QUICK TAKE
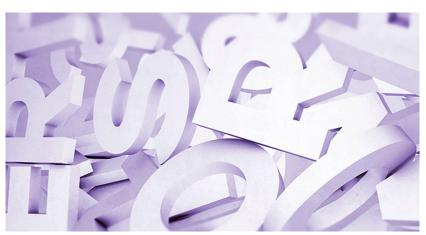
10 EMERGING STARTUPS IN NATURAL LANGUAGE PROCESSING (NLP)

KEY TAKEAWAYS

1) In this report, we have profiled 10 NLP startups working in the areas of natural language search, conversational commerce, automated speech recognition and content analysis, which have the potential to disrupt the retail industry.

2) NLP is a branch of Artificial Intelligence, and it forms the backbone of chatbots, as well as the core element supporting machine translation, information extraction and summarization.

3) The global NLP market was valued at $277.2 million in 2015, and is expected to reach $2.1 billion by 2024.

WHAT IS NATURAL LANGUAGE PROCESSING?

Natural language processing (NLP) is concerned with the interactions between humans and computers using natural human language, i.e. the way in which humans talk with each other. NLP is a branch of artificial intelligence (AI), as well as computational linguistics. It deals with analyzing, understanding and generating languages that human use naturally.

Natural human language can be highly ambiguous—humans can interpret it without problem, but it can be difficult for computers to interpret. As the capabilities of NLP advance, it will become key to bridge the gap between human communication and digital data. NLP is the backbone of chatbots, and also the core element supporting machine translation, information extraction and summarization.

The global NLP market was valued at $277.2 million in 2015 and is expected to reach $2.1 billion by 2024, according to a study by Tractica, a market intelligence company. It was also unveiled that the e-Commerce sector was the second-largest end-user segment, accounting for 12% of the market in 2014.

Figure 1. 10 NLP Startups Profiled

Company	Area
AddStructure	Natural Language Search
Angel.ai	Natural Language Search
Klevu	Natural Language Search
Twiggle	Natural Language Search
Api.ai	Automated voice recognition
Mindmeld	Automated voice recognition
DigitalGenius	Automated customer service
Inbenta	Automated customer service
Satisfi	Automated customer service
Netbase	Social media analysis

ADDSTRUCTURE

AddStructure

AddStructure offers a white-labeled natural language understanding (NLU) platform for retailers and brands. It helps retailers implement natural language search on their own platform, and is compatible with multiple retail channels, including organic, on-site, mobile, voice and chatbot.

Year Founded	2014
Key People	Jarrod Wolf (Co-Founder) William Underwood (Co-Founder)
Team Size	1-10
Location	New York, US
Funding	$230,000
Key Investors	Matchstick Ventures, Techstars

During the Target + Techstars retail accelerator Demo Day, AddStructure Co-founder Jarrod Wolf specifically mentioned that AddStructure can help retailers take on Amazon's Alexa with a white-label solution at a fraction of the cost.

According to the *Chicago Turbine*, Best Buy has already embedded some of AddStructure's search technology into its mobile app, and has plans to carry Makerbloks' toys and Revolar's devices on its website this fall.

Angel.ai

Angel.ai provides an off-the-shelf solution to facilitate natural language-powered transactions for retailers and companies across over 40 commercial categories, such as flights, hotels and deliveries, with a demonstration available on the company's website.

Year Founded	2015
Key People	Pierluigi Ferrari (Co-Founder & CPO) Joko Winterscheidt (Co-Founder)
Team Size	51 – 100
Location	New York, US
Funding	$8,000,000
Key Investors	General Catalyst Partners

The company has previously used the same NLP technology to power GoButler, its virtual assistant, which helps user to request anything on-demand. In an interview with TechCrunch, Navid Hadzaad, the then CEO and co-founder of Angel.ai, explained that the virtual assistant service has helped the company to collect millions of examples of how people express intent in a natural-language message, and how they interact with the virtual assistant. The company then used their human-assisted concierge to develop the AI and train the models, and built their data sets based on these conversations.

Klevu

Klevu Oy is a Finnish start-up which provides a self-learning e-commerce site search tool based on NLP technology for small- and medium-sized web stores. The search tool can be easily integrated into multiple e-commerce platforms such as Magento, Shopify, Demandware and Hybris. The starting cost of US$19 per month also makes the tool affordable for the smaller web stores. The search tool is now used by over 3,000 online stores worldwide.

Year Founded	2013
Key People	Nilay Oza (CEO & Co-Founder) Niraj Aswani (CTO & Co-Founder) Jyrki Kontio (SVP & Co-Founder)
Team Size	11 – 50
Location	Helsinki, Finland
Funding	$344,310
Key Investors	Inventure Oy

From the case studies published by Klevu Oy, the search tool has helped online retailers to increase sales and orders, as well as reduce the bounce rate. Zest Beauty, which sells over 1,600 luxury beauty products online, reported a 15% increase in sales from the search box. Another retailer, HongKong.fi, a Finnish department store that sells more than 25,000

products, reported a 47% increase in conversion rates, and 26% reduction in the bounce rate, after conducting an A/B test based on 60,000 visits compared with a standard search tool.

twiggle

Twiggle

Twiggle aims to develop an e-commerce search engine with a higher degree of accuracy, nuances and coverage than current available options. The system also supports natural-language search, analyzing normal sentences for key words and determining the technical criteria required to find in product descriptions.

Year Founded	2013
Key People	Amir Konigsberg (Co-Founder & CEO) Adi Avidor (Co-Founder & CTO)
Team Size	11 – 50
Location	Tel Aviv, Israel
Funding	$20,000,000
Key Investors	Alibaba, Naspers, Yahoo! Japan

The company is backed by Internet conglomerates including Naspers and Yahoo! Japan, and more recently the Chinese e-commerce leader Alibaba. As reported by the *Wall Street Journal*, Twiggle's query language tool has the biggest appeal for Alibaba. By using behavioral data and artificial intelligence, it delivers better targeted search results for the user. For example, a search query for the word "camera" would not return results for irrelevant items such as camera cases or lenses. This could greatly enhance the shopping experience on Alibaba's Taobao and Tmall marketplaces, which have more than one billion products for sale.

Source: Shutterstock

API.ai

API.AI provides tools for speech recognition and natural-language understanding. It provides companies with tools to build conversational voice interfaces for mobile, web and devices. The start-up also created Assistant, a conversational assistant app with over 40 million users.

The company was acquired by Google in September 2016.

Year Founded	2010
Key People	Ilya Gelfenbeyn (Co-Founder & CEO) Artem Goncharuk (Co-Founder & CTO) Pavel Sirotin (Co-Founder & VP)
Team Size	11 – 50
Location	Sunnyvale, US
Funding	$8,600,000
Key Investors	Intel Capital, SAIC Motor

According to co-founder and CEO Ilya Gelfenbeyn in a call with TechCrunch, the company has been offering free use of its API to developers, and with more data and use cases feeding into the system, it helps the system to become smarter by using machine learning.

There are currently over 60,000 developers using Api.ai to build conversational experiences for environments such as Slack, Facebook Messenger and Kik, as revealed in a blog post by Google vice president of engineering Scott Huffman.

MindMeld

MindMeld is one of the pioneers in conversational technology using AI. The company provides a platform for companies to create conversational assistants. It was named one of the world's "50 Smartest Companies" of 2014 by MIT Technology Review.

Year Founded	2011 (Founder & CEO)
Key People	Tim Tuttle
Team Size	11 – 50
Location	San Francisco, US
Funding	$15,400,000
Key Investors	Google Ventures, Samsung, Intel

The company rolled out MindMeld for Commerce, a bot platform specifically for retailers and e-commerce companies, in May this year. The bot can be deployed on messaging services like Facebook Messenger, Line, KiK, Skype, Telegram, WeChat and Slack as well as on their own messaging platforms, mobile apps and websites. The platform helps customers find information or a product they want, enables message-based transactions

and reduces the customer support workload by automating the most common customer transactions.

DigitalGenius

DigitalGenius offers a "Human+AI" customer-service platform, which is based on the company's proprietary AI and NLP engine. The platform predicts the appropriate answer for each incoming message with a confidence rating—those above the threshold are automated, while the rest are passed on to human agents for approval or personalization, which further trains the model.

Year Founded	2013
Key People	Dmitry Aksenov (Founder & CEO)
Team Size	11 – 50
Location	London, UK
Funding	$8,350,000
Key Investors	Lerer-Hippeau Ventures, Lowercase Capital, Metamorphic Ventures, RRE Ventures

The Human+AI platform helps to reduce the workload of a company's customer service center, by automating the relatively repetitive tasks and queries, and improves customer satisfaction, as agents have more time to handle each enquiry. Several major brands have adopted the service, including BMW and Panasonic.

Inbenta

Inbenta provides a comprehensive customer service solution powered by AI and NLP technologies, including intelligent self-service search, ticketing system, automated response and chatbots. With offices located in the US, France, Spain, Brazil and Chile, the company supports more than 20 languages natively.

Year Founded	2005
Key People	John Torras (CEO & Founder)
Team Size	101 – 250
Location	San Mateo, US
Funding	$16,000,000
Key Investors	Amasia, InverSur Capital, Level Equity, Scale Capital

Inbenta has created a self-service system with features including autocomplete, dynamic FAQ system, semantic search and analysis. Powered by NLP technology, the system is able to understand customer queries based on meaning instead of keywords. According to Inbenta, the

company's semantic search engine enabled Groupon to offer 1 million answers to its customers, and as a result, it decreased email wait times and led to faster customer service.

Furthermore, the company has helped retailers like Farmgirl Flowers to reduce incoming emails by 90% after implementing the online self-service.

Satisfi

Satisfi has created a location-based customer engagement platform, which helps to address on-site customer issues in real time, with a seamless transition between automated responses and live-person engagements.

Year Founded	2014
Key People	Don White (CEO) Randall Newman (CTO) Rungson Samroengraja (COO)
Team Size	1 – 10
Location	New York, US
Funding	N.A.
Key Investors	N.A.

The startup has partnered with IBM Watson to develop an in-store shopping assistant tool for Macy's. The mobile web tool, known as Macy's On Call, helps customers to get information as they shop in the store. Customers can type their questions in their own words, such as where a specific product is located, or services and facilities available. They will then receive location and directions specific to the store they are located in, determined by GPS or the ZIP code entered.

The mobile web tool is currently in pilot at 10 of the retailer's stores.

NetBase

NetBase analyzes social media posts in real time using NLP to derive insights for brands and retailers for making business decisions. The company extracts information from posts on social media including Twitter and Tumblr to understand customer perceptions or needs, and to help businesses monitor their brands' reputation.

Year Founded	2004
Key People	Michael Osofsky (Co-Founder and CIO) Peter Caswell (CEO)
Team Size	101 – 250
Location	Mountain View, US
Funding	$84,600,000

NetBase has developed a social command center, dubbed Live Pulse Suite. It helps brands to view real-time updates on what people are saying about them on social media, including the products, trending topics, sentiments and the reason behind them. Target is one of the companies using the tool, Live Pulse Suite has helped the retailer to learn about its signature categories, as well as what the guests visit most. This real-time analysis helps Target to better engage and retain its customers.

Taco Bell is another customer which had a successful app launch with a campaign aided by the company's analytics which led to more than 3.7 million downloads and better customer engagement.

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