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# Enterprise Innovation Chatbot for Urgent Event

— Vamsavardhana Vijay —

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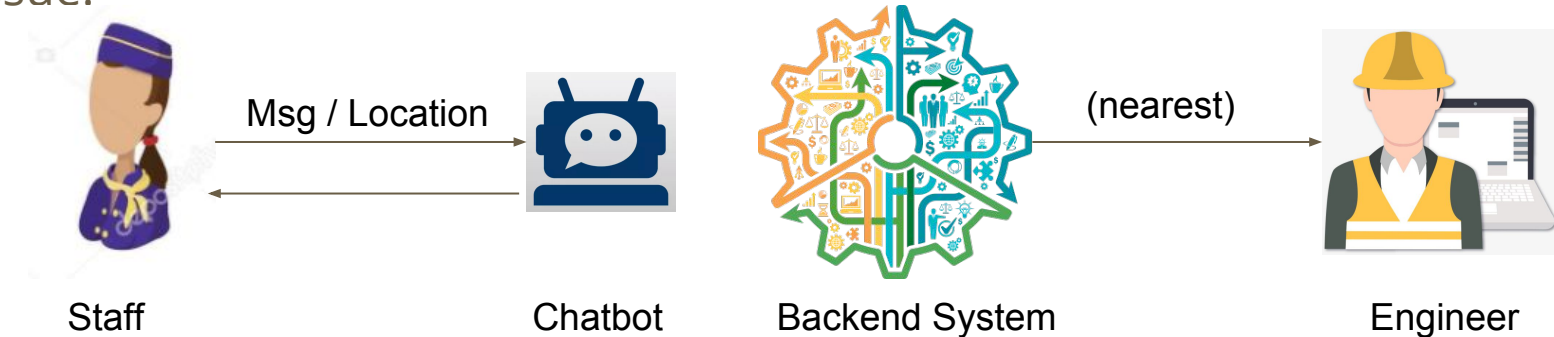
# Agenda

- Introduction
- Achievements
- Proof of Concept & Proposed solution
- Use analysis, System recommendation
- Business Impact
- Next steps: Timeline, Challenges & Risk Mitigation
- Cost Analysis

# Introduction

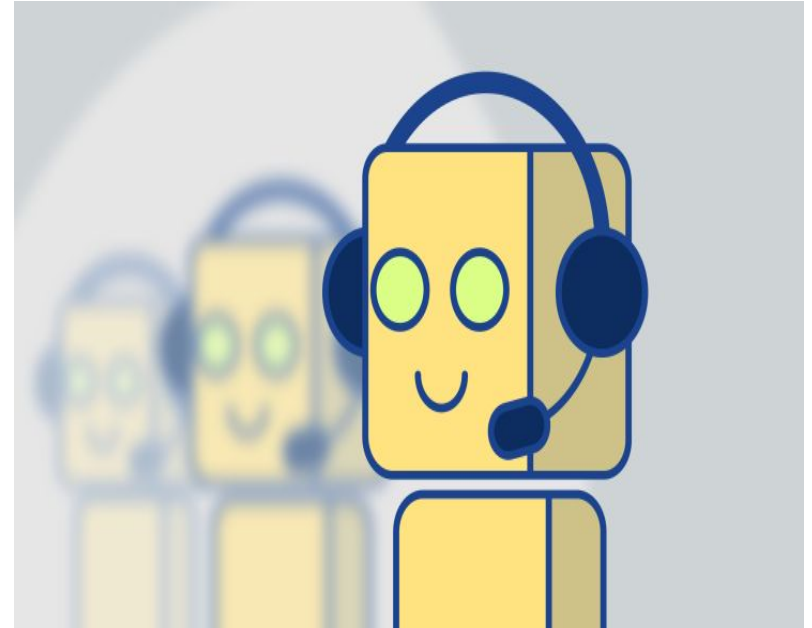
**Problem:** How can we introduction chatbot in an urgency? (e.g. Ticket reader is not working in a Terminal)

**Approach:** Use chatbot in terminal, when Emirates staff meet an urgency, he/she can use chatbot to send a voice message, the chatbot will transform voice to text, detect what is happening, then invoke an incident in backend system, system will automatically notify/locate nearest engineer, and fix the issue.

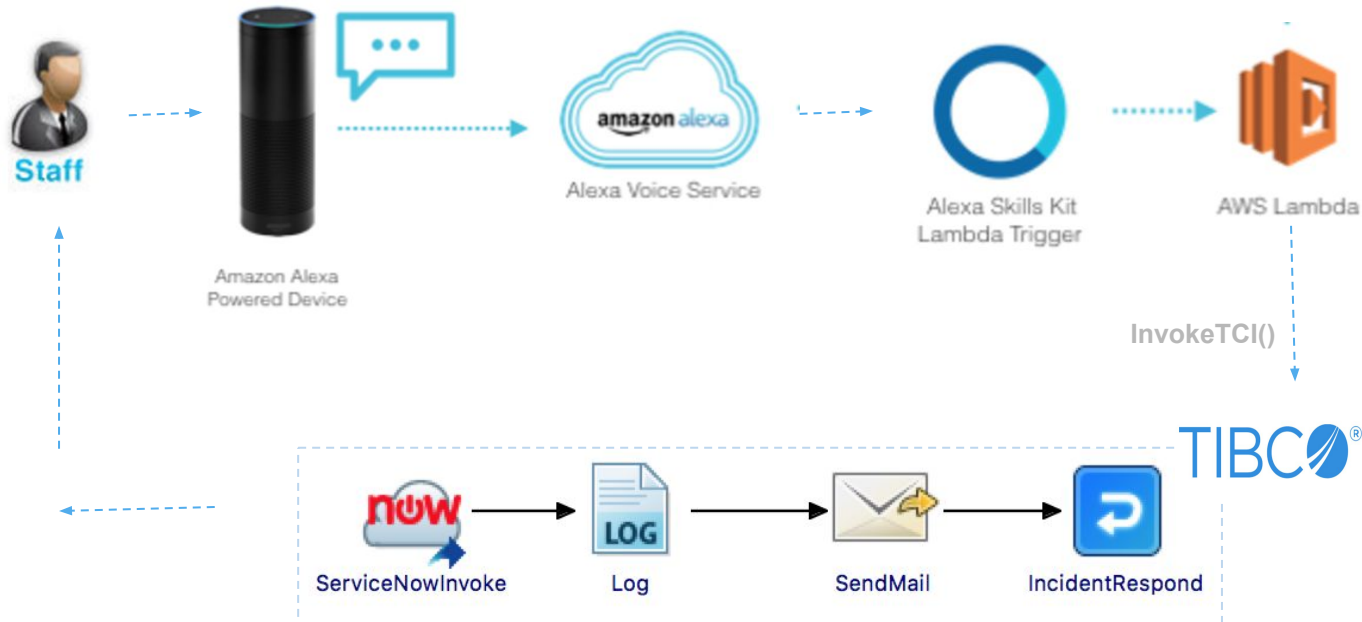


# Achievements of our research

- Holistic view of issues
- Transparency
- Quicker response time
- Cost effective
- Scalability
- Technology shift to bots



# Proof of Concept (March 2017)



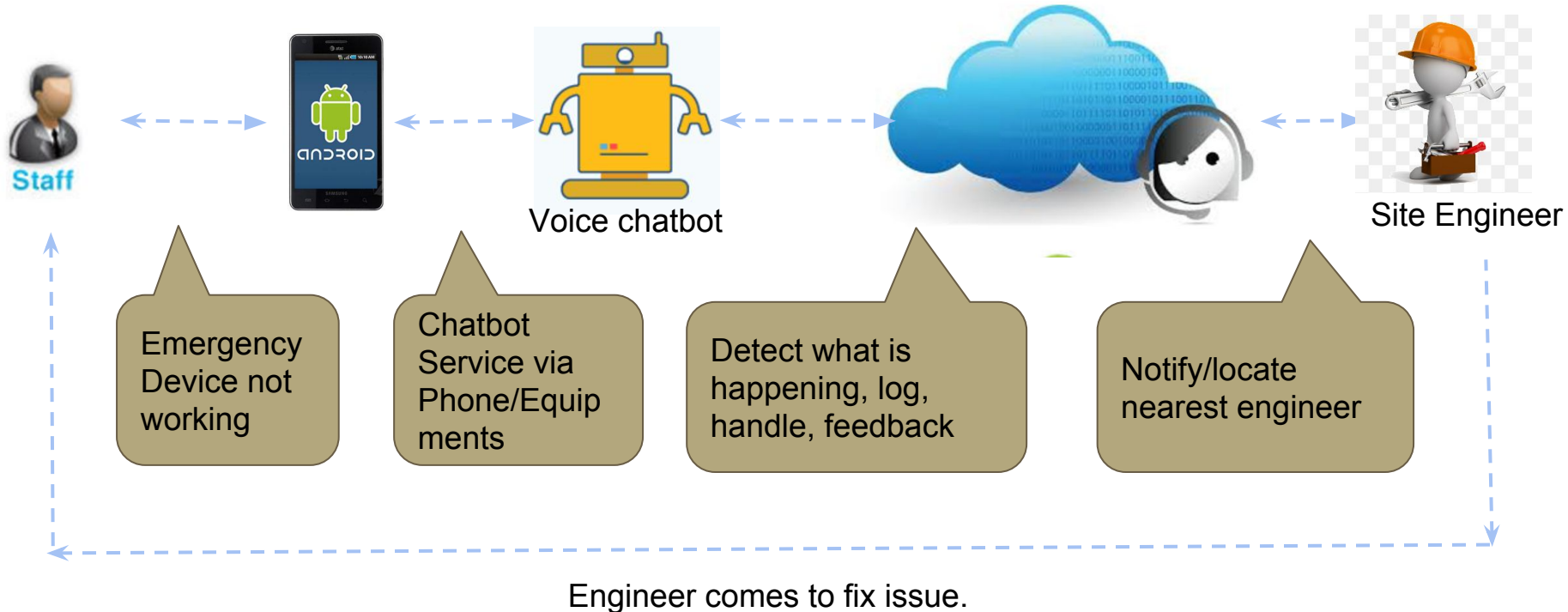
# Our Recommendation

- For simple use cases where security is not an issue, we propose voice and text activated chatbot solution;
- For complex use cases, our recommendation would be chatbot application integrated with servicenow platform and/or HP service manager.

servicenow



# Our Proposal (April 2017)



# Use Case Analysis

1. Knowledge based use cases (e.g., repair easyMARS)
2. Call-Response use cases (e.g., unable to access My Learning Zone)
3. High Security use cases(e.g., emergency at terminal, reset password, authenticate user)

Voice message activated chatbots can be used for use cases that need user-friendly quick response call-to-action.

Text Message activated Chatbots can be used for all the categories and would be our recommended solution for automating IT helpdesk.



# HelpDesk Systems



HP Service Manager

- Suited for Software As A Service requirements (SAAS).
- Implement their processes into the business.
- The delivery model is on-premises.



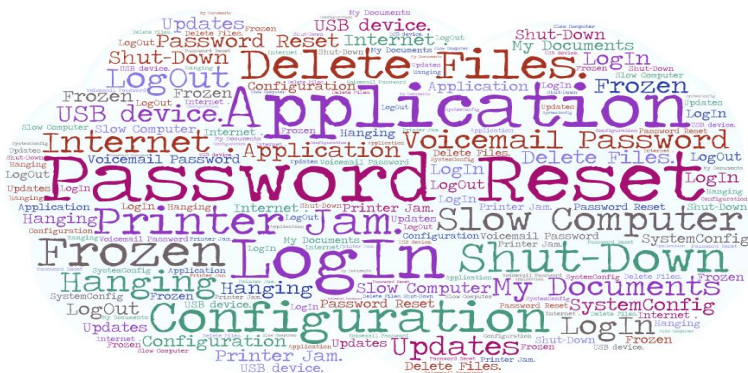
- Provides an ITSM platform based services which is PAAS model
- Implement the business processes into the tool.
- The delivery model is cloud based.

# Chatbot Frameworks

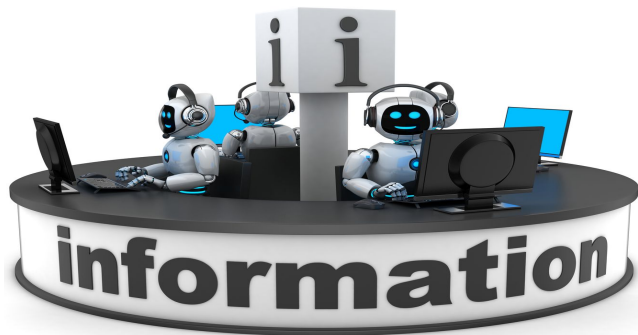
Chatbot	Price	Features	Platform
IBM Watson	0.00025 USD/API call	<ul style="list-style-type: none"> <li>Can add natural language interface to application to automate interactions .</li> <li>Easy-to-use web application to design bot conversation</li> <li>Quick to build and provide scalable, cost effective solution.</li> </ul>	Web Apps, Android Apps, iOS Apps
Octane AI	Beta version available for free	<ul style="list-style-type: none"> <li>Drive sales, capture leads, and increase engagement on Facebook Page.</li> <li>Connect Youtube, Soundcloud, Blogs, Medium, Facebook Videos, Google Sheets.</li> <li>Real-time analytics to help grow audience and interactions.</li> </ul>	Facebook Messenger
Azure Bot services	\$0.20 per Million Executions	<ul style="list-style-type: none"> <li>Add Cognitive Services to enable bots to see, hear, interpret, and interact in more human ways.</li> <li>No server management or patching needed.</li> <li>Scale out automatically</li> <li>Pay only for what you use</li> <li>Boost the power of bots with Azure services</li> </ul>	Web Apps, Android Apps, iOS Apps
Rupertbot	Not specified, no trial version	<ul style="list-style-type: none"> <li>A patented natural language understanding and processing platform.</li> <li>Takes 2-3 weeks for machine learning</li> <li>Chatbot Experience Manager can be used to create custom experiences by specifying training keywords, manage the response to an intent and preview the response.</li> </ul>	Facebook messenger, kik, Skype, Telegram, Slack, SMS, Line, Website, App, Alexa skill, IOT
Buddy	Limited beta version available for free	<ul style="list-style-type: none"> <li>AI powered customer support agent that handles over 90% of your questions.</li> <li>Extremely simple setup, one click to import existing customer data in any format.</li> </ul>	Slack, Salesforce, kik, facebook messenger

# Technology Influence

## Benefits of our Approach



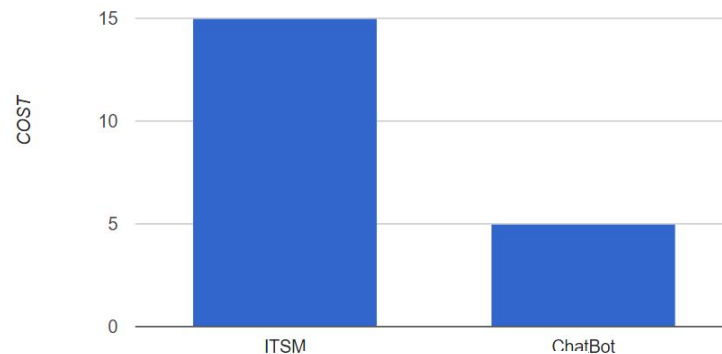
## Automate 80 % Routine task



## Utilise Human effort in Important work



## Easy Integration with Existing Systems

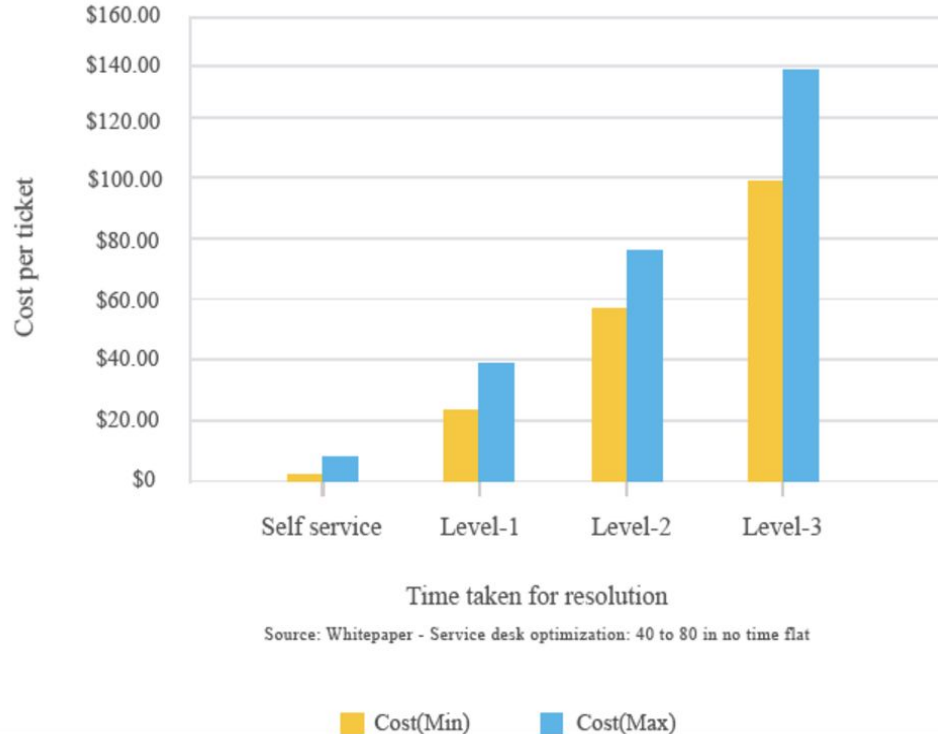


## Cost Effective

# Business Impact

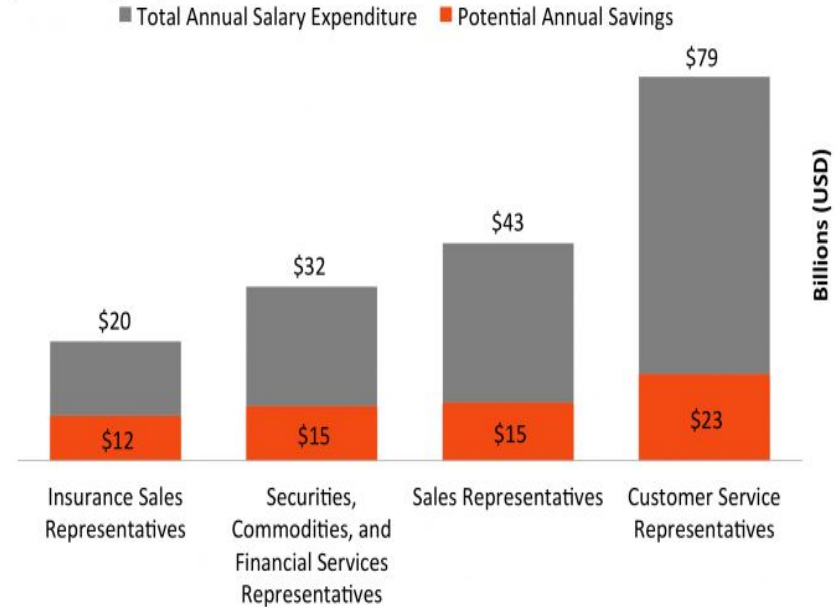
# Financial Savings

## Cost Per Ticket at Different Levels



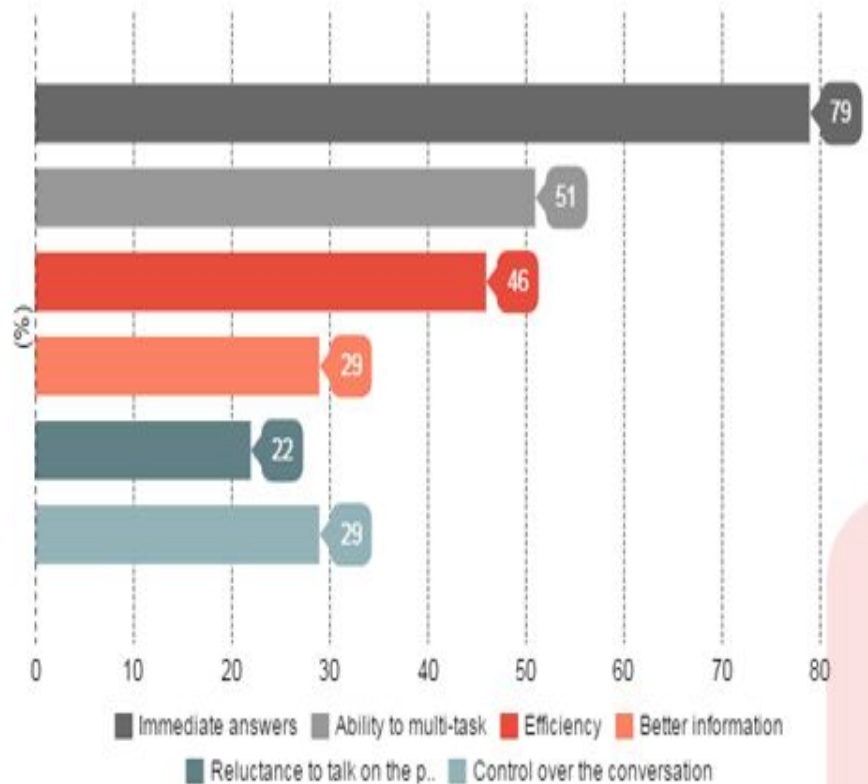
## Potential Annual US Salary Savings Created By Chatbots

2016, In billions (USD)

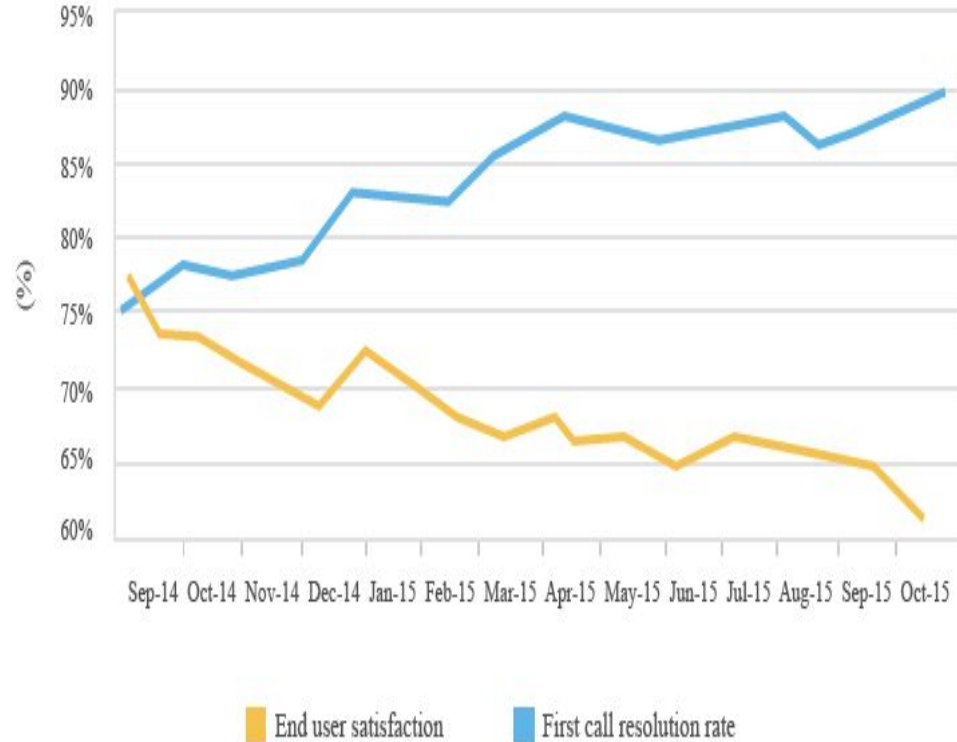


Note: Estimates are calculated against the potential of bots replacing these positions: Insurance sales rep = 60%; Securities, commodities, and financial services rep = 46%; Sales rep = 36%; Customer service rep = 29%. Source: McKinsey estimates, US Office of Personnel Management

## Reasons why Customers prefer ChatBots



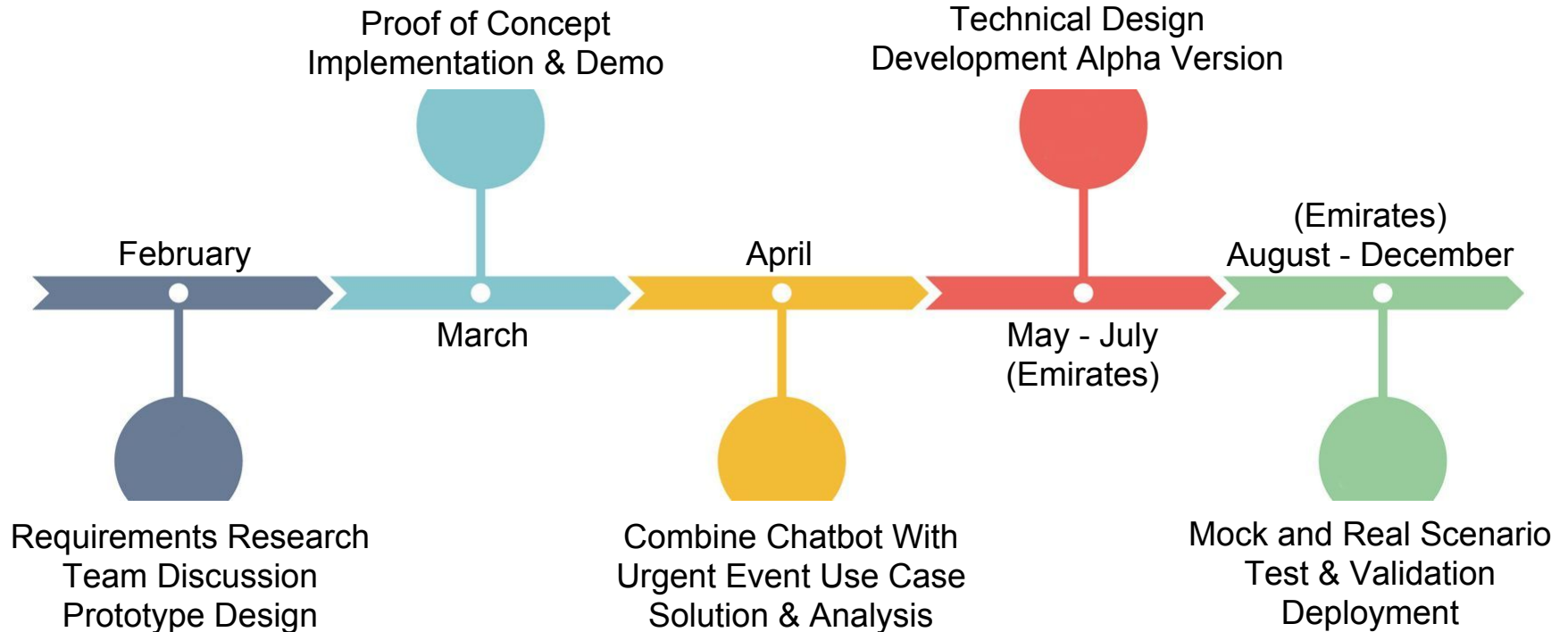
## Customer Satisfaction vs First call Resolution Rate( IT help Desks )



Source:

<https://blogs.manageengine.com/help-desk/servicedesk/2016/10/18/8-kpis-that-every-it-help-desk-speeds-to-know-kpi-5-first-call-resolution-rate.html>

# Project Timeline

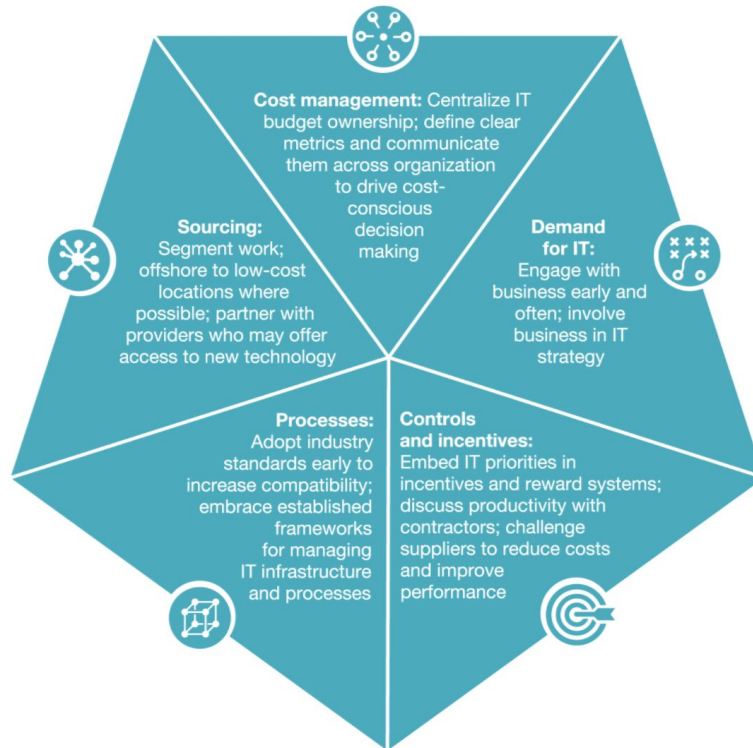




# Next steps: Challenges

- Technology Maturity
  - Speech recognition
  - Speech synthesis
- Scalability
- Flexibility
- Security
- Change Management
  - Move legacy to recommended system
  - People's reaction to recommended system

# Mitigation - Best Practices



## Cost management

- Centralize IT budget ownership
- Define clear metrics

## Demand for IT

- Engage with business early and often
- Involve business in IT strategy

## Controls and incentive

- Embed IT priorities in incentives and reward systems
- Discuss productivity with contractors
- Challenge suppliers to reduce costs and improve performance

## Processes

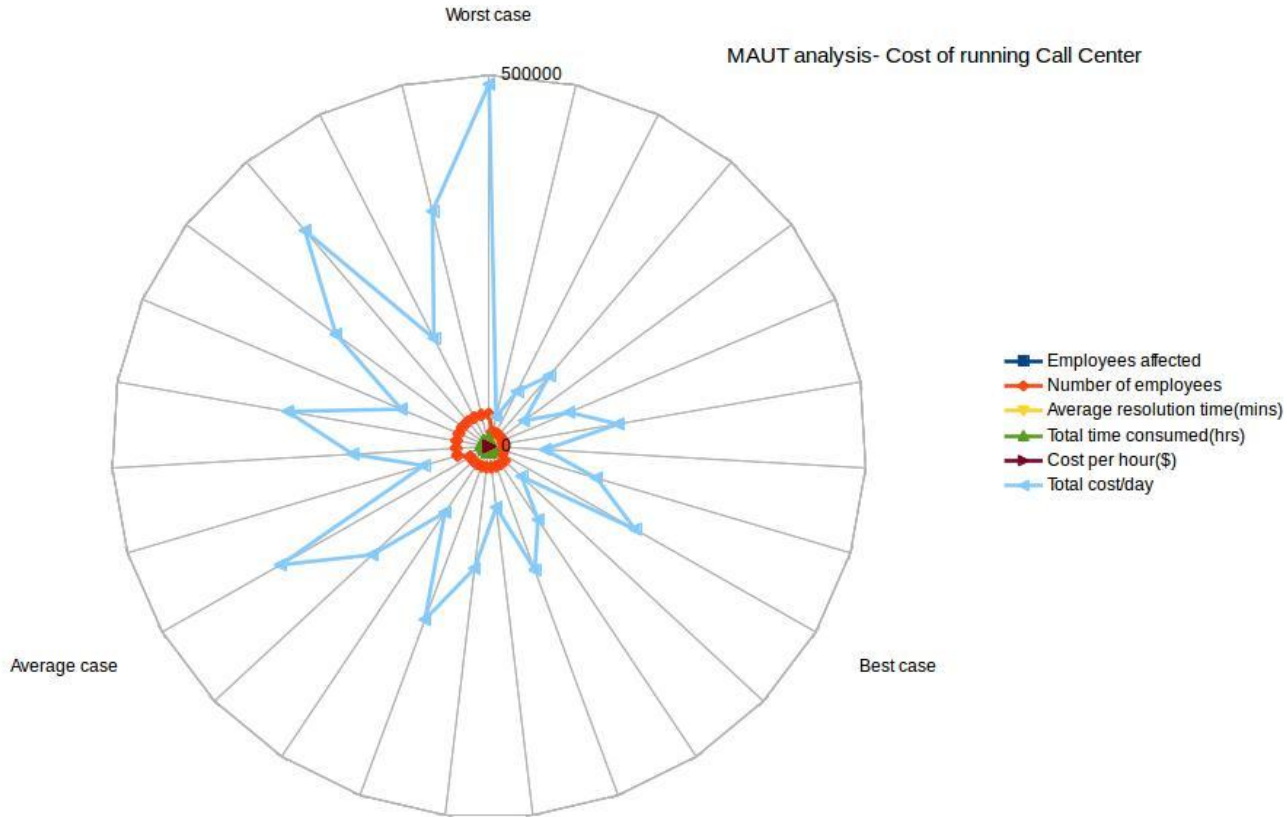
- Adopt industry standards early to increase compatibility
- Embrace established frameworks for managing IT infrastructure and processes

## Sourcing

- Segment work;
- Offshore to low cost locations where possible;
- Partner with providers who may offer access to new technology

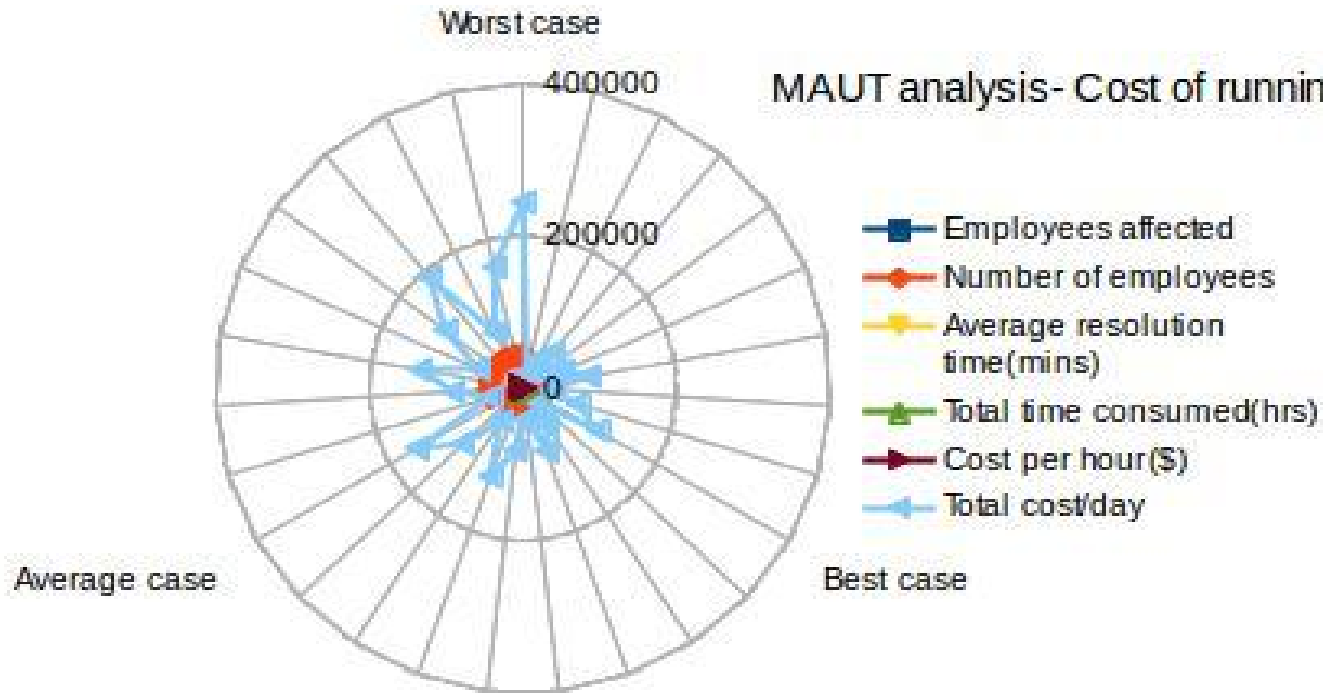
# Cost Analysis

# Cost of Call-center

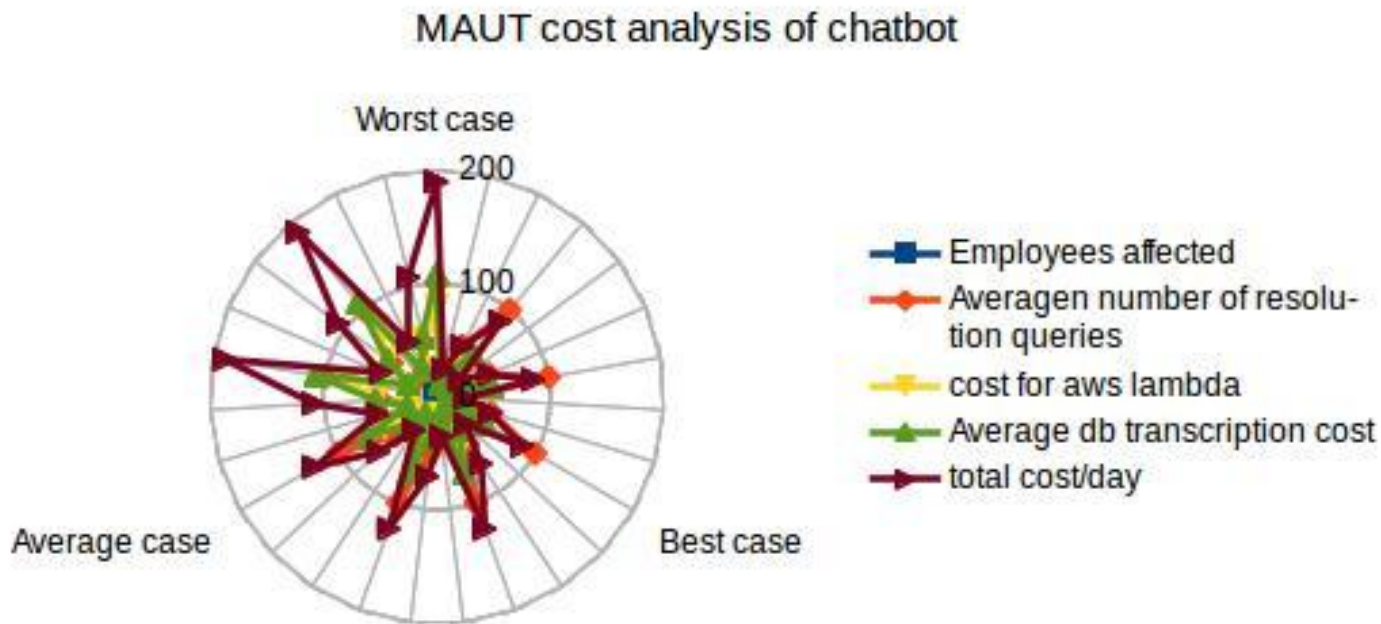


# Hybrid solution

MAUT analysis- Cost of running Call Center



# Cost of proposed solution



# Appendix

# Demo





# References

<http://www.businessinsider.com/chatbots-increase-recruitment-opportunities-2016-7>

<https://blogs.manageengine.com/help-desk/servicedesk/2016/10/18/8-kpis-that-every-it-help-desk-needs-to-know-kpi-5-first-call-resolution-rate.html>

<https://blogs.manageengine.com/help-desk/servicedesk/2016/11/21/8-kpis-that-every-it-help-desk-needs-to-know-kpi-6-sla-compliance-rate.html>