CHATBOTS - 2017
A conversation between tech and story.
REPORT SUMMARY:

The story of chatbots is a story of our times. Exuberance, excitement, fear, confusion, it’s a story with many shades and emotions. With the market growing at over 30% and with many companies, both large and small, joining the chatbot innovation wave, we wanted to put together a report that goes behind the buzz, the data and the opinions, to simplify what chatbots mean – for all of us.

What goes into the making of a chatbot? Is there a frame of reference with which we can look at chatbots today? What metrics and the benefits chatbots are expected to bring? What are they showing in reality? What are the challenges and opportunities that are shaping the future?

These are the questions we are raising in this report.

WHY SHOULD YOU READ THE REPORT?

There is no dearth of articles, news, and reports about chatbots. We are not aiming to replace them. Our attempt is to tell you a story, a story that we have been fortunate to have been a part of. And to leave with you some thoughts on what could happen when the page turns, and the next chapter starts.

A large enterprise, a chatbot developer, an investor, a consumer, we hope all of you find your voice reflected in our story.
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“Science is a magic that works,” said author Kurt Vonnegut.

Are chatbots one such manifestation of seemingly impossible scientific magic made true today?

Sample this!
Morning news. Weather and traffic updates. Utility bill payment. A quick byte of entertainment. Ordering flowers. Planning a long weekend. At every step of our busy lives, a chatbot can now give us exactly what we need, through just a simple, virtual conversation.

And while the chatter around chatbots continues to build up, a search about the market throws up numbers like this:

![Estimated chatbot market size in $m](chart)

**FIGURE 1: CHATBOT MARKET STATISTICS**

Chatbots, the tip of the Digital Transformation Iceberg:
Estimating the market size for chatbots is not easy right now given the multiple forecasts and their respective varying assumptions. Fact is, new chatbot use cases are being discovered each day and the market is evolving at a fast pace. Based on some of the existing use cases and the lowest expected market size, chatbots can grow from $700M in 2016 to $3B market in 2021. Over 35% CAGR.

Why this sudden explosion?
Chatbots are just the tip of the Digital Transformation Iceberg hitting across sectors now. Customers today are going beyond just searches and ratings in interacting with companies; with digital payment options also getting quickly adopted across demographics. These increasing mobile footprints result in more and more data generation, which can now be mined with tools such as natural language processing, artificial intelligence and machine learning.

Result?
Organizations need to navigate this two-speed world between the old and the new and reimagine ways to enhance customer experience, improve operational efficiency and drive new age digital business models. Chatbots fit right at the intersection of these business outcomes. They bring an enhanced Customer Experience and improve efficiency in operations. No wonder that companies are looking at $8 bn in annual savings from chatbots according to Juniper that referenced over 50 companies across 8 regions and assessed the impact of chatbots in 4 industries - Banking, Healthcare, Social, Ecommerce and Retail.
How do chatbots drive cost savings and efficiency?

To start with, by automating a lot of human effort in solving customer queries effectively. Not just that, as chatbots start integrating with transaction and payment options, companies can save money on customer acquisition costs and over the longer term, improve customer experience and retention.

Companies are therefore keen to be part of this innovation. In a survey done by Oracle, with over 800 decision makers including CXOs, senior sales and marketing executives from France, the Netherlands, South Africa and the UK as participants, it was concluded that 80% of companies are planning to develop chatbots, if they haven’t already.

It’s a revolution being led by the biggest technology companies, viz., Microsoft, Facebook, Google, Amazon, and Apple on one side and on the other, by new platforms such as Slack, Wechat, Kik, Telegram and a slew of nimble startups.

Apart from the obvious business benefits, the biggest potential benefit of chatbots, for us as customers, is their promise of humanizing technology and keeping the art of conversation alive, through our chosen device.

Do they live up to it? Let’s read on.
Before we get into the current market opportunities and challenges and peek into the future, let’s learn a few facts about chatbots.

**What are Chatbots?**
Chatbots are a conversational interface that use text or voice to interact with customers. They aim to keep the conversation real & human & are trained through NLP & AI.

**How many of them exist now?**
Over 40,000 Chatbots currently exist, across multiple platforms.

**Where do they live?**
Chatbots primarily live on our messenger apps across devices. And lately, they have also been living in whatsaap.

The hour between the dog and the wolf is an hour of almost unreal confusion. The illumination is dull, the vision is clouded. That is what we saw last year. Though chatbots by themselves are not that new, Facebook’s announcement of “messenger chatbots” played the role the town criers would have played in villages of earlier times.

The graph below is from a survey conducted by Mindbowser Info Solutions in collaboration with Chatbots Journal between Nov 2016 to Jan 2017. With the participation of over 300+ surveyed companies and individuals, including chatbot developers and decision makers across 9 industries, this report has an interesting insight.

As consumers, our awareness is still low. We don’t care whether we are speaking to a human or a machine. We want someone who can help us with what we need. We want convenience, speed and empathy. And a conversation that doesn’t break.
So, what goes behind creating a great chatbot that customers love speaking with? And more importantly, how do we create conversations that do not break?

Our first answer might be NLP (Natural Language Processing) and AI (Artificial Intelligence).

For chatbots to develop a language of their own, they need to be trained through humongous data sets through NLP and AI techniques for them to recognize patterns and develop a vocabulary of their own. But NLP and AI may not be enough to develop a chatbot that’s ready for conversation.

**Character and Design: Building blocks of Chatbots**

Just as a good story needs memorable characters and superb crafting, a successful chatbot needs to have a memorable character and design that is in line with its character.

Pixar speaks about the elements that go into designing a character, “*Imbuing the characters with humanity, and focusing on their humanity is vitally important to creating this connection. While designing a character, a Pixar artist needs to know what to exaggerate and what to play down, what to add to give a hint of background and depth, and what to do to develop personality.*”
Does that hold true for chatbots that are trying to bring conversations back to technology? Let's see with two examples.

1. Haptik

Haptik is a digital assistant. It aims to solve specific queries such as booking a flight ticket, getting live PNR status of trains, help set reminders for tasks that are easier to forget.

The designer needs to have an imaginary conversation with the user -

*Are we helpful, dependable, fast?*

*Do we have forms and lists for you to tap on and do less typing?*

*Does our tone change when your queries become more complex?*

As the designer answers these questions, Haptik’s character and personality is formed.
2. Poncho

Poncho, on the other hand, is a weather chatbot. Poncho gives information that’s useful but not always that interesting. Poncho’s character is fun and quirky. Even when Poncho cannot give the required answer, it does not stray from its Character. Or it’s tone. And design-wise, it's bold, simple and visual.

*If chatbots fail the character and the design test, no matter how well we have trained our chatbot on the semantics of conversation, it will not seem real.*

Say design and character are in place. The chatbot is ready for a chat. What kinds of chat can a chatbot have? Let’s dig deeper!

FIGURE 5: PONCHO - WEATHER CHATBOT
Chatbots across industries, and moods:
Across industries, chatbot usage has been picking up. A recent article by CB Insights found applications of chatbots across all these industries- Food, Technology, News, Travel, Fintech, Insurance, CPG/Retail, Automotive, or Entertainment.

There seems to be a chatbot for every mood.

One website helps you test whether a poem was written by a bot or a human. 53% of people feel that the poem shown below was written by a bot and not by a human.

*Was this poem written by a human or a computer?*

**Dollars of Sand**

dollars of sand
in my hand
worth nothing more
than the Frisbee of man.

![Bot](image1)

![or](image2)

![Not](image3)

FIGURE 6: BOT OR NOT
The Game of Thrones (GOT) chatbot gives you information on the GOT characters and Disney’s Miss Piggy chatbot became a new movie promotion device.

Confusing array of choices?

Why do we even need to use a chatbot?

For a few minutes of entertainment or for answering specific questions?

Which brings us to vital question that requires addressing today - Why are we launching a chatbot?

Chatbots, like humans, need to find their purpose. And unless that’s clear, they will not work.

We have highlighted five categories of chatbots by their purpose, no matter which industry they are operating in.

1) HELPER
2) SOLVER
3) SELLER
4) STORYTELLER
5) TEACHER
Most companies today are building Helper chatbots to improve Customer Experience. And the customer satisfaction (CSAT) scores validate their investments. But not all battles can be fought at the enterprise level. That’s where the Solver chatbot brings in verticalized offerings to offer choice and comparison and improve the speed of task completion. The Seller has not yet proven its promise of converting transactions through conversational commerce. But we are sure that there will be no lack of business experts trying to solve that puzzle. The unsolved use cases are for the Teacher and The Storyteller. The potential for them to drive lead conversion and customer retention is huge. Going back to the building blocks of character and design, shouldn’t personality-driven chatbots be able to engage with us better, with content and personalized offerings?

That’s a battle yet to be played out.
The chatbot journey from adoption to engagement:

How many consumers are using chatbots today? Separate surveys from Chatbots Magazine and Wizeline attempted to answer that. They surveyed a sample of 1,000 people each which may not be representative of the true market. But the story that comes out is quite interesting.

As the chart shows, 70% of those surveyed have not yet spoken to a chatbot. 20% of them are not sure. In fact, Wizeline reported that chatbot use does not guarantee adoption. And that while Millennials are the obvious users, older people are expected to show higher rates of satisfaction, if and when they become chatbot users. That poses a valid question. Even as companies try to get new users, shouldn’t they focus on building engagement with the existing ones, first?

**Question:** Have you interacted with a chatbot (software that chats automatically with humans) in the past?

As the chart shows, 70% of those surveyed have not yet spoken to a chatbot. 20% of them are not sure. In fact, Wizeline reported that chatbot use does not guarantee adoption. And that while Millennials are the obvious users, older people are expected to show higher rates of satisfaction, if and when they become chatbot users. That poses a valid question. Even as companies try to get new users, shouldn’t they focus on building engagement with the existing ones, first?

**FIGURE 9: MESSAGING AND CHATBOT ADOPTION SURVEY, JULY 2017**

*Data: Chatbots magazine, Wizeline*
Chatbot Breakthroughs of today and moonshots of tomorrow:

As of now, early adopters of technology are the ones using chatbots today. It's still a drop in the ocean of human population with diverse needs that technology could potentially address. There are two simultaneous battles being played out in the market currently:

1) The Customer Engagement and Market-Share battle:

Like any nascent and growing technology led market, innovation has never been scarce. Neither are opinions. Nor are reviews. But there is no standardized ranking of chatbots available. Which adds to the confusion about choices. Here's our attempt to build a framework to look at separating the good chatbots from the not-so-good ones:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Threshold</th>
<th>Examples that qualify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Over a million users</td>
<td>Haptik, Poncho, Swell</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>Score of over 4 in App Annie</td>
<td>Haptik, Poncho, Nuance, Letz.do, 1-800 flowers</td>
</tr>
<tr>
<td>Automation</td>
<td>Automating human effort</td>
<td>HDFC Bank chatbot, KLM, 1-800 flowers</td>
</tr>
<tr>
<td>Most talked about</td>
<td>More than one promotional view, actual reviews</td>
<td>Mitsuku and Rose (most humane), Instalocate (travel bot), Meekan (productivity bot), TechCrunch (news bot), chatShopper (E-Commerce bot)</td>
</tr>
</tbody>
</table>

Can a framework like this help us look at chatbots in a more systematic way? We certainly hope so. Chatbots that cross the threshold will become the breakthrough chatbots. Having said that, not all chatbots use cases have been attempted yet.
2) The Moonshot Battle of Tomorrow:
Let’s go beyond business. Technology is envisioned to be a force that brings more inclusion and equality.

Do we see chatbots treading such uncharted territories today?
Imagine health. Mental health is one of the least talked about problems we face today. It’s often difficult to confide in a psychiatrist, either due to the attached social stigma or financial reasons.

*Is a chatbot confider hard to imagine?*
*Is it possible to use a chatbot as a healthcare diagnostic tool for doctors?*
*Can chatbots play a role in Education bringing the teacher back in focus, helping students learn rather than download information?*
*What about transport? Or agriculture? The possibilities are immense.*

And while many are already innovating, we feel that the battlegrounds of tomorrow will not just throw up new use cases but also leverage new technologies.
Could voice and regional languages help develop chatbots that are more localized?
Companies like Vernacular.ai are already trying to localize chatbot conversations.

What about empathy and context? Can chatbots keep developing that? For many chatbots such as Haptik, the goal is not to keep the customer guessing whether they are talking to a bot or a human. And it’s not about AI-based chatbots replacing jobs. It’s about providing a seamless conversation.
At the end of it all, connecting with a customer and solving their problem will continue to be the key job of a chatbot.
CONCLUSION:
The best conversations are the ones where a lot is yet to be said. Chatbots are at that stage of their journey right now.

The conversation will continue. The ones that will create a great conversation will have a few building blocks in place. A defined, memorable character and clear design will remain the first test of the chatbot. The ones without these building blocks will not be able to survive long. Companies will continue to create Helper, Solver, Seller, Teacher and Storyteller chatbots for both enterprise and direct-to-consumer use cases. Apart from the Solvers, Helpers and even Sellers that will find success, we will see more Teacher and Storyteller chatbots with defined personalities emerging. Across the categories, performance metrics will become the key differentiator for chatbots and drive increased adoption and investments.

A framework of looking at chatbots from the point of view of scale, customer satisfaction, reviews and ratings will help cut the noise around chatbots and differentiate the best ones from the crowd. We expect that over the next few years, we will see many path-breaking chatbots that become as ubiquitous to us as waking up in the morning.

And on a hopeful last note, we sincerely believe that, at least a few of them will go beyond business use cases to solve challenges that people across the world face every single day. Then and only then will the magic reach the billions of people and make science real for them.

*We continue this journey with aplomb, to ensure that chatbots and their impact will become our generation’s magical scientific story to tell.*
In case of more questions please reach out to hello@haptik.ai