

# Virtual Agent Chatbot Product Overview

April 1, 2022

VA



U.S. Department  
of Veterans Affairs

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# Who we are

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# Virtual Agent Chatbot Team



Luciana Morais  
*Product Owner*



Shane Strassberg  
*Design Researcher*



Alina Murphy  
*Project Manager*



Ian Santarinala  
*Product Manager*



Tanya Randstoft  
*Tech Lead*



Jacob Gacek  
*Developer*



Kha Huynh  
*Developer*



Joe Hall  
*Developer*



Justin Trieu  
*Developer*



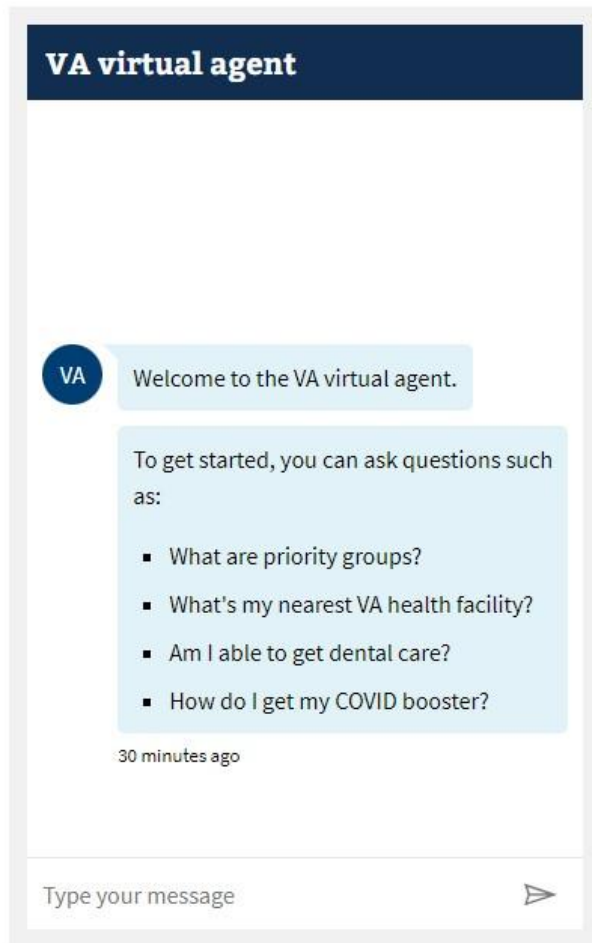
Aditya Sharma  
*Quality Analyst*



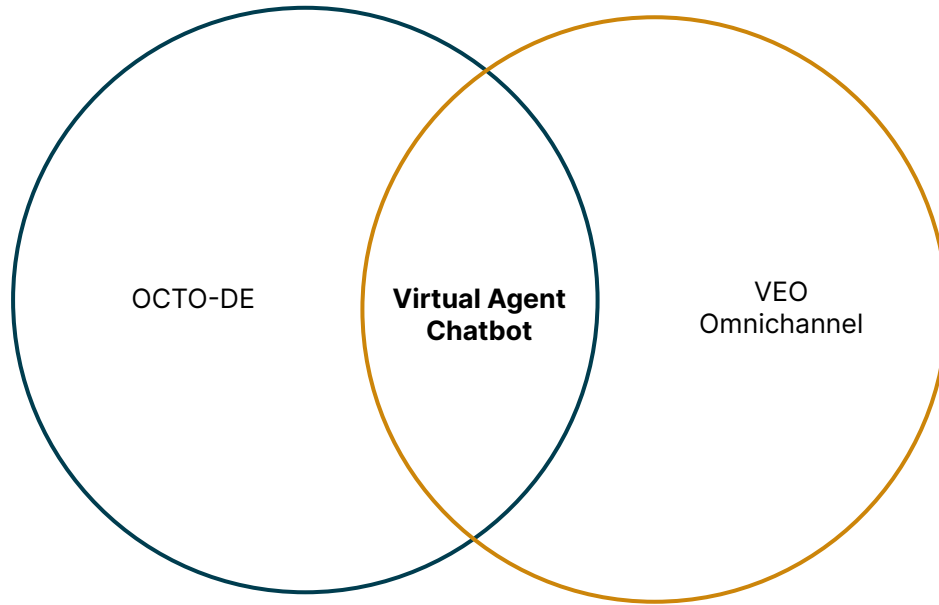
*XD Researcher*

# The chatbot in a nutshell

- Our bot is an AI-enabled chatbot using Microsoft Power Virtual Agent (PVA)
- Available on the Contact Us page of VA.gov to 25% of traffic
- Currently, it allows users to ask basic questions and receive answers we've written ourselves, or a link out to content from VA.gov



# Project Governance



# What we've built

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# Virtual Agent Chatbot Team

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# Playing with the chatbot

The chatbot lives here: [va.gov/contact-us/virtual-agent/](https://va.gov/contact-us/virtual-agent/)

In order to separate our interactions with the chatbot from real veteran usage, please visit our staging environment:

<https://staging.va.gov/contact-us/virtual-agent/>

It will help our data analysis immensely.

Additionally, if you do go to the production chatbot page (or visit VA.gov in general) please click on this link so that your session isn't counted within Google Analytics:

<https://www.va.gov/analytics-opt-out.html>

# Chatbot features

Sample automated responses based on VA.gov benefits-content for:

- Health
- Career
- Education
- Records
- Disability

Recognition and surfacing of best resources on topics such as:

- COVID (ongoing)
- Homelessness
- Facilities

General responses for:

- Unrecognized topics
- Errors
- Security & Privacy questions
- Chit-chat
- Escalation to human agent
- Crisis (limited)

## VA Virtual Agent (beta)

as:

- What's my claim status?
- How do I get health benefits?
- What's my nearest VA health facility?
- What's my appeal status?

A minute ago

Can I receive health benefits?

You

A minute ago

VA

You may be eligible for VA health care benefits if you served in the active military, naval, or air service and didn't receive a dishonorable discharge.

[Learn more about your eligibility or begin your application process.](#)

A minute ago

Type your message



# Chatbot features

## Authenticated Content (March/April release)

- Personalized greeting
- Compensation claims and appeals status-check

## Feedback systems

- Medallia survey
- Dialogue feedback (exploring)

## Expectations & Security

- Disclaimers
- Monitoring (exploring)
- Switch bot on/off

### VA Virtual Agent (beta)

You have more than one in-progress compensation claim.

Your first Compensation claim was filed on 12/16/2021. This claim is currently UNDER REVIEW as of 12/16/2021.

Additional details about this and other claims can be found on the [Check your claim and appeals status](#) page.

What would you like to do next?

Just now

See next claim

Speak with an agent

Check Appeals

Ask a new question

Type your message

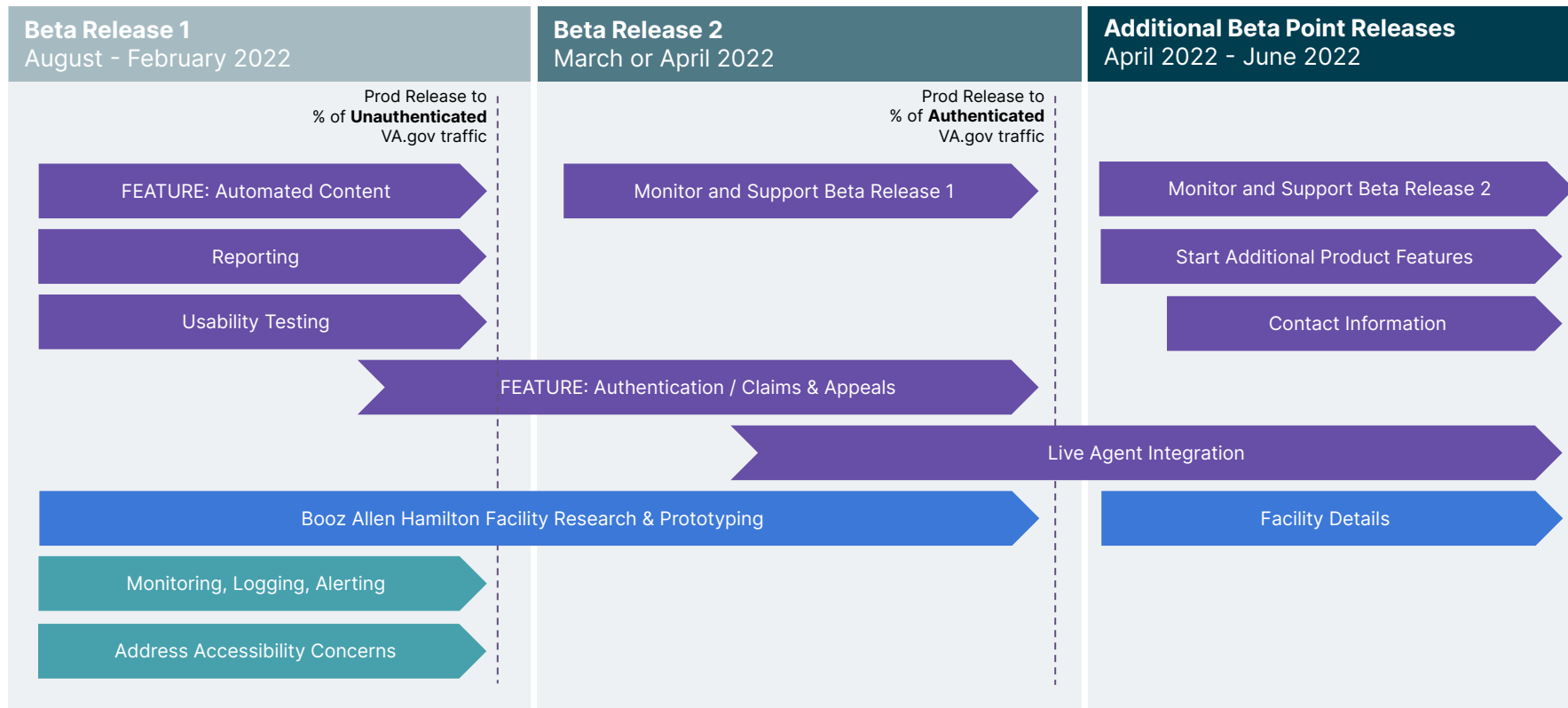


# Additional Efforts

- Spanish study (internationalization initiative)
- Generic Spanish response (investigating)
- Continued discussions on content management
- Continued discussions on data centralization
- Facilities research (Booz Allen Hamilton)
- General “bot-needs” research (Booz Allen Hamilton)
- Metrics and analytics setup
- Integration with Omnichannel architecture
- Integration with Live Agent-VBA
- Collaboration with Microsoft during platform transitions
- Marketing discussions



# High-level Product Roadmap



# Research topics

And work in progress

VA

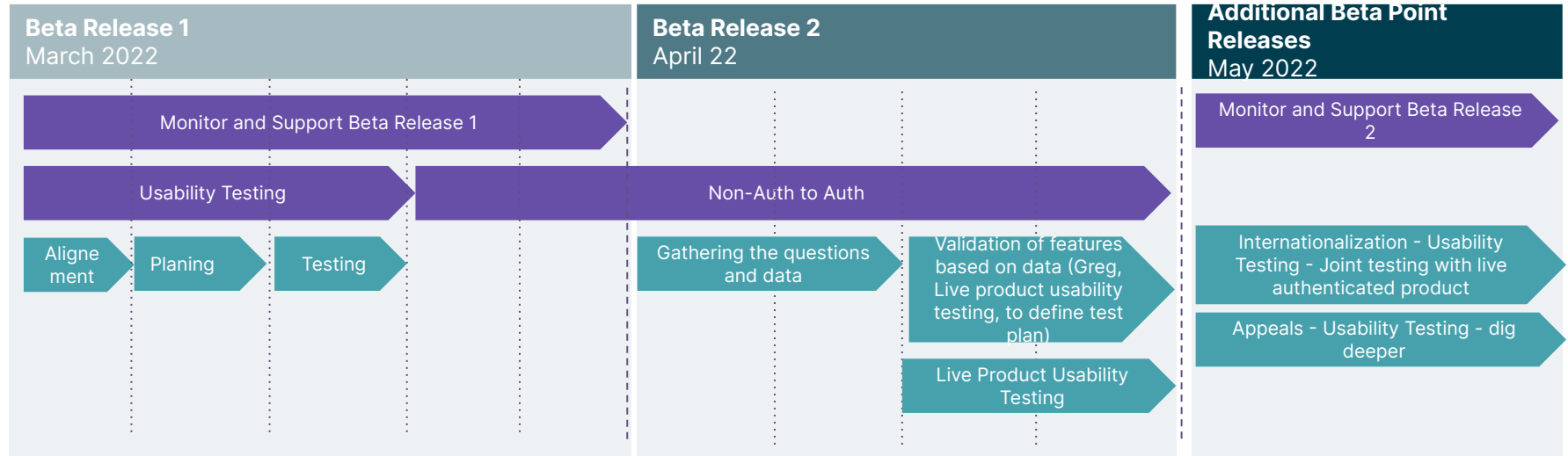


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# Research planning

More details [here](#)

- Aligned on 31st March, 2021
- Research planning and goals aligned for April and May release



# Parking Lot of Research

Please see the [Research Parking Lot Doc.](#) for more details - this will eventually be broken into individual ones for studies.

You will find background on previous studies, different topics parking lot to be prioritized, and ideas or question behind upcoming topics.

Topics included are:

Spanish research and internationalization follow up

User feedback

Appeals

Mobile experience



# Non authenticated to Authenticated

- Kicked off on March 1st
- Journey review workshop 1st pass - MURAL
  - From this journey we drove the needed questions and spikes, initial assumptions and questions.
- Research plan
  - Find here the research plan
  - This was the prototype tested, currently the ownership of the invasion project is daniel.kim@bah.com
  - Here is the .sketchcloud file with mockups.
- Sign In journey and technical adjustments - MURAL
  - Discussion about the sign in journey, with tech feedback.
- Journey after adjustments - MURAL
  - Iterations before and after usability research are being discussed in this mural.
-

# User Feedback Research

More details [here](#)

- Kicked off on March 30th
- To gather feedback and discover pain points from the live version.
- To validate and ask about findings from data analysis from transcripts.
- Next steps:
  - Set and align goals with Luciana & team.
  - Create research plan.

# Validation of features based on data

More details [here](#)

*To evaluate and gather user feedback from the live version (to define if to use the current unauthenticated release) or the soon to be authenticated.*

- Hypothesis: What is your hypothesis for this research
- To validate and explore further the roadmap from the findings from data analysis from the transcript, these can be found [here](#)
- Probably to be merged with User Feedback Research

Goals to be defined

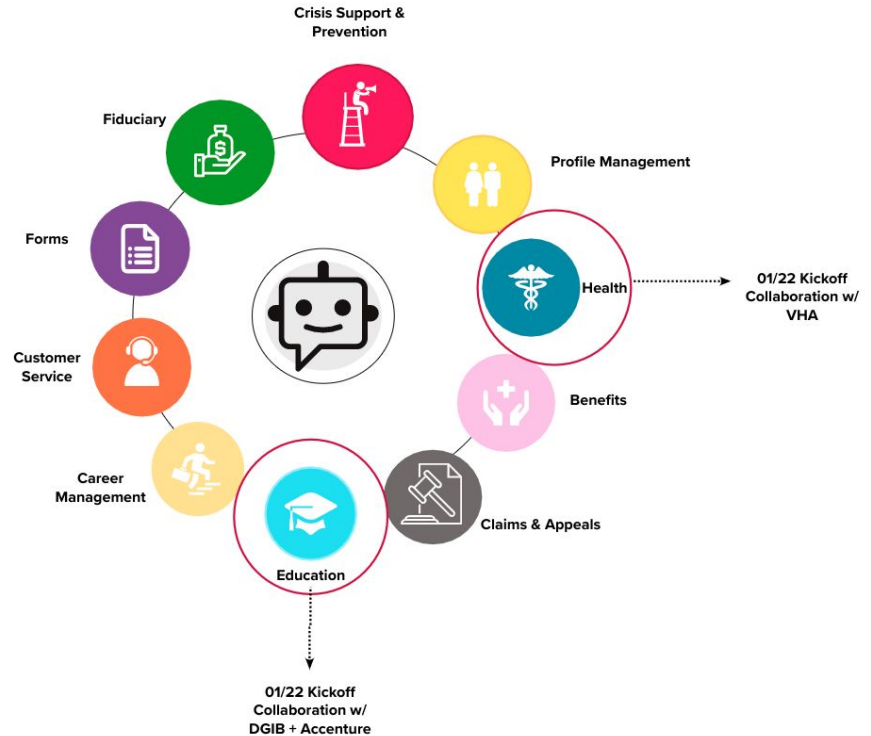
# Teams integrating to the chatbot

VHA as well other teams (GI Bill), seem to want to integrate with our virtual Agent. This would require to both set standards and oversee their UX Integration pair to understand their experience with UX and what would be their next steps, and redirect them to get the support needed.

[Here](#) you can find some knowledge sharing prepared for them, to present the overview of the product and share key information regarding the Virtual Agent.

You can also find the chatbot and virtual agent [VEO MCT Chatbot Style Guide](#)

You can also see this in the What we've learned of this deck.



# Teams integrating to the chatbot Collab sessions

- Individual conversations with VHA and DGIB teams to level set, establish requirements, explore roadmaps and align on timelines.
- Collaborate as cohorts:
  - UX
  - Engineering
  - Product
- With collaboration from:
  - VEO & MCT
  - OCTO
  - VBA, VCL and others as needed

## Collaborations, Facilitations & Oversight

<b>Customer Experience</b>	<b>Systems</b>
<ul style="list-style-type: none"><li>• Continuous Discovery practices</li><li>• Veteran-first approach</li><li>• Content management and sustainment</li><li>• Ethical and legal sensibilities</li></ul>	<ul style="list-style-type: none"><li>• Bot platform procurements and assignments</li><li>• Interoperable systems (ex: live agents)</li><li>• Data retention, sharing and storage</li><li>• Call centers</li><li>• Analytics integrations</li></ul>
<b>Engineering</b>	<b>Product</b>
<ul style="list-style-type: none"><li>• Legacy code</li><li>• Access point management</li><li>• Troubleshooting</li><li>• Sustainment and enhancements</li><li>• Escape routes (ex: microservice feature switches)</li><li>• Identity</li></ul>	<ul style="list-style-type: none"><li>• Scalability management</li><li>• Roadmap alignments</li><li>• Veteran &amp; Business alignment</li><li>• Leadership &amp; Transfer protocols</li><li>• Outcomes &amp; KPIs</li></ul>

# Spanish research and internationalization

For more information on the topics please refer to the [research parking lot](#).

[Here](#) you can find the previous research done in the topic, which consisted of discovery interviews related with the topic, and a question on how would they use the Virtual Agent, how they would change the language, as well as their pain points and expectations.

- As a follow up from [Spanish Speaking Veterans and the Virtual Agent Interviews](#), when it is prioritized it would be needed to get on solution mode. This research was complemented by this [Spike](#) with PVA possibilities.

You can also refer [here](#) on when and how to conduct bilingual to best practices for conducting bilingual or multilingual research if the language is not spoken by the researcher.

Another research gap to explore would be with users with Low English proficiency.

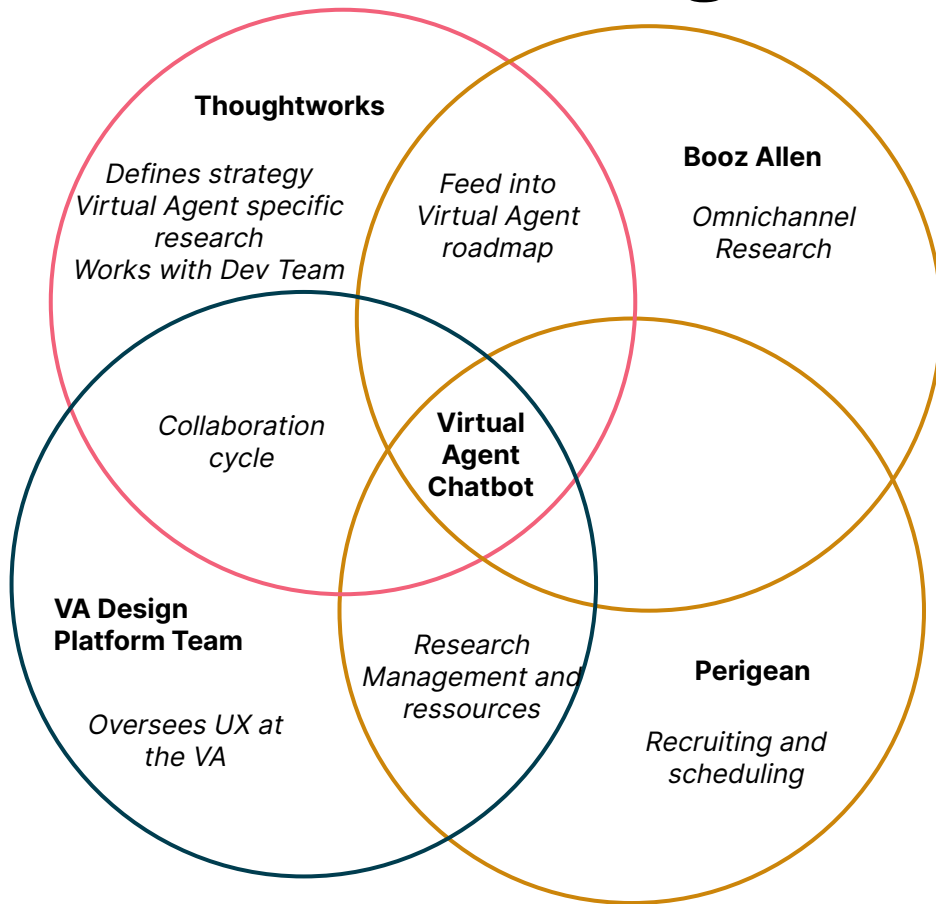
# How we work

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# User Research in the Virtual Agent





# User Research in the Virtual Agent

To be continuously improved upon

## Setting goals

Align goals with team and PO.

\*[Research alignment for Apr-May 22](#)

\*[Research parking lot](#)

\*[Research tracker](#)

## Research

**Follow the VEO\***

**[Research collaboration cycle](#)**

**Create research plan in**  
[Virtual Agent Public Github](#)

\*Submit research plan at the [VA Research Repository Github](#)

\*Contact:  
[shane.strassberg@va.gov](mailto:shane.strassberg@va.gov)

\*User recruiting - Perigean

## Present Back

Places to present back:  
Internally to the team - [template](#)

VA.gov Platform and Apps Weekly Design + Content + Research Sync - [template](#)

\*Contact:  
[naomi.marcussen@va.gov](mailto:naomi.marcussen@va.gov)

Product Showcase - [template](#)

Omnichannel meeting  
\*Alina Murphy

## Document

Document everything in [Virtual Agent Public Github](#)  
Add key findings at [VA Research Repository Github](#)  
Follow up with team about recommendations and create tickets.

# Metrics

Currently the project is being measured with these different tools:

Google Analytics: [Get access](#)

DOMO: Internal NSP dashboards

PowerBI: Microsoft Analytics reports

Medallia: Embedded surveys

# What we've learned

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# Virtual Agent Personas



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Vets that want to use AI for a personalized experience for their benefits, claims and appeals



Vets that want to quickly find information without needing to use a search engine or understand the website navigation



Vets that want to remain anonymous while researching sensitive topics before speaking to a human at VA

# Proof of Value

## Study Goals

Validate the assumption that a virtual agent can provide value by:

- Increasing awareness of existing VA self-service tools
- Decreasing the time Veterans spend waiting for an outcome
- Giving Veterans 24/7 access to either anonymous or secure support

## Methods

- Unauthenticated w/limited content
- Led by OCTO/ThoughtWorks
- Released on June 2021
- 44 (out of 100 recruited) participants
- Segmented by men, women, marginalized populations (ex: LGBT)
- Unmoderated testing with prototype + survey link
- Analyzed conversational logs + survey results
- Not mobile-first w/508 considerations

For results on this and other studies, see [report](#) and [deck](#).

Overall, Veterans are willing to use a chatbot and are excited about it, but they want a bot that can:



Identify who they are and leverage personalized information



Provide direct answers with reasonable accuracy



Admit when it does not have an answer, but offers another way to help



Be an efficient channel that can help them avoid calling the VA

Can speak on topics such as debt management, appointment management, health and education benefits

# Chatbot Recommendations

## Study Goals

Prototype, evaluate, and refine early-stage virtual agent experiences and features to understand user expectations, motivations, and behaviors when interacting with a virtual agent to create design recommendations and inform future virtual agent development

## Methods

- 4 rounds of remote moderated usability testing using PVA to simulate a virtual agent experience, two of which exclusively focused on Virtual Agent expectations and behaviors
- 33 usability sessions across 4 separate rounds of research
- Led by VEO MCT/Booz Allen Hamilton
- Demographics collected and evaluated included agent, gender, their familiarity with VA.gov, and their geographic location (rural vs. urban)
- A Chatbot Style Guide built upon existing content strategy from VA.gov to develop a consistent brand, tone, and guidelines for virtual agent communications based on the Proof of Value capabilities

For results on this and other studies, see report.

2022

## Chatbots should...



Greet users with a direct, mission-oriented personality and brand with an opening message that sets a clear expectation of the virtual agent's capabilities and limitations



Promote a guided experience that leads users down a happy path towards resolution



If a user's intent is undecipherable, prompt the user to rephrase their question no more than two times and each time offer clear guidance



If the user's question is outside scope of the virtual agent abilities, provide clear instruction to reach the specific contact center or other resources (ex. hyperlinks) that can meet their needs



Include visual cues and disclaimers that assure users that their data and privacy are protected

# Chat

## Recommendations

### Study Goals

Prototype, evaluate, and refine the escalation experience from a virtual to live agents to understand user expectations, motivations, and behaviors and to create design recommendations and inform future virtual and live agent development and system architecture.

### Methods

- Two rounds of remote moderated usability testing, one using Microsoft Power Virtual Agent (PVA) and another using an interactive wireframe to prototype a more complex escalation experience
- 19 usability sessions focused on this virtual agent escalation experience
- 4 facilitated workshops with live agents across NCC and OCC also informed live agent content recommendations
- Demographics collected and evaluated included agent, gender, their familiarity with VA.gov, and their geographic location (rural vs. urban)
- Live Agent Chat Style Guide built upon existing content strategy from VA.gov, VA Knowledge Base, and existing live agent CX training to develop a customize existing call center language, brand, and tone for communications via chat; this included example quick replies for select frequently used responses and topics

### Live Agent chats should...

	Limit the number pre-chat screener questions to only the absolutely necessary and only require readily available information (ex. user's name and date of birth), rather than requiring information like specific case numbers, which users may not have easily available
	Provide estimated wait times to give users an idea of when to expect a live agent to join the chat
	Display the prior conversation with the virtual agent to the live agent joining the chat to strengthen trust with VA and reduce user frustration at having to repeat themselves
	Provide clear, personalized answers to the user's specific question and actionable next steps when relevant, such as the user's claim status and a link to the VA.gov website for checking the status of a claim in the future
	When wait times are long for connection with a live agent (ex. >20 minutes), offer alternative communication channels or follow up options to reduce user frustration

# Discovery and Inception

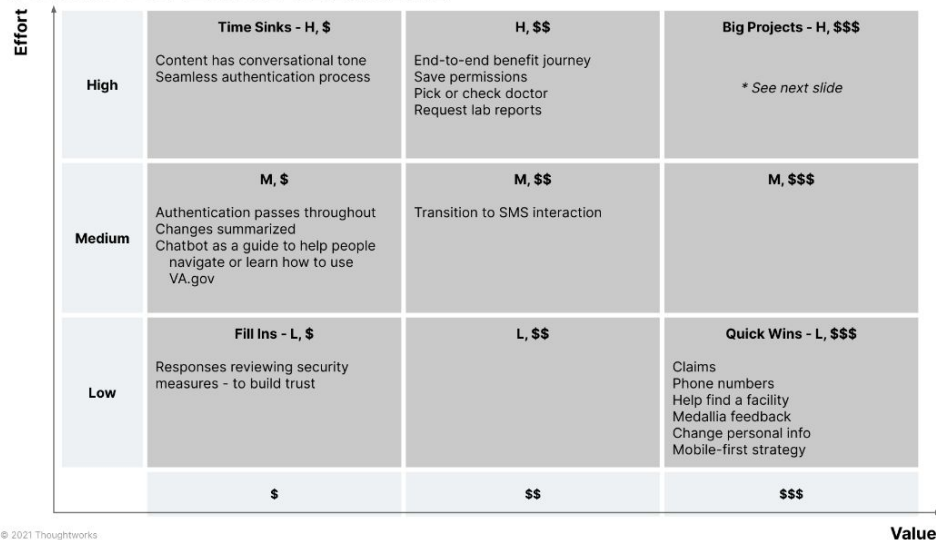
In July 2021 we undertook a Discovery and Inception Workshop to determine “What to build?” and “How to build it?”.

The artifacts produced during this session concluded that an *ideal chatbot* can:

- Provide concierge services that take you from A to B
- Act as an information finder
- Have a seamless (and kind) conversational exchange
- Transfer to a human
- Transfer prior conversation to human agent
- Add, remove or update personal information across VA systems
- Help customers pay their bills, refill prescriptions, manage appointments and arrange medical transportation
- Recognize and be supportive of marginalized populations

See the complete [Discovery & Inception Report](#).

## Value vs. Effort Matrix





# Crisis Management

## Workshop Goals:

- Bring awareness around the issue of crisis and chatbots
- Identify different sets of crisis-scenarios a Veteran or caretaker can communicate within the bot
- Identify how a mishandled crisis can impact the VA

View the Crisis workshop [Mural](#).

## Bot Crisis Outcomes & Decisions



Display a disclaimer stating that the virtual agent is not a mental health bot



Have **limited** crisis responses as fallback



Implement a kill-switch to turn off the bot from further usage should an urgency occur

Launch within pages that have clear callout to VCL resources

Continue conversations on this topic

# Where we're going

VA

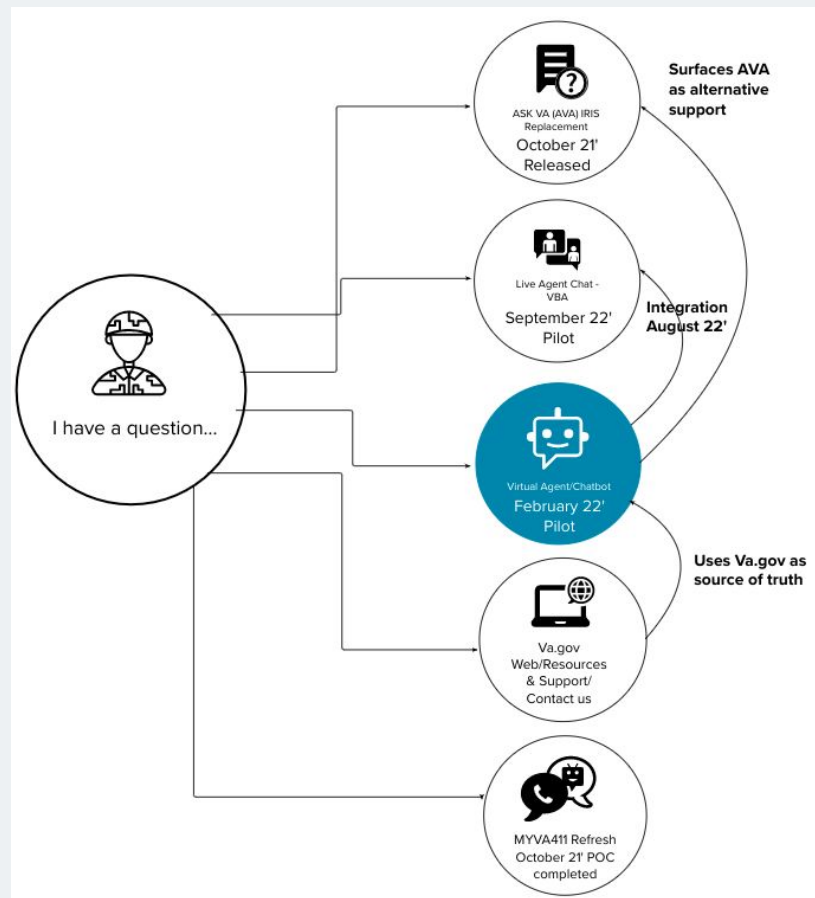


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# Omnichannel

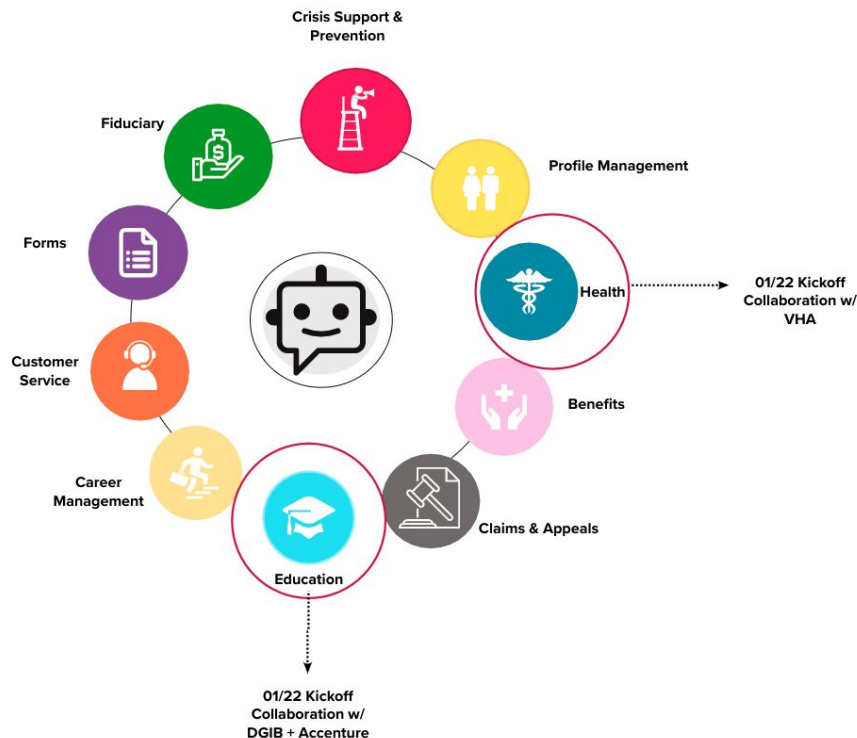
The Omnichannel initiative, led by VEO, envisions a "One-VA" digital customer support experience, where Veterans can start a conversation in one channel and pick it up again at another channel.

The virtual agent/chatbot belongs to this family of existing and up and coming interoperable customer support channels.



# Omnichannel & Virtual Agent

Goal: One bot with multiple customer journeys (microservices)



Collaborations, Facilitations & Oversight

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# Bot Sophistication

## Level 3: Teen Bot Association + Context Retention



what's my claims status? You

Just now

VA James, you have two medical claims and one disability claim.  
Would you like to see your medical or disability claims?

Disability You

Just now

VA Your disability claim # 12345 is on hold. Further documentation is needed.

What documentation? You

Just now

VA I cannot find more information about this claim. However, I have found the following guidance that may help.

[link]

Would you like to speak with an agent?

Context Retention.  
The bot stays on  
topic.

Surfaces related  
resources

## Level 3: Adult Bot Proactiveness



what's my claims status? You

Just now

VA James, you have two medical claims and one disability claim.  
Would you like to see your medical or disability claims?

Disability You

Just now

VA Your disability claim # 12345 has been approved. I am unable to provide you with any further details on the disability decision...

VA However, I see that a package with decision information has been sent to your address:

12345 Address  
Arlington VA 22203

It may take 10 days to arrive. Would you like to speak with an agent?

Surfaces related and  
contextual  
information.

# Appendix



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# Useful links

## Virtual Agent

Production: <https://va.gov/contact-us/virtual-agent/>

- **Before using production you need to opt out of analytics [here](#)**

Staging: <https://staging.va.gov/contact-us/virtual-agent/>

## Virtual Agent Team and Repositories

- [Virtual Agent Public Github](#)
  - [Virtual Agent Research Public folder](#)
- [VA Research Repository Github](#)
- [Team Orchid's board](#)
- [Ways of working /roles description](#)

Proof of Value ([Report](#), [Deck](#))

## Discovery & Inception

Discovery & Inception ([Deck](#), [Mural board](#))

## Murals

- Non-auth to authenticated Journey First pass and open questions- [MURAL](#)
- Sign In journey and technical adjustments - [MURAL](#)
- Journey after adjustments - [MURAL](#)

## Slack

To be added to the channels #design, #vsanalytics,

## Design at the VA and Useful Templates

- [VA Collaboration Cycle and ux standards](#)
- [VA Design Systems](#)
- [Research collaboration cycle](#)

## Templates

- [Recruitment checker template](#)
- Presentation templates
  - [Internal to the team: detailed findings](#)
  - [Monday Design and Research](#)
  - [Product Showcase](#)
- [Research Plan Template](#)
- [Conversation Guide Template](#)
- [Bilingual User Research](#)

## Metrics

- Access to [Google Analytics and DOMO](#)
- Medallia - contact Luciana or Ian.
- PowerBI Analysis - [here](#)

# Research documentation

## Upcoming research

Phase 2 research planning (parking lot of topics) and context

## Phase 1

Index of Research ([Page](#))

- [OCTO-DE Branding Survey](#)
- [Veterans & Caregivers Branding Interviews](#)
- [Controlled study](#)
- [OCTO-DE Self-Service Feature Survey](#)
- [Inclusive Design Study](#)

Proof of Value ([Report](#), [Deck](#))

## Discovery & Inception

Discovery & Inception ([Deck](#), [Mural board](#))

All Virtual Agent Chatbot links above can be found on the Virtual Agent Chatbot team's public GitHub repository [here](#).

[Research Parking Lot Apr - May 22](#)

## Booz Allen Hamilton Research

- [VEO MCT Phase 1 Chatbot Research](#)
- [VEO MCT Phase 2 Chatbot Research](#)
- [VEO MCT Phase 3 Live Chat and Chatbot Research](#)
- [VEO MCT Phase 4 Live Chat and Chatbot Research](#)
- [VEO MCT Chatbot Style Guide](#)

The VEO MCT research done by BAH can be found on the VEO Sharepoint [here](#).

## Phase 2

Index of Research ([Page](#))

- [Claims Usability Studies](#)
- [Facilities Discovery Research](#)
- [Facilities Conversational Design](#)
- [Spanish Speaking Veterans and the Virtual Agent Interviews](#)
- [Authentication Usability Studies](#)
- [MCT Omnichannel Co-Design](#) (In progress)
- Release unmoderated testing (Upcoming)



# Contacts Virtual Agent Team

<b>Luciana Morais</b>	Product Owner	<a href="mailto:luciana.morais@va.gov">luciana.morais@va.gov</a>	
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<b>Joe Hall</b>	Developer	<a href="mailto:joseph.hall4@va.gov">joseph.hall4@va.gov</a>	<a href="mailto:joe.hall@thoughtworks.com">joe.hall@thoughtworks.com</a>
<b>Justin Trieu</b>	Developer	<a href="mailto:justin.trieu@va.gov">justin.trieu@va.gov</a>	<a href="mailto:justin.trieu@thoughtworks.com">justin.trieu@thoughtworks.com</a>
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# Contacts VA

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<b>Eunice Garcia</b>	Content team *Research experience	eunice.garcia@va.gov
<b>Danielle Thierry</b>	Content team	danielle.thierry@va.gov