THE BOTS ARE COMING...
THE BOTS ARE COMING...
THE BOTS ARE HERE!

NASACT Webinar
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OPENING REMARKS

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AGENDA

• Overview
• Case Examples
• Concluding Comments
• Questions
At the August 2018 annual conference, we had several discussions about “intelligent automation,” or using technologies like **Robotic Process Automation, Artificial Intelligence and Chatbots** to significantly reduce the time and energy required for routine tasks, thereby freeing up the ‘human’ staff to do more strategic and customer-service activities.

This technology is developing quickly, and is being very rapidly adopted for both private and public sector applications.
DIGITAL UNLOCKS RESOURCES TO ENHANCE VALUE ADDED SERVICES

FROM TODAY

TRANSFORMATIONAL STRATEGIES

TO TOMORROW

Value-Add

ANALYSIS/ ADVISORY

Digital and other forms of automation
Best practices adoption
Business process reengineering
Shared services operating model
Self service
Risk-based controls
Voluntary compliance
Cloud/SaaS Applications

Mandatory

COMPLIANCE

TRANSACTIONAL PROCESSING

ANALYSIS/ ADVISORY

COMPLIANCE

TRANSACTIONAL PROCESSING

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ERP Industry is heading here...FAST!
DIGITAL EVOLUTION

Foundation Automation
Robotic Process Automation (RPA)
Digital/Virtual Assistance
Artificial Intelligence

Focus for today
Data Analytics

Intelligent Automation Platform

Programmed, Strictly Controlled, Contained

Rules Based

Cognitive / Judgement Based

Self-Learning, Autonomous Unbounded

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CASE EXAMPLES

• State of Oregon Department of Treasury – OregonSaves Retirement System: Pension Bot (Eyal Darmon – Accenture)

• Ireland Office of The Revenue Commissioners: Voice Bot (Eyal Darmon – Accenture)

• Georgia State Accounting Office: Intelligent Time & Expense Machine Learning (Alan Skelton – State of GA)

• Financial Information $ystem of California (FI$Cal): FI$Bot (Umair Khan – Accenture)

• Ivy League Institution: Student Chatbot (Avik Batra – Accenture)

• Global Education Institution: Student Chatbot (Avik Batra – Accenture)

• Texas Department of Licensing & Regulation: CORA (CORA) (Tracy Goguen – Accenture)

• Kansas Department of Children and Families: LIEAP Q&A Virtual Assistant (Tracy Goguen – Accenture)
Objective: Deploy a POC of Accenture Virtual Assistant on Oregon Saves’s Facebook page to provide 24/7 support the queries of members and employers related to the Oregon Saves program.

Scope:
- Supports 75 intents in English and Spanish
- Engagement to date: Bot went live on June 2018
  - 7,500 messages
  - 92% of the questions asked were supported by an intent and 94% of the questions supported were answered correctly (per week of 9/17)

Additional Details:
- Currently in discussions to implement the bot on Oregon Saves’s website
- The bot is continued to be trained and enhanced
- Deployed Accenture’s Converse 2.0 solution, on Accenture’s AWS cloud infrastructure, using the Google Dialog Flow and Google Chatbase
Objective: Revenue is working with Accenture to pilot the use of AI to provide services to citizens using a Virtual Agent. The pilot Virtual Agent went live in July 2018, having previously being tested in a Proof of Concept stage.

Scope:
The pilot built on the technologies proven in the PoC and added integration with Revenue’s telephony system and core backend systems, including the Customer Registration System and Integrated Taxation Services. The high level of integration enabled the following features of the VA:

- The authentication approach uses the Customer Registration Number which is passed from the telephony system into the VA. A further layer of authentication was then added using Customer Registration System records.
- Leverage ‘Smart Suggestions’ to drive the conversation and use the customer’s current status to proactively suggest actions to the customers.
- The VA is also capable of updating customer records depending on the outcome of the call.
- Includes live-agent handover if required, an agent dashboard, and included the ability for agents to read call transcripts.

Additional Details:
- Within the first 8 weeks of go-live, over 2,400 calls were routed to the VA.
- The underlying platform for the Virtual Agent is based on Accenture’s technology-agnostic Platform, Converse, proving a layer of abstraction from Cognitive Service providers such as Microsoft, Amazon, Google and IBM Watson.
GEORGIA STATE ACCOUNTING OFFICE: INTELLIGENT TIME & EXPENSE MACHINE LEARNING
## EXECUTIVE SUMMARY OF RESULTS

<table>
<thead>
<tr>
<th>Metric</th>
<th>Traditional Process</th>
<th>Intelligent T&amp;E Machine Learning Model Suite (MLMS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total volume (yearly)</strong></td>
<td>130K reports/$41M in total amount</td>
<td>130K reports / $41M in total amount</td>
</tr>
<tr>
<td><strong>Number of cases selected for audit</strong></td>
<td>5% per State of Georgia T&amp;E Controller (~540 reports / month totaling ~$3M / year)</td>
<td>Select top 6% “potentials” based on MLMS risk algorithm (600-700 reports / month totaling $7.3M / year)</td>
</tr>
<tr>
<td><strong>‘Hit Rate’ (i.e., the % of cases investigated that require further action)</strong></td>
<td>Industry baseline 20-25%</td>
<td>59% of the selected reports were confirmed non-compliant or worthwhile for investigation (Note: 74% of cases the algorithm identified as highest risk were newly found and not reviewed using the traditional process)</td>
</tr>
<tr>
<td><strong>Potential non-compliant report amount captured</strong></td>
<td>Est. $0.6M-$2M / year</td>
<td>$3.5M-$5M / year</td>
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</tbody>
</table>
FINANCIAL INFORMATION SYSTEM OF CALIFORNIA (FI$CAL): FI$B$OT
Accenture has partnered with the State of California to deliver one of the largest IT and business transformation projects in the State’s history.

Financial Information System for California (FI$Cal) enables the state to perform accounting, budgeting, procurement, and cash management, functions in a single integrated system.

Partnership began in 2012 and has resulted in multiple successful releases.

**FI$Cal BY THE NUMBERS**

- Population: 39 Million
- Budgetary Expenditure: $293 Billion
- Cash Management: $2 Trillion
- Departments: 150+
- Users: 20K
- Cal eProcure Suppliers: 97K
- 5th Largest Economy in the World

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INNOVATION AT FI$CAL

Key Initiatives In Progress
- Transparency Website
- End User Support Chatbot
- Test Automation
- Dept 360 Dashboards
- Encumbrance Evaluator
- User Enablement Videos

Key Initiatives Implemented
- MEC Self-Reporting and Execution Tool
- COA Mappings Maintenance Tool
- Interfaces Summary Dashboard
- Configuration Build Automation
- Identity Self-Service and Automated User Security
- Reporting Search Index
- Conversions and Interfaces Self-Service Portals
- Operational Insights Dashboard
- Production Watchdog Utility

FI$CAL CHATBOT IMPLEMENTATION

- Department of FI$Cal and Accenture developed a chatbot to better support the statewide end users of the FI$Cal System
- FI$Cal selected IBM Watson as the technology solution to support the chatbot functionality
- Selected Use Case for POC
  - Allow procurement users to ask how-to questions to a chatbot, and get specific responses, including references to detailed job aids, in order to minimize production support incidents
  - List of possible questions and responses mined from 1500+ ServiceNow tickets logged since July 2017
  - Chatbot is initiated from within the Oracle PeopleSoft application
PO as % of Functional Inquiries to FSC: 32%

AP as % of Functional Inquiries to FSC: 28%
MEET FI$BOT

STATE OF CALIFORNIA

FI$Cal

FI$Bot
MEET FI$BOT
IVY LEAGUE INSTITUTION: STUDENT CHATBOT
**Objective:** Deploy Virtual Assistant to redirect live calls to a 24/7 web-channel in support of student account related inquiries from students/parents/interest parties resulting in a reduction to the cost to serve.

**Scope:**
- Use of a chatbot to respond to student inquiries regarding Billing and Registration questions
- Implement the chatbot containing up to 100 intents/questions and up to 20 API integrations in English on a web channel
- Outline chatbot impacts on technology, process, organization, and metrics
- Provide three months of support, with option to extend

**Additional Details:**
- Working directly with CIO, his team, and Billing/Registrar Service Desk Business Owner
- Current scope is a proving ground for chatbot work in other areas
- Current inquiries are handled by third-party provider
- Limited reporting currently available
- Deploying Accenture’s Converse 3.0 platform with Amazon’s stack of technologies (Lex and Kibana)
- Deploying the virtual agent on client’s AWS cloud infrastructure due to strict security requirements

**Duration:** 6 months
GLOBAL EDUCATION INSTITUTION: STUDENT CHATBOT
GLOBAL EDUCATION INSTITUTION

STUDENT CHATBOT

Duration: 15 months

Objective: Deploy a Virtual Assistant on web self-service portal (post authentication) to support student inquires related to enrollment, graduation requirements, financial aid, payments, class schedules

Scope:
- Supports ~250 intents and select API integrations (student name/picture) in Peruvian Spanish
- Engagement to date: Bot went live on June 2018
  - +200K interactions/messages
  - +30K student supported (out of 75K)
- 82% of the questions asked were supported by an intent the bot’s knowledge base and 99% of the questions supported were answered

Additional Details:
- Deploying on Accenture’s AWS cloud infrastructure
- Bot is exposed as an iFrame within the Student Portal
- Deploying Accenture’s Converse 2.0 solution, using the Google Dialog Flow and Google Chatbase

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Use case that allows cosmetologists to obtain their license renewal status using text message

Deliver Virtual Assistant Dashboard to monitor usage statistics
PROJECT MILESTONES

KICKOFF 07/09/2018

DESIGN 07/18/2018

BUILD 07/30/2018

UAT 08/27/2018

PROD 09/05/2018

Only two months from kick-off to production
Hi, you've reached the Texas Department of Licensing and Regulation. I'm Cora. Please confirm your cosmetologist license number is 943284 (yes or no).

Yes

Hi, you've reached the Texas Department of Licensing and Regulation. I'm Cora. To get started, what is your cosmetologist license number?

Hi I want to check my license status.

1414891

Please confirm your cosmetologist license number is 1414891 (yes or no).

Yes

Hi, you've reached the Texas Department of Licensing and Regulation. I'm Cora. Please confirm your cosmetologist license number is 1624391 (yes or no).

Yes

It's time to renew. Your license expires 10/01/2018. Get answers to common questions at https://go.usa.gov/xUdcJ.

Okay thanks

Thank you and have a great day!

Thank you and have a great day!

1624391

1341861

Hi, you've reached the Texas Department of Licensing and Regulation. I'm Cora. Please confirm your cosmetologist license number is 1341861 (yes or no).

Yes

4 hours of CE is required. Find a CE provider at https://go.usa.gov/cuPJA. Please wait a week for us to receive CE. Get answers to common questions at https://go.usa.gov/xUdcJ.

Okay thanks

Thank you and have a great day!

Thank you and have a great day!
CORA RESULTS

1874
Total SMS texts received

742
Total calls diverted

524
Total cosmetologists served

124
Hours saved by call center staff

371
Hours of wait time saved by cosmetologists
COSMETOLOGIST BENEFITS

- No wait time on phone to get in touch with call center
- Convenient digital channel
- Expanded self-service hours on evenings and weekends
- Accuracy in license renewal status details

“Just tried it. Fantastic!”

“Thank you for your help this is cool”
TDLR BENEFITS

We discussed Cora stats and also what we are learning along the way, for instance the people who text “call me” or the lag time in the CE units being uploaded once they are completed (it is a school issue, we were brainstorming ways to nudge them to improve). Cora is giving us more than usage, it is also giving us data about our customers and how we can help them.

“Huge bonus for the agency”

“Wildly successful”

Improved customer service and satisfaction

Provide cosmetologist an alternative channel to inquire on their license renewal status

Lower wait times for the call center based on calls diverted to Cora

Allow call center staff to focus on more value added work with time saved by Cora

Data received from Cora allows department to identify further issues in licensing renewal process (i.e. Continuing Educating status delay)

Increased traffic to TDLR website which allows for more self-service options
LESSONS LEARNED & BEST PRACTICES

START SMALL
• Have small, well define scope to position the project for a quick win, and early adoption from the end users.

BE AWARE OF TIMELINES
• Consider implementation timelines which may impact measure of success
• Deployment of Cora after Labor Day coincided with a standard decrease in calls which made it more difficult to assess impact

BE FLEXIBLE
• Allow time for conversation updates during UAT and Production Support

JOINT COMMUNICATION
• Collaborate on Marketing/Communication Plan

NUDGE USERS
• Guide end users toward common responses when possible (e.g. (yes/no))

MODULARIZE
• Modularize your dialogues in IBM Watson which helps to adopt to change if needed

EARLY USER ADOPTION
• Have a plan to increase user adoption based on low usage during preliminary deployment

GET USER FEEDBACK
• Make a plan to incorporate feedback from users, specifically if they are customers
• Link to survey feature through Cora
• In communication plan provide link to survey
FUTURE USE CASES

1. Allow Cora to process end-to-end license renewals

2. Expand Cora to additional license types other than cosmetologists (electrician, massage therapist, etc.)

3. Allow licensees to pay fees via Cora

4. Automated process for internal workers to limit duplicative data entry

5. Virtual Assistant FAQ to assist customer’s with website navigation and guidance on topics

6. Output from TDLR internal license process optimization effort that may identify additional beneficial use cases
KANSAS DEPARTMENT OF CHILDREN AND FAMILIES: LIEAP Q&A VIRTUAL ASSISTANT
WHAT WE ARE DOING
BUILDING VIRTUAL ASSISTANTS BY APPLYING ARTIFICIAL INTELLIGENCE

LIEAP Virtual Assistant

- Assist LIEAP case workers’ questions in the following areas:
  - LIEAP Policy and System Process
  - 100 new questions
  - Policy Information – SNAP, TANF and Medicaid
  - Questions exist OOTB, State can modify responses via the Admin Panel
  - System How-To
  - Questions exist OOTB, State can modify responses via the Admin Panel

Dashboards & Admin Panel

- Utilize Virtual assistant dashboards:
  - Monitor Virtual Assistant usage statistics
  - Virtual assistants control and administration
  - This includes modification to SNAP/TANF/Medicaid OOTB answers
WHY WE ARE DOING IT
INCREASE CASEWORKER CAPACITY AND ENHANCE WORKER EXPERIENCE

• Get consistent and accurate answers to frequently asked questions
• Help train a seasonal workforce
• Help support workers and supervisors during a new LIEAP season on a new system

Introduce Robotic Process Automation to allow the Virtual Assistant to complete defined repeatable actions in KEES and other relevant systems.
• Enhance digital interactions between citizens and the agency
• Extend POC for ongoing support of LIEAP workers, consider inclusion of RPA scenarios
• Identify additional use cases to expand the benefits of Virtual Assistants across the agency
HIGH-LEVEL TIMELINE
APPROACH FOR DEPLOYMENT OF VIRTUAL ASSISTANT

1. KICKOFF
   09/05/2018

2. DESIGN
   09/17/2018

3. BUILD
   10/01/2018

4. UAT
   11/26/2018

5. PROD
   01/22/2019
CHATBOT BENEFITS
OUR EXPERIENCE

82% Handling Time Optimization
The average handling time reduction

85% User Satisfaction
Increase in positive user experience and user satisfaction

92% Staffing Optimization
The average FTE reduction
QUESTIONS AND ANSWERS

Moderator
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