Design Spaces Book Club

Design Beyond Devices: What Comes Next?

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September 2021
WHAT WILL WE COVER TODAY?

Since this is a book club, I’m assuming you’ve already gone through some or all of the book. Today, we’ll focus on key concepts and some next steps.

- Definitions and theme review
- Capturing customer context
- Working with stakeholders
- Evaluating potential ideas
PROLOGUE

Definitions
The future is multimodal, because humans are multimodal.

A **mode** (in this context) is a type of communication, and humans communicate using their senses.

A **multimodal interaction** is an exchange between a device and a human being where multiple input or output modalities may be used simultaneously or sequentially depending upon context and preference.
<table>
<thead>
<tr>
<th>Modality</th>
<th>Description</th>
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<tbody>
<tr>
<td>Visual</td>
<td>Projection or rendering of a stimulus that will be interpreted over optical channels—from books and e-readers to GIFs and videos.</td>
</tr>
<tr>
<td>Auditory</td>
<td>The use of acoustic waves to communicate meaning: music, sound effects, or language.</td>
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<tr>
<td>Haptic</td>
<td>Communicating meaning with changes to the physical environment: pressure, vibration, force feedback, or direct manipulation like taps or clicks.</td>
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<tr>
<td>Kinetic</td>
<td>Communication based on movement or orientation in space.</td>
</tr>
<tr>
<td>Ambient</td>
<td>Inferred meaning driven by environmental or biometric conditions: temperature, heart rate, lighting, etc.</td>
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**COMMUNICATION MODALITIES**

As defined in the book; there is some debate about how to split the Kinetic and Ambient categories.

Note that these don’t align 1:1 to the human senses.
What is multimodal design?

**DEFINITION**
Multimodal design seeks to coordinate the delivery of multiple input and output stimuli to create a flexible, coherent experience for our customers.

**PRACTICE**
Multimodal design is an additional layer of design rigor added on top of our existing modality-specific designs, like voice UI (VUI) designs.
You’re still going to need to do full VUI or NUI designs for multimodal experiences.

MULTIMODALITY JUST ADDS ONE MORE LAYER OF COMPLEXITY.
WHY INCLUDE BOTH “MULTIMODAL” AND “CROSS-DEVICE” EXPERIENCES?

Wasn’t just multimodality complicated enough for one book?

It’s short-sighted to assume ANY experience exists in a vacuum. Our customers are swimming in devices. Even websites are cross-device now: most websites must function on desktop and mobile, which means interruption, context, and notifications become relevant. The limits of multimodality on one device may cause a customer to turn to another device.

CHERYL PLATZ - @IDEAPLATZ
THE BOOK CAN BE DIVIDED INTO FOUR THEMES.

Each chapter fits into one or two of these core themes, each a critical piece of the puzzle you’ll need to complete to become a responsible, resilient multimodal designer.

1. Customer context & ethics
2. Multimodal frameworks
3. Ideation and Execution
4. Emerging technology
But what comes after the final page? How do you start to put some of these concepts into practice?
Getting context for informed design choices

BEFORE YOU CAN BEGIN, YOU NEED TO KNOW MORE THAN BEFORE

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From the Echo to automotive, smartwatches to your television - not all multimodal experiences are created equal. How do you choose the right interaction model?
Dimensions driving multimodality

How rich is your information?

- Low information density
  Smart watch or wearable
- High density
  Book or computer screen

How close is the device to the customer?

- Close proximity
  Wearable to arms-reach
- Long range
  3-10 feet
THE SPECTRUM OF MULTIMODALITY

By plotting information density and proximity on a grid, you can place all current and future experiences in one of four categories.

RICH INFORMATION

<table>
<thead>
<tr>
<th>QUADRANT 1</th>
<th>QUADRANT 2</th>
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<tbody>
<tr>
<td>Adaptive</td>
<td>Anchored</td>
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Experiences with rich physical presence where a customer is usually nearby.

- Fire TV, Xbox One, Cortana on PC
- Echo Show, Facebook Portal, Google Nest Hub

CLOSE PROXIMITY

<table>
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<tr>
<th>QUADRANT 3</th>
<th>QUADRANT 4</th>
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</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Intangible</td>
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Customer and device must be in direct contact or extreme proximity for use.

- Fitbit, Google Glass, Hololens, Apple Watch
- Hands-free experience where close proximity to the device is not required.

- Echo (original)
- Google Home

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HOW DO YOU CHOOSE?

You must understand your customer’s context to know what interaction model makes sense in the moment.
Anchored
Direct

Adaptive
Intangible

Context matters.
And MOST of our assumptions about the way the world works have changed since March 2020!

Office environments? Education?
Public transportation? Travel?
Family gatherings?
Use CROW to help you define and capture customer context.

CROW is a storytelling shorthand we use at my improv theater (Unexpected Productions) to quickly define the essential elements of a scene.

CROW stands for:
- Character
- Relationship
- Objective
- Where
The good news is that many of the questions you’ll want to ask are similar regardless of the product context. I’ve created an interview guide to inspire your own question selections.
It takes a village, so bring your stakeholders

HOW DO YOU CONVINCE THE SKEPTICS?
It’s not uncommon to encounter skepticism when exploring multimodality or cross-device work.

"WE ALREADY KNOW OUR CUSTOMERS"

Sometimes, when you seek to get that extra customer context, your stakeholders will claim they already know all they need to about your customers.

"WE CAN ALREADY DO THIS TODAY"

In other cases, your stakeholders will push back at the perceived cost and complexity of new solutions when there’s conceivably an app for the scenario today.
How do you convince stakeholders to let go of outdated knowledge?
Shared understanding workshops generate buy-in while effectively gathering the sum total of the group’s knowledge.

Generate energy and curiosity around your customer scenarios!
Shared Understanding Workshop

SESSION GOALS
- Everyone has the same basic knowledge
- Gaps in understanding are identified
- Stakeholders feel heard

SESSION AGENDA
PART 1: Review existing knowledge
PART 2: Ideation & exploration
PART 3: Analysis & synthesis
Framing the session with your stakeholders:

The goal of this session isn't to solve the problem. We're trying to understand our customers and the human context in which the potential problem occurs.

We're also working to make sure everyone on the team has the same information about our customer insight so we can speak the same language and make smart decisions about our research and product priorities as a group.
I'm making these worksheets available for you to download and use from the Ideaplatz company website.

1. Shared Understanding Baseline
2. Visualizing Context
3. Capturing CROW
4. Open Research Questions

Remote-only? Hybrid? No problem. I’ve also built a free MURAL template for you to use to try and build shared understanding.
And what about those stakeholders that think the phone is solution enough?
Why storyboarding?

When you’re working on experiences that aren’t locked into a single screen, storyboarding is a KEY early envisioning technique.

Context matters, and you need to bring your customer’s context to life for your stakeholders.

Storyboards will help you:

• Set the stage
• Start the debate
• Gain support for the cause
• Create and maintain a shared vision throughout your product team.
DEFINING A “GOOD” UX STORYBOARD

Your goals when storyboarding for user experience scenarios – especially multimodal or cross-device scenarios – are much different than, say, a cinematic storyboard.

• It’s focused on one or more users of the product, not the product itself.

• It supports one of these goals:
  • Context for a specific customer scenario
  • Exploring potential interaction issues

• It’s fairly technology-agnostic
  • More than 3 screens or devices in a row early in production? You may be solutioning too soon.

• The customer’s context or circumstances change over time.
IT’S NOT ART, IT’S CUSTOMER CONTEXT.

Your stakeholders haven’t seen the nuances of your customer’s experience that make a natural user interface, cross-device experience, or multimodal experience important. Your goal is to use just enough technique to get that context across.

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How do we identify the right problems to solve and ensure we’re solving them correctly?

ONCE WE’VE GAINED CONTEXT AND IDENTIFIED A PLAN, EXPLORE CONSEQUENCES.
PICS OR IT SHOULDN’T HAPPEN

Should you build it?

These four dimensions – and related challenge questions – help you examine all elements of a potential idea to evaluate whether it’s actually worth pursuing.

Problem
• Who has this need & how did you identify it?
• Is there a better use of this time and energy?
• Are you working on a solution in search of a problem?

Inclusion
• Does your team include many perspectives?
• When you consult experts, are you taking action on their recommendations?

Change
• What is your theory of change?
• What might success and failure look like?
• What happens if your product goes away?

Systems
• What systems might be disrupted by your work, and how can you minimize harm?
• How will your solution interact with institutionalized racism or other forms of systemic discrimination?
OPTI-PESSIMISM

If you're building it, what's the worst that can happen, even if things go well?

Exercise your imagination and push your scenarios to the extremes before they become too costly to adapt.

These four steps – and a series of related challenge questions – can help ignite your ethical imagination and help you foresee some of the biggest problems you'll need to plan for when coming up on a big product release or change.

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Example questions</th>
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| Consider the human context                    | • What are the worst conditions in which your product will be used?  
  • How might this make the world worse?       |
| Design for the best case                      | If your product is wildly successful, what other platforms might your customer want to interact with? |
| Plan for the worst case                       | • How could your project harm your customer?  
  • How will customers abuse your product?     |
| Be ready to adapt in the moment              | • What signals might you watch for that your product is not working as intended?  
  • What's the riskiest part of this project?  |
All of the concepts covered in the book fit together to give you an end-to-end process for multimodal and cross-device design.
Putting it all together

Discover Opportunities

2: Capturing Customer Context
3: Understanding Busy Humans
7: Spectrum of Multimodality
13: Beyond Devices: Human + AI Collab

Evaluate Technology

5: Language of Devices
6: Expressing Intent

Envision and Explore

4: Activity, Interrupted
8: It’s a (Multimodal) Trap!
11: Breathe Life into the Unknown
14: Beyond Reality: XR, VR, MR, AR

Deliver Designs

9: Lost in Transition
10: Let’s Get Proactive
12: From Envisioning to Execution
15: Should You Build It?
As I tell folks outside the software industry, I hope this book will be the design manual for folks who want to design the bridge of the Starship Enterprise.
Someone’s going to build this... will it be you?
VISIT THE BOOK SITE ONLINE

- Free downloads, guides, and templates
- Podcasts and sample chapters

or Ideaplatz.com > About Us > Design Beyond Devices
DESIGN BEYOND DEVICES: CREATING MULTIMODAL, CROSS-DEVICE EXPERIENCES

Want a free signed bookplate? Send a name and mailing address to Cheryl@ideaplatz.com. Your contact information will not be used for any other purpose.

For more detail on the topics covered today: available from rosenfeldmedia.com or major online booksellers.
Have fun at the final frontier!

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QUADRANT 1: ADAPTIVE experiences
(Echo Show, Google Nest Hub etc.)

- Generally support both close and far scenarios
- Scenarios are completable remotely but proximity unlocks new options
- Customers can choose how to interact in some or all situations
QUADRANT 2: ANCHORED experiences
(Smart TV, home computer, VR, etc.)

- Customer is likely to be in arms’ reach of a controller or screen
- Close proximity means high density displays are supported
- Voice is usually supplemental due to high visual load
QUADRANT 3: DIRECT experiences (Smart watches, Google Glass, AR, etc.)

- Device is usually attached to or in immediate proximity to customer
- Proximity allows use of additional ambient input sensors
- Small, constrained screens force low information density
QUADRANT 4: INTANGIBLE experiences
(Smart speakers, etc.)

- Customer is rarely near the device
- Customer does not have to look at the device to interact
- All interactions should be completable without physical interaction due to lack of proximity
- Lower information density

PROXIMITY: Far
INFO DENSITY: Low/Medium
DESIGN BEYOND DEVICES: CREATING MULTIMODAL, CROSS-DEVICE EXPERIENCES

For 20% off before Sep 30, use the discount code designingwomen30sep21 at rosenfeldmedia.com.
(Print orders come with a free ebook!)
Computer, who is Cheryl?

- Author of Design Beyond Devices
- Original UX Designer on Echo Look team
- Original designer for Alexa Notifications
- Voice, systems, and multimodal design: Alexa, Cortana, Windows Automotive, Dynamics Power Virtual Agents
- Shipped one of the first speech-enabled Nintendo DS games (Disney Friends)
- Creator of several Alexa skills