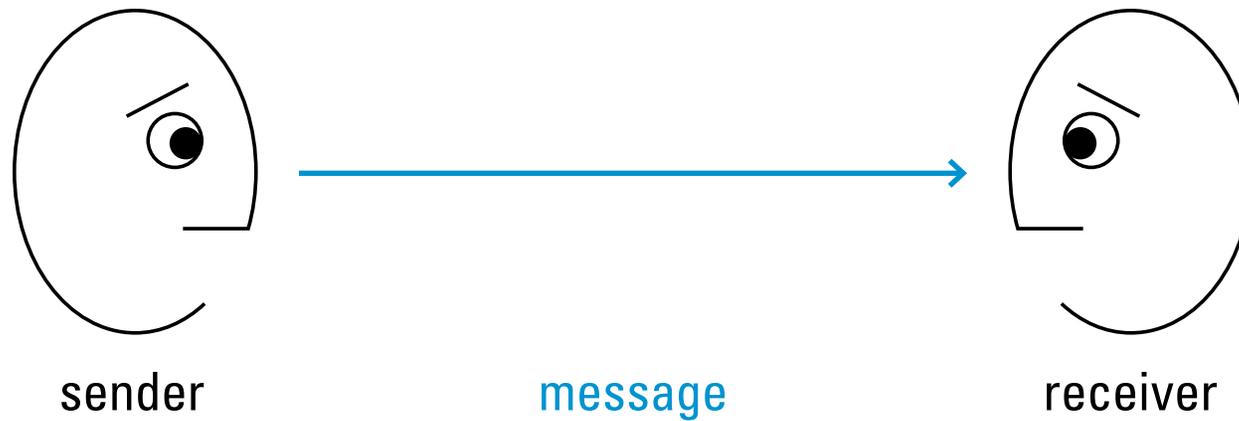
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**Sending a message  
is not enough;  
the message must be received  
and understood**

# Shannon & Weaver's model of communication describes technical problems in machine-to-machine communications



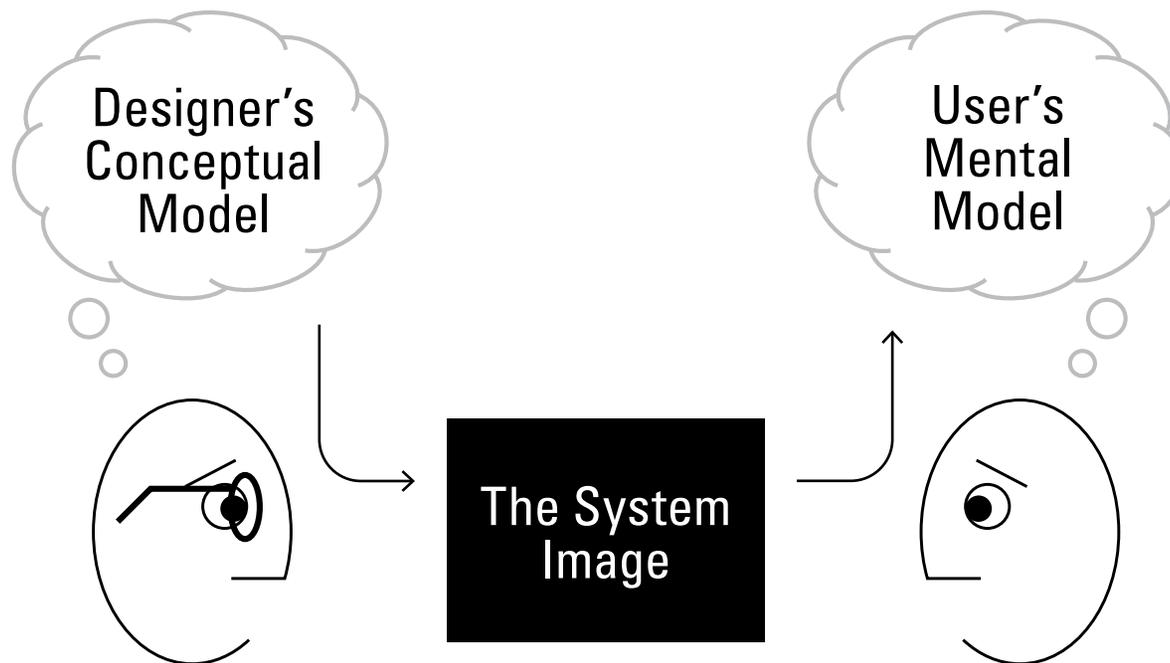
# The message that I think I'm sending may not be the one that you think you're receiving



# The system image

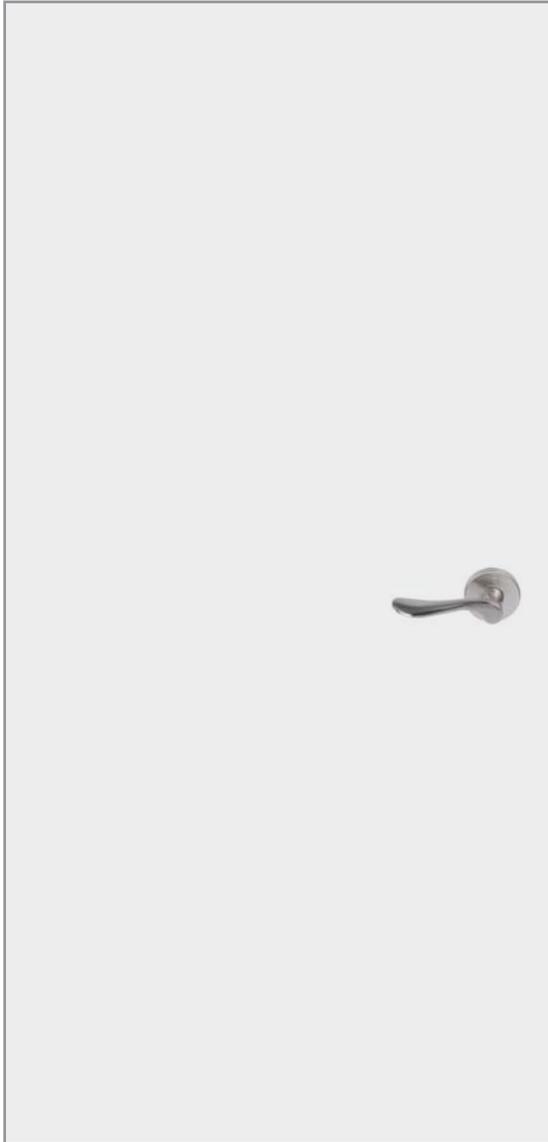
—Don Norman

To use a product properly,  
users must have the same mental model as the designer  
But the designer can only communicate via the product,  
the 'system image'



# Hardware controls are often physically tied to function

Door handles indicate where to push or pull



# Software can communicate its structure through its interface

Spreadsheets are grids of cells, which contain text, numbers, and functions that operate on a range of numbers

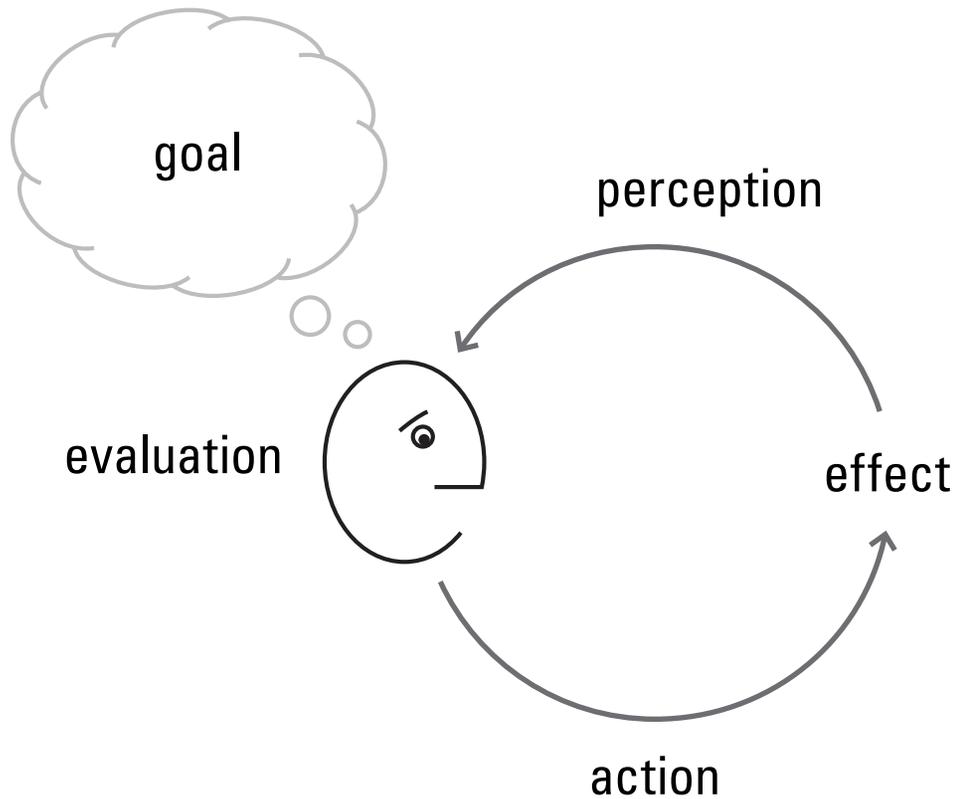
	A	B	C	D
1		<b>FY 10</b>	<b>FY 11</b>	
2	Jan	1	2	
3	Feb	3	4	
4	March	5	6	
5	April	7	8	
6				
7	<b>Totals</b>	16	=SUM(C2:C5)	
8				
9				
10				

# FOUR

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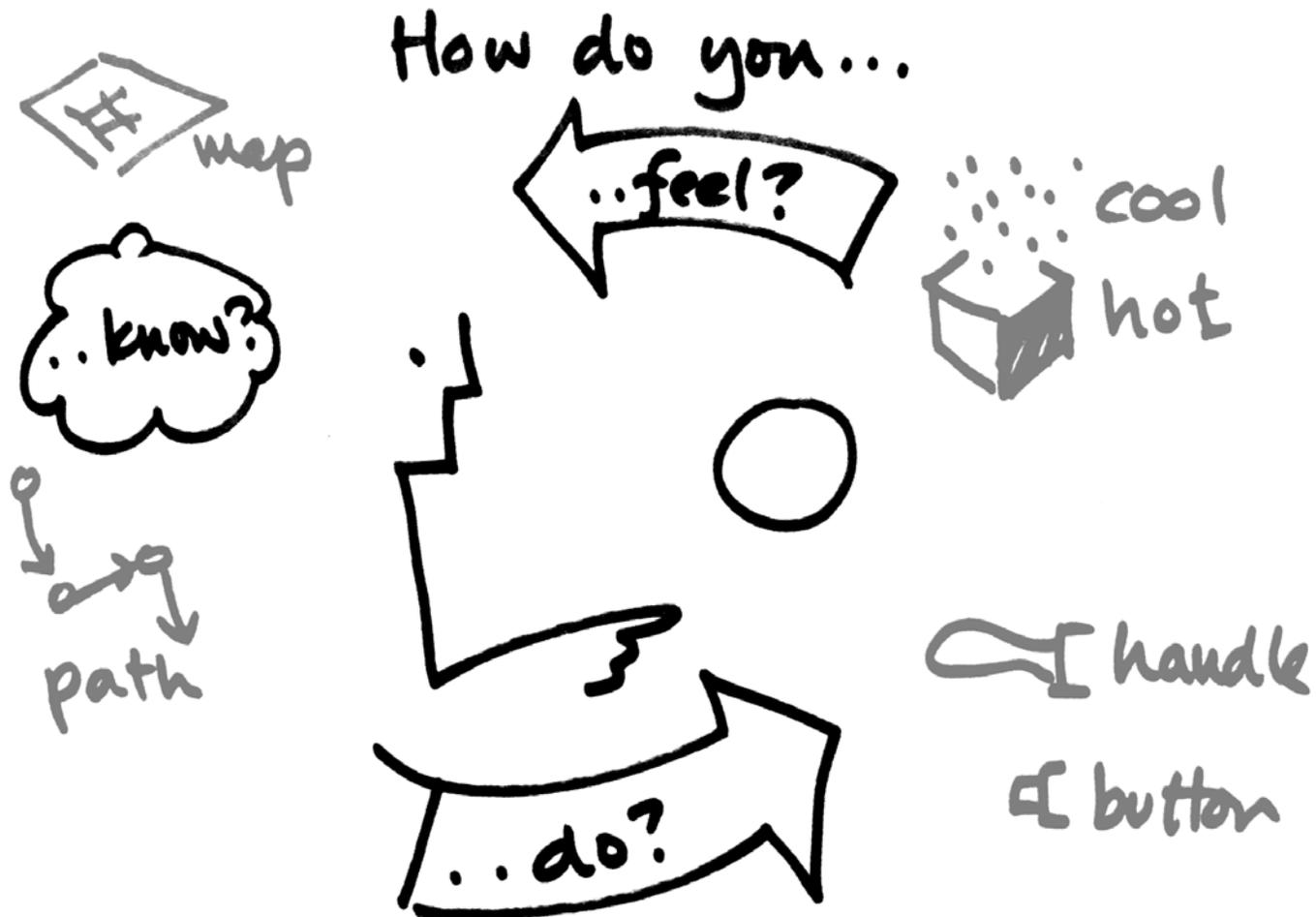
## **Learning requires interaction with an environment**

# Feedback is the basic process of learning



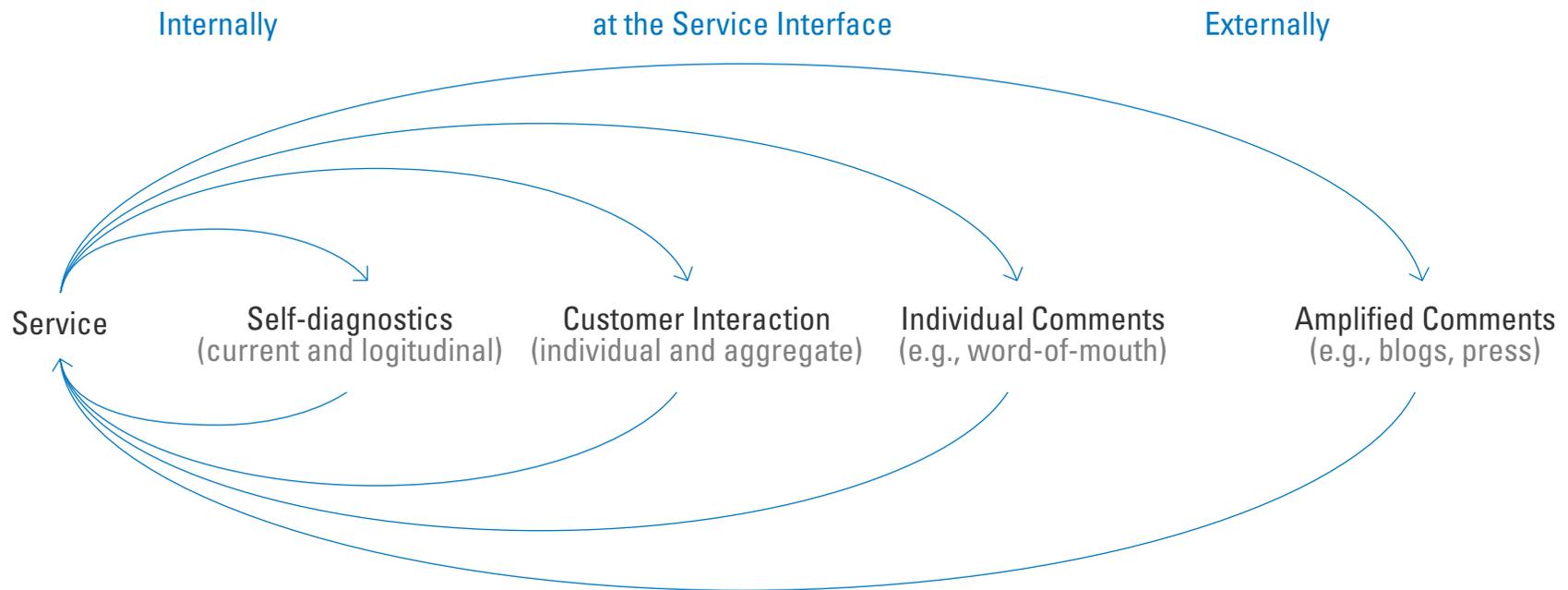
# Bill Verplank's Model of Interaction

How do you feel? How do you know? How do you do?



# Services must continuously monitor their operation

- maintaining existing standards
- identifying quality problems and setting new standards
- recognizing and exploiting new opportunities in a changing environment
- building a culture dedicated to using feedback



# **New tools can build a ladder to health + wellbeing.**

Health + Wellbeing

↑ enable

Better Choices

↑ yield

Motivation + Validation

↑ yield

Conversations + Learning

↑ support

Data + Stories

↑ generate

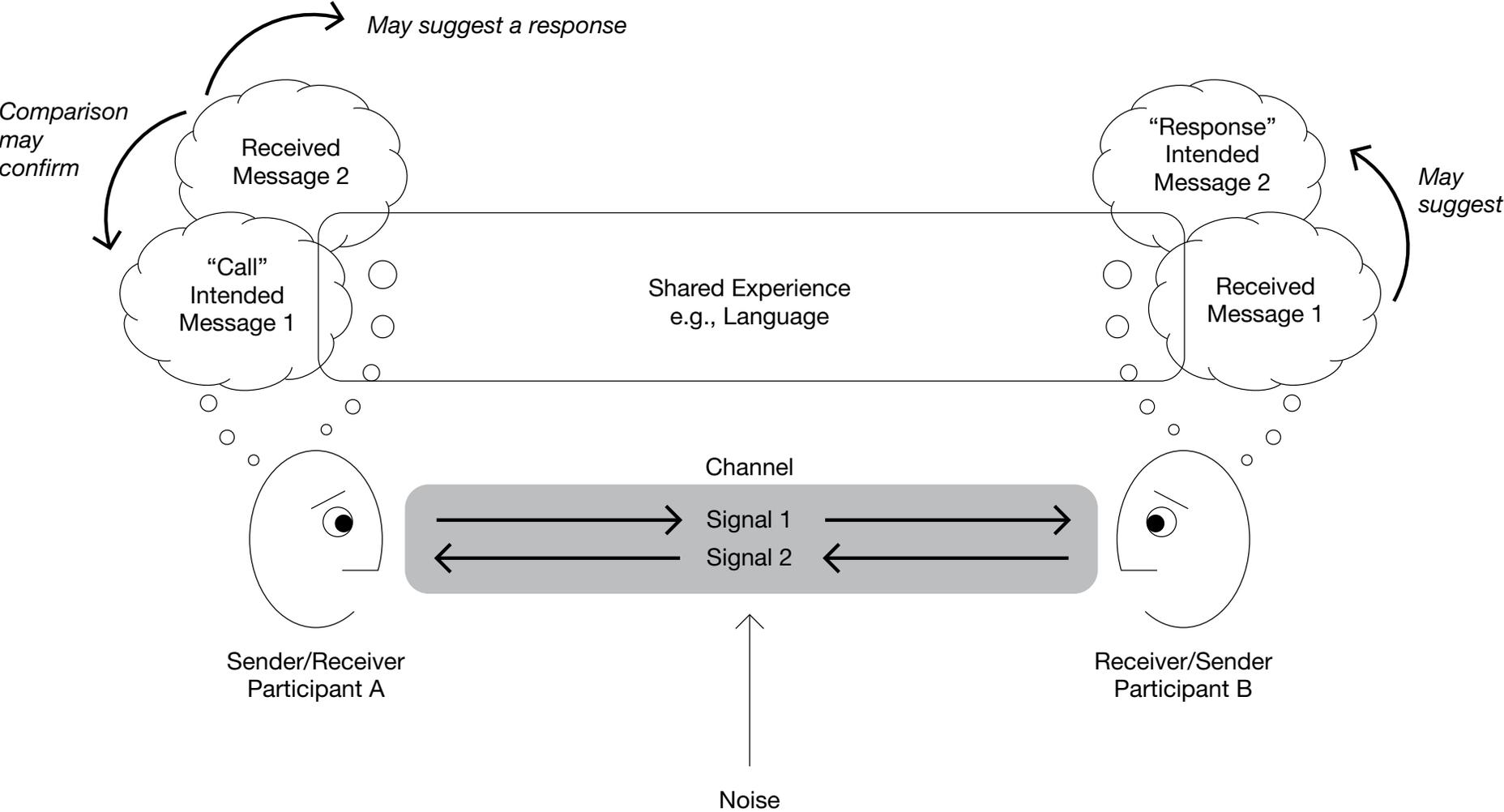
Actions + Events

# FIVE

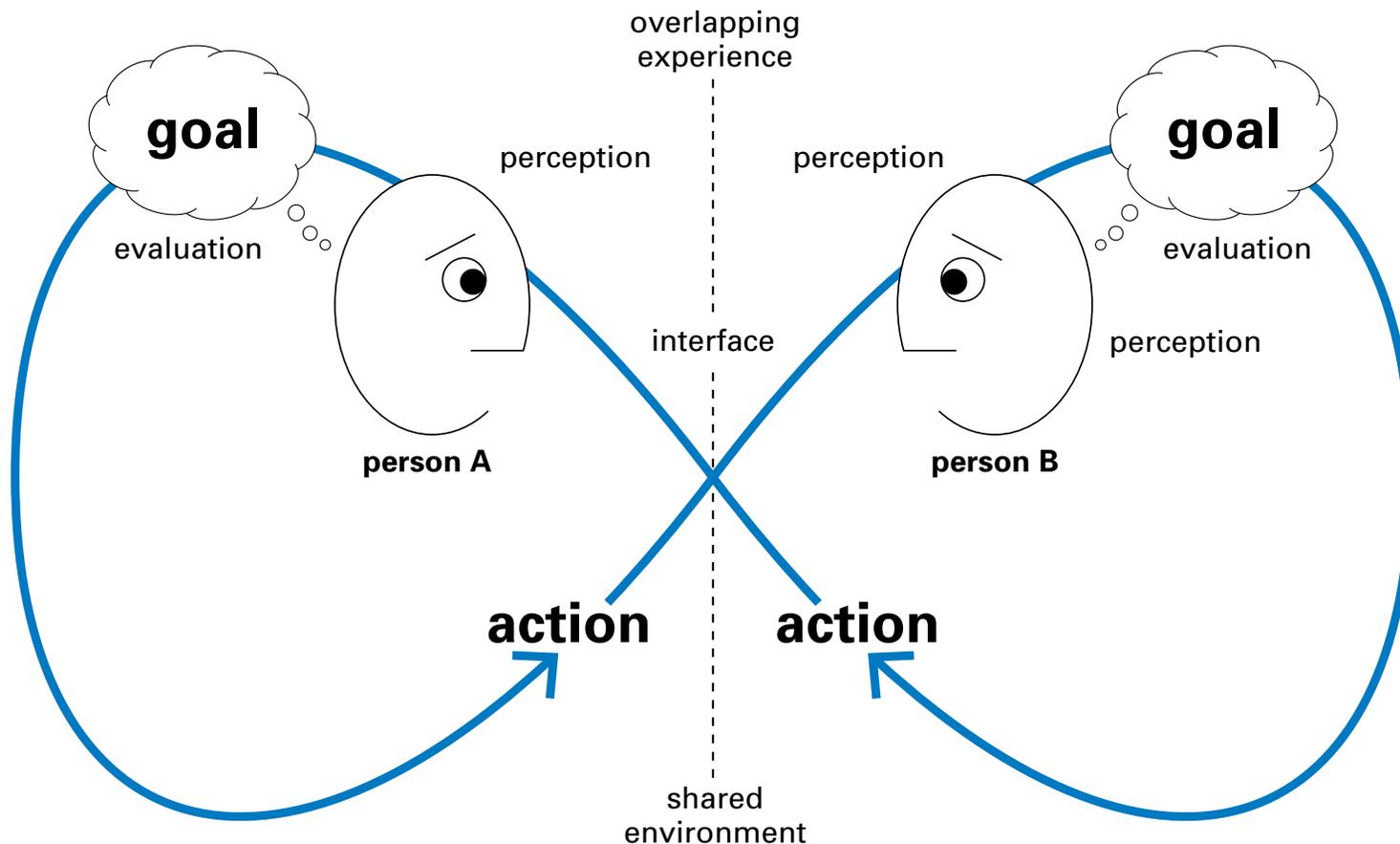
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**Conversation builds meaning—  
creates understanding,  
agreement, action**

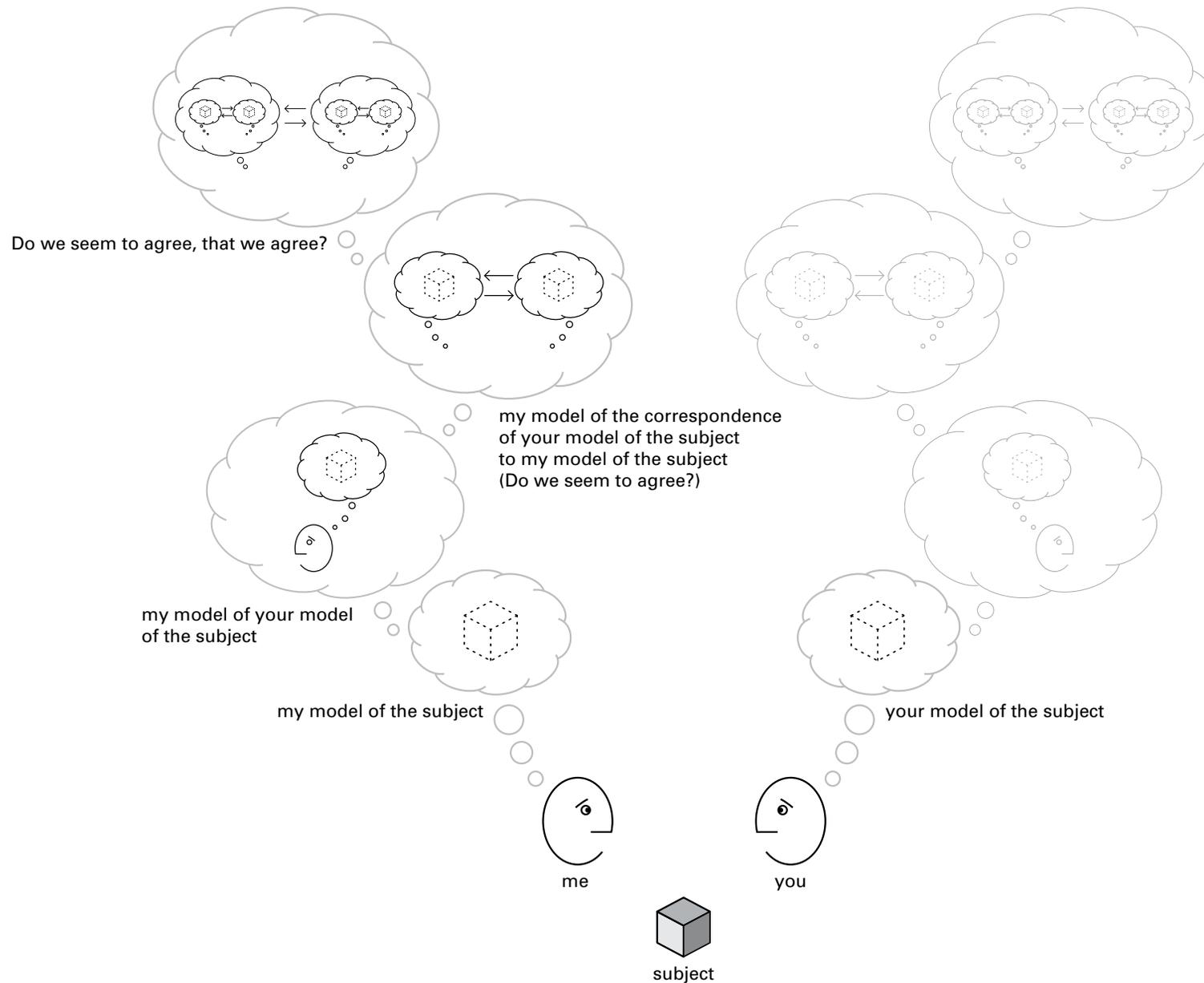
# Human communication is more complex than machine communication



# Conversation involves interlocking feedback loops— enabling consensual coordination of goals and actions



# Human communication relies on agreement



# Conversations may lead to trust.

Trust



Relationship



(Trans)action



Agreement



Understanding

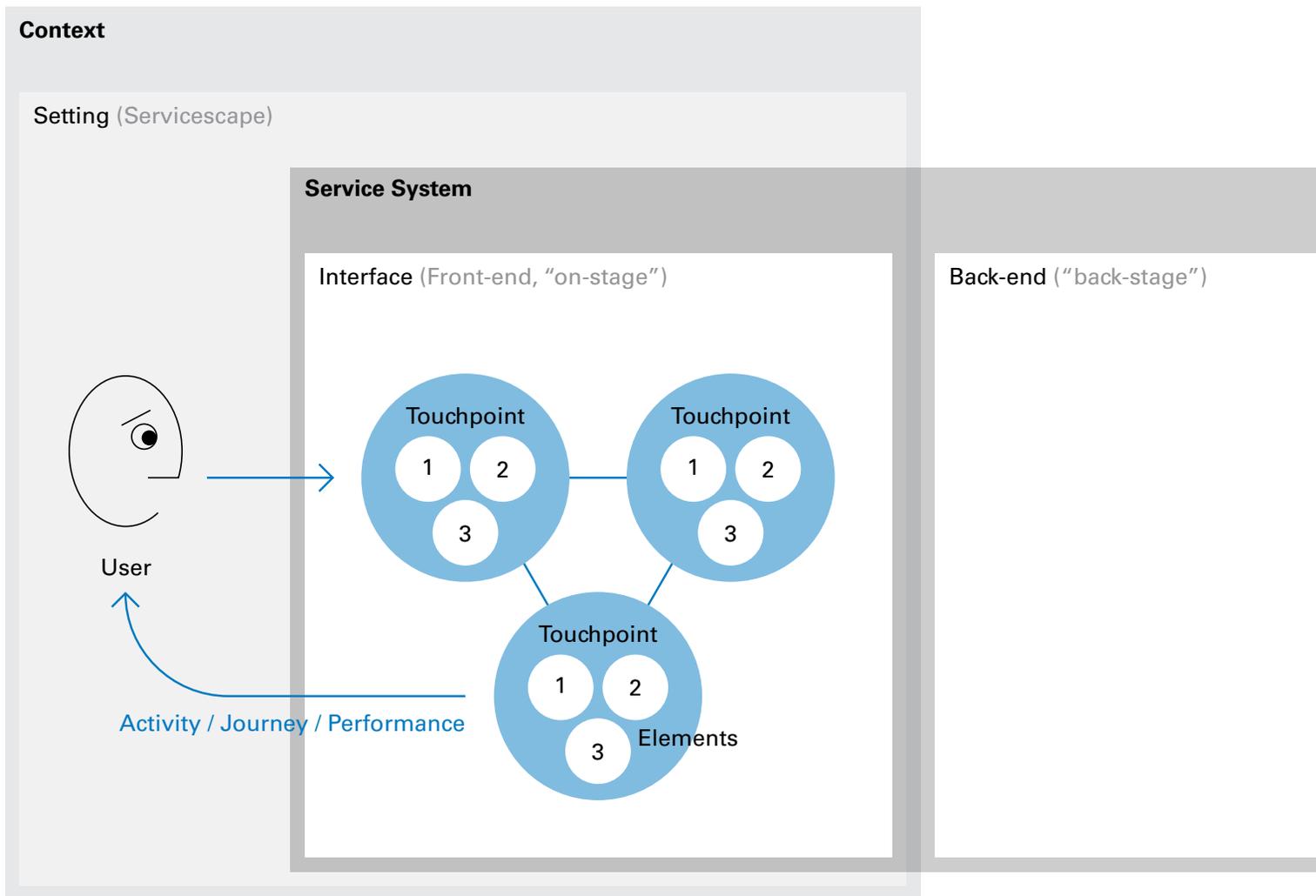
# SIX

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**Services are intangible  
and unfold through time**

**Managers need maps  
to see 'services' as 'wholes'**

# Sets of resources composed into interfaces make up a service system



—Based on Gupta, Vajic, Suchman, and Lave

# A wonderful service experience: diners engage the chef directly

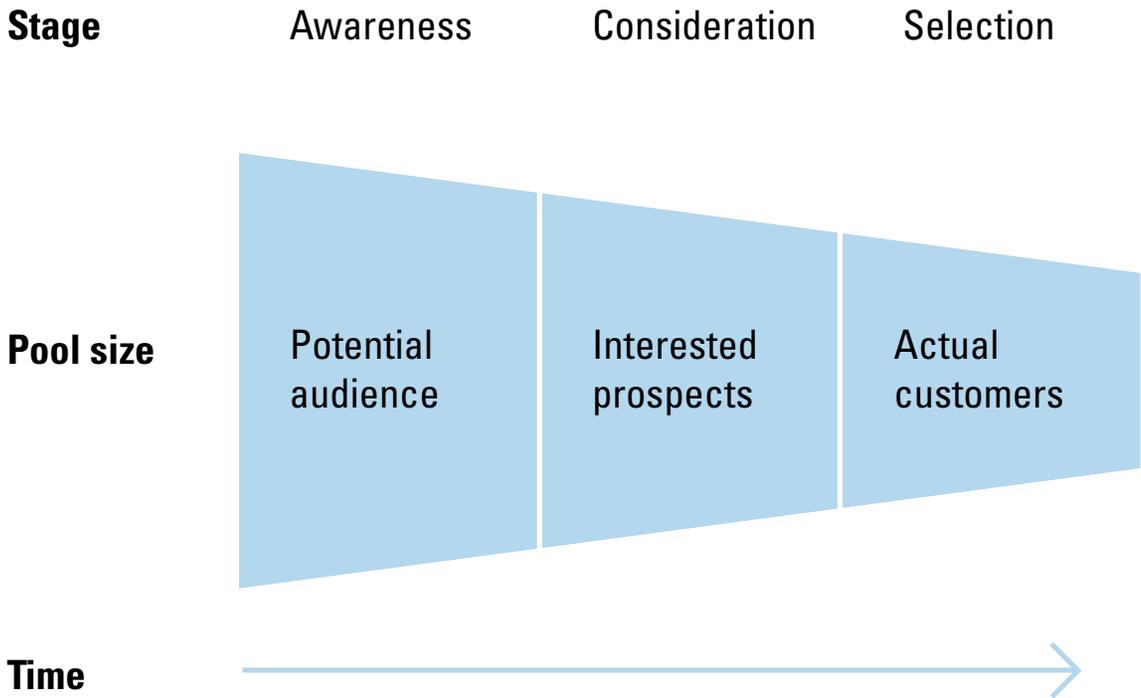


# SEVEN

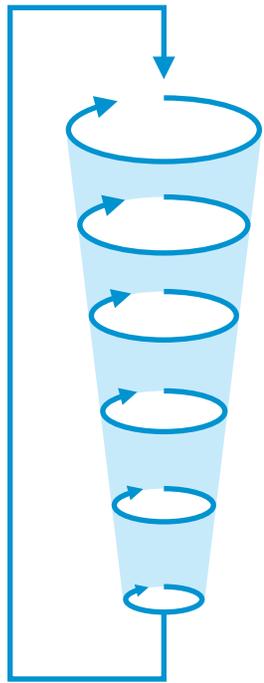
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**Experience is an activity  
a performance  
a journey**

# The conventional sales cycle funnels prospects to a purchase



# An updated sales cycle builds on the goal-action-measure feedback loop at each step



## Goal

Where seller wants buyer 'to be'

## Adoption Stage

Aware of seller + offering

Understand features + benefits

Interact + decide to try

Increase use + effectiveness

Advocate + influence others

Suggest changes + additions

## Action

What seller does

## Sales Stage

Publicize + advertise

Inform + educate

Close + transact

Service + support

Reinforce + reward

Listen + adopt

## Measure

What seller watches

## Research Stage

Recognition score + # of inquiries

Reputation + quality scores

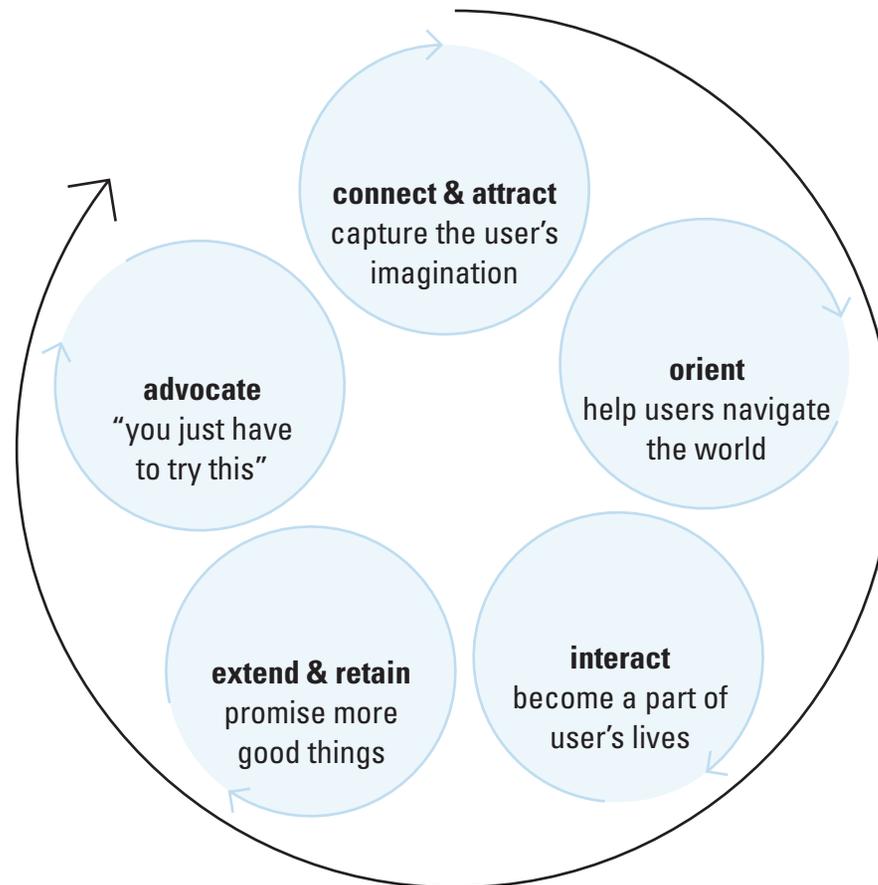
Sales \$ + % repeat purchases

Usability scores + maintenance records

Net promoter + satisfaction scores

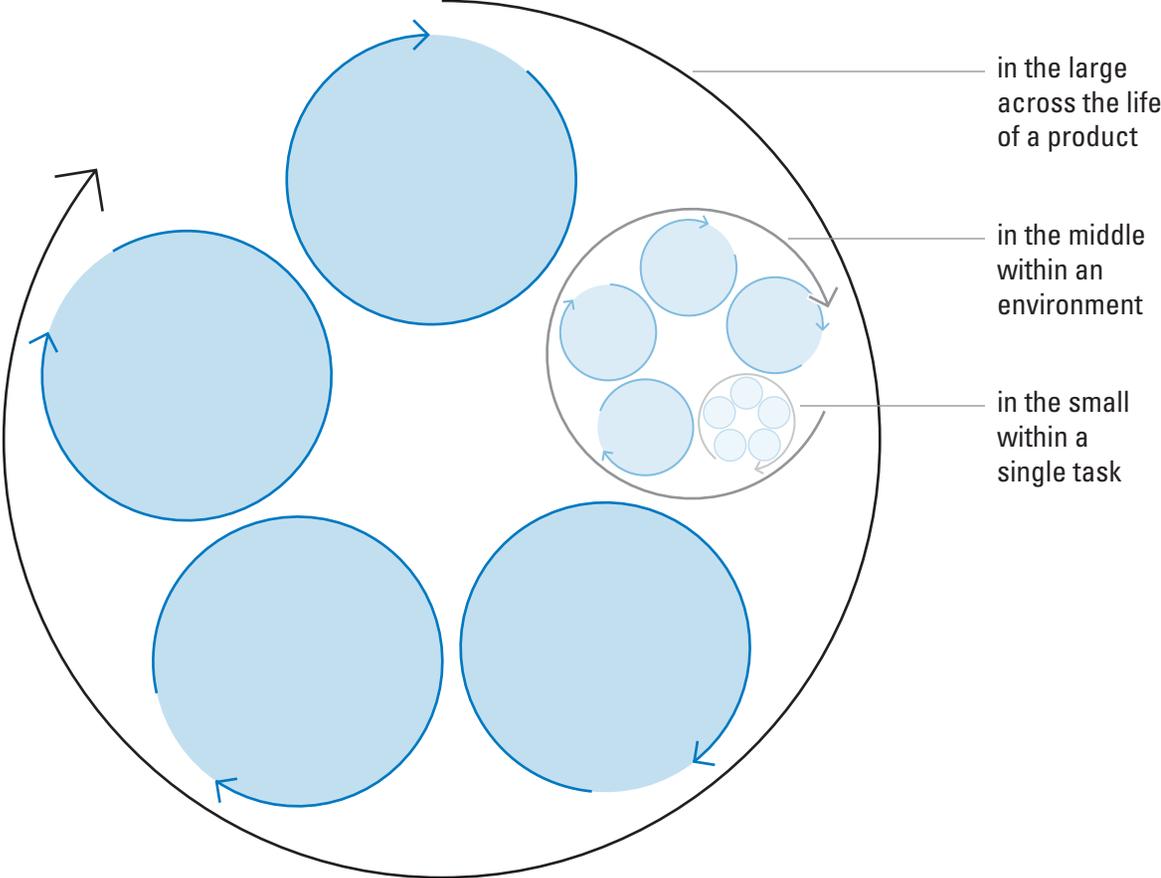
# of unexpected uses of product

# The experience cycle emphasizes building relationships



—Shelley Evenson

# The experience cycle works in the large and in the small



# Apple experience cycle: In the large

Multiples touch-points across the life of a product



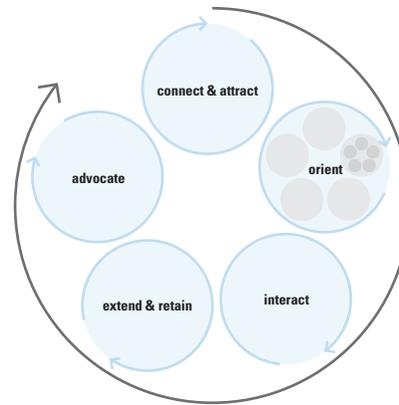
## Sharing

Buy music for friends. Share playlists on local-area networks, which can be fairly large in libraries or universities. I show off my toys where ever I go. (People smile and often ask about them.) I become an extension of the store.



## Software + services

iTunes helps with managing music collections, buying songs through the iTunes store, and transferring data onto the iPod. Once I have my stuff in there— I don't want to move to any other platform. I buy the phone that integrates iPod into my communication world, or the Touch that extends my iPod experience to calendars, web browsing, and mail.



## Advertising

iPod advertising. Billboards. TV. A silhouetted figure against a colorful background. The white earbuds and cord identify it from far away.



## Store

The giant backlit apple and silver/glass backdrop lets you know you are in a different kind of place. Upon entering you find the iPods among the store's displays.



## Product

You listen/watch. You are in your place wherever you are with this product—it creates your surround. (It is about the experience after all.) And everyone knows it by your identifying white cords.

# Apple experience cycle: In the middle

Multiples touch-points in the store experience



## Busy locations

Apple locates flag-ship stores in high-traffic areas like Market Street in SF, Michigan Avenue in Chicago, and 5th Avenue in NY. It also locates mini stores (as narrow as 15 feet) in malls. Both strategies expose Apple products directly to people who wouldn't otherwise see them.



## Simple layout

The stores display relatively few products in an open even sparse layout, so that visitors can easily find what they're looking for. A greeter stands at the door, and plenty of trained staff are available throughout the store to answer questions.

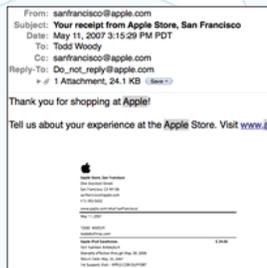
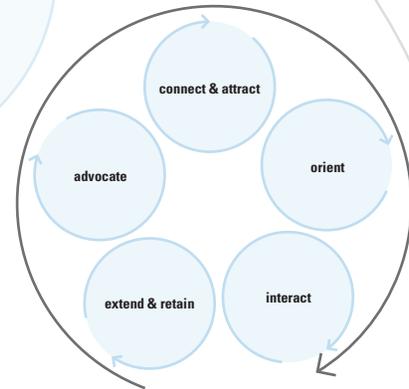


## Test drive

Visitors can test most of Apple's products in the stores. There's even a special area for kids and internet access. Recently, Apple has begun to replace cash registers with mobile check-out devices, an effort to eliminate check-out lines.

# Apple experience cycle: In the small

Multiples touch-points within the in-store purchase process



## Connect by mail

Staff offers opportunity to receive the receipt by e-mail—so there is another chance for Apple to touch you via a different channel.



## Choose accessories

The staff member gathers the item from stock (located near the rear of the store)—and directs you to accessories, cables, cases, etc., and checks you out right there with a hand-held device.



## Museum-style staging

Because of the sparse layout, it is easy for people to find the product category that they are looking for—differentiation between products is clear—iPods vs. laptops vs. desktops.



## Informative signs

Once at a station the information about the product is displayed on small cards, so you know what you're looking at.



## Listen to music

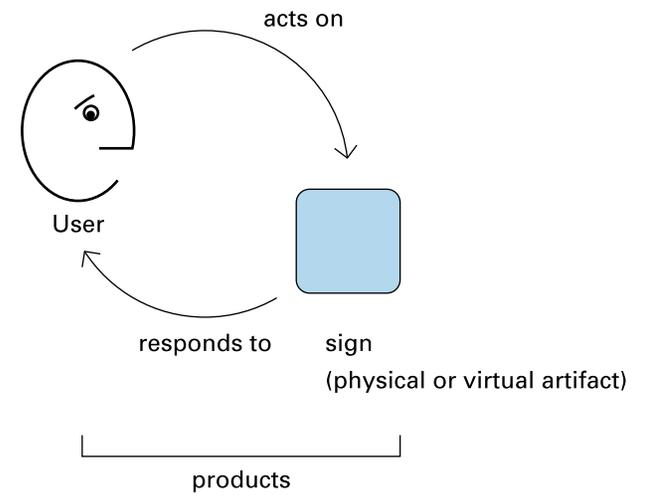
People can try on the products by playing with them (headsets supplied.) In the ipod section all the colors are displayed—so you can even try them on with your outfit. A staff member sees you playing, asks if you'd like one.

# EIGHT

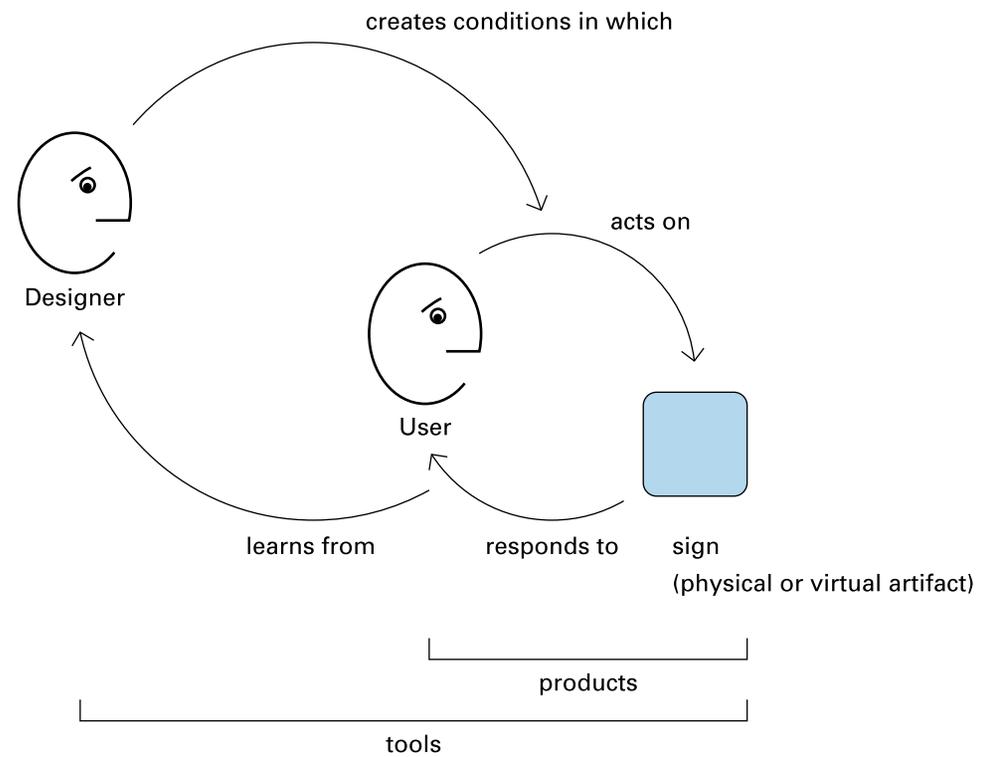
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## **Create conditions in which users can design**

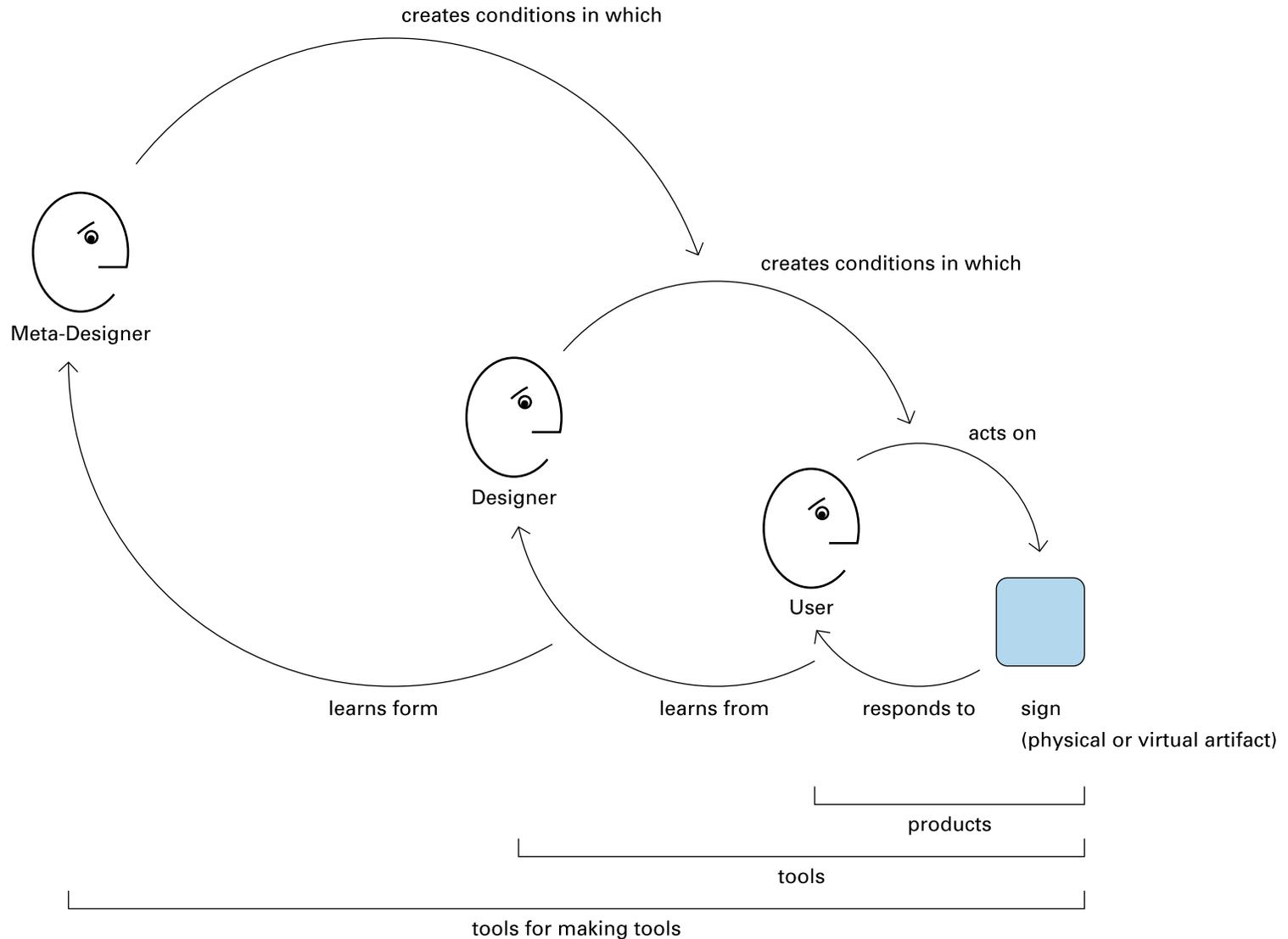
# User interacting with artifact



# Designer interacting with User interacting with artifact



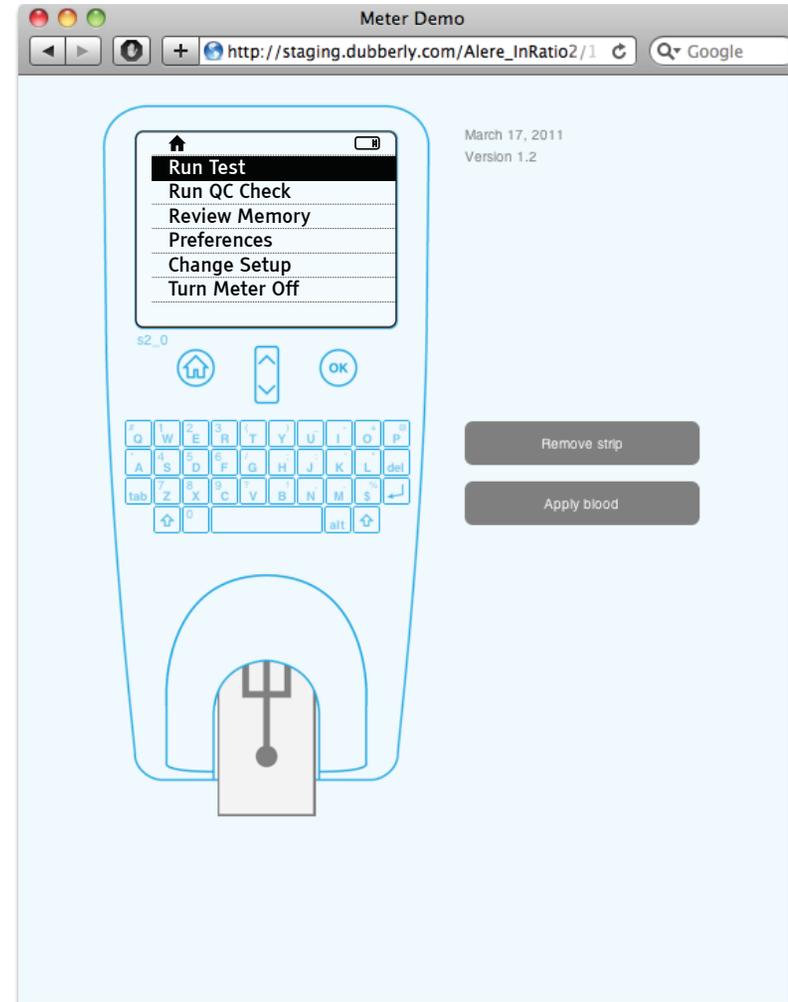
# Meta-Designer interacting with Designer interacting with User interacting with artifact





# User task-flow maps are brought to life in interactive demos

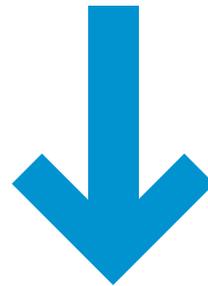
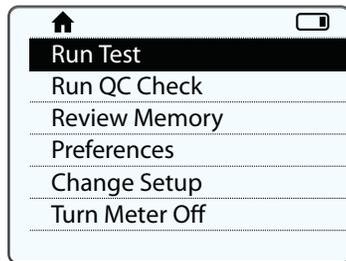
Feedback suggests changes



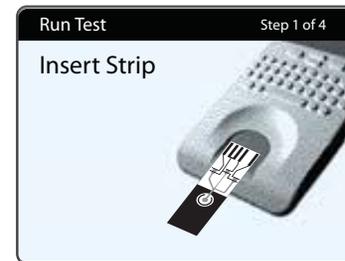
# Our first demos were difficult to modify

## Javascript

```
$('#ok_button').click(function(){ if(RunTest.selected){Display.goto('insertStrip'); } });
```

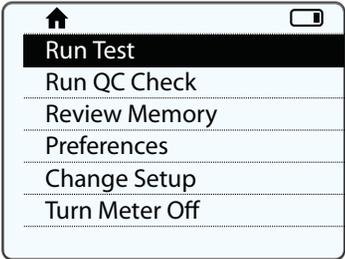


→  
Selecting "Run Test"  
begins the test  
sequence.



# We built a demo development framework which simplifies the process

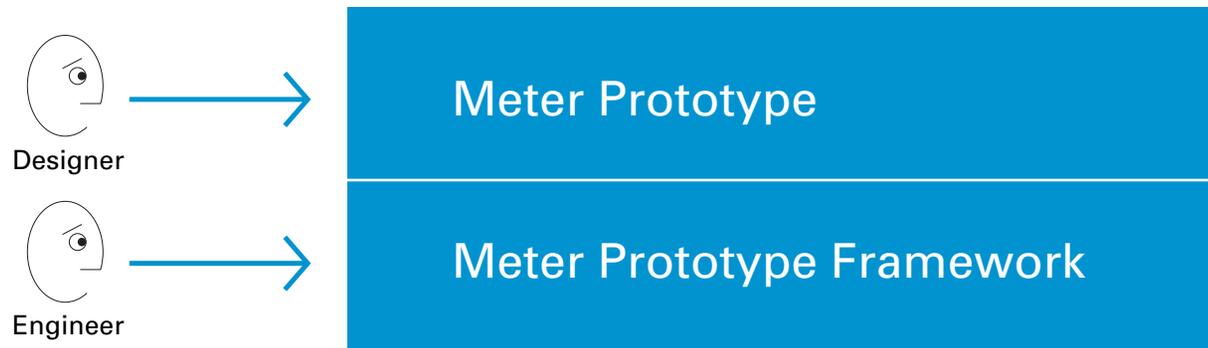
```
Wires  
run_test: ok: => goto 'insert_strip'
```



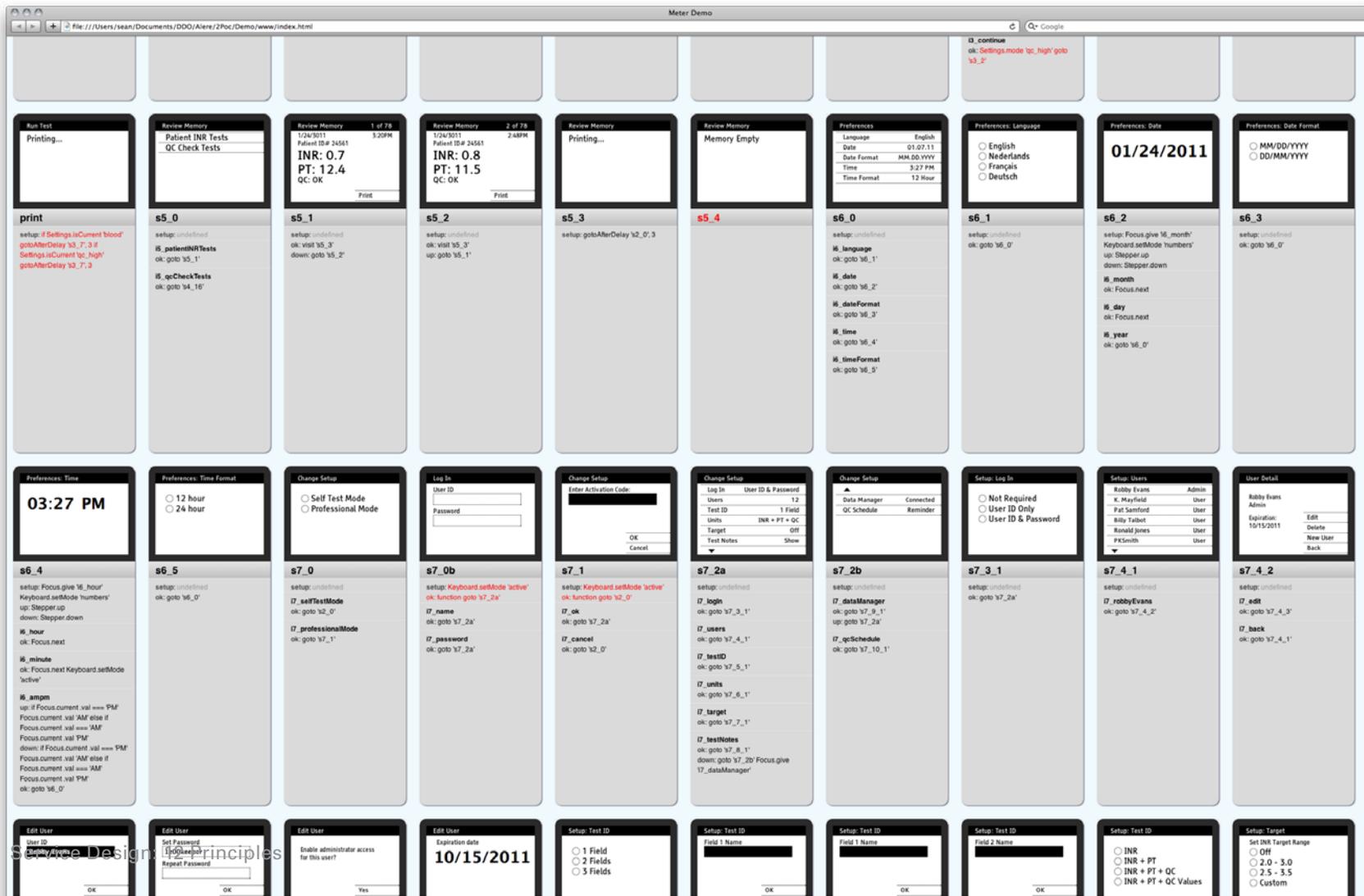
→  
Selecting "Run Test"  
begins the test  
sequence.



# The development framework enables designers and other non-programmers to create prototypes easily



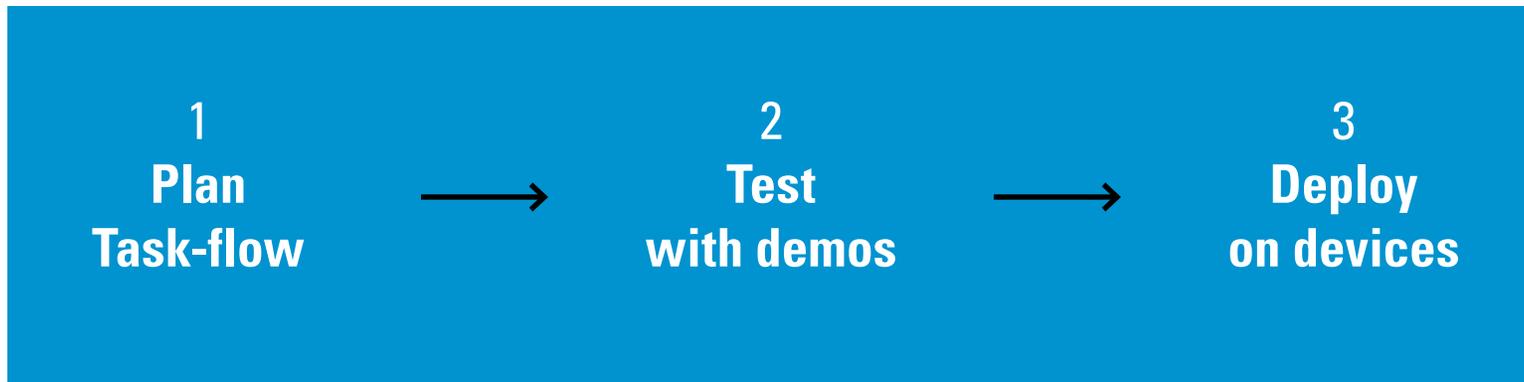
# The framework includes an all-screen view for debugging; it shows connections, much like the original task-flow map



# The original development process involved creating the UI 3 times



The UI development environment could handle all 3 tasks



# NINE

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## **Build platforms— systems with rules for extension**

# Rearrange, reconfigure, transform



Transformers

# Choose from a range of options

## Mini Cooper (Color Options)



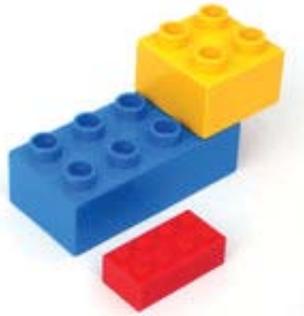
# Add or delete pieces



Bugaboo

# Assemble building blocks or a kit of parts

Lego



**Like most fast food from burgers to noodles to wraps,  
Starbucks drinks are a platform**



**Short: 8oz**

**Tall: 12oz**

**Grande: 16oz**

**Venti: 20oz**

# Starbucks offers almost 200 million variations on latte



# In a networked-services world, software platforms and API's are critical— and continually evolving

**Applications**

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Lexolous

**Identity Service**

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Facebook

**Browser**

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Explorer

Firefox

**Operating System**

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Windows

Linux

**Chip Set**

Pentium

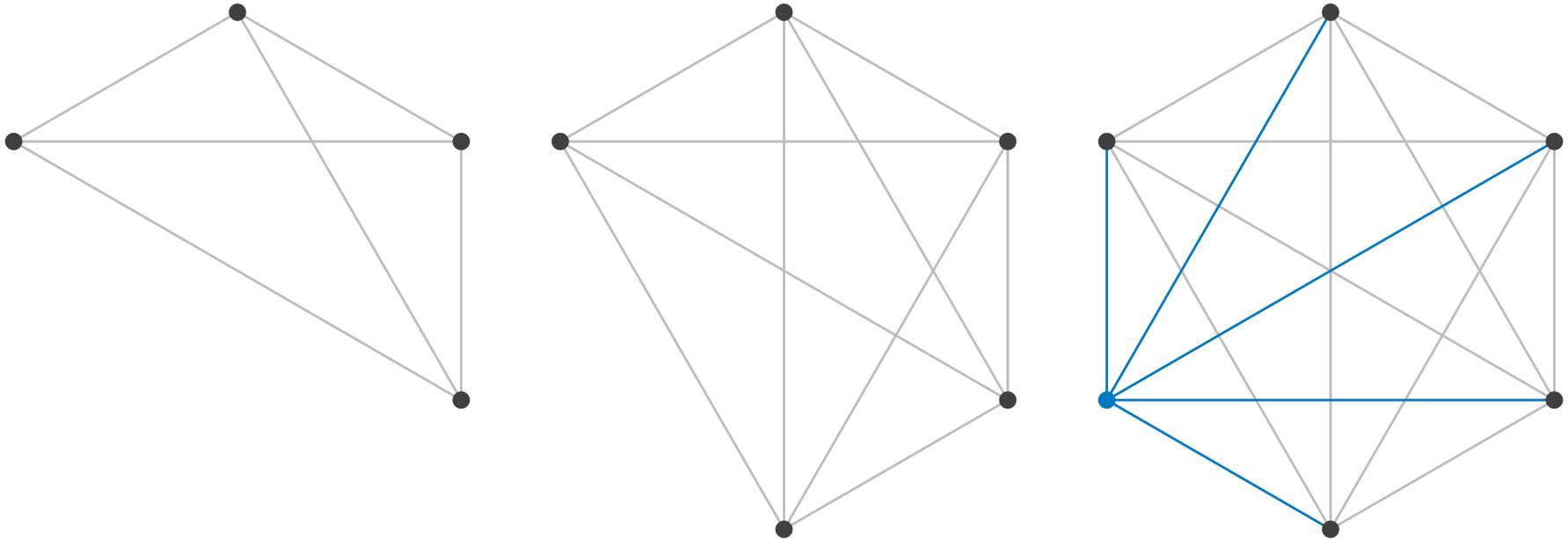
Arm

TEN

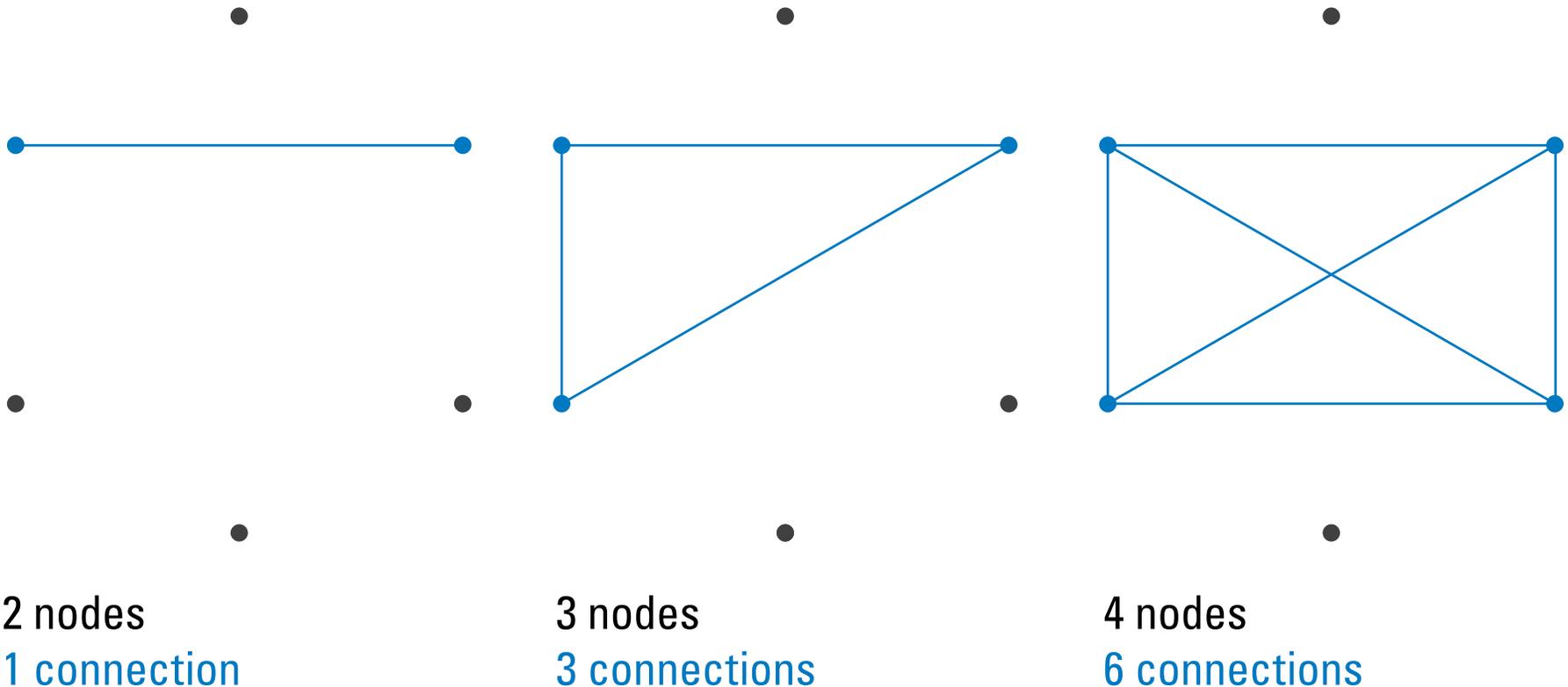
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# Take advantage of network effects

**In a network,  
each node enhances the value of the existing nodes  
by increasing the number of connections**



# As the number of nodes grow, each new node brings an increasing number of new connections

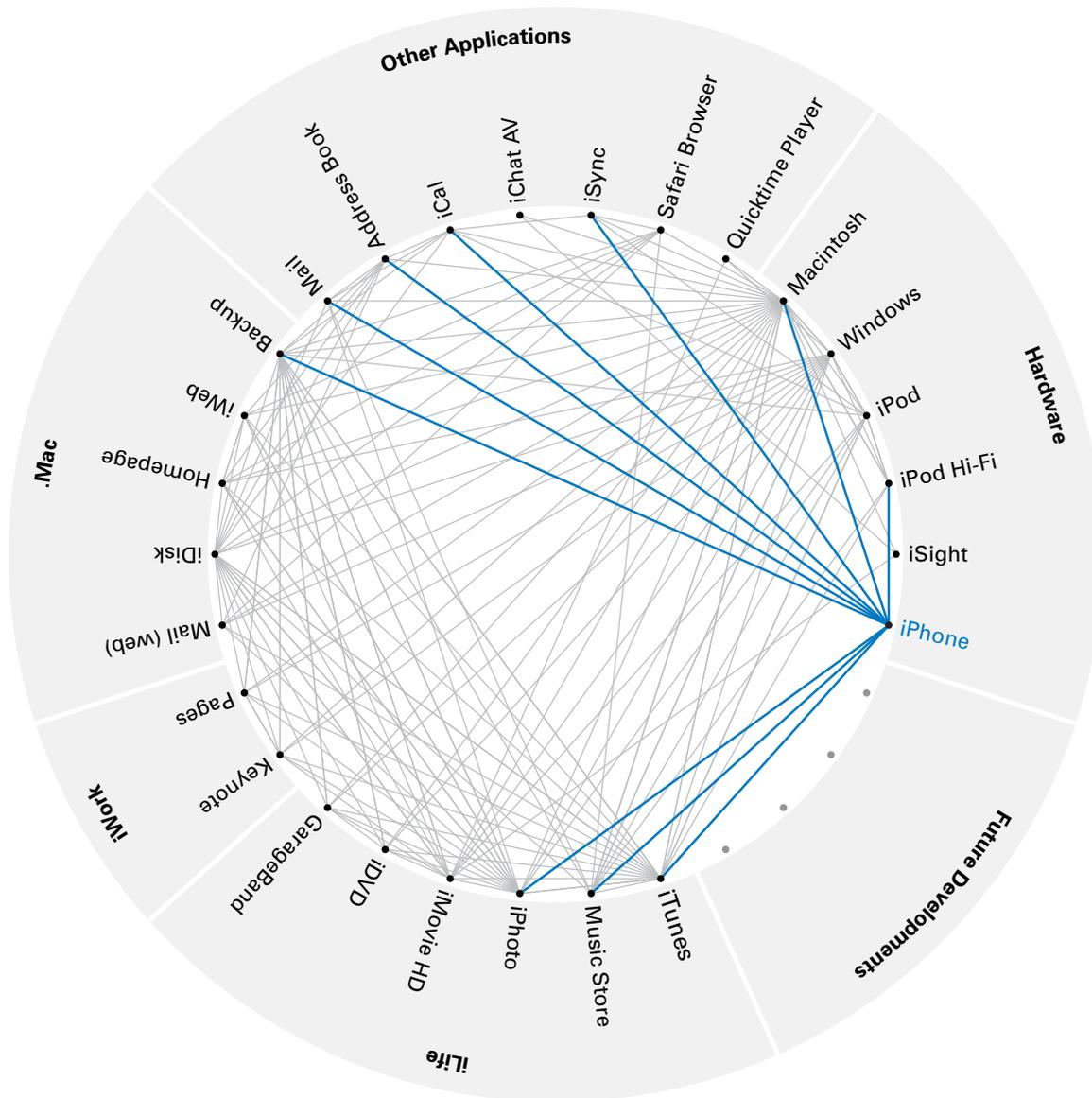


$n$  nodes yield  $\frac{(n^2 - n)}{2}$  connections

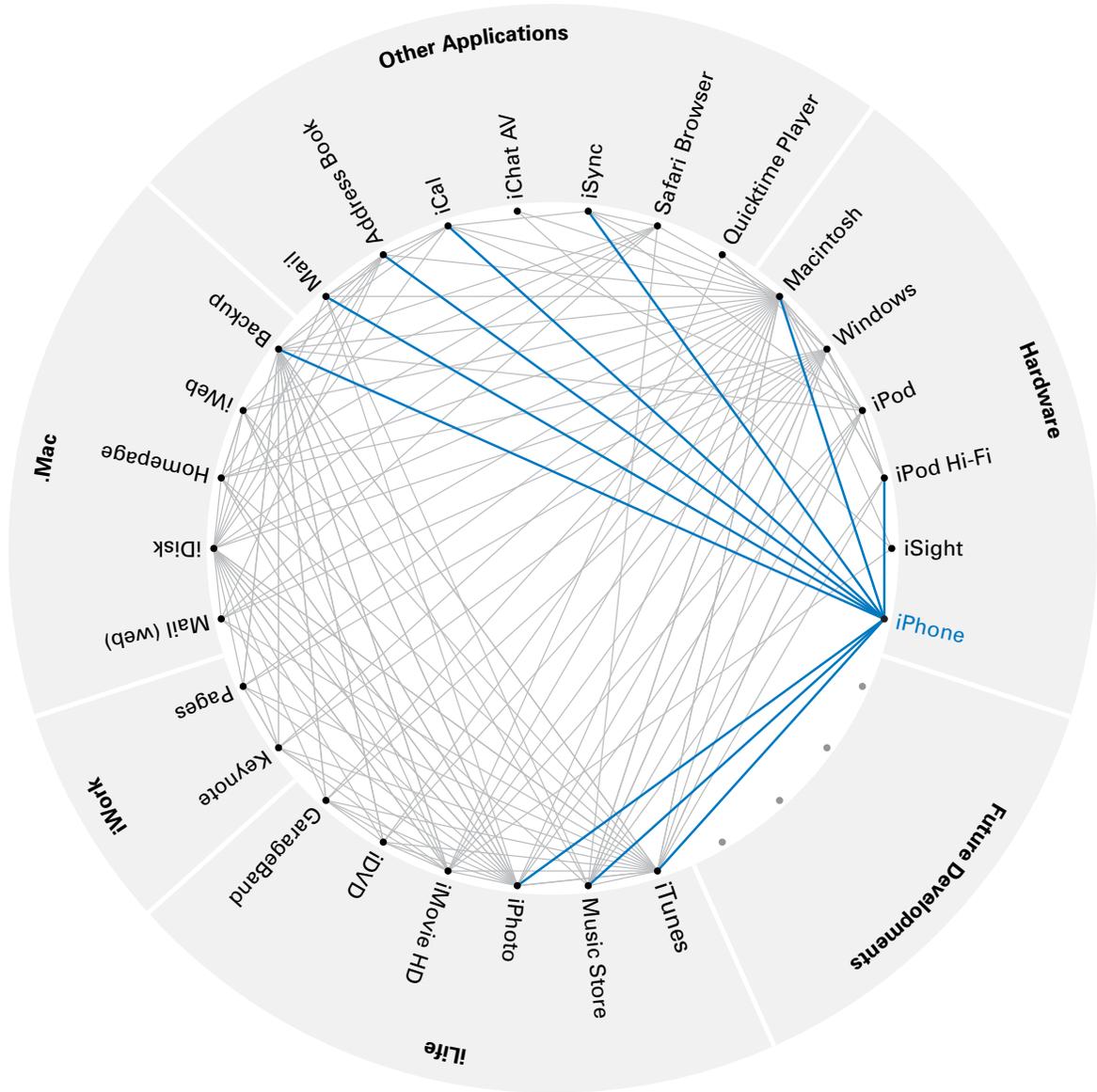
1000 nodes yield nearly half a million connections



# The iPhone will connect with Apple's existing system of systems



# How will new Apple TV products connect?



# ELEVEN

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## **Convergence 2.0** **Interactive multimedia**

**+ service**

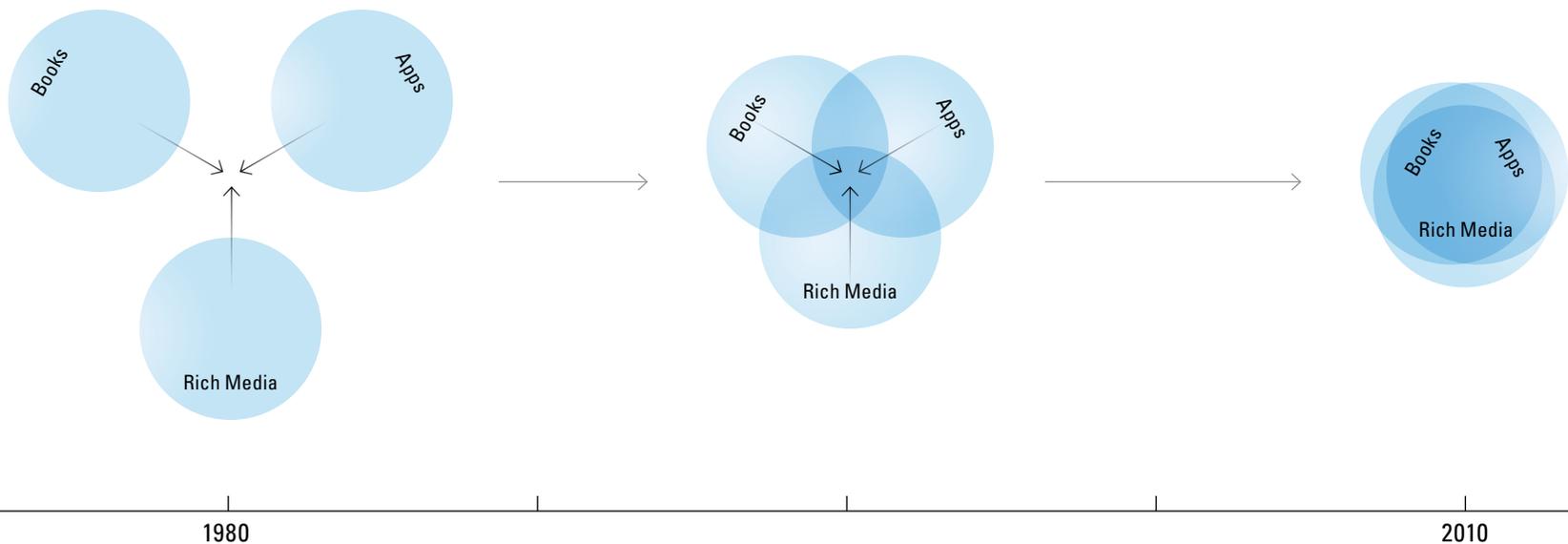
**+ social**

**+ physical**

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# For the last 30 years, publishing, broadcasting, and computing have been converging, creating interactive multimedia

—Nicholas Negroponte



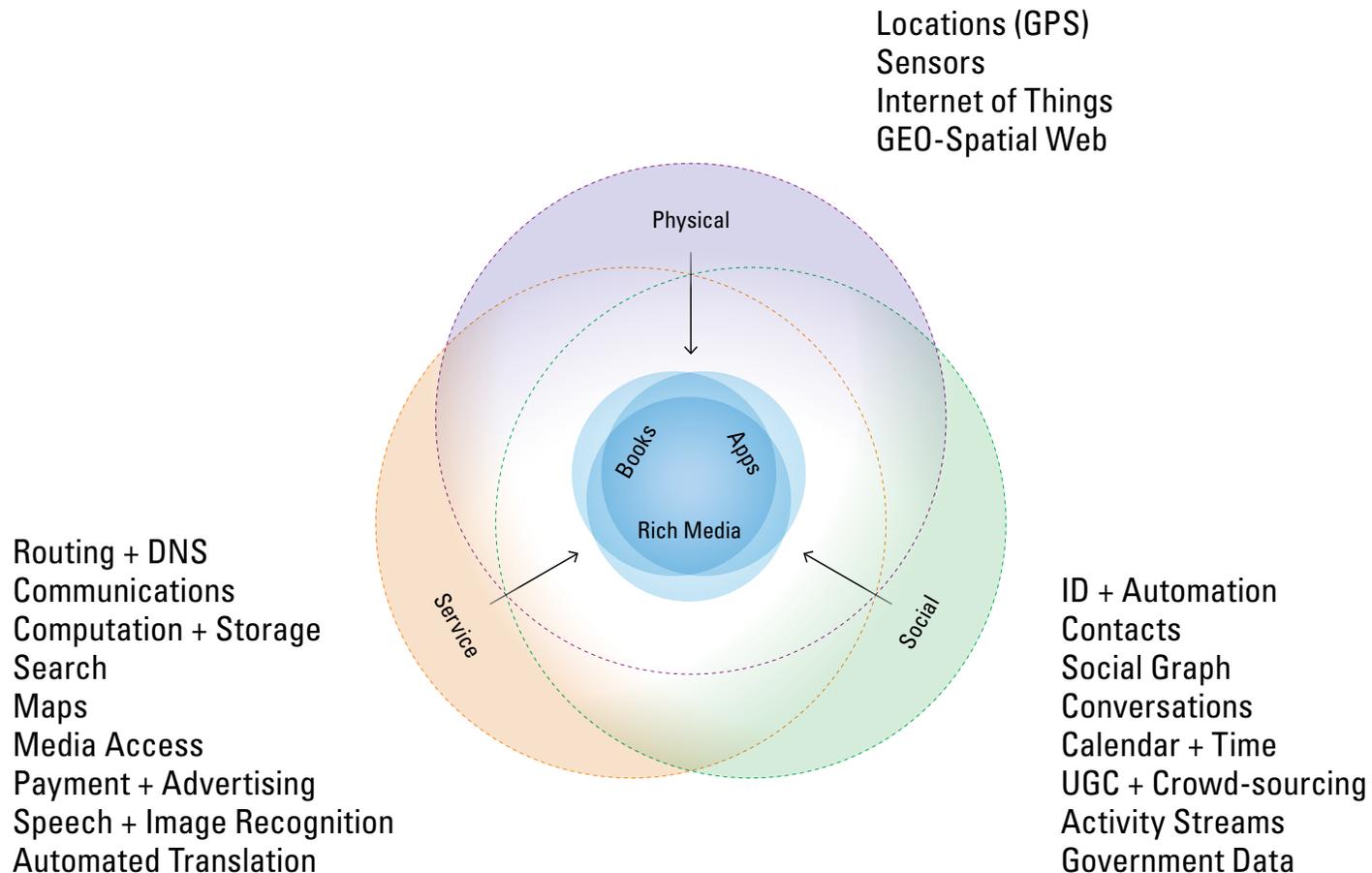
Books, applications, and rich media are distinct entities, but moving toward each other.

Convergence of books, applications, and rich media.

Books are evolving to become multi-media, interactive, social, and service oriented. These are all aspects of the converging technology of books.

About 10 years ago, signs of a second wave began to emerge—

# Convergence 2.0 integrating interactive multimedia with social networks, cloud-based services, and awareness of the physical context



# What convergence means for e-books

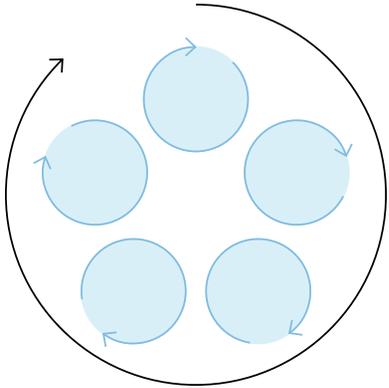
- Books as **multi-media**—**don't just tell me, show me**  
(books + photos, videos, animation, and sound)
- Books as **interactivity**—**'tell me more/less' + let me try it myself**  
(books + games, simulations, linking, and glosses—parallel texts)
- Books as **social nodes**—**conversation topics + learning from others**  
(books + online social networks—shared interests, notes, highlights)
- Books as **services**—**integration with other systems**  
(books + continuous updating, experts, etc, e.g. Lexis-Nexis)
- Books as **places**—**on demand details**  
(books + related objects, e.g. contents, instructions, history)

# Convergence will hasten the growth of personal archives—and their integration.

		<b>Health</b> Wellness Physical Data	<b>Finance</b> Assets Transactions	<b>Education</b> Experience Media Consumed	<b>Social</b> Contacts Calendar Communications Travel
<b>Future</b>	<i>Goals</i> – <i>Opportunities</i> – <i>Threats</i>	Amazon Wishlist			
<b>Present</b>	<i>Status</i> – <i>Strengths</i> – <i>Weaknesses</i>	Mint Online Wallets		Facebook Single Sign-on	
<b>Past</b>	<i>Records</i> – <i>Successes</i> – <i>Failures</i>	EMR / PHR		Evernote Amazon Purchase History	

# Convergence can be leveraged for all products + services— across each touch point in the sales-experience cycle

	Connect	Orient	Interact	Extend	Advocate
Message					
Multimedia					
Interactivity					
Social Networks					
Web-services					
Context Awareness					



# TWELVE

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## **Create easy steps for learning**

# Learning proceeds in stages



Crawl

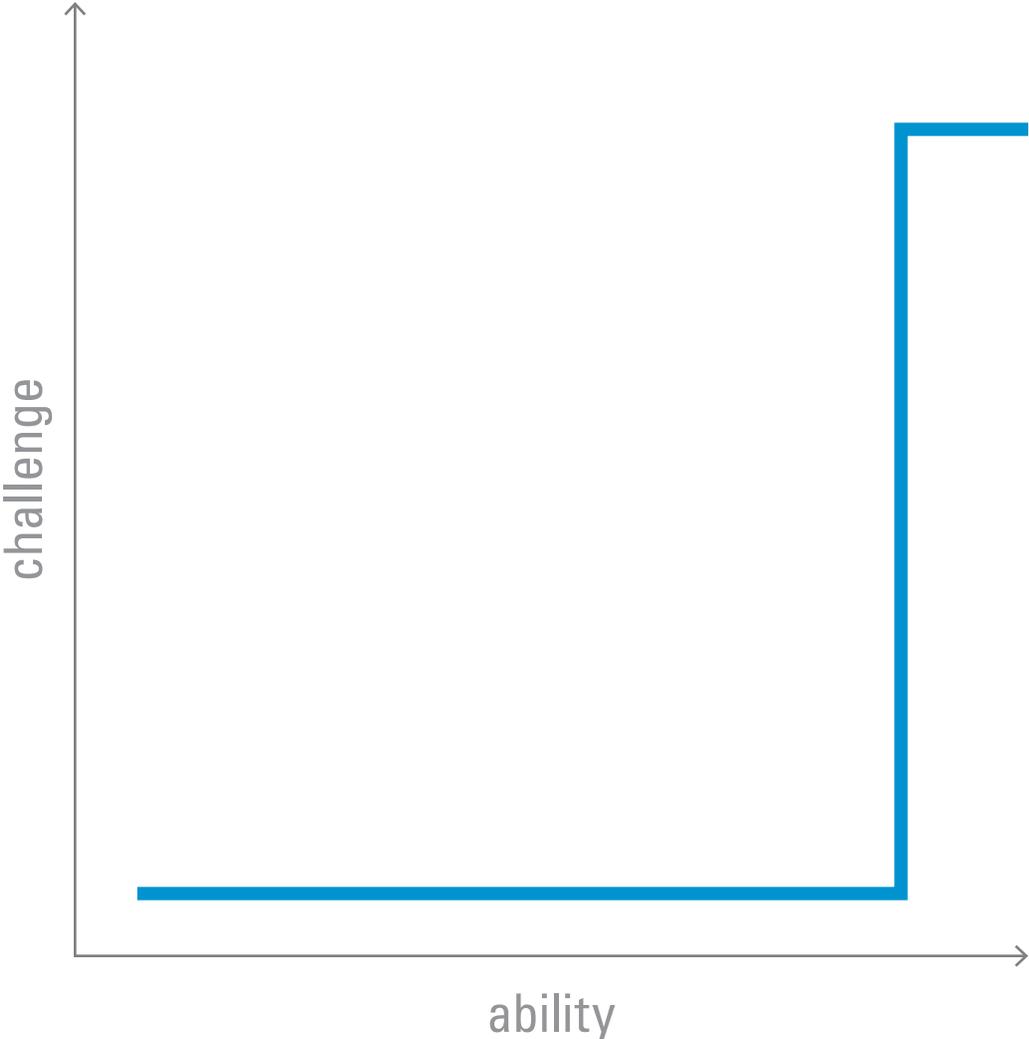


Walk

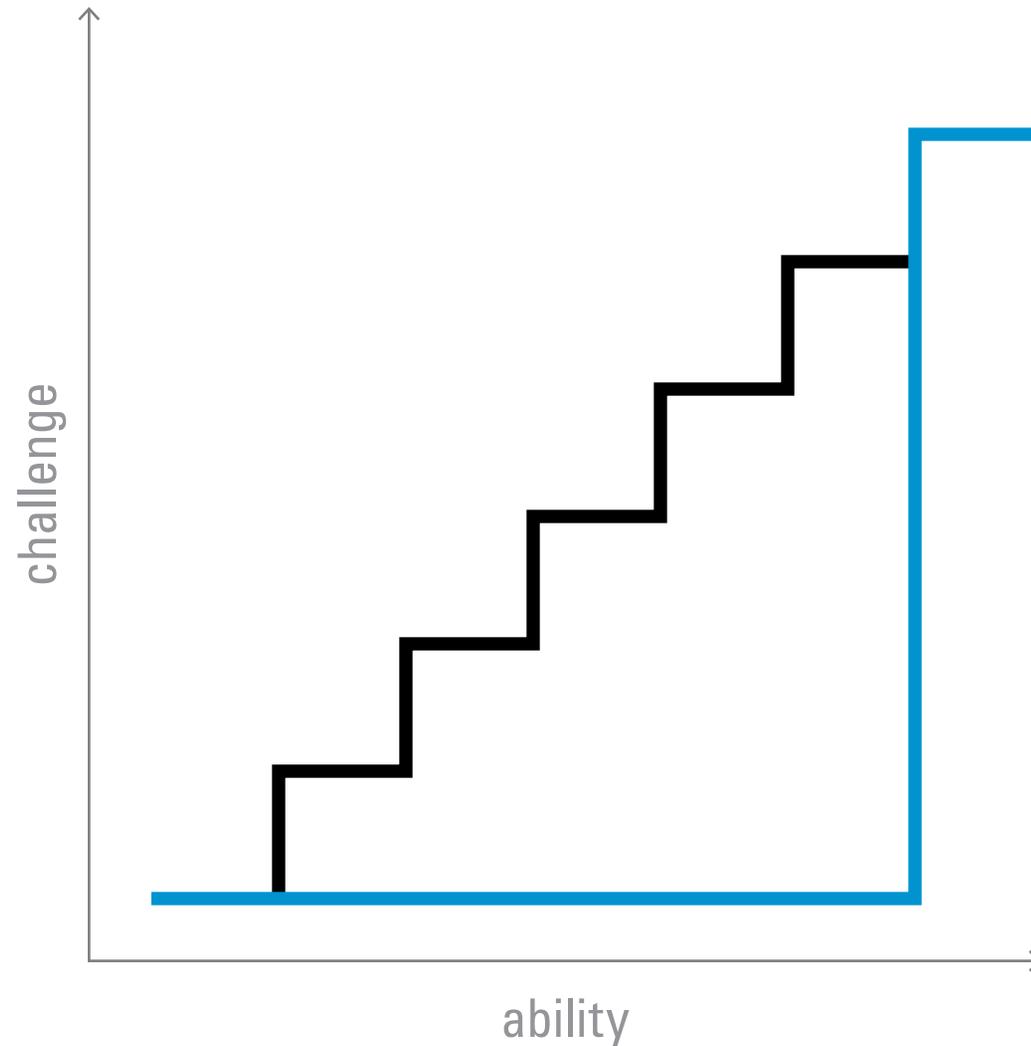


Run

# A really big challenge can be difficult to overcome

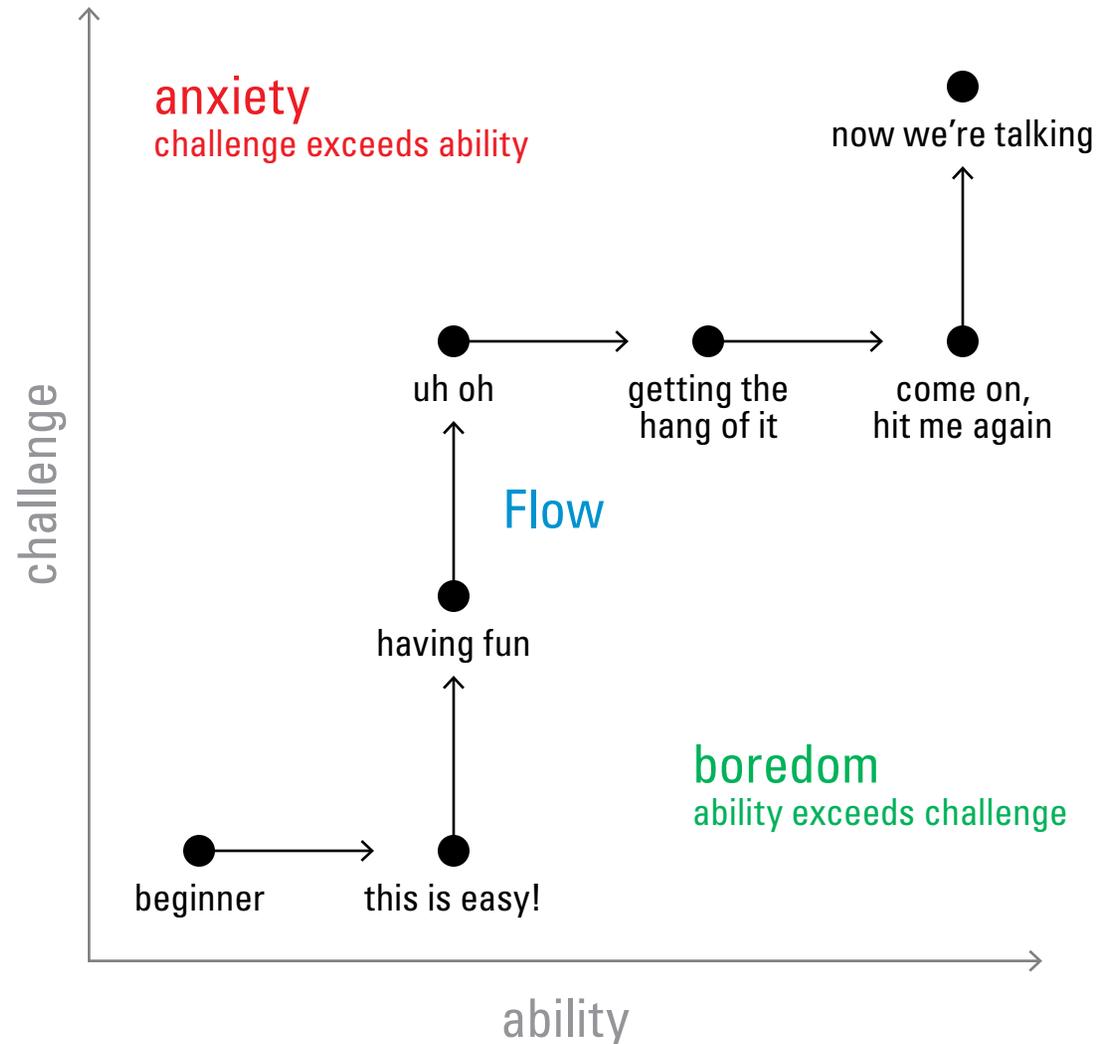


# Breaking challenges into smaller steps— scaffolding—aids the process



# Flow is a state-of-mind in which ability just matches challenge

—Mihalyi Csikszentmihalyi



# Electronic games are designed with levels that increase challenges as users improve their skills



# Games often include elaborate interfaces for managing increased skills and apportioning skill points



# Service Design: 12 Principles

- 1 Value is in the experience
- 2 Experience = Reputation = Brand
- 3 Sending a message is not enough
- 4 Learning requires interaction
- 5 Conversation builds meaning
- 6 Services must be seen as wholes
- 7 Experience is a journey
- 8 Practice metadesign
- 9 Build Platforms
- 10 Take advantage of network effects
- 11 Leverage convergence 2.0
- 12 Create easy steps for learning

**What does all this mean?**

**The world is changing**

**We need to 'think different'**

**We need to adopt  
an organic-systems view**

## Old thinking

## + New thinking

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### *Product*

as object

+ as experience

static

+ dynamic

node

+ link

unique

+ platform

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### *Focus*

computing

+ communicating

with

+ through

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### *Key skills*

manufacturing

+ services

product design

+ interaction design

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