

# Introduction to Chatbots

## State of the art

Musa Baloyi

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# State of the art

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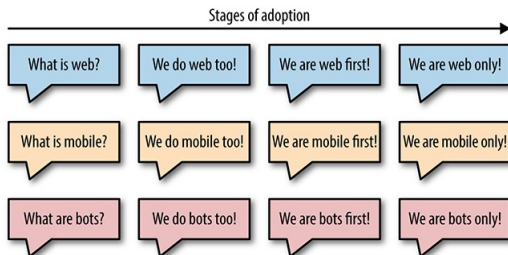
# PART I

## Basic Introduction

# Motivation

## Adoption

- ▶ "Bots are the new apps." - Satya Nadella, Microsoft CEO.
- ▶ "Bots might become the third runtime, after the Web and native apps." - Benedict Evans, venture capitalist.



- ▶ Bots are going to disrupt the software industry in the same way the web and mobile revolutions did.

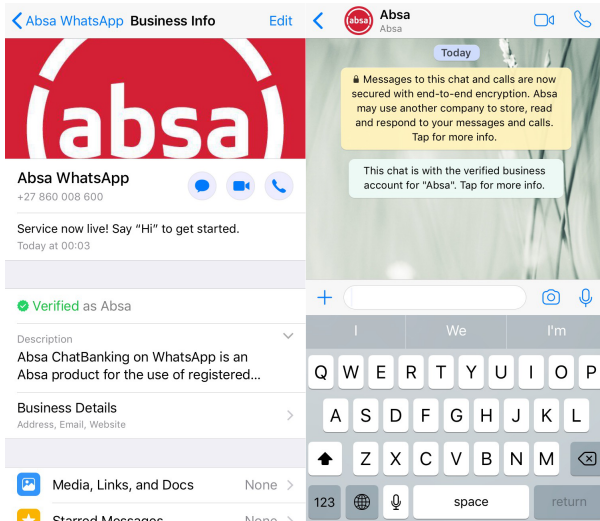
# Motivation

## Accelerators

- ▶ The mobile app economy is stagnating.
- ▶ Consumers like conversational interfaces.
- ▶ Bots are the ultimate source of cheap labor.
- ▶ Make workers more productive by taking care of time-consuming repetitive tasks.
- ▶ AI has advanced remarkably in the last few years.

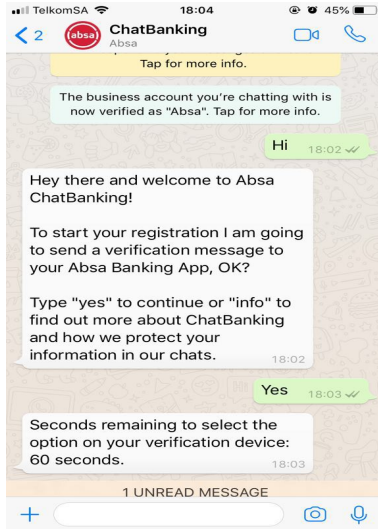
# Motivation

## Competition



# Motivation

## Competition



(a) Start



# Motivation

## Competition

- ▶ WhatsApp Pay services:
  - ▶ Absa is the first to fully launch WhatsApp Pay services anywhere in the world.
  - ▶ A number of banking institutions in India have trialled using the platform for banking services.
- ▶ Absa ChatBanking:
  - ▶ Facebook Messenger, Twitter, WhatsApp.
  - ▶ Check bank balance, buy electricity, purchase airtime and data, pay beneficiaries.



# Definition

What exactly is a bot?

- ▶ Bots are AI-driven pieces of software that converse in human terms.
- ▶ NLP is the discipline concerned with making computers communicate in human terms.
- ▶ AI makes it possible for bots to parse human language, understand intent, and compose replies.
- ▶ Bots communicate in human language through a variety of interfaces.

# Definition

How are bots different from humans?

- ▶ Bots have no online status and no last seen timestamps.
- ▶ Bots have limited cloud storage.
- ▶ Bots can't initiate conversations with users.
- ▶ Bot usernames always end in 'bot'.
- ▶ When added to a group, bots do not receive all messages by default.

# Types

- ▶ Personal vs. team bots
- ▶ Super bots vs. domain-specific bots
- ▶ Business bots vs. consumer bots
- ▶ Voice vs. text bots
- ▶ Net new bots vs. integrations exposing legacy systems

# Applications

- ▶ Conversational Commerce
- ▶ Bots for Business
- ▶ Productivity and Coaching
- ▶ Alert and Notification Bots
- ▶ Bots as Routers between Humans
- ▶ Customer Service and FAQ Bots
- ▶ Third Party Integration Bots
- ▶ Games and Entertainment Bots
- ▶ Brand Bots

## PART II

# Technology Providers

# Overview of Bots Landscape

## The bot platform ecosystem and the emerging giants

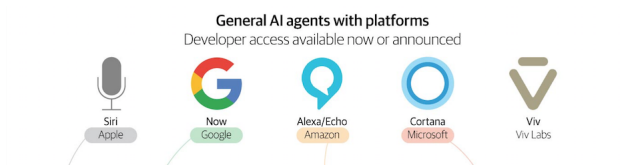
Nearly every large software company has announced some sort of bot strategy in the last year. Here's a look at a handful of leading platforms that developers might use to send messages, interpret natural language, and deploy bots, with the emerging bot-ecosystem giants highlighted.



O'REILLY

Graphic by Jon Bruner  
@JonBruner

# General AI Agents with Platforms



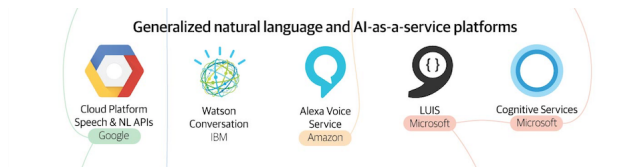
# Messaging Platforms



Where bots live.

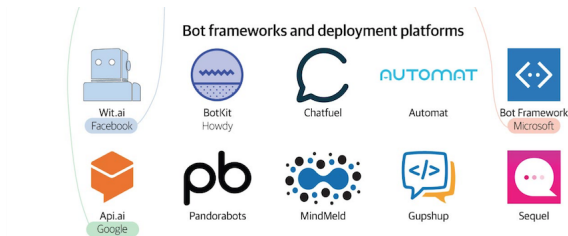


# Generalized NL and AI-as-a-Service Platforms



The sophistication of a bot is directly linked to the sophistication of its AI model. AI as a service makes it easy to implement very basic AI.

# Bot Frameworks and Deployment Platforms



Tools, platforms, and resources that make it easy to deploy chatbots.

# References

1. What are Conversational Bots? An Introduction to and Overview of AI-Driven Chatbots by Jon Bruner and Mike Barlow (2016)
2. Designing Bots by Amir Shevat (2017)