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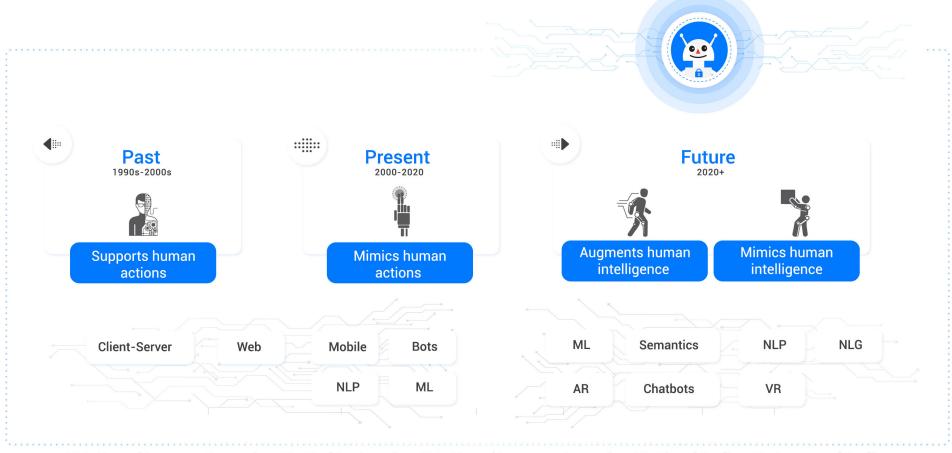
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Part I

The Rise of the Chatbot

Moving towards Artificial Intelligence



NLP: Natural Language Processing ML: Machine Learning NLG: Natural Language Generation VR: Virtual Reality AR: Augmented Reality

Al tools such as chatbots are set to evolve further as they imbibe an augmented ability to mirror human intelligence. And as they become smarter, bots will undertake and perform more intelligent and complex tasks.

This will further spur AI's adoption at an even higher level across functions — even across areas such as planning, budgeting, analysis and decision making that were perceived to always remain within the preserve of only humans. The world's leading companies are already seeing these benefits while using the SnatchBot platform.

Chatbot Definition

A chatbot is an assistant that communicates with you through text or voice messages, a virtual companion that integrates into websites, applications or instant messengers and helps organisations to get closer to customers. Such a bot is an automated system of communication with users. Plugins such as SalesForce can also be integrated into chatbots.

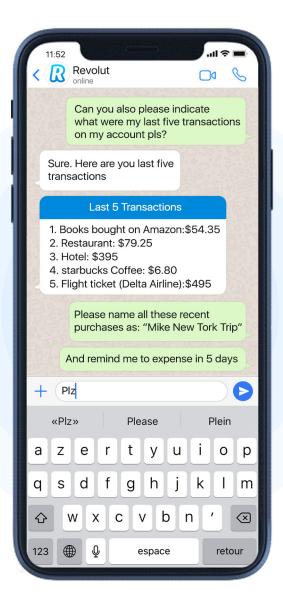
Why does a business need chatbots? Reasons include the elimination of routine tasks and the simultanteous processing of multiple requests froms users. In addition, instant reponses from a chatbot to user requests helps gain the customer's loyalty.

Consumers also benefit from chatbots and they are getting increasingly interested in this technology.

The process of building, testing and deploying chatbots can be done on cloud-based chatbot development platforms offered by cloud Platform as a Service (PaaS) providers such as SnatchBot.

The SnatchBot platform provides Natural Language Processing, Artificial Intelligence and Mobile Backend as a Service for chatbot development.

Today, small-to-mid-to large companies are utilizing chatbots on apps like Facebook Messenger to provide customer service through two-way conversational experiences.



Chatbots Understand Language & Context

Reinforcement Learning

The ability to accept user "corrections" over time to improve the relevancy of responses.

Machine Learning

Learns how to respond to the user by analyzing human agent responses.

Intent Recognition

The ability to "guess" at what the user means even if the phrase is unexpected.

Natural Language Processing

The ability to "read" or parse human language.

Entity Recognition

Reason

Interact

Understand

Perceive

An understanding that some terms can be grouped into generalized categories (entities). Thus "February2" is recognized as a date.

Dialog Management

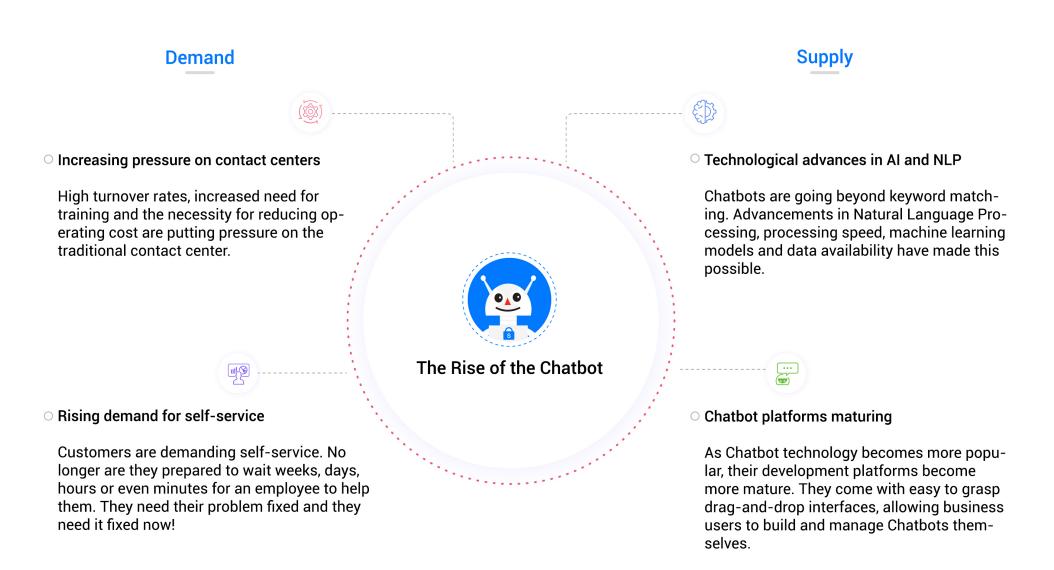
The ability to follow conversation history, recall and memorize over a single conversation, and across conversations.

Q&A Pairs / Scripts

Are used to deliver facts, details or solutions to queries or requests.

Market forces driving Chatbot opportunities

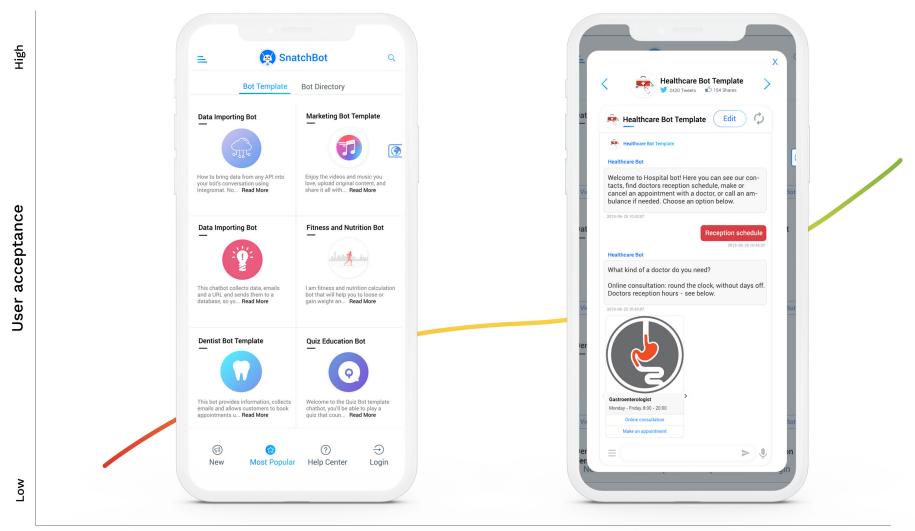
Developments at both the side of supply and demand drive the added value of Chatbot technology.



Towards User Acceptance

Low

Due to improvements in Natural Language Processing, Chatbots are shifting from command-driven towards more intelligent, conversational driven 'Virtual Assistants', which are much better at determining context and user internet.



Evolution of Conversational AI

Chatbots are like apps that users interact in a conversational way, throught text or speech. As technology advances, Chatbots are able to better understand both written and spoken text.

Chatbots may be as simple as basic pattern matching with a response, or it may be a sophisticated weaving of artificial intelligence techniques with complex conversational state tracking and integration into existing business services.

Scripted Chatbots

- Basic and scripted.
- Looks for key phrases & give pre-defined responses.

Intent Recognizers

- Machine learning capabilities.
- Greatly improved understanding of user intent, relationships between words are taken into account to extract meaning from a request.

Virtual Agents

- Able to understand what a human is trying to achieve and can hold an end-to-end conversation.
- Connects to other systems to leverage user data and insights.
- Learns and improves over time.

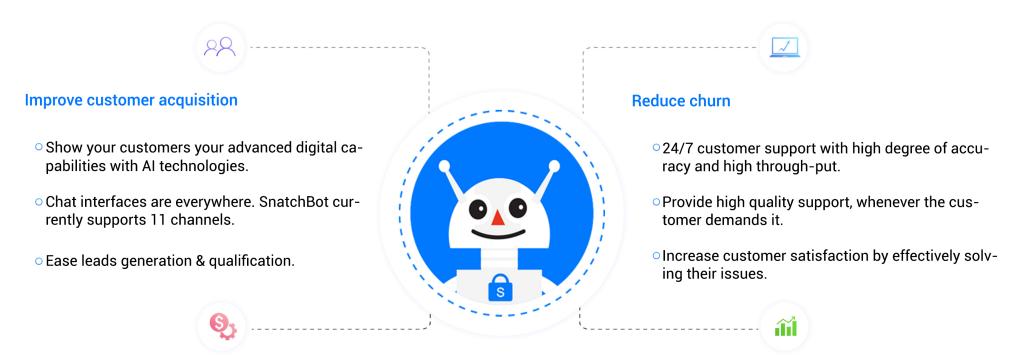
Human-like Advisor

• Genral AI, also known as human-level AI or strong AI.

The type Artificial intelligence that can undrestand and reason its environment as a human would.

Value throughout your organization

Chatbots are key in your organization's digital journey and in engaging the next-generation, intelligent customer.



Increase revenue per user

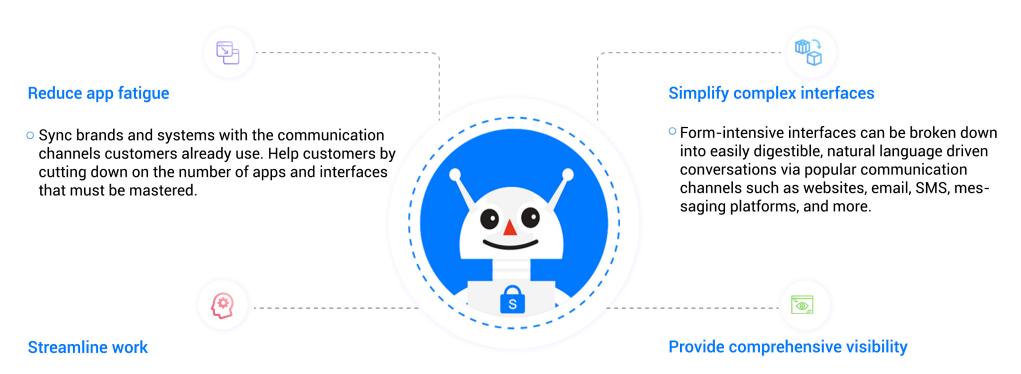
- Save human resources for qualitative tasks while chatbots can answer repetitive tasks.
- Understand your client base more efficiently by generating analytics.
- Analyze and act on the customer's preferences and dislikes.

Minimize cost to serve

- Short payback period with low integration costs and High potential ROI.
- Mitigate security risks, Scale up your operations, 24/7.
- Cost reduction opportunity.

Value throughout your organization

We see more and more business applications where chatbots with self-learning capabilities can interact with humans in a more natural way. We can also observe growing sophistication and accuracy of AI which makes chatbots more robust and suitable for a broader range of applications.



 Let employees get routine tasks done in less time - enhancing productivity and efficiency. Allows for better resource allocation and decreases calls and emails to support services. Analytics generated from chatbots can provide unmatched visibility into customer and employee behavior.

Chatbot statistics

Mobile Messaging Apps Statistics and Trends

5 Billion users on messaging apps

6 of the Top 10 most used apps globally are messaging apps

65% of mobile users are experiencing app fatigue

75% of users would rather use a conversational interface instead of a phone call or loading another app Gartner predicts that brands offering personalization will outperform competitive brands by 35% by 2022

Chatbots are becoming Prominent

80% of people say a business should be avaible 24/7

78% are more likely to shop with a business the can message

75% say engagement through messaging is ROI positive. 80% say it reduces costs

By 2022, banks could automate up to 90% of their interactions with chatbots

Chatbots could save \$174 Billion across Insurance, Financial Services, Sales, and Customer Service Average time for a company to respond to a message is 10 Hours while bots answer instantly

Businesses are following customers into messaging platforms

By 2021, over 80% of businesses are expected to have some sort of chatbot automation implemented According to Gartners, by 2022, more than 20% of IT hires in customer services will most likely write scripts for bot interactions About 95% of businesses in 2019 stated that they were happy with the way that chatbots were helping their businesses. The average one-month retention ratio for chatbot use stood at 60-80% in 2019, compared with 20-40% for apps



Chatbot Use Cases per Sector

Brands

- Entertainment
- Sports Team
- Event Assistant
- Artists
- Media
- Publishers

E-Commerce

- Business Purchases
- Shop Locator
- Shopping
- Product Information
- Food Delivery
- Personal Shopper

Customer Service

- Utility
- Insurance
- Retailers
- Telecom
- Call Centers
- Financial Institutions

Healthcare

- 24/7 Help Support
- Website Guide
- Home Care Assistant
- Patient Portal
- Scheduling Assistant
- Virtual Caregivers

Financial & Legal

- Retail banking
- Asset Management
- Private Banking
- Fintech
- Finance
- Markets and Exchanges









Hospitality

- VIP Concierge
- Restaurant
- Hotel
- Events
- Bar
- Travel













Education

- Teacher Assistant
- Student Centered Feedback
- Automatic Essay Scoring
- Spaced Interval Learning
- Student Rating
- Course Assessment









IOT

- Smart Homes
- Heart Monitors
- Smart Cities
- Smart Devices
- Connected Cars
- Wearables

IT

- Self Service Support
- Collect Network Data
- Report Incidents
- Remedy Technical Issues
- IT Service Management
- Report to IT Staff

Insurance

- Care Advice

- Account Updates
- Virtual Assistant
- Track Policy Updates
- Manage digital Claim
- Provider Searches

Government

- Civic Engagement
- Housing Services
- Gov-Related News
- City Info Request
- Conduct Polls
- Public Health

Airline

- Real Time Promotions
- Travel Advice
- Automated Customer Service
- Activity Notifications
- Booking Process
- Real-Time Support

Employee/B2B Chatbot Use Cases

Travel & Expense

- Expense reports
- Travel policy compliance
- Travel booking
- Expense capture
- Travel approvals

Human Resources

- HR & payroll functions
- Employee FAQs
- Employee on-boarding
- Time and attendance
- · Announcements and alerts

IT Services

- Password/token reset
- Issue reporting
- Automate service requests
- Asset management
- Hardware procurement
- Network issues



Manufacturing

- Safety checks
- Machine maintenance
- Supply chain
- Announcements and alerts
- Ordering parts

Sales

- Lead and Contact Management
- Create new lead or contact
- Update contact details
- Assign lead to sales representative
- Convert lead to contact
- Assign contact to account

Improve Internal Process Productivity

- · Get notified when new lead is assigned to account
- Get notified when new account is assigned to an employee
- · View contact details
- Create appointment with lead or contact
- Get notified of upcoming appointments
- View daily appointments and follow-up activities
- Send email to contact with support for templates
- Quote Management
- Account Renewals

Return On Investment (ROI) for Companies using Chatbots

Large eCommerce Company

- \$500M annual sales from web and mobile
- · Average transaction value: \$100

| | improvement in conversion % | No. of additional transactions | Potential Revenue Increase |
|--------|-----------------------------|--------------------------------|-------------------------------|
| Year 1 | 1% | 50K | \$5M |
| Year 2 | 2% | 100K | \$10M |
| Year 3 | 4% | 200K | \$20M |
| Year 4 | 7% | 300K | \$35M |
| Year 5 | 10% | 500K | \$50M |



E-Commerce Company

Example of Direct-to-consumer ROI

As depicted on the left, a large E-commerce company with \$500 Million annual sales with an average transaction of \$100, can significantly increase its revenue using the SnatchBot platform.

By improving the customer experience through chatbots, this e-commerce company can increase its conversation rate year after year. A 1% increase in conversion rate will be translated into a \$5 Million potential revenue increase in just one year. The conversion rate will improve year on year and could potentially generate \$120 Million over 5 years.

Potential revenue increase of \$120 Million over 5 years

Company Sales Team (100 reps)

Initiative: Sales Automation

- Number of Sales Opportunities closed per rep/year=20
- · Average transaction value = \$75,000
- Average time wasted on CRM admin tasks per rep/week = 4 hours



Airline Company

Example of Workforce ROI

Each person spends on average 4 hours per week on admin. Using a chatbot, the same employee could use those 4 hours to increase sales turnover.

Given the employee does 20 deals a year, with the average deal value being \$75k, this generates \$1.5m. With the chatbot allowing 10% more deals, each employee averages an extra \$150k: across the 100 sales staff, that's a gain of \$15 Million.

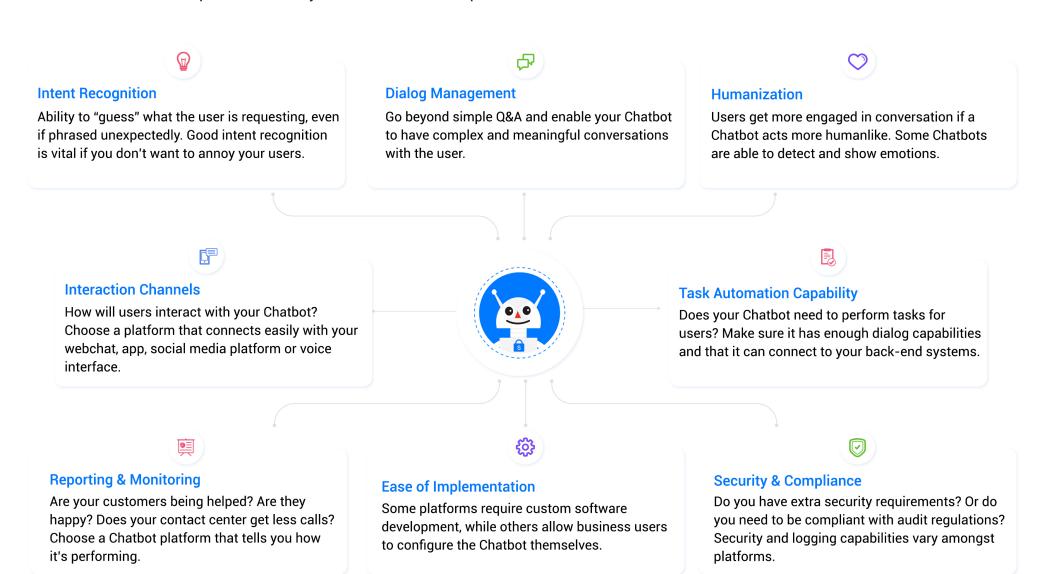
Total Net Productivity Lost Without Chatbot = \$15 Million.

Part II

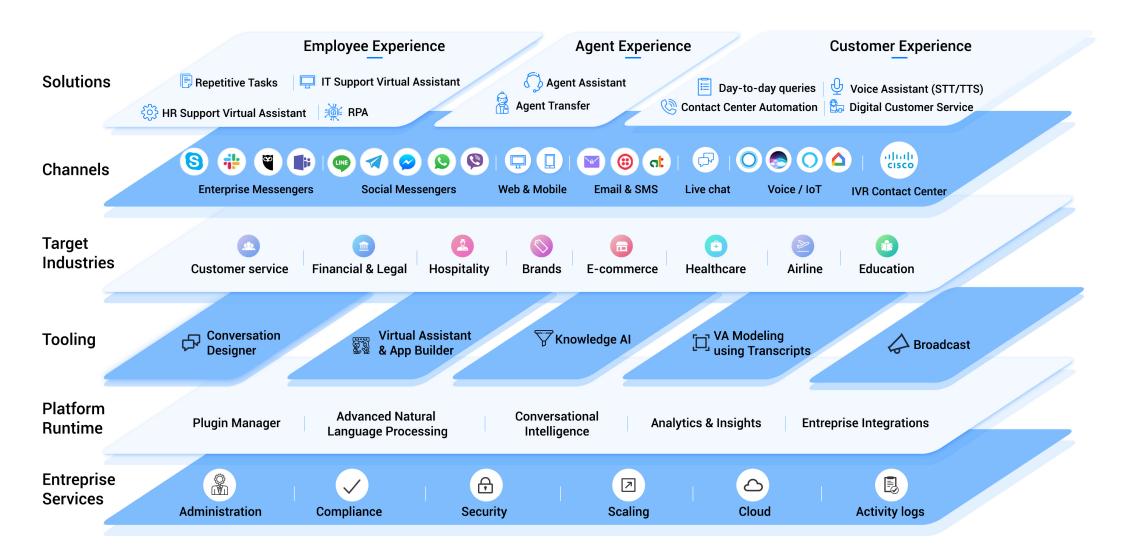
Architecting a chatbot on the SnatchBot platform

Chatbot Characteristic Requirements

Below are a number of characteristics that should be taken into account when choosing the suitable platform to implement with your Chatbot. SnatchBot Omni-channel platform already fulfil all the below requirements and more.



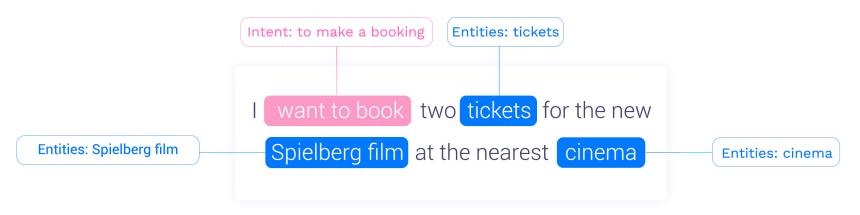
SnatchBot Platform Component Architecture



Proprietary, Cutting-Edge NLP Technology

SnatchBot proprietary, state-of-the-art, Natural Language Processing (NLP) capabilities enable chatbots to understand, remember and learn from the information gathered during each interaction and act accordingly. SnatchBot offers its NLP technology in 160 languages.

The NLP breaks down a sentence to get to the meaning of it. This is done by distinguish between Entities and Intents.



I can book two cinema tickets for 8pm at the Savoy for £18. Please press 'yes' to confirm.

Users need to create several NLP models, one for every Entity or Intent that the chatbot will need to identify. SnatchBot provides an engine that uses ML algorithms and queries training data to determine the best match for a user's intent, and search for patterns to train and tune the NLP engine. The engine allows clients with large sets of training data to leverage this information from the start. It also reviews user history to correct failed utterances and false positives.

The SnatchBot platform also offers what is sometimes termed supervised Machine Learning. In the light of data from your conversations, users can spot where the chatbot needs more training and input the problematic sentences users have identified, along with the correct result that the bot should arrive at when examining the sentence.

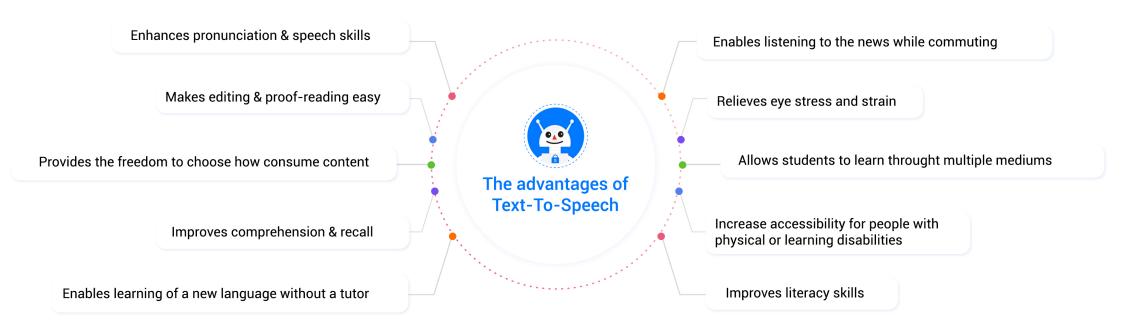
This supervised Machine Learning will result in a higher rate of success for the next round of unsupervised Machine Learning. SnatchBot provides pre-trained NLP models. These are state-of-the-art Entity-seeking models, which have been trained against massive datasets of sentences.

Automatic Speech Recognition Engine

SnatchBot offers its text-to-speech (TTS) technology in over 60 languages which allows users to play the chatbot's messages in audio format that can be a benefit for users who are visually impaired or prefer to listen to the chatbot's messages than strain their attention on a screen that might be quite small, depending on their device.

The SnatchBot-building platform incorporates natural language processing features into the process:

- Training of text-to-speech systems is dependent on the availability of very specific sets of data. Our in-house system also provides functionality for converting words into the English alphabet via a transliteration model, and using the English text-to-speech model in that way makes text-to-speech functionality available for the rare languages.
- Sometimes, in the text provided for TTS for one language texts can be written in other languages (like a company name written in English within a Spanish text. In order to solve this issue, the system executes detection of different languages and applies appropriate conversions.

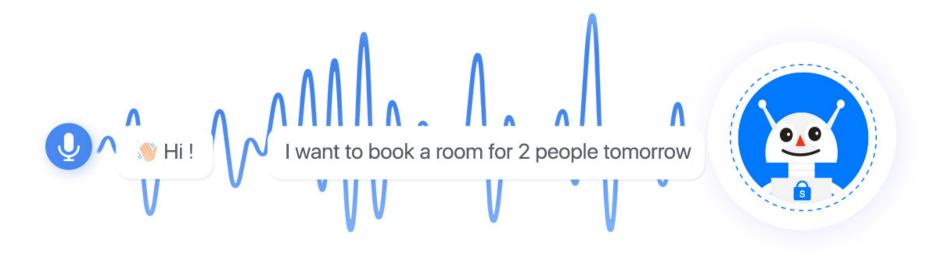


SnatchBot Speech-To-Text in-house Technology

Users on the SnatchBot platform can now accurately convert speech into text powered by SnatchBot's AI technologies recognizing more then 120 languages and variants.

Users can build natural and rich conversational experiences by giving users new ways to interact with their product by building engaging voice and text-based conversational interfaces. Companies can now connect with your users on their website, mobile app, Facebook Messenger, WhatsApp and other popular platforms and devices.

SnatchBot incorporates its proprietary machine learning expertise such as Speech-to-Text, Text-to-Speech and Automatic Speech Recognition. Apply the most advanced deep-learning neural network algorithms to audio for speech recognition with unparalleled accuracy.



Our technology's accuracy improves over time as we improve the internal speech recognition technology.

With Speech-to-Text Technology companies can:

- Transcribe your content with accurate captions
- Deliver better user experience in products through voice commands
- Gain insights from customer interactions to improve your service

Robotic Process Automation (RPA)

RPA is a tool or method of automating manual, time-consuming, and complex, rule-based workflows using bots. RPA bots utilise the user interface to capture data and manipulate applications just like humans do.

SnatchBot now offers automation tools such as Google, desktop or Web automation tools.

SnatchBot provides RPA bots that can be used for business processes (back-end related) that can perform various tasks and transactions in databases, enterprise systems, and websites more efficiently than humans and other automation solutions by reducing cycle times.

They are often used to either replace the people who interact with these applications or replace the responsibility to interact with them.

SnatchBot can also provide robots that are traditionally used for back-end administrative IT work, can perform various tasks and transactions in databases, enterprise systems, and websites more efficiently than humans and other automation solutions by reducing cycle times.

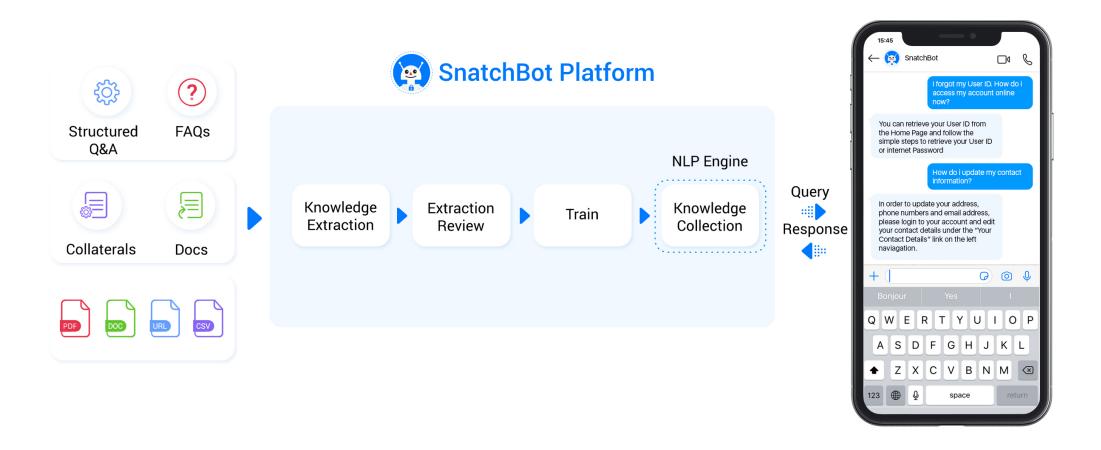
Like chatbots, RPA can be a powerful tool for digital transformation by providing the following benefits:

- Reduce labor & operational costs
- Increase processing speed
- o Improve customer experiences: Extend service hours

- O Reduce human errors: Rapid, non-invasive integration & deployment
- Provide comprehensive operational visibility
- Increase security & compliance

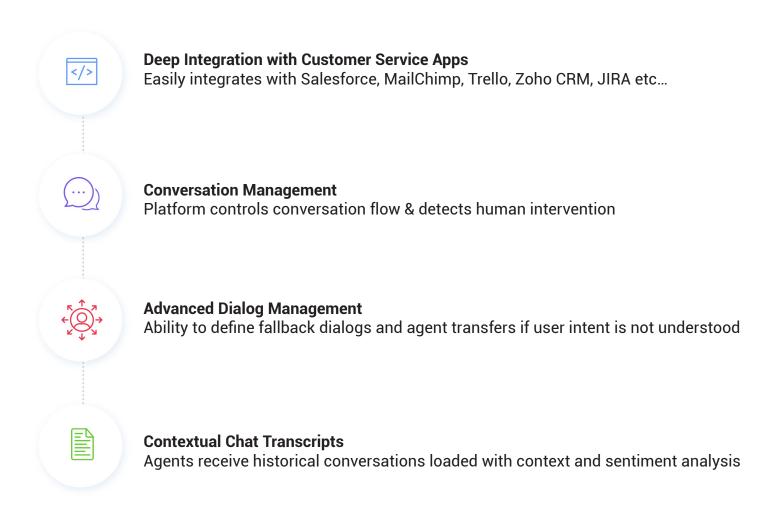
Knowledge Discovery & Extraction

Extract, Review, Train and Publish FAQs from URLs, Structured & Unstructured Documents in minutes with Zero Coding

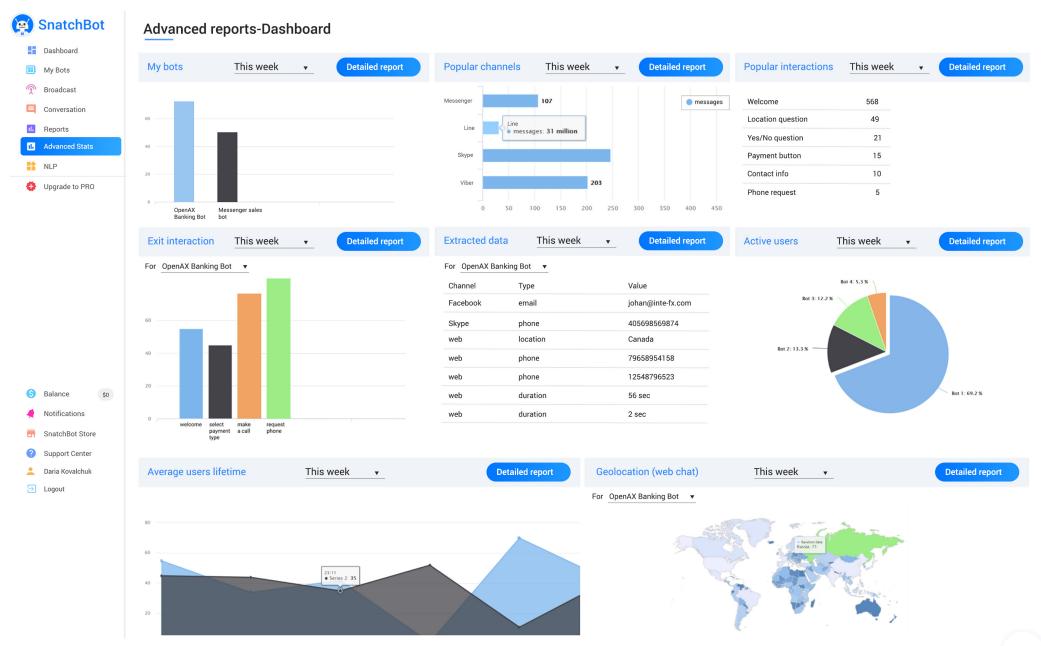


Live Agent Transfer

SnatchBot agent transfer capabilities automates first-line of customer support and can seamlessly hand off dialogs, based on conversation context to human agents in real time.



SnatchBot Advanced Analytics Dashboard



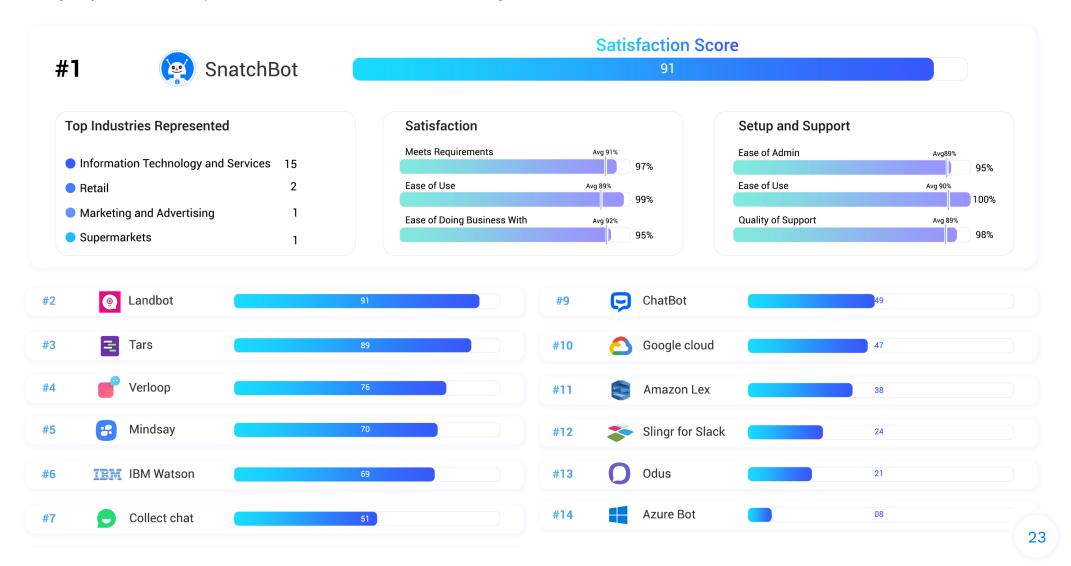
SnatchBot Pricing

| Price | \$30 per month | \$79 per month | \$149 per month | \$199 per month | \$249 per month | \$449 per month | 749 per month | \$999 per month | Entreprise |
|------------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|------------------|--------------------|-------------------------------|
| Limit of messages | 10,000 | 25,000 | 50,000 | 75,000 | 100,000 | 250,000 | 500,000 | 1,000,000 | Unlimited |
| Cost per message | \$0.0030 | \$0.0030 | \$0.0030 | \$0.0027 | \$0.0025 | \$0.0018 | \$0.0015 | \$0.0010 | |
| You save | | | | -10% | -17% | -40% | -50% | -67% | Contact us for a special offe |
| Each extra message | \$0.00060 | \$0.00060 | \$0.00060 | \$0.00054 | \$0.00050 | \$0.00036 | \$0.00030 | \$0.00020 | ioi a speciai one |
| Advanced Features | | | | | | | | | |
| Customize Bot design | ② | ② | | ⊘ | ② | ② | ② | ② | ② |
| Remove SnatchBot branding | | ② | ② | ② | ⊘ | • | ⊘ | ② | ② |
| Premium support | ② | ② | ② | ⊘ | ⊘ | • | • | • | Personal manag |
| Advanced analytics | | ② | | ② | ② | ② | ② | ② | |
| Premium plugins | | ② | | ② | • | • | • | • | ② |
| Premium interaction features | | ② | | ② | \bigcirc | • | ⊘ | ② | • |
| Translate API key | | ② | | ② | ② | ② | ② | ② | ② |
| Maps API key | • | ⊘ | • | | • | • | • | • | Ø |
| Integration | | | | | | | | | |
| WhatsApp | | ② | | ② | O | • | • | • | |
| Cisco (coming soon) | | | | | | | | ② | © |
| Custom integrations | | | | | | | | | ② |
| New Reseller | | | | | | | | | |

SnatchBot races ahead of all other Chatbot Platforms

Which is the best chatbot platform according to unbiased user reviews? Here at SnatchBot we are confident we are the right chatbot platform solution for everyone, from small business to giant enterprise.

The scrupulous G2, who base their ratings on real users and pride themselves on offering a solution to the crisis of trust created by the paid market in software comparison articles, rate SnatchBot as the chatbot platform which has the highest overall satisfaction score, surpassing by a long way other chatbot platforms like IBM Watson, Chatfuel, Google cloud, Amazon Lex and Azure Bot.



Security & Compliance

SnatchBot follows the strictest guidelines for security and compliance, regardless of industry. From personally identifiable customer information to proprietary business data, SnatchBot allows companies to meet strict requirements passed down from local, state, and federal regulatory and governing bodies. All components are hosted across two Amazon Web Services availability zones. These services are constantly monitored to provide High Availability.



Encryption Method

Provides full encryption of bot messages on the server and during transit and uses HTTPS over Transit Layer Security (TLS) using AES 256 standard. All application data at rest in database, Search Indexes, and SAN storage is encrypted. The platform also provides full encryption of all bot messages during transit.



Encryption Key Management

Snatchbot uses two sets of keys: a master key and enterprise data keys. Each enterprise is assigned a data key, and enterprise-specific data keys are kept encrypted using the master key. The master key is provisioned and stored using an HSM-backed Key Management Service. Enterprise data keys are rotated periodically or on demand.

Enterprise administrators can manage data keys from the Admin Console. The administrator can also view the key meta information and rotate the key on demand if required. The newly generated data key will be used to encrypt the data from that point of time onwards.

Security & Compliance

Security Protocols & Compliance Reporting



Rigorous Penetration Testing

The servers are regularly scanned for vulnerability and monitored by intrusion detection and file integrity agents and combine exhaustive internal security practices with third-party penetration audits, run on a periodic basis, to ensure data integrity, security, and that industry-best practices are consistently followed.



Data Center

SnatchBot's services are hosted within an Amazon Web Service environment. This environment maintains multiple compliance certifications, including ISO2001, PCI, and SOC.





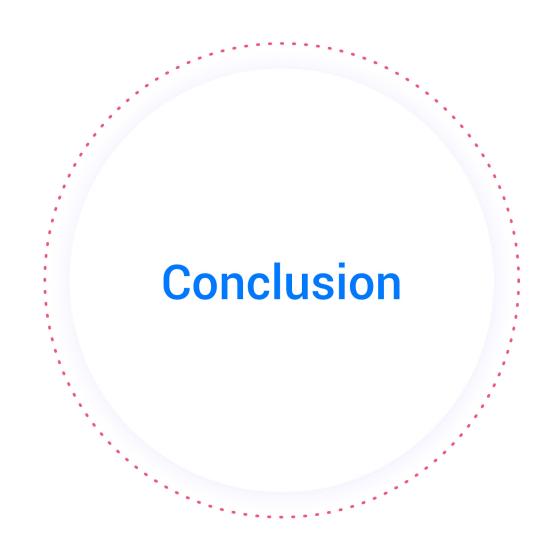
Service Organization Control Report (SOC)

SnatchBot is SOC2 Type 1 compliant.



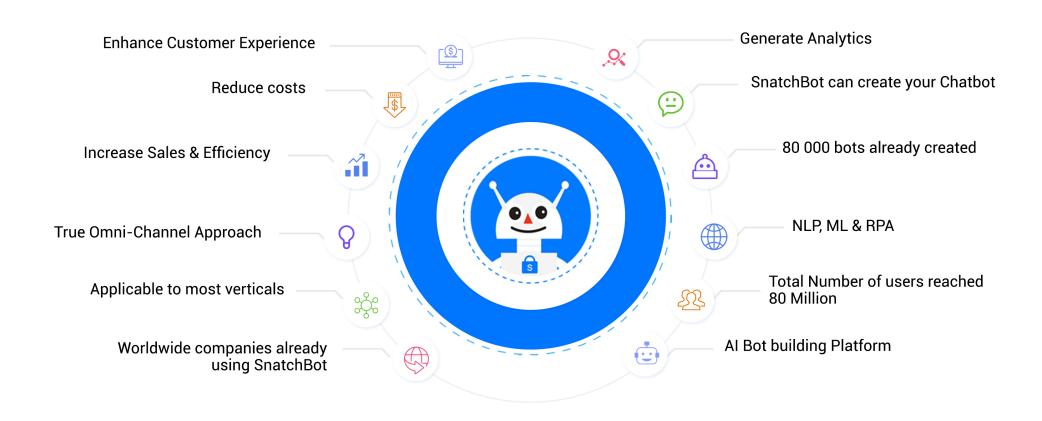
Cloud

Server components across the architecture tiers have built-in redundancy, load balancing, auto-scaling and replications to withstand failures.

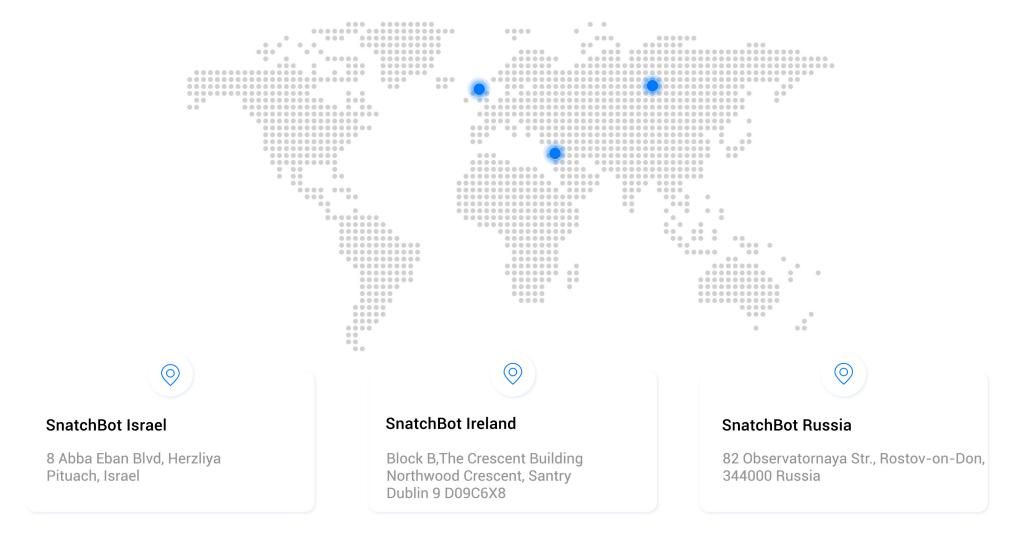


Conclusion

SnatchBot enables companies to add AI technologies at no cost with no coding skills required to bring them to the forefront of a real digital customer strategy



Office locations



Contact us: webuildforyou@snatchbot.me

















Natural Language Processing consists of 5 steps

1. Lexical analysis. The lexicon of a language is a collection of words and phrases in a language. The computer analyse the text and divide it into paragraphs, sentences and words.



2. Syntactic analysis: the computer analyses the grammatical role of each word in a sentence and identifies the relationship between each word.



Natural Language Processing consists of 5 steps

3. Semantic analysis, the computer checks the intrinsic meaning of the words, so that means looking up the meaning of the words as stated in the dictionary. A word can have several meanings, so the computer also needs to map this with the syntactic structures analysed in the previous step to derive the correct meaning.

fox

1. A carnivorous mamma of the dog family with a pointed muzzle and bushy tail, proverbial for its cunning.

Exemple

The fur of a fox.

- 2. A cunning or sly person: 'a wily old fox'
- 3. North American informal A sexually attractive woman.

4. **Discourse integration**, which means looking at the meaning of a sentence compared to the sentence that comes before it.

The quick brown fox jumps over the lazy dog.

He jumps very high.

5. The **pragmatic analysis** involves reinterpreting what is said as what was actually meant. This involves taking knowledge from the real world into account.