The Role of Voice Assistance in Healthcare:
Macadamian at a Glance

full-service UX and software design & development firm specialized in creating digital and connected healthcare experiences.

20 years experience
We have delivered 1,000+ projects providing end-to-end connected system and digital experiences globally.

170+ people globally
We are a trusted partner solving complex problems over multiple domains throughout the journey.

88% of our business is repeat business
We are a trusted partner solving complex problems over multiple domains throughout the journey.
Voice Assistants - Market Trends
Voice Is The Next Interface Frontier

By 2020, Gartner predicts that zero-touch UIs will be available on 2 billion devices and IoT endpoints.

“"We've seen more progress in voice technology in the last 30 months than we saw in the last 30 years."”

It is predicted 50% of all searches will be voice searches by 2020.
Smart Speaker Ownership

Smart speaker ownership rose by 40.3% in 2018

The number of US adults that have access to Smart Speakers

“We have moved past the notion that smart speakers may be a novelty as they are now in such widespread use that one-in-three smartphone owners have one.” Voicebot.ai

Source: Voicebot.ai
U.S. Smart Speaker Market Share by Brand January 2018 & 2019

Amazon: 61.1% →
Google: 23.9% →
Other: 15.0% 

Amazon: 71.9% →
Google: 18.4% →
Other: 9.7% 

Source: voicebot.ai
Smart Speakers on the Adoption Curve

Source: C. Blohm & Associates
Smart Speaker Adoption and Uses

Smart Speaker Use Case Frequency January 2019

- Ask a question: 84.0% (EVER TRIED), 66.0% (MONTHLY), 36.9% (DAILY)
- Listen to streaming music service: 83.0% (EVER TRIED), 69.9% (MONTHLY), 38.2% (DAILY)
- Check the weather: 80.1% (EVER TRIED), 61.4% (MONTHLY), 35.6% (DAILY)
- Set an alarm: 62.4% (EVER TRIED), 41.8% (MONTHLY), 23.5% (DAILY)
- Set a timer: 62.4% (EVER TRIED), 46.7% (MONTHLY), 22.9% (DAILY)
- Listen to radio: 54.9% (EVER TRIED), 40.5% (MONTHLY), 21.2% (DAILY)
- Use a favorite Alexa skill / Google Action: 48.7% (EVER TRIED), 35.0% (MONTHLY), 18.3% (DAILY)
- Play game or answer trivia: 48.0% (EVER TRIED), 29.1% (MONTHLY), 10.8% (DAILY)
- Control smart home devices: 45.8% (EVER TRIED), 33.3% (MONTHLY), 23.5% (DAILY)
- Listen to news or sports: 43.8% (EVER TRIED), 28.8% (MONTHLY), 13.4% (DAILY)
- Search for product info: 41.2% (EVER TRIED), 27.8% (MONTHLY), 10.8% (DAILY)
- Call someone: 40.2% (EVER TRIED), 23.5% (MONTHLY), 11.4% (DAILY)
- Find a recipe / cooking instructions: 40.2% (EVER TRIED), 26.1% (MONTHLY), 7.8% (DAILY)
- Listen to podcast / other talk formats: 39.9% (EVER TRIED), 26.5% (MONTHLY), 11.1% (DAILY)
- Check traffic: 36.9% (EVER TRIED), 22.9% (MONTHLY), 11.8% (DAILY)
- Access my calendar: 31.7% (EVER TRIED), 21.2% (MONTHLY), 11.4% (DAILY)
- Send a text message: 30.4% (EVER TRIED), 18.3% (MONTHLY), 10.5% (DAILY)
- Make a purchase: 26.1% (EVER TRIED), 15.0% (MONTHLY), 3.9% (DAILY)

Source: voicebot.ai
Smart Speaker Locations

Smart Speaker Locations Jan 19

- Bedroom: 37.6%
- Home Office: 14.4%
- Living Room: 44.4%
- Garage: 2.3%
- Kitchen: 32.7%
- Dining Room: 6.5%

Source: voicebot.ai
Who Uses Them

US Voice Assistant Users by Generation (millions)

2016
- Millennials: 23.3
- Gen X: 14.4
- Baby Boomers: 8.6

2017
- Millennials: 29.9
- Gen X: 15.8
- Baby Boomers: 9.7

2018
- Millennials: 35.8
- Gen X: 16.7
- Baby Boomers: 9.9

2019
- Millennials: 39.5
- Gen X: 17.2
- Baby Boomers: 15.1

Source: emarketer.com
Voice in Healthcare Use Cases & Applications
Use Case: Virtual Clinical Trial Support

**Company**
Global pharmaceutical company

**Challenge**
Patient engagement is critical to delivering successful clinical trials where high patient drop-off can mean the difference between success and failure. Ensuring HIPAA compliance while leveraging technologies that are not.

**Solution**
Integration of conversational user experience within clinical trial to increase patient engagement and reduce the time and effort to capture symptoms and impacts. System Architecture which achieves HIPAA compliance when Alexa Voice Services currently are not.

**Benefits**
- Improved patient engagement
- Reduced patient drop-off rates in clinical trials
- Leadership position in leveraging the latest virtual assistants
In Home Assistant for Seniors

**Company**
LifePod Solutions

**Challenge**
Provide “personal assistant” care to seniors living at home to help with things like medication reminders, prompts to eat, etc. While also providing updates to caregivers such as clinicians and family members.

**Solution**
Alexa Voice Services powered product with a unique implementation which enables natural voice prompts without the user needing to speak first. This enables a dialogue that can query their health status and send alerts in the event that no response is received.

**Benefits**
Product differentiated in marketplace
Simple user interface appropriate for seniors and users with limited technology capacity
Use Case: Product Marketing

**Company**
Medtech Company

**Challenge**
Alignment and communications around new product launch for country managers and distributed sales team. Leveraging the medium of voice to prepare and train staff around key messaging for international trade show.

**Solution**
A rich and interactive Alexa Skill that transcends the desktop and mobile screen to deliver the corporate content (new product) that is most relevant to the user accessing it in a way that engages and drives recall and alignment.

**Benefits**
Improved employee engagement
Reduced internal marketing & communications costs
Improved sales for new product introductions
Use Case: Chronic Disease Management

Company
Macadamian Technologies

Challenge
Providers and payers are looking for comprehensive solutions to manage patient populations with chronic disease. Existing solutions are not context aware with data that is siloed.

Solution
Macadamian developed a reference design for a holistic chronic disease management platform targeting people suffering with type 2 diabetes that leverages Alexa Voice Services in a personalized and empathetic manner to provide a digital therapeutic solution.

Benefits
Voice-first improves patient engagement
Integrates with third-party patient portals and devices
Provides insights when patients are struggling
Engagement

An additional touch point that’s always available
Conversational vs input fields
Low barrier to access/provide information.
Easier for users with tremors or visual impairment

Value increases with integration
Use them to make their life easier
Not just to ask, but what can it do?
Voice Assistants for Healthcare

Care Coordination
• Caregiver scheduling, treatment and medication reminders

Patient Monitoring
• Wellness data gathering, tracking, and reporting

Care Team Collaboration
• Caregiver messaging, clinician video calls

Patient Education
• Q&A, knowledge bases, condition management

Assessments
• Daily surveys, Symptom checkers

Care Instructions
• Treatment guidance, how-to guides
Making the Most of Voice

Understand the Medium

Design the user experience around the interface

Not suitable for all patients

Notifications have been slow in coming

Security is #1 concern

Not HIPAA compliant on its own
Security & Privacy

Don’t reinvent the wheel

Pin # identification

Two factor authentication

Pass phrase

Physical key
Achieving HIPAA Compliance

Architecture is everything

Understand the flow of PHI through your system

Encrypt PHI in transit and at rest

De-identify data through non-HIPAA compliant services

Protect against reasonably anticipated impermissible uses or disclosures
In Summary

The time is Now!

New use cases for leveraging voice are emerging daily

Learn by doing, there will always be opportunities to iterate

There are challenges and risks but none that cannot be mitigated

The platforms will evolve
Thank You!

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