Creating Specialized Digital Assistants: The Process and Resources

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Applications that interact with users through human “natural” language

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By any other name...
- “Bots”: Conversation as a platform
  - “Chatbots” (text)
  - Microsoft CEO: “Bots are the next applications”
- Virtual assistants
- Personal assistants
- Natural language interaction
A fundamental shift in user interfaces

- The Graphical User Interface (GUI) is overburdened
- "Digital Overload"
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- The Language User Interface (LUI) is maturing
  - Supplement to GUI
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- General digital assistants will be the gateway to specialized digital assistants
  - Like a web browser is the gateway to web sites
Degrees of complexity

- Specialization
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- Specialization
- Personalization
Degrees of complexity

- Specialization
- Personalization
- Interaction
  - Prompting to limit responses
  - Open-ended “How can I help you?”
  - Question-response versus dialog/conversation
Join the revolution!

- Develop skills in using lower-level tools
- Use higher-level tools
- Use a service/vendor
Using lower-level tools

- Speech recognition in the cloud
  - E.g., Google, Nuance, Microsoft
Using lower-level tools

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- Natural language understanding
  - E.g., Language Understanding Intelligent Service (LUIS.ai) from Microsoft Cognitive Services (in beta and currently free to use)
  - Machine learning (data required)
  - Keyword approach
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- Machine Learning
  - Microsoft, Amazon cloud services
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- Text-to-speech (e.g., Cepstral)
Higher-level tools for building digital assistants

- Similar in concept to website builder tools
- Templates, Software Development Kits (SDKs), Application Programming Interfaces (APIs)
- Specialization
Typical verticals where there is a base of speech recognition and NL understanding

- Communications service providers
- Finance and banking
- Healthcare
- Insurance
- Retail
- Travel and hospitality
- Utilities
Nuance’s Nina

- Version for mobile and web
- Mobile version:

**Nina Virtual Assistant Persona™**
Nina is a pre-made, reusable virtual assistant persona, which developers can leverage for their app, or use the available source code to quickly create a custom persona.

**Nina Virtual Assistant SDK™**
Mobile app developers can quickly develop their own virtual assistant by leveraging, adding or modifying pre-built reference designs and tasks addressing common use cases for travel and banking.

**Reference Designs**
Nuance-hosted technology that provides the power and intelligence to Nina. Innovative algorithms developed by Nuance capture the intent of the conversations to provide rapid and relevant answers to customers’ queries.

**Nina Virtual Assistant Cloud™**
A Nuance hosted service that provides the power and intelligence to Nina. The cloud offers scalable, redundant, and PCI compliant servers with guaranteed SLAs of 99.95% uptime. Hosting allows customers to focus on building a better mobile experience for their users, without the additional overhead needed to install, deploy, and manage hardware, software, and network updates.
Microsoft Skype Video Bots

- Conversational avatars for Microsoft’s Skype communications service
  - Cortana already available in Skype

- Can be customized for businesses
  - The Skype Bot Platform
  - Developers Program: www.skype.com/en/developer/

- Currently available in Australia, Canada, England, Ireland, India, New Zealand, Singapore, and US
Bots available in text/SMS, Skype, Slack, Office 365 email, and more

CEO Satya Nadella: Bots are the new applications
Multichannel: Retaining context as customers move from web to call

24/7:

Connecting channels and data for real omnichannel journeys

**Self Service**
Digitizing customer service and sales channels for customers to help themselves

**Assisted Service**
Delivering integrated channels and empowered live agents to manage the omnichannel journey

**Omnichannel Journeys**
Orchestrating channels to maintain context and deliver data-driven experiences
Professional services

- Can work with tools for you
- Deliver and tune a product
- E.g., 24/7, Cobalt, Interactions, Nuance
Interactions’ Human-Assisted Understanding
Natural language technology and tools are at an early stage
It’s not easy

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- Iteration a requirement in any natural language application
  - Tools for testing (e.g., Cyara)
  - Agent backup can generate data for improvement
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- Cost currently an issue
SmartAction natural-language voice self-service

- “Intelligent Voice Automation” (IVA)
- Recently announced versions for Small-to-Medium Businesses

Where is My Order?

We charge on a per-call basis for the Appointment Confirmations solution.

- $1.00 PER CALL
- $250 MONTHLY MIN.
- $250 SETUP FEE
For a list of vendors providing digital assistant technology

- Over 100 vendors providing different levels of resource supporting developing a digital assistant
- And to be informed when a report on the digital assistant market and vendors is available
- TMA Associates: info@tmaa.com