



# 10 conversational AI trends

... to watch for in 2022 and beyond





# Contents:

**Introduction - p.3-4**

**Conversational AI market growth - p.5**

**Conversational AI adoption across industries - p.6**

**The hype is over - conversational AI is here to stay - p.9**

**Criteria to consider when selecting a conversational AI vendor - p.11**

**Top 10 conversational AI trends:**

- 1) Scalable tech will be critical for automation at the enterprise level - p.13**
- 2) Automated chat will become the primary channel for customer service - p.14**
- 3) Companies will build smarter chatbots, much faster - p.15**
- 4) Conversational AI retains the human touch - p.16**
- 5) Proprietary algorithms will replace off-the-shelf models - p.17**
- 6) AI will bring automated phone support into the 21st century - p.18**
- 7) Chatbots will work together to provide better service - p.19**
- 8) Conversational AI will augment human workers not replace them - p.20**
- 9) Virtual agents will become less informational and more transformational - p.21**
- 10) Chatbot design will become increasingly evidence-based - p.22**

**What's next for conversational AI? Predictions 2022 - 2026 - p.23**

**Glossary of terms - p.24**

24/7





**Our increasingly digital world requires evermore digital solutions to help streamline customer service, sales and support.**

As consumers, workers and businesses have moved online, they are now embracing the opportunity to automate with digitally-native alternatives such as voice and online chat.

This is due, in large part, to the necessity for businesses to scale more easily as consumer demand grows and interaction becomes more online than in person. Digitally automated systems provide a clear path to scaling support and service functions, with today's conversational AI-powered virtual agents being a far cry from the rudimentary Gen 1 chatbots of even a decade ago.

These intelligent machines have evolved into powerful tools that, thanks to advances in Natural Language Understanding (NLU) and Machine Learning, help businesses across all industries deliver an unprecedented level of customer experience.



# INTRODUCTION



## The COVID effect:

The adoption of conversational AI has been significantly accelerated by the recent pandemic. A study by **PwC** found that 52% of companies stepped up their adoption of artificial intelligence in 2020 as a direct result of Covid. This mirrors a shift in spending habits where **59% of consumers** say that, in a post-Covid world, they care more than ever about customer experience and what brands they support and spend their money with. Rather than go into a branch or store, consumers will interact with brands online, insisting that the experience is improved to facilitate this preference.



**Online chat and direct messaging have also been steadily gaining ground as leading methods of customer contact, particularly amongst Millennials and Gen Z.**

Interest in these channels amongst US consumers **increased to 62%** in 2019. Conversational AI provides a unique advantage to companies looking to support these customers in the digital space in a way that is efficient and effective.

In this guide, we will look at 10 key trends that will shape the future of conversational AI, virtual agents and chatbots. We examine their market impact and potential to forge a new way forward for automated customer experience into 2022 and beyond.



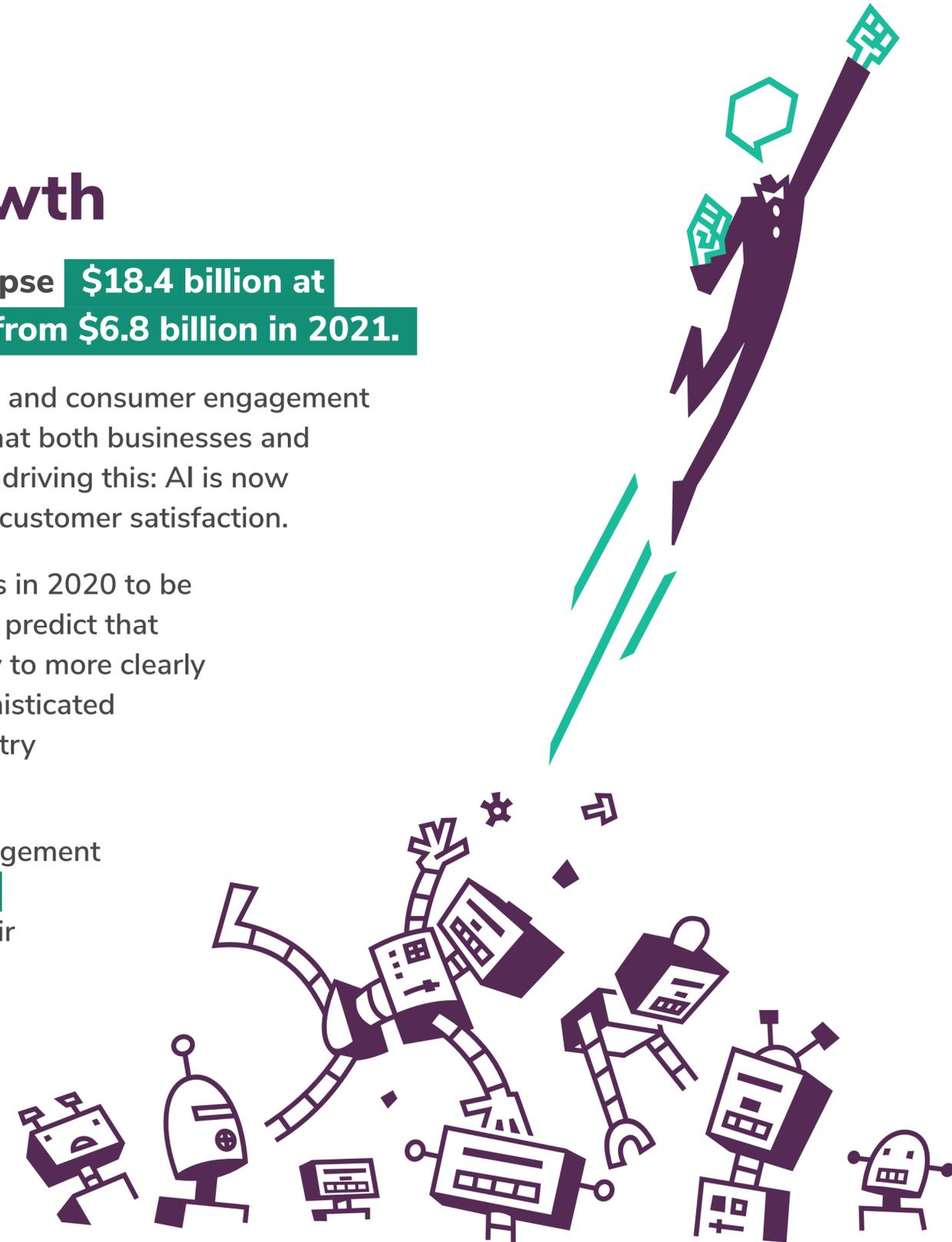
# Conversational AI market growth

By 2026, the conversational AI market is expected to eclipse **\$18.4 billion at a Compound Annual Growth Rate (CAGR) of 21.8%, up from \$6.8 billion in 2021.**

Primarily driven by increasing integration of advanced AI capabilities, and consumer engagement via multiple platforms (including social media), this is a clear signal that both businesses and their customers view the technology as viable. Business benefits are driving this: AI is now delivering on strategies to cut costs, increase revenues and improve customer satisfaction.

Gartner estimates the overall revenue of conversational AI platforms in 2020 to be \$2.5 billion, **growing at a rate of 75% year-on-year**. They further predict that conversational AI vendors will continue to innovate out of necessity to more clearly differentiate themselves from their competitors, offering more sophisticated additions to support multi-use cases, multidomain and multi-industry requirements.

Similarly, enterprises across the board are signaling an acknowledgement of this rise in conversational AI. According to Accenture, **56% of companies** say that conversational AI is driving disruption in their industry, with a further 43% reporting that their competitors are already in the process of implementing the technology.





# Conversational AI adoption across industries

Conversational AI stands to help enterprises to cut costs, increase revenues and improve customer satisfaction over the coming period.

In research published by Capgemini, it was revealed that companies across banking, insurance and retail that have adopted conversational AI report **a greater than 20% reduction** in both customer service costs and overall customer churn.

Gartner is similarly bullish, estimating that **40% of enterprise applications** will have embedded conversational AI by 2023, up from below 5% today. They recommend that product leaders looking to get ahead of the curve should look to solutions that offer end-to-end automation via easy integration with enterprise back-end systems, instead of simple Q&A functionality.

This positive uptick looks to only continue across key industries as conversational AI and virtual agents become a mainstay of the wider digital service and support strategy of major enterprises:



## Banking

By 2023, the operational cost of savings by implementing virtual agents in banking will reach **\$7.3 billion** globally

- [Juniper Research](#)

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**18%** of credit unions have already deployed some form of chatbot and another 18% plan to in 2021

- [Cornerstone Advisors](#)



## Insurance

**±75%** of insurance customers trust chatbots to provide a new or renewal quote, make a claim, add a member to coverage and update billing information

- [Liveperson](#)

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Insurance companies can expect conversational AI to account for cost savings of up to **\$1.3 billion** by 2023

- [Juniper Research](#)



## Telecommunications

Global AI in the telecommunications market is expected to reach **\$1 billion** by 2023

- [Market Research Future](#)

The telecommunications industry is expected to invest **\$36.7 billion** annually in artificial intelligence by 2025

- [Tractica](#)



## E-commerce

By 2023, over **70%** of chatbots are estimated to be in retail

- [Juniper Research](#)

**47%** of online shoppers are open to making purchases using a virtual agent

- [Hubspot Research](#)



## Healthcare

The healthcare chatbot market is estimated to reach **\$340 million** by 2027

- [FutureWise](#)

Over **1,000** Covid-19-specific chatbots were built using Microsoft's chatbot creation program during the pandemic

- [CB Insights](#)



# INTRODUCTION

In the 2021 revision of its **Hype Cycle for Artificial Intelligence**, Gartner has updated its projections for where it sees chatbots headed. While still placed squarely in the 'Trough of Disillusionment' - that is to say, the initial market surge has begun to subside -

**Gartner predicts that conversational AI (and its related technologies) will be ready for primetime in less than two years.**

This is a significant reclassification of its projections which, in 2020, predicted that chatbots would hit the 'Plateau of Productivity' within two to five years.

This signals a confidence in the maturing of the market and technology, making it doubly important for companies looking to deploy a conversational AI solution to ensure that they perform the necessary due diligence when selecting the correct vendor.





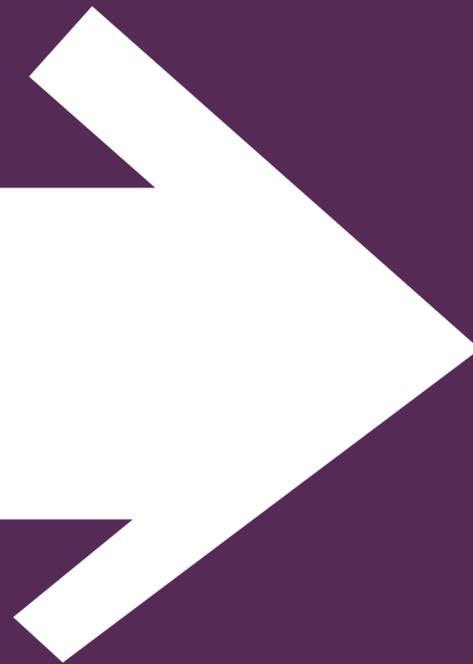
# Criteria to consider when selecting a conversational AI vendor:

- Does the solution scale well?
- Current number of live/deployed virtual agents
- Industry-specific domain expertise captured in pre-built content
- Self-learning functionality
- No-code software and an in-depth educational component
- Proprietary Natural Language Understanding
- Third-party recognition from trusted market analysts
- Integration support to facilitate transactions





# **10 conversational AI trends to watch for in 2022:**



# 1)

## Scalable tech will be critical for automation at the enterprise level

#BroadScopeVirtualAgents

**A common problem afflicting Gen 1 chatbot projects is the tendency to deploy a variety of specialized ‘mini-bots’ that are unable to fully meet the needs of end-users.**

This can result in a bad experience as, in the case of a bank, a chatbot designed to only answer questions about credit cards is not able to help with anything else. Similarly, if that same bot is hidden away on the ‘credit card’ section of the bank’s website, it will be less effective simply because fewer people will interact with it.

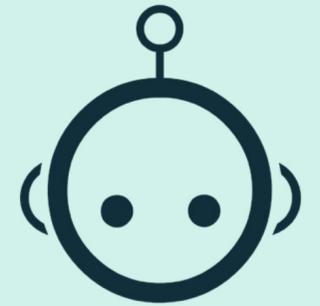
This narrow scope approach to deployment is ineffective when scaling automated support and service at the levels required by large enterprises. Instead, conversational AI solutions will need to adapt to offer more broad-scope capabilities in order to provide genuine value.

Deploying virtual agents that can answer questions on a wide variety of topics, and do so with accuracy levels of 90%+, will result in a better overall customer experience.

### DNB

Norway’s largest bank employs a broad-scope approach to its virtual agent, ensuring it can answer a wide variety of questions with a deep knowledge on each subject. This resulted in DNB automating over 50% of all incoming chat traffic in just 6 months since launch.

DNB



#### Did you know:

The virtual agent, AINO, successfully automates over 10,000 conversations every day that equate to 20% of all DNB customer service traffic.



## 2) Automated chat will become the primary channel for customer service

### #ChatFirst

For a business to get the highest possible value out of its chatbot, a simple equation needs to be followed:



**Value per interaction X Number of interactions = Value created**

Maximizing value from this equation requires that the underlying technology powering a conversational AI platform is robust enough to handle high volumes of traffic with consistently high resolution rates. Once this is in place, it means that a business can confidently place a virtual agent at the center of its customer service strategy.

This will allow for large-scale automation, reallocating phone, email and even live chat to second- and third-tier support channels that the virtual agent can transfer customers to if necessary.

Based on existing results, this 'chat-first' approach is already enabling businesses to play to the strengths of automation by reducing overall support costs and driving up CSAT scores.

### Sparebank 1 SR-Bank

One of Norway's leading digital-first banks placed a virtual agent at the centre of its customer service strategy. All customer service traffic via SR-Bank's website is directed through the chatbot and today automates 42% of all B2B and B2C traffic.

#### Did you know:

3 out of 4 SR-Bank customers report a preference to using the virtual agent Banki over talking to a human.



**SpareBank** **1**  
SR-BANK



# 3) Companies will build smarter chatbots much faster

#SelfLearningAI

The dirty little secret of artificial intelligence is that it still needs human intervention in some capacity to function effectively.

Whether that's helping to train the algorithms, or maintaining them to ensure optimal performance over time, AI is only ever as good as the humans in charge of it.

Conversational AI is no different. However, recent advances in self-learning functionality are set to allow for a dramatic reduction in the time it takes to build and deploy virtual agents, while also assisting in both their maintenance and improvement.

Self-learning AI makes it possible to scan data from a variety of sources including a company's website, chat logs or even an existing chatbot. This data can then be used to repurpose key topics and products into an advanced virtual agent in a matter of hours - significantly reducing deployment timelines from weeks and months to only a few days.



## Smarter AI through search

In addition to scanning a company's existing data sources, self-learning AI can be used to identify patterns and relevant user questions from multiple search sources. This helps to further enhance the model by leveraging search queries to related products and services.



# 4) Conversational AI retains the human touch

## #AITrainers

Employees in the new digital age will look to AI not as a scary technology designed to replace them, but as an invaluable tool to enhance and augment how they work.

Customer service workers - a group previously identified as 'high risk' of being made redundant due to automation - are actually uniquely positioned to be upskilled into a key role in the future of their industry - the training and maintenance of conversational AI.

Thanks to the prevalence of no- and low-code solutions, these 'AI Trainers' can translate their existing customer service expertise into highly-effective chatbots without the need for data scientists or developers.

Employees who continue in traditional service and support roles will also benefit greatly from AI, thanks to its ability to automate high volumes of repetitive inquiries at scale. MIT Technology Review conducted a study where it found that **nearly 90% of businesses reported measurable improvements in the speed of complaint resolution** thanks to conversational AI, and over 80% noted enhanced call volume processing.

**88%** of customer experience professionals believe that AI will improve and enhance their work rather than replace them outright

- Customer Contact Week



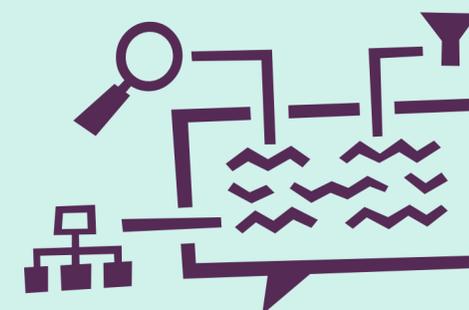


# 5) Proprietary algorithms will replace off-the-shelf models

#NaturalLanguageUnderstanding

If a virtual agent can't understand, it won't be able to help. Off-the-shelf algorithms will be replaced by proprietary Natural Language technologies that will make it possible for chatbots to do more and understand better.

As conversational AI continues to become a principal customer service channel for enterprises in 2022 and beyond, expect the norm to shift. Small-scale chatbots that can only answer questions on a few hundred topics will be replaced by advanced virtual agents powered by proprietary NLU able to handle 10,000+ intents while maintaining consistent resolution rates above 90% in any language.

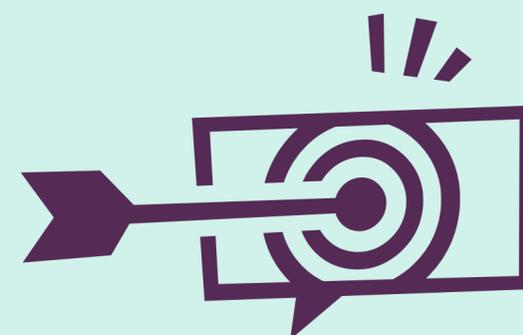


Identify, understand and action on multiple intents within the same request

Language understanding capabilities that will become 'table stakes' in 2022:



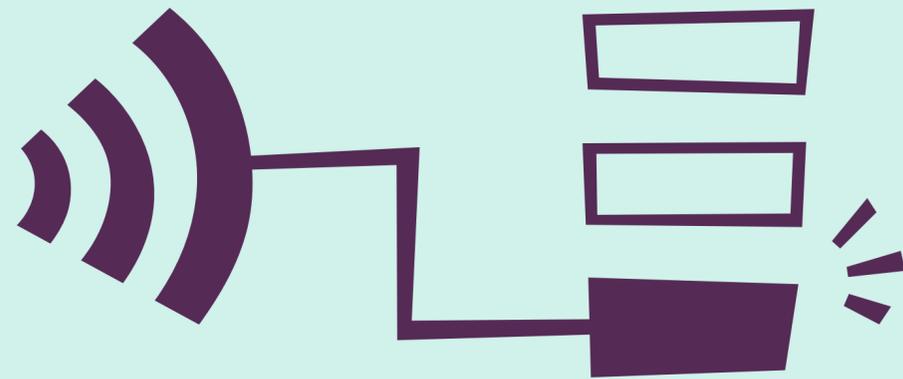
Easily parse the nuances of human language - slang, dialect and colloquialisms



Minimize false-positive response



# 6)



**By 2023, 25% of employee interactions with applications will happen via voice, up from 5% in 2020**

- Gartner

## AI will bring automated phone support into the 21st century

### #VoiceBots

**The synergy between conversational AI and voice-enabled platforms is undeniable.**

With the prevalence of voice assistants like Amazon's Alexa and Google Assistant, it's only a matter of time before consumers will expect to handle complex banking and insurance transactions via voice, and the technology needs to be there to support them.

Data from Salesforce found that **72% of users** placed a higher degree of trust in a business after having a positive experience with a voice assistant. In the customer service space, **voice bots** are the next generation of automated phone support that take advantage of conversational AI and combine it with speech-to-text and text-to-speech to take a company's self service rates beyond chat.

Conversational AI vendors will begin to branch out into providing voice services that leverage the Natural Language capabilities of their existing chatbot platforms. The lines between chat- and voice-based virtual agents will begin to blur as it becomes increasingly possible to automate chat and IVR from within the same interface.



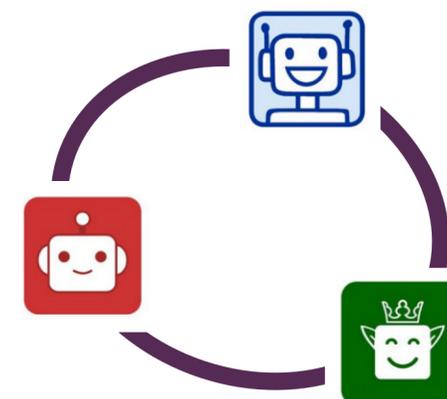
# 7) Chatbots will work together to provide better service

## #VirtualAgentNetworks

For larger public and private sector organizations it is often inefficient (or impossible) to have a single virtual agent manage all support and service-related tasks.

Instead, we will see the emergence of virtual agent networks, designed to connect together a range of broad-scope bots via a unified interface.

Advanced NLU will allow each individual chatbot to identify when it needs to redirect the user to a more appropriate bot and seamlessly handover without interrupting the customer experience. Gartner recognizes that **the potential market impact of this innovation is significant**, citing the growing need for governments and public sector organizations to find innovative ways to further improve citizen digital experiences.



## The Finnish government

The world's first Virtual Agent Network was implemented by the Finnish government in collaboration with Accenture and boost.ai. It connects three separate chatbots for taxation, immigration and company registration via a single chat window in order to significantly decrease friction for foreign entrepreneurs setting up a new business in Finland.

**Did you know:** The three virtual agents and the underlying network technology were developed, piloted and launched in just six months.



# 8) Conversational AI will augment human workers, not replace them

#AIAssistedHumanChat

Gartner predicts that by 2022, **70% of white-collar workers will interact with conversational platforms on a daily basis.**

This is because we are beginning to see a sharp uptick in the adoption of virtual agents in areas outside of traditional customer service/support settings.

Increasingly, businesses are turning to conversational AI to help streamline internal systems. Opting to deploy chatbots for IT and HR applications, that give employees access to information instantly, without tying up their colleagues with repetitive questions.

Companies on the leading edge of this internal automation revolution are also employing conversational AI to augment existing support staff to help boost employee efficiency.

Customer service agents can query a virtual agent for important product or policy information without needing to put a customer on hold. This ensures consistent answers and allows workers access to a wealth of information instantly without resorting to calling the back office or wading through documentation.

## Tryg

Denmark's largest insurance company has no fewer than 10 virtual agents on the boost.ai platform, across three markets. One of the most interesting implementations is RoSa, an internal bot that helps customer service staff to find and reference complicated policy information without the need to put customers on hold.

**Did you know:** RoSa assists more than **750**

Tryg employees daily and can answer questions on over **1,200** topics with a **95%** success rate.

Tryg 



[Watch case study](#)



# 9) Virtual agents will become less informational and more transformational

## #NextLevelIntegrations

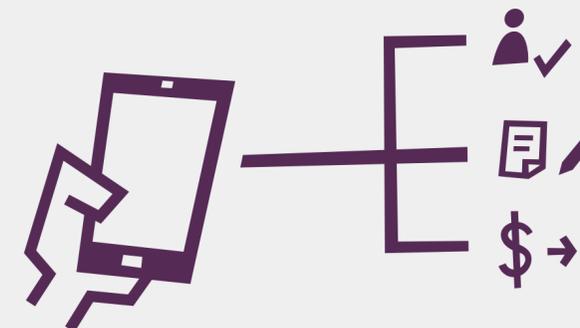
By interfacing with API integrations, virtual agents will move away from being purely informational to becoming proactive tools that empower self service.

Acting as a front-end for powerful back-end systems like **Robotic Process Automation** (RPA) and co-browsing technologies, conversational AI is the perfect complement. A virtual agent provides a user-friendly, always-available interface that customers and employees can interact with to perform any number of automated tasks:

- Banks will allow customers to log in to their accounts via a virtual agent and complete transactions like funds transfers and personalized mortgage quotes based on their financial history
- Insurance companies will incorporate claims-handling functionality into their chatbots. Integrating with **Optical Character Recognition** (OCR) to allow scanning and uploading of documents into the chat panel to expedite the claims process
- Mobile and broadband carriers will make it easier for customers to upgrade and modify plans. It will be possible to log into an account via a virtual agent and be given recommendations of more appropriate products based on usage trends analyzed by AI

## Top 5 virtual agent integrations for 2022:

- Robotic Process Automation (ie UiPath)
- User authentication
- Optical Character Recognition (OCR)
- Live chat platforms (ie Zendesk, Puzzel, Genesys)
- CRM platforms (ie Salesforce)





# 10) Chatbot design will become increasingly evidence-based

## #DataDrivenDesign

According to data from Cognizant, **nearly one quarter of consumers** (22%) trust product recommendations they receive via a chatbot. This is encouraging, but in order for this number to increase it will be necessary to move chatbots beyond the basic design principles that they currently rely on.

Using evidenced-based design to inform how a virtual agent functions - from its personality and avatar to its placement on a company's website - can have a significant impact on how users perceive its usefulness. Vendors will need to offer more than just the best technology if they hope to compete in a crowded marketplace. This means providing deep analytics tools as well as best practices and comprehensive e-learning material so that the brands using their solutions are able to utilize the technology to its full potential.



## Riihimäki city

The Finnish city of Riihimäki used data-driven design to improve adoption rates of its virtual agent Kunta-Kati by 1,000%. The bot was integrated into the website's search functionality so that visitors would be directed to the chat panel, rather than a page of results, and have the opportunity to ask follow-up questions.



**Did you know:** Kunta-Kati was the first municipal virtual agent to launch in Finland back in 2019. Today the bot can answer questions on over 1,500 topics.



# What's next for conversational AI?

Predictions 2022 - 2026

**2022**



Chatbots to save nearly \$0.70 per customer interaction for businesses across different domains

- CNBC

**2023**



Conversational AI will save consumers and businesses over 2.5 billion customer service hours

- Juniper Research

**2024**



77% of customers say chatbots will transform their expectations of companies

- Salesforce

**2025**



Customer service organizations that embed AI in their multichannel customer engagement platforms will elevate operational efficiency by 25%

- Gartner

**2026**



The global conversational AI market to be worth \$18.4 billion with a CAGR of 21.8%

- Markets and Markets



# Glossary of terms

## A

**A-POC (Accelerated Proof-of-Concept)** - 2-3 day intensive workshop held at a client's premises to determine the viability of boost.ai solution.

**Algorithm** - A set of operational commands or operational steps that can be used to solve a problem.

**API (Application Programming Interface)** - A set of tools, protocols and definitions used to build application software.

**AI (Artificial Intelligence)** - The development of computer systems that require human-like intelligence, including speech recognition, language translation and understanding, and decision making.

**AI-assisted human chat** - An application of Conversational AI where a Virtual Agent works behind-the-scenes to provide human support staff with helpful answers that can be given to customers.

**ASU (Automatic Semantic Understanding)** - A proprietary algorithm developed by boost.ai that is layered on top of other Deep Learning algorithms to enhance a Virtual Agent's ability to understand a customer request. ASU improves key language understanding pain points including complex sentences, multiple intents and can reduce false positives by up to 90%.

## B

**boost.ai** - Norwegian software company founded in 2016 specializing in Conversational AI.

**Bots (see Chatbot)** - Abbreviation for an autonomous program on a network (especially the Internet) that can interact with computer systems or users.

## C

**Channel** The medium for which customers connect with a business, i.e. phone, email, chat, etc. Conversational AI exists primarily on the chat channel, including platforms such as Skype, Slack, Messenger and more.

**Chat log** - Collected data of human-to-machine interactions.

**Chatbot** - An autonomous program on a network (especially the Internet) that can interact with computer systems or users. Chatbots are considered rudimentary versions of Virtual Agents due to their lack of 'true AI' and reliance on prompts and button-based systems.

**Cloud** - A network of connecting computers that share data and processing resources via the Internet.

**Context** - Relevant information that Conversational AI extracts from a user conversation and can be used to provide responses or complete tasks.

**Conversational AI** - The synthetic brainpower that makes machines capable of understanding, processing and responding to human language. Applying this technology in Virtual Agents helps companies with high volumes and frequency of online customer traffic improve interactions happening in their direct messaging channels.

**Conversation** - A logic diagram or decision tree of a scripted conversation. Can either be linear or branching, with multiple outcomes and answers.

**Customer experience (CX)** - A phrase used to describe the relationship a customer has with a business. Customer experience refers to the total of all experiences the customer has with the business, based on all interactions and thoughts about the business.

## D

**Deep learning** - A subset of Machine Learning where artificial neural networks learn from large data sets in order to improve.

## E

**Enterprise-grade** - Description of the components and capabilities of boost.ai's Conversational AI platform that are designed for large business, companies and organizations.

**Entity** - Fields, data or words that are designated as important for a Virtual Agent to complete a request. Examples include location, date, time, numbers, etc.

**Entity extraction** - The process by which Conversational AI identifies important words in a user request and matches them with relevant Intents in order to deliver a correct response.

## H

**Hosting** - Available hosting options for boost.ai clients include on-premises and in the cloud via Amazon Web Services (AWS)

## I

**Intent** - Important topics that define what a user wants when interacting with a Virtual Agent. Intents are often combinations of nouns and verbs: e.g. Order a credit card, Find my invoice, etc.

**Interaction** - Text or spoken communication between a human and a Virtual Agent.

## M

**Machine learning (ML)** - A process in which a computer learns from experience rather than programming. This is achieved by gathering data and identifying insights on its own, without the aid of a human.

**Multiple intents** - Complex user requests that contain more than one intent that Conversational AI must process and prioritize.

## N

**NLP (Natural Language Processing)** - A subfield of linguistics, computer science, information engineering, and artificial intelligence concerned with the interactions between computers and human (natural) languages, in particular how to program computers to process and analyze large amounts of natural language data.

**NLU (Natural Language Understanding)** - The comprehension by computers of the structure and meaning of human language (e.g., English, Spanish, Japanese), allowing users to interact with the computer using natural sentences.

## P

**Pilot** - Early development stage of a Virtual Agent where it is deployed to a controlled user group for testing.

## R

**Response** - A Virtual Agent reply based on user input.

## S

**Sentiment analysis** - The ability for Conversational AI to understand user mood during an interaction. This is assigned a score that can subsequently be used to trigger specific conversation flows, improve the model or seamlessly transfer to human chat agents as necessary.

**Structured data** - Information that is organized to a large degree and easily searchable from within a database.

**Synonyms** - Alternatives and variations to intents that can be added to a Virtual Agent's synonym list allowing it to understand a greater range of topics and enhancing its natural language understanding capabilities.

## T

**Test data** - Data that has been specifically identified for use in testing Conversational AI.

**Training data** - An initial set of data used to help a program understand how to apply technologies like neural networks to learn and produce sophisticated results

## U

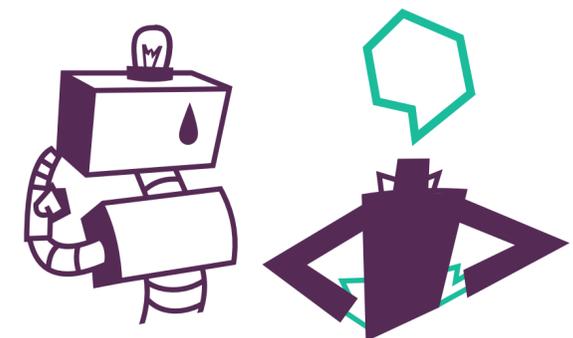
**Use case** - Specific ways in which a company or organization can implement a Virtual Agent to achieve its desired business goals.

**Unstructured data** - Information that lacks consistency and does not fit a pre-defined data model.

## V

**Virtual agent** - An advanced Chatbot that uses Conversational AI to deliver real-time customer service. Virtual Agents use Natural Language Understanding and Deep Learning algorithms to automate customer interactions by either efficiently answering questions, performing tasks on a user's behalf or transferring to customer support when identifying a necessity to do so.

**Virtual agent network (VAN)** - A proprietary technology from boost.ai that combines multiple separate virtual agents in a network configuration that can be accessed via a single chat window.



# Drowning in customer service inquiries?

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