



Can Smart Chatbots Humanize Human Resources?

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June, 2017

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Summary

Issue/Analytical Summary

Artificial Intelligence (AI) is perhaps the most hyped and least understood technology to shape the enterprise landscape since client server computing in the late 60s, when companies broke free of the mainframe and discovered unforeseen opportunities. Without a doubt the application of machine intelligence over the next decade will leave no technological resource or business process untouched, influencing everything from bandwidth allocation across the WAN to employee retention and training. The latter of these two examples in particular holds a great deal of promise. Human resources (HR) has historically circled around the softer side of the enterprise, namely human interaction.

Quantifying those unstructured interactions with the aim of improving productivity or finding and retaining talent has been met with some scepticism by employees and viewed as anything but an exact science by management. But that is changing, thanks to AI-infused chatbots, which have the uncanny ability to understand, put into context, create meaningful inferences, and then propose successful outcomes – all without incurring the stigma typically associated with analytics-driven HR. Within this article, we will outline how chatbots can benefit HR and discuss the potential pitfalls of mixing humans and machines.

Key Takeways

Within HR, AI technologies typically meet two goals – improving operational efficiency and/or creating new business opportunities by augmenting human intelligence.

AI-driven HR processes frequently combine heuristic based machine learning (ML), neural network based deep learning (DL) and traditional predictive analytics modelling to derive meaning from data and then generate meaningful inferences.

Chatbots such as Obie, Lucy Abbot and Niles make for a low cost and low risk entry point for companies seeking to employ AI in the HR process through pre-built routines, data models, and training.

Technology providers (many with HR products) are actively building open chatbot platforms upon which developers can build bespoke solutions that can be incorporated into a wide array of messaging platforms.

Successful chatbot implementations require constant care from both IT and the business, ensuring they have access to timely and accurate data and that has continuous feedback to improve accuracy.

Perspective

Current perspective

Unlike any other department in the enterprise, Human resources (HR) defy definition in that it is not easily quantified, nor is it readily instrumented. Certainly HR software represents a significant organizing force, bringing together and optimizing many disparate tasks such as searching for the right candidate, on-boarding and training employees, scheduling time off, and tracking various workflows such as expense reporting and benefit form submissions. It seems logical, then, given the amount of data streaming off of these tasks that HR software, like any line of business application, stands to benefit from artificial intelligence (AI).

Yet HR relies on people more than numbers. Opinions and interrelationships are much more than the sum of their parts. HR requires a delicate touch and thoughtful interpretation of the data at hand, taking context, history, and sentiment into account. Therefore, putting AI to work in HR to predict outcomes and recommend actions is anything but clear cut. That is because HR relies predominantly on unstructured data, such as email threads, in-person meetings and disparate text documents. This poses many technological

and social problems with early AI endeavours being met with much scepticism by employees and viewed as anything but an exact science by management. But that is changing with the advent of machine learning (ML) and deep learning (DL), which when used together have the uncanny ability to understand those interrelationships, put them into context, create meaningful inferences, and then propose desired outcomes.

The application of AI technologies like natural language processing (NLP), which makes assistants like Siri conversational, and the use of self-teaching algorithms, which inform some of Watson's prescient capabilities, can remake HR, not all at once but a little bit at a time by optimizing interactions and identifying both opportunities and concerns. Within the realm of HR, after all, predicting the unanticipated is of the utmost importance. Is it possible to anticipate the future success of a given candidate? Is it possible to predict the impact of a change in corporate policy? AI affords many such opportunities, most of which are available right now.

Candidate Engagement. Using email or chat exchanges, AI can help companies better communicate with would-be employees, even re-engaging with them over time as staffing needs change.

On-boarding. Through question and answer conversations, companies can better support new hires by quickly answering common questions and expertly routing more difficult queries to the right resource. These same capabilities can be applied to ongoing training.

Compliance. It is imperative for HR to properly document and process employee interactions (both positive and negative). Therefore, with AI-informed predictive routines, companies can ensure that the right (and correct) information is gathered at each stage of an inquiry, promotion, or investigation.

Employee Retention. With an innate ability to find and evolve the detection of important trends within a wide array of data sources, AI-infused HR software can pinpoint employees that are at risk of leaving a company and recommend appropriate, mitigating actions.

Process Optimization. By incorporating AI routines into basic processes such as expense submissions or time off requests, companies can greatly cut down on the resources necessary to check for errors, omission and inconsistencies.

These are only a few of the opportunities for AI in HR software, but what is interesting about these is that most make use of conversation and employ what is commonly termed as a chatbot. Chatbots are the lowest hanging fruit for HR, because they are well known to users and accepted globally as an often-desirable means of communication with services like Apple Siri, Amazon Alexa and Google Assistant leading the way. For HR in particular, they do not represent a threat. They are there simply to improve the speed, accuracy and value of the HR department in supporting employee requirements. They are not seen as a gateway to an analytics-driven valuation of employee productivity or worth.

Through neural networks, chatbots can understand the spoken or written word and respond in kind, learning from each interaction and drawing from a vast repository of knowledge. They never sleep and are available 24 hours a day. Their answers can be more detailed than those provided by a human. And they are adaptive, switching between languages on the fly, for example. And most importantly they can base their answers on, not just the question, but the person asking the question (history, preferences, etc.).

Architecturally, there are two different types of chatbots, those that are declarative (declarative), and those that are driven by data (conversational). Declarative chatbots are procedural and employ both NLP and natural language generation (NLG) in conjunction with a rules engine to walk users through prescribed workflows such as the act

of confirming an appointment. Conversational chatbots incorporate these same capabilities, but they also make heavy use of ML and DL routines to understand things like intent and sentiment.

The use of these chatbots within HR software itself is still in its infancy. Major HR players like Oracle, Workday, SAP, IBM, and others are actively pursuing the idea for use in HR. Many are also building broader platforms for use within any app that relies upon communication, such as customer relationship management (CRM). For example, last September Oracle launched a standalone chatbot platform, Oracle Intelligent Bots Cloud Service (IBCS). This foundation will inform the company's broad line of business software portfolio and is already showing up in the form of Oracle Adaptive Intelligent Apps, one of which focuses specifically on finding appropriate job candidates.

But that's not the only entry point for chatbots. There are many, many stand-alone chatbots available, each specializing in specific domains of expertise or functions. Each can be customized to meet specific needs and embedded within a wide array of user interfaces. Out of the box, are chatbots designed to look up information, gather feedback or simply converse. There's even a chat bot capable of carrying on a conversation with millennials. Here are a few notable HR-capable chatbots, most of which are natively embedded within the Slack collaboration tool.

Obie - This general-purpose question and answer chatbot uses ML to learn from past interactions in supporting user requests for information. It is in use among some very notable customers including ESPN and Disney, NASA and SAP.

Lucy Abbot - Built on top of api.ai, this Slack plug-in is geared around tasks such as on-boarding and uses a lexicon specific to millennial and Gen-Z users.

Niles - Built as a knowledge-sharing chatbot, Niles works, not just to answer questions, but also to ensure that supportive content is kept up to date, identifying stale answers and reminding owners to provide an update.

Captain Feedback - Created to give employees an open forum for honest discussion of performance.

Clearly from HR's vantage point, these chatbots offer a way to provide more accurate support more rapidly and with greater accuracy. But why would employees want to speak with a computer rather than a human in solving HR concerns? For many users, chatbots serve as a neutral representative, one without bias or emotion that can objectively make decisions. Others see chatbots as a means of gaining greater insight into their employer with minimal impact and limited exposure. That is, chatbots encourage users to explore and inquire, seeking out information on further job opportunities in house, for instance.

From an IT perspective, one of the benefits of intelligent chatbots is that they do not require a tremendous amount of data and domain expertise to build. IBM, for instance, uses the popular Botkit open source project to embed various IBM Watson AI chat capabilities within Facebook Messaging,

Twitter Slack, etc. Through dialog flows and pre-trained content, these chatbots don't need to be trained...at least not initially and extensively. However, because chatbots rely upon ML and DL routines, which constantly learn from past experience, it is imperative that IT view a chatbot as if it were a garden, ensuring that it is constantly nourished with new and accurate data and that it is free from weeds by providing continuous feedback. This means refining modelling phrases ("I want candy" = "Candy I want"), marking incorrect answers as such, and adding new classifiers to better identify intent.

HR's responsibilities extend far beyond chatbot training and maintenance. The sensitive combination of AI and HR requires a delicate touch that centers on transparency. For example, any HR chatbot should adhere to a few rules of engagement in order to build and maintain trust with employees. It must:

Tell users that they are talking to a computer. This may seem like something that can go unsaid, but in simply beginning a conversation with "I am a chatbot," employers demonstrate their commitment to transparency and honesty.

Ensure users understand what aspects of their conversations are being tracked and analyzed, assuring them that the objective of doing so isn't to assess them but instead to improve the value of the chatbot.

Provide users with a view into the inner workings of a chatbot. This could be as simple as a dashboard, showing most popular questions.

With these rules in place, and with some careful care and feeding, AI-infused chatbots can serve as a valuable entry point for AI, paving the way for its use much more broadly. With the appropriate big data architecture in place, HR professionals can begin to use AI and analytics together to do far more than answer questions. Imagine if HR departments could use AI to fundamentally change the way employees and companies relate to one another. By blending those interactions within the context of a wide array of data sources and predictive algorithms, it is possible to do away with some of the more laborious and unpleasant aspects of HR such as employee reviews, and replace those

with a system designed to help employees reach their potential.

Until then, the ready-made world of chatbots gives companies a low cost and low risk way to improve operational efficiency, for both HR and employees, through the augmentation of human intelligence. That's what chatbots do best, after all. They make for an excellent first line of interaction between HR professionals and employees by scaling and enhancing what people do best – communicate.

Recommended Actions

Buyer Actions

Enterprise buyers of AI services must be careful not to underestimate the complexity of adopting even the simplest AI capability, such as sentiment analysis. There is a tremendous amount of hype in the marketplace characterizing these services as no- or low-investment implementations in terms of expertise. And while many services are indeed easily built, the underlying, data-oriented work involved in creating and training the necessary data models for these services is, in no way, a trivial affair – a fact that is not likely to change going forward.

Companies considering the adoption of AI with HR must first come to grips with what is the most important facet of AI, namely data. AI needs a lot of data, trusted data that can be readily consumed by the appropriate AI service. AI cannot tolerate inconsistent, changeable data formats and sources. This requires buyers to build a comprehensive data warehouse/lake that can centrally govern all necessary data sources, be those structured or unstructured.

Buyer should beware of vendors promoting ML- and DL- driven chatbots. There are many solutions that appear to be AI-infused but in actuality only deliver rule-based heuristics, well-informed decision trees, or pattern matching recommendations. True ML and DL systems (chatbot or otherwise) are not static entities reliant upon an extensive set of rules; rather these systems, when presented with decisions that do not adhere to any rule, are still able to draw meaningful conclusions and propose appropriate actions.

The AI algorithms and models used by even the most basic of chatbots are not entirely plug-and-play. Regardless of the work spent operationalizing AI in HR, trained professionals with domain and data expertise are necessary to ensure that predicted outcomes are based upon a solid foundation that is both timely and accurate for the company and its employees at any given time.



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