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Capturing Customer Context for Cross-Channel Experiences

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BACKGROUNDS: Cover art from “Design Beyond Devices” – The Heads of State

We're designing products at the final frontier.

Your customer has 5 senses and a small universe of devices. Why aren't you designing for all of them?

The website has been declared dead many times already.

And yet, the web still thrives – but it lives on many devices, and via many modes of interaction.

And what waits to replace the dearly departed website?

Should you join the mobile-first revolution?

Forbes

Jun 7, 2016, 09:00am EDT

10 Ways To Win The Mobile-First Revolution

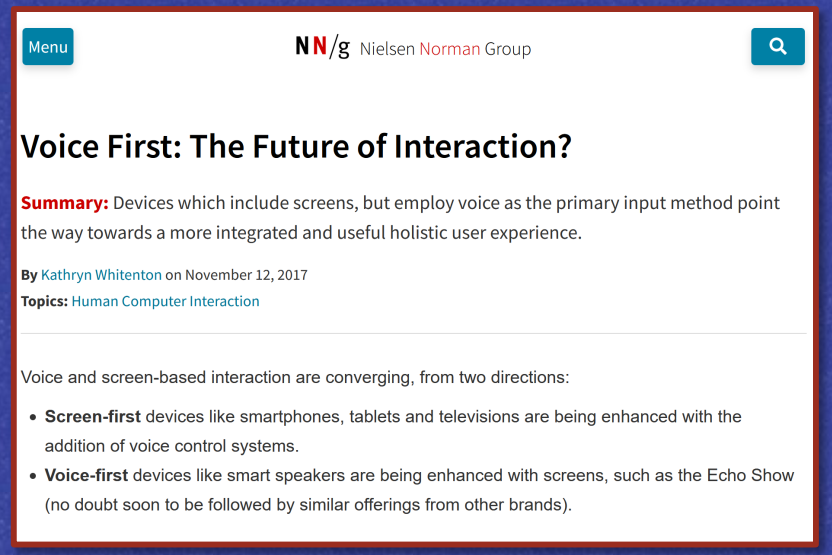
Forbes Technology Council COUNCIL POST | Paid Program
Innovation

POST WRITTEN BY
Forbes Technology Council

Successful CIOs, CTOs & executives from Forbes Technology Council offer firsthand insights on tech & business.

Designing your website or app with a mobile-first strategy is increasingly important as consumers do more and more of their shopping via their

Or is voice-first the way of the future?



Menu

NN/g Nielsen Norman Group

Voice First: The Future of Interaction?

Summary: Devices which include screens, but employ voice as the primary input method point the way towards a more integrated and useful holistic user experience.

By Kathryn Whitenton on November 12, 2017
Topics: Human Computer Interaction

Voice and screen-based interaction are converging, from two directions:

- **Screen-first** devices like smartphones, tablets and televisions are being enhanced with the addition of voice control systems.
- **Voice-first** devices like smart speakers are being enhanced with screens, such as the Echo Show (no doubt soon to be followed by similar offerings from other brands).

Our natural instinct to seek a winner is missing the point. There is no one true interface. And most of the devices your customers are using? They're multimodal.

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.

Multimodal experiences incorporate classic interactions like screens, keyboards, mouse, and touch with newer tech like voice, gesture, lights, and sensors.

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.

Modality	Description
Visual	Projection or rendering of a stimulus that will be interpreted over optical channels—from books and e-readers to GIFs and videos.
Auditory	The use of acoustic waves to communicate meaning: music, sound effects, or language.
Haptic	Communicating meaning with changes to the physical environment: pressure, vibration, force feedback, or direct manipulation like taps or clicks.
Kinetic	Communication based on movement or orientation in space.
Ambient	Inferred meaning driven by environmental or biometric conditions: temperature, heart rate, lighting, etc.

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

RICH INFORMATION

CLOSE PROXIMITY

LONG RANGE / FAR FIELD

QUADRANT 2

Anchored

Experiences with rich physical presence where a customer is usually nearby.

Fire TV, Xbox One, Cortana on PC

QUADRANT 1

Adaptive

Experiences that support both close proximity and long-range interactions.

Echo Show, Facebook Portal, Google Nest Hub

QUADRANT 3

Direct

Customer and device must be in direct contact or extreme proximity for use.

Fitbit, Google Glass, Hololens, Apple Watch

QUADRANT 4

Intangible

Hands-free experience where close proximity to the device is not required.

Echo (original) Google Home

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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.

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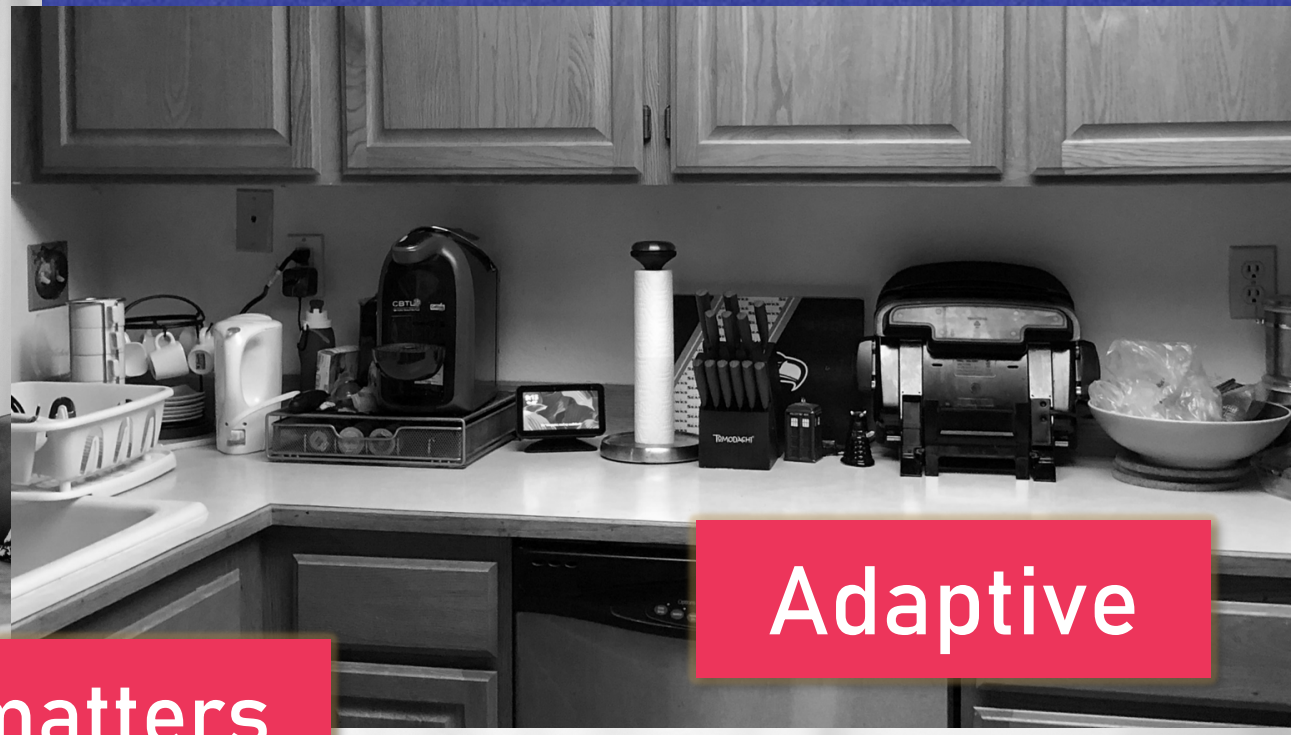
You must understand your customer's context to know what interaction model makes sense in the moment.

Anchored



Adaptive

Context matters.

Direct

Intangible

Where do smartphone interactions fit in?

Smartphones are difficult to classify, as it depends on the type of content you're presenting.

For productivity scenarios, smartphones belong in the **Direct** quadrant: short range with a constrained screen when compared to full laptop screens.

But optimized experiences like gaming land more in the **Anchored** quadrant, and voice-enabled apps like Alexa are pushing into **Adaptive**.

Why enable transitions between devices?

Environmental changes

- Commuting
- Traveling
- Mealtime
- Exercise
- Daytime/nighttime shift

Device suitability

- Data entry vs. consumption
- Physical comfort
- Temporary interference
- Multitasking

Capturing customer context

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**

C: Character
What defines your customer?

Dimension	Definition	Example questions
Attributes	Fundamental traits, mannerisms, and habits. Skills, quirks, gender identity, preferred pronouns, disabilities, communities.	• How does your customer define their own identity to themselves and others? • Which of your customer's attributes are underrepresented, and how might that affect them?
Attitudes	Emotions and reactions to outside stimuli—other people, objects, or situations.	• Would this customer have any preconceived opinions or learned behaviors that they would bring to bear on this experience?
Choices	The actions you take, based on your beliefs and attitudes.	• Why would a customer choose to seek out your experience? Did they have a choice at all?

R: Relationships
What connects your customer?

The closer you are to someone (or something), the more likely you are to get emotional about it. Relationships drive satisfaction – and frustration.

Human to device	Human to business	Human to human
- Device ownership	- Communication channels	- Cooperative use
- Anthropomorphization	- Perception	- Sequential use
- Emotional attachment	- Choice	- Trust
- Financial investment	- Market conditions	- Identity
- Self-expression	- Expectations	- Competition

O: Objective
What drives your customer?

What have you defined as your customer's objective?

Is that truly their end goal, or simply a sentence written to get the customer to your feature?

Has your product team assumed that their solution stands alone? Is that true, or are you part of a **larger, device-agnostic human objective** that might span multiple experiences?

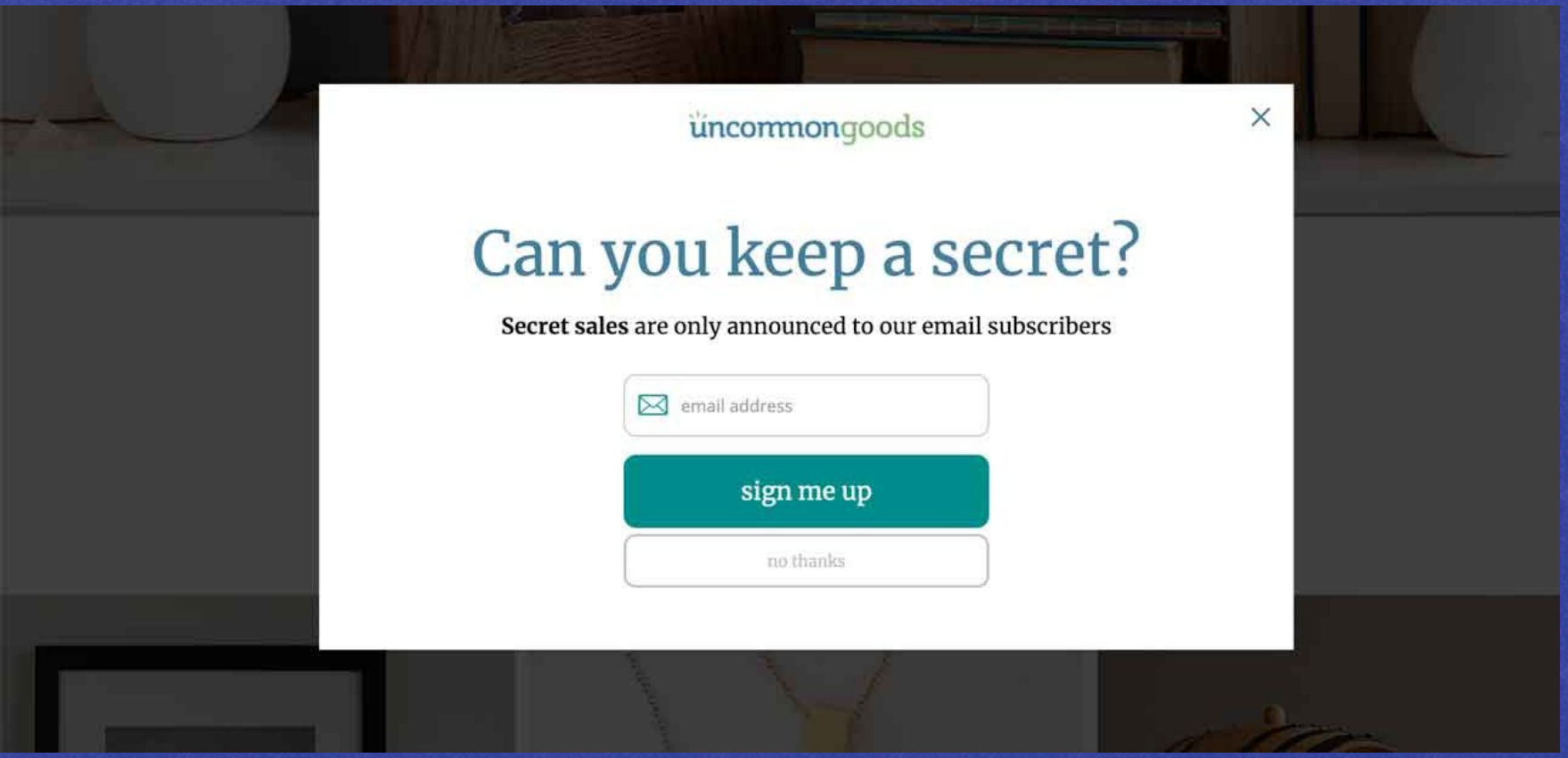


Image from https://www.nngroup.com/articles/popups/

Don't obstruct the objective

Timing and context matter when considering customer objective. Even if you're offering something of value *later*, you might be obstructing objective in the moment.

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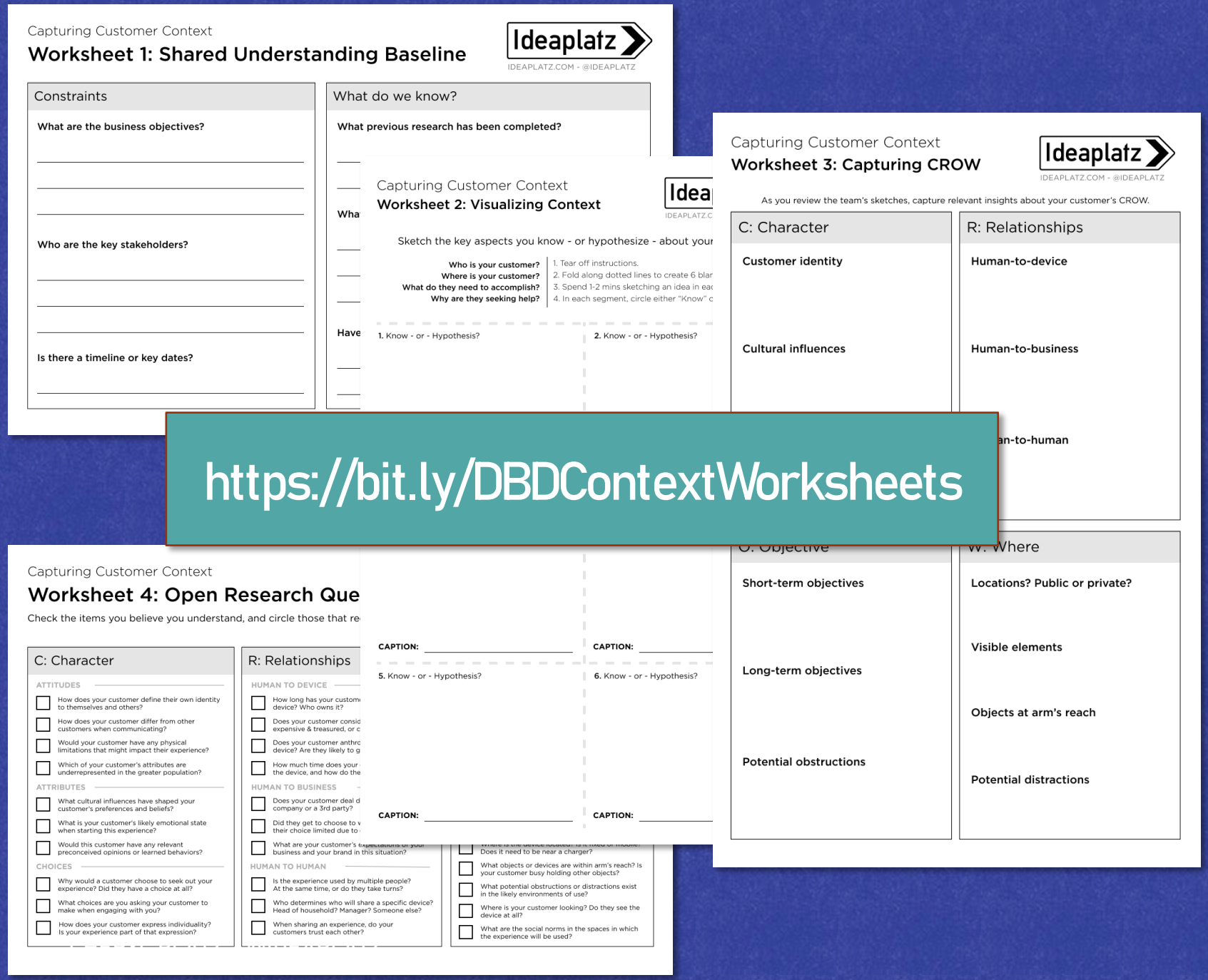
W: Where
What surrounds your customer?

- Where will your customer be when they want to interact with you?
- Will they be seated? Standing? Moving?
- What is in arm's reach?
- What devices will be available?
- Who else will be in those environments?
- Are there distractions in the environment?
- Will customers expect to continue this experience between locations or devices?



https://bit.ly/DBDContextWorksheets

CROW Customer Context worksheets

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

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Respecting customer context

Representing this understanding in your system or platform

While engaging, your customers are likely multitasking – but up until now, the definition of multitasking only focused on the system. Enter the activity model.

Activity Models: Patterns of behavior

To responsibly interrupt your customers, or to transition between devices, you'll need to understand what types of activities your customer may be engaged in at any given time.

I used these questions to define activity patterns for Alexa Notifications:

1. Does the activity have a fixed endpoint?
2. How long is the activity?
3. How time-sensitive is the activity?
4. How much attention is required during the activity?
5. How much effort does it take to restart the activity if our customer is interrupted?

Activity Modeling Case Study: Alexa Notifications

Activity	Description	Cognitive Load	Length
Passive	Unfocused attention not directed at a single device or activity.	(Almost) None	Indefinite
Sustained	A long-running activity, low-burden activity often without a known endpoint. It can usually be paused, suspended, or even run in parallel with other tasks without loss of detail.	Low	Indefinite
Discrete	An activity that requires directed attention but may leave some cognitive bandwidth for multitasking or interruption. The activity usually has a known, discrete endpoint.	Moderate	Short
Focused	An activity that consumes most or all cognitive resources: from the creative state of "flow" to operation of a motor vehicle. Recovery from interruptions is costly.	High	Long
Live	A real-time activity like a phone call. Due to the unpredictable nature of real-time interactions, full attention is required. Any distraction will cause loss of context, if not actual harm.	Full	Long

There's no one activity model to rule them all. Know what your customer is doing and how they're doing it so that you understand how to support & interrupt them.

Defining your platform

Understand the modes and devices you'll choose to support – and why.

So how do you decide what channels and multimodal interaction models are most appropriate for your experience?

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Largely? Customer context and objectives.

The devices your customers own will directly impact your choices – for example, they may not own devices capable of Adaptive engagement.

Customer objectives will also dictate choices – for example, if they need to obtain a lot of rich information, Direct and Intangible interactions may be too limiting.

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Which Interaction Models are Right for You?

Different tasks in your customer journey might lend themselves to different interaction models.

Anchored

Your customer will always be close to the device, allowing you to rely on physical input devices.

- Best when you need to convey a lot of information.
- Multimodality is largely useful as a shortcut for search and navigation.

Adaptive

Experiences in this quadrant support both close & long range interactions based on customer preference.

- Most inclusive
- Most expensive
- Best when customer context is likely to change

Direct

Your customer is always in close range, but the form factor will limit your options.

- Best when you have a few key, often-repeated tasks to support
- Can often infer a lot using sensors
- Not well-suited to search or text

Intangible

Your customer is not near the device when interacting, eliminating your ability to rely on touch and visuals.

- Well-suited to questions
- Excellent for search scenarios
- Difficult in multi-user environments

What else do you need to flesh out your cross-channel strategy?

Device & Transition strategy

- What devices do you support?
- What modalities do you support on each device?
- Can customers move between modalities or devices?

Proactivity strategy

- When do you need to bring information to your customer without a request?
- How will you interrupt them?

User data strategy

- What user profile information is needed cross-platform?
- What tasks can be suspended & resumed?
- What information about task state is needed if customers transition mid-task?

What do you need to document when you're delivering multimodal designs?

Within a single scenario

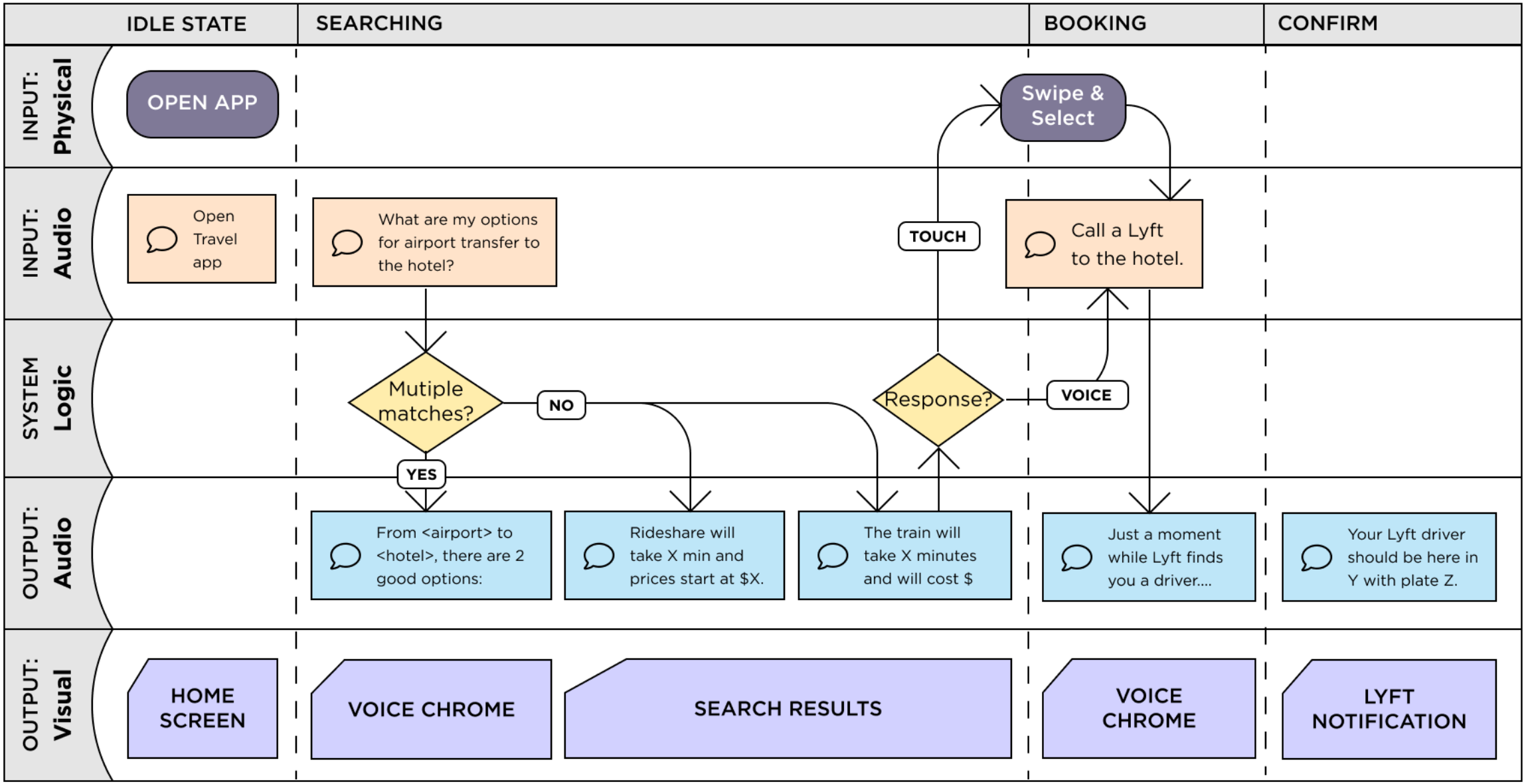
- Initiation of scenario
- Key transitions between states
- Decision points
- Any backend systems you're pulling information from

Across all scenarios

- Examples of all "intents" or scenarios
- Key moments in all of your input and output modalities
- Interactions that can be completed in more than one modality

Multimodal swim lanes:
Smart Watch Airport Transfer

INPUT: Touch, Dial, Voice
OUTPUT: Audio, Screen



The same system that powers your website today can be extended to power a whole constellation of multimodal experiences.

Meet your customers where they are by understanding their context and supporting the modalities and devices they need.

Coming December 1, 2020: Design Beyond Devices

Your customer has five senses and a small universe of devices. Why aren't you designing for all of them? Go beyond screens, keyboards, and touchscreens by letting your customer's humanity drive the experience—not a specific device or input type. Learn the techniques you'll need to build fluid, adaptive experiences for multiple inputs, multiple outputs, and multiple devices.

Print & Ebook:
Rosenfeldmedia.com or Amazon (US/CA/UK)
Kindle only: **Amazon in Europe/Japan**

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The final frontier is waiting for you!

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