CHATBOTS & HEALTHCARE

HOW AI TECHNOLOGY CAN LEAP HEALTHCARE FORWARD

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OPPORTUNITY

Healthcare organizations seeking differentiation will gain a tremendous advantage by thoughtfully deploying chatbot technology.

This white paper will explore how organizations are using chatbots to connect to their customers, and solve business problems—and what the healthcare industry can learn from these companies’ digital experiences.

Rather than major healthcare players leading chatbot adoption, app makers have led the charge, shuttling healthcare technology forward by combining machine learning with AI.

This presents a tremendous opportunity for organizations that want to personalize support—giving their customers access where they need it the most.
THE COMPETITIVE LANDSCAPE

The competition isn’t what you’d expect in terms of healthcare technology. But the healthcare industry can lean in and learn from those deploying technology to their benefit—and the benefit of their users.

1. **A personal health assistant**: Your.MD is an AI-based personal health assistant that can be added to other native messaging platforms such as Kik, Slack, and Telegram. Your.MD provides customers with an enhanced route to obtain health-related information online through its virtual health assistants.

2. **A virtual nurse**: Sense.ly: By combining a virtual nurse that can provide customized monitoring and follow-up care with a strong focus on chronic illness care, Sense.ly claims to give a clinician 20% of their day back.

3. **Machine learning meets medical recommendations**: MedWhat: Transparency and information accessibility are top priorities among healthcare providers and patients, which is why MedWhat has created a platform that deploys machine learning through access to medical records. This AI platform can answer medical questions as well as help doctors and nurses with personalized recommendations tied to patients’ EMRs and medical literature.

4. **On-demand physicians**: HealthTap’s Dr. AI, an AI-powered physician trained to ask medical triage questions when users need it the most.
ECOSYSTEM STATS

It’s not always about keeping up with the Jones’, but healthcare organizations would be remiss to not pay close attention to how and where their users are spending their time. Here is the current state of SMS and related technologies:

- Millenials in the US send 2,022 SMS per month on average — 67 texts on a daily basis — and receive ~1,831
- As many as 200,000 iMessages are sent per second.²
- Facebook Messenger and WhatsApp process 60 billion messages a day—three times more than SMS.³
- In 2016, it’s estimated that more than $2 billion in online shopping will be performed by mobile digital assistants.⁴
- The average American spends 60.8 a year watching TV. 4.9 of those days are spent deciding what to watch.⁵
- By 2020, Gartner predicts that customers will manage 85% of their enterprise relationship without even interacting with a human.⁶

The opportunity to move from native apps to SMS is there. The data shows that consumers are more than willing engage with companies across multiple channels.

1. Business Insider, Chart Of The Day: Kids Send A Mind Boggling Number Of Texts Every Month, 2013
2. Business Insider, Apple Says People Send As Many As 200,000 iMessages Per Second, 2016
5. eXtreamist, Report: We Spend 115 Hours A Year Searching For Something To Watch On TV, 2015
6. Inc, Here’s How Customer-Service is Going To Explode in 2015, 2015

Chatbots & Healthcare: How AI Technology Can Leap Healthcare Forward

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THE CURRENT LANDSCAPE

As communication channels have integrated themselves into our daily lives, what used to be a “nice to have” feature is now a critical component of user and customer engagement. Many industries have recognized this and have garnered positive engagement from their users as a result. The current landscape shows us where and how chatbot technology has popped up across platforms and devices.

AI PLATFORMS
Nearly every major software company has announced a bot strategy in the past year. These handful of platforms send messages, interpret speech and deploy bots to manage tasks.

MESSAGING
What used to be solely email and IM has expanded to include a complex multi-media, messaging, fixed and mobile infrastructure. Arguably, any Internet or wireless telecommunication is a message of one kind or another.

AI AS SERVICE
These are specific services focused on natural language processing and understanding as well as Artificial Intelligence technologies. They are often designed to train and author models on existing platforms.

BOT FRAMEWORKS
Bot frameworks are basic toolsets that allow developers to design and implement various interfaces for larger platforms. These bot types include monitoring, management, speech recognition, fulfillment and more.

HEALTHCARE ORGANIZATIONS SHOULD PAY CLOSE ATTENTION TO THE SUCCESS OF ECHO.
CASE STUDIES

Leading organizations are using chatbots and related technologies to serve their users, but missing from this list are healthcare titans. Tapping into the expertise and success of forward-thinking companies to deliver a truly innovative healthcare experience remains on the table for all major players in the industry.

AMAZON ECHO

Amazon’s home assistant platform offers a limited but powerful set of abilities including voice interaction, search, lists, alarms, music/podcast/audiobook playback, and real-time information like weather and news. The primary goal of Echo is to drive sales to Amazon—it offers wide third party integration and “smart home” capabilities. Healthcare organizations should pay close attention to the success of Echo—the seamless integration with user’s homes and user’s mobile profiles highlight the need for omnichannel engagement.

FACEBOOK MESSENGER

Facebook Messenger is a text-based platform that allows for Facebook users to interact with various bots within the normal flow of a Facebook chat. More than 11,000 bots, including those by CNN, Burger King, and Uber, are currently active on Messenger. A bot is engaged by finding it within Messenger and then striking up a natural conversation like you would with any contact. With younger generations opting to keep their online interactions to one app or platform, healthcare organizations can reach their young customers where they spend the most time—and provide helpful information. Bots are entering the conversation because of the booming popularity of messaging “apps.” The average American smartphone user downloads slightly more than one app a month.

MORE THAN 11,000 BOTS ARE CURRENTLY ACTIVE ON FACEBOOK MESSENGER

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(Comscore), and of those, texting and messaging apps are the most widely used apps on any smartphone. Based on cost, time to build, and flexibility, bots are more effective than apps at meeting customers where they already spend their time.

Bots solve real problems, bringing otherwise fragmented experiences together into a familiar and accessible UI.

**iMessage**

iMessage is Apple’s messaging platform. It’s limited to Apple users and instead of using bots, Apple insists developers build “apps within the app” as extensions. Apps are found within iMessage and can be used inside of the platform. This prevents the user from having to leave iMessage to engage the app.

Like Facebook Messenger, healthcare organizations can witness the power of connecting with users on their own terms.
THE CURRENT LANDSCAPE

Like the early days of apps, companies are trying to figure out what the right fit is for their brand. Still, they’ve recognized the bot movement as a potential game changer for support, engagement and commerce. These companies took the plunge:

**Burger King**
Created a bot that allows you to order and pay for food via Facebook Messenger.

**H&M**
The H&M bot that allows you to ask questions and shop via Kik

**CNN**
CNN bot pushes a digest of top stories via Facebook Messenger to subscriber. It learns interests and preferences over time.

**KLM**
KLM bot sends customers flight documentation and flight updates via Messenger.

**Taco Bell**
Tacobot answers questions about the menu, talks about how it’s feeling, and favorite movies. Allows users to order and pick food orders through Slack.

**Unicef**
Created a bot that allows women to get info on pregnancy and HIV prevention in a conversational environment.

**Hyatt**
Currently building a bot that will allow Messenger users to reserve rooms and check on low prices.

**Disney**
Created a Zootopia bot that acts like a game where users get clues and solve crimes.

**Uber**
Uber bot allows users to order a ride through Messenger

With the diverse array of bot applications and integrated platforms, healthcare chatbots from a major organization would be a natural progression. But how will healthcare chatbots be most effective?
STRATEGIC PRINCIPLES

When building a bot, consider the following strategic principles:

- Redefining the “app” experience
- Guiding the conversation
- Establishing foundation first
REDEFINE THE “APP” EXPERIENCE

As messaging platforms become more app-like, streamlining the customer experience across the customer service ecosystem will become critical.

TIPS:

• Consider gamifying the initial setup to gather credentials easily and delightfully.

• Use technologies such as deep-linking to create in-app shortcuts when needed.
FOUNDATION FIRST

Focus first on defining your domain and mapping out retrieval-based responses that connect and enhance your offerings, independent of platform. This scalable framework can then be deployed within and enhanced by the native features of any individual messaging platform.

TIPS:

• Know your data: where it's coming from, available formats, and the relationship between product data sets.

• Research and prioritize channels to focus MVP requirements and ensure experience is consistent.

• After the foundation is mastered, move into generative responses and expand your domain.
GUIDE THE CONVERSATION

Listen, learn, and test in a way that feels natural and non-invasive.

New interaction channels pose a potential learning and trust curve to customers. A thoughtful balance of conversational prompts and buttons which guide user decisions can help alleviate much of this challenge.

TIPS:

• Set guidelines. Limit the number of questions a bot can use to clarify a request and hand off if need be.

• Map conversation trees, keywords and resources. Align product requirements and biz/user objectives. Apply tone last.

• Consider responses for random requests to promote curiosity and encourage conversation.
YOUR NEXT STEPS

Take it from us: we’ve worked with Fortune 500 clients from myriad industries. There is no one-size-fits-all solution for engaging your customers where they are, but there is soon going to be a minimum level of engagement required for remaining competitive in the marketplace.

Don’t be left behind. Discuss how your organization might benefit from a chatbot or other conversational UI component with one of our design strategists today.

ABOUT CITIZEN

Citizen is a digital design and technology company headquartered in Portland, OR. We partner with Fortune 500 companies to build digital user experiences that bring our clients and their customers closer together.

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FURTHER READING & LISTENING

READING

Benedict Evans *Messaging & Mobile Platforms*

Benedict Evans *Chat Bots, Conversation and AI As An Interface*

Benedict Evans *Three Phases of Messaging*

Chatbots Life *Your Consumers Want To Chat, But Are You Listening? #ChatBots*

Chatbots Magazine *Ultimate Guide to Leveraging NLP & Machine Learning for your Chatbot*

Chatbots Magazine *How to Make a Chatbot People will Love in 3 Steps*

Chatbots Magazine *The Complete Beginner’s Guide To Chatbots*

Chatbots Magazine *Why Brands Need a Bot Strategy Now*

Chris Messina *2016 Will Be The Year of Conversational Commerce*

Inc. *The Day Is Coming When Customer Service Will Be Run by Chatbots*

O’Reilly *The Bot Platform Ecosystem*

Slack *5 Scenarios for how Humans and Bots Work Together*

Stickyeyes *Are We Racing To A Bot-Centric Future?*

Technology Review *AI Hits the Mainstream*

UXDesign.cc *The Designer’s Guide to AI—a $70 Billion industry by 2020*

**VENTURE BEAT**

Why Chatbots Can’t Do Much More Than Order You An Uber…yet

Smart Assistants & Chatbots Will Be Top Consumer Applications for AI In Next 5 Years

The State of Bots: 11 Examples of Conversational Commerce in 2016

**zdnet**

Artificial Intelligence in Business: The State of Play and Future Prospects

LISTENING

a16z Podcast *Bots and Beyond*

a16z Podcast *When Humanity Meets AI*

O’Reilly Bots Podcast

ADVANCED ANALYTICS: MOVING BEYOND THE BIG BIODATA HYPE

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