SOCIETY FOR HUMAN RESOURCE MANAGEMENT

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WEBCAST:
TALENT ANALYTICS IN THE NEW ERA
OF COGNITIVE COMPUTING

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THURSDAY
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SPEAKER:

JACKIE RYAN
Director of Product Management for IBM's Smarter Workforce Portfolio

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MODERATOR: Hello. And thanks for joining us for today's webcast Talent Analytics in the New Era of Cognitive Computing.

This program is part of SHRM's webcast series. You can see a list of available and upcoming events at www.shrm.org/webcast.

Before we introduce today's speaker, we want to provide you with some information about this presentation. First, SHRM would like to thank IBM for sponsoring today's program and making it available to the HR community.

We have some tips for you on using the webcast interface. On the bottom of your webcast screen, you should see a dock with icons. Those buttons control each of the windows on your screen. They work as toggles. If you click one, it will either open or close the corresponding window. And if you click it again, it will do the opposite action. Keep that in mind, if you accidentally or intentionally close one of the

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You can reposition the window displaying the slides by clicking and dragging it. You can also change the size of that display window by dragging it from the bottom right, or you can click the large square sizer in the upper right of the slides window to make it full screen.

A PDF version of the presentation slides is available in the program resources window, just below the SHRM logo on the left side of your screen. We have two versions of the same content on one. There is one slide per page. The other has two slides per page to save on paper and ink, if you are printing out.

We will have time at the end of the presentation for a question and answer session with our speaker. Under the program resources box there is an area for you to submit questions. You can type in your questions at any time during the program, or copy and paste them from another app if you prefer, and then click Submit. That

gets the questions to us. We will hold all questions until our presenter has finished speaking, and we'll get to as many questions as time allows.

In today's program, you are going to learn about cognitive talent analytics and how they can be used to grow HR's impact on your organization.

We are pleased to welcome Jackie Ryan from IBM to lead this program. Ms. Ryan is the Director of Product Management for IBM's Smarter Workforce Portfolio. In that capacity, she is responsible for the strategy and new product offerings for workforce analytics.

With over 20 years of experience in information management, analytics, and big data technologies, Ms. Ryan has led worldwide software development, product management, and marketing teams that have led the market in client value and innovation. Most recently, she has led innovations in Cloud software as a service, workforce analytics solutions, that enable HR

professionals to interact with self-learning, cognitive analytic systems through natural language.

We have a full agenda and a full room today, so with introductions complete I am pleased to get today's events started by turning things -- the webcast microphone over to our speaker, Ms. Jackie Ryan.

MS. RYAN: Great. Thank you very much, and hello, everyone. As was mentioned, I am Jackie Ryan, and I lead our Science and Analytics Portfolio within IBM's Smarter Workforce. And I am hoping that today's session will be both fun and informative as we explore the wild world of cognitive computing and how this can fundamentally change talent analytics for the HR professional.

So in this session we will cover three topics -- the evolution of cognitive, to give a perspective and history on how cognitive has come to be. We will talk about applying that very specifically to the new objectives of

transforming HR. And then, third, we will cover how to get started, the way ahead.

So, with that, let's start with the evolution of cognitive computing. So I want to take a look here that for -- for decades, science fiction visionaries have shared, you know, their renditions of intelligent machines and computers that could learn and function as humans. Intelligent machines have since moved beyond that of a science fiction story, and today they are a reality thanks to the breakthroughs in cognitive computing.

Cognitive computing is here, and this innovative capability is increasingly becoming woven into our everyday lives and fundamentally changing how we engage and interact with information and information systems.

An example here, for those of you who are techies, if you look on the left-hand side here, the intelligent-speaking computer on the bridge of the USS Enterprise on the show called Star Trek. Today, many of these capabilities are

now a reality made possible through breakthroughs in cognitive computing and are being implemented by pioneering organizations to help solve some of society's greatest challenges.

While tremendous breakthroughs and advancement have been made over the past 50 years, we have only yet begun to scratch the surface of the potential of this innovative and exciting technology.

So moving forward here, I'm going to give kind of an overview of cognitive over the past 50 years here. And I promise you I won't go through 50 years of history, but just calling out some of the very specific events that have transformed cognitive to where it is today.

The earliest history of cognitive computing can actually be traced back to the fourth century B.C. and Aristotle's invention of the first formal deductive reasoning system. Other innovative discoveries and breakthroughs over our history, such as Charles Babbage's analytical engine, have also laid the groundwork

for the modern history of artificial intelligence and cognitive computing.

Several significant events have influenced how this capability has evolved to where we are today. So, for example, in the '50s, Turing published the Computing Machinery and Intelligence and introduced the Turing test as a way of operationalizing a test of intelligent behavior.

In the mid-'60s, a Stanford team led by Ed Feigenbaum created Dendrol (phonetic), and this was the first expert system or program that was designed to execute the accumulated expertise of specialists. Dendrol applied a battery of if/then types of rules in chemistry and physics to identify the molecular structure of organic compounds.

And then, in the '80s, this was actually seen as the boom in artificial intelligence, due to advances that were made in expert systems, and, again, further advancements in Dendrol.

Moving into the late '90s, this is where IBM's Deep Blue defeated Garry Kasparov in the -- who was the world chess champion.

And then, moving closer to home here, in 2011, IBM's Watson defeated the top two Jeopardy champions. And that wasn't cheating either by being hooked into the internet.

And then, just recently, in the last year, in 2014, IBM announced the formation of a new business unit to focus on commercialization of cognitive computing solutions such as Watson. And also, Google acquired Neth Labs, who make learning home devices.

So with advancements over the past 50 years really coming to fruition, we are entering into a new era of computing. The cognitive computing era follows the eras of programmable and tabulating systems and represents a huge leap forward. This is a new era because there is a fundamental difference in how these systems are built and how they interact with humans.

Additional programmable systems are

fed data, knowledge, and information, and they carry out and return results of processing that is pre-programmed by humans. In the programmable systems era, humans do most of the directing. The cognitive era, on the other hand, is about thinking itself and how we gather information, access it, and make decisions.

Cognitive-based systems learn and build knowledge. They understand natural language, and they reason and interact more naturally with human beings than traditional programmable systems, while the term "reasoning" refers to how systems demonstrate insights that are very human-like.

So cognitive systems are able to put context into -- or put content into context. They are also able to quickly find that impossible needle in a haystack, identify new patterns and insights. Cognitive systems extend the capabilities of humans by augmenting human decision-making capacity and making us make sense of the growing amount of data that is

accumulating here and that we have access to these days.

So we see these broad areas of capability -- so we see broad areas of capabilities for cognitive systems which directly relate to the way people think. In the future, we will see systems with higher orders of cognitive capabilities.

So to go through these, to highlight what these are, engagement, the capability -- this capability fundamentally changes the way humans and systems interact, and really extend the capabilities of humans by using their ability to -- using their ability to provide expert assistance and to understand.

These systems provide expert assistance by developing deep domain insights and bringing this information to people in a timely, natural, and usable way. Here cognitive systems play a role of an assistant that can consume vast amounts of structured and unstructured information. They can reconcile ambiguous and

even self-contradictory data, and they can learn.

So in this partnership the two -- human and machine -- are more effective than either one alone. Much like the human brain, these systems begin to build models of themselves and the world around them. These models include the contextual relationships between various entities in a systems world that enable it to form hypotheses and arguments and discover patterns.

If we look at decisions, these are -- these systems have decision-making capabilities to the degree that humans can trust and rely on their judgment. Decisions made by cognitive systems are bias-free. However, certain standards are required for humans to fully trust their decisions.

Currently, cognitive computing systems perform more as advisors, by suggesting a set of options for humans who ultimately make the final decisions based on insights and options being surfaced. Confidence in a cognitive systems

ability to make decisions autonomously, without humans, will depend on the ability to query and have a traceable -- traceability to audit why a particular decision was made, as well as improve confidence scores.

If we move to discovery, discovery is the epitome of a cognitive capability. These systems can discover insights that perhaps could not be discovered before by even the most brilliant human beings. Discovery involves finding insights and connections and understanding the vast amounts of information that is available around the world.

With increasingly more volumes of data, there is a clear need for systems that can help exploit information more effectively than humans can on our -- you know, on our own.

So moving on, the foray with intelligent question and answer systems began in the '60s. One of the most famous early implementations in this area was ELIZA, which was written by MIT by Joseph Weizenbaum in the early

'60s, or between '64 and '66. And it mimicked a psychotherapist who could run a dialogue with a human patient.

And even though it provided an illusion of an expert system, ELIZA did not have any cognitive power. It used to trick the human user by using some early natural language or NOP techniques, such as string substitution and stock answers that were based on keyboard matching. So much has happened since then, and intelligent expert systems that can handle questions from human users in natural language started to come up.

And two of the most recent examples that are shown below, and one is Next IT Olney (phonetic), and this system can be trained with a set of frequently asked questions on a particular domain. And when a human user asks a similar question using natural language text, the system responds.

So Olney is deployed actually in Navigator, which is a secure website for members

of Aetna, and it is trained to handle the frequently asked questions about the registration problem a member may face to register in the website.

More advanced systems, though, are solutions such as IBM Watson and Engagement Advisor. IBM Kenexa Talent Insights, which uses IBM Watson Analytics. These systems can be trained on a particular domain. When a user asks a question, the system tries to answer it based on the knowledge base it is trained with, and ontologies to uniquely tailor to the language of the business.

So it is more powerful than Olney in a sense that Watson is not dependent on a pre-defined set of questions. It attempts to answer any question that is posed to it.

So these systems fundamentally change the way humans and systems interact, and significantly extend the capabilities of humans by leveraging their ability to provide expert assistance and to understand. These systems

provide expert assistance by developing deep domain insights and bringing this information to people in a timely and natural and useable way.

So, again, here the cognitive systems play the role of an assistant. So currently cognitive computing systems are performing as an advisor, where they suggest insights and options to a human user who ultimately make the final decision.

One example they call out here is the Watson Oncology Advisor. So IBM, in partnership with the Memorial Sloan-Kettering Cancer Center, developed a Watson Oncology Advisor that has the ability to sift through one and a half million patient records. That represents decades of cancer treatment history, such as medical records and patient outcomes, and provides physicians evidence-based treatment options in a manner of seconds for which then they can decide what they want to do.

IBM Watson Discovery Advisor is an example of cognitive discovery capabilities that

combs through massive amounts of data looking for insights and connections without relying on a human question initiative throughout the discovery process itself.

So moving forward, and kind of finalizing -- getting to the conclusion of how has cognitive computing come to be, I want to take you through the evolution of cognitive and how cognitive computing will evolve over five dimensions.

So this is an area that is the art of the possible and with research underway in each of these areas. So how these three areas of cognitive computing evolve is going to depend on five important dimensions that you see here, which is the evolution path and rate of advancements across these dimensions.

So current cognitive systems are predominantly passive, and they require that human beings initiate the action to generate an outcome or a response. And often this interaction is through typed text on a computer

or a mobile app or a web portal. Future cognitive systems will increasingly enable a more natural interaction with users, including voice and visualization.

Future systems will become increasingly more interactive and engaging. Significant advancements have already been made to better understand users and deliver a responsible -- responses that are fit for a user's specific locative and temporal context.

Current cognitive systems are not -- are not generic enough to learn and adopt to new domains on their own, meaning that currently systems have to be trained. So they are relying upon humans and domain-specific subject matter expertise to train them, whether that's training them with information about a given industry or information about a given problem.

So the exception is with Watson Analytics whereby data that is modeled is immediately learned as it is modeled, and you can start posing questions immediately.

Current cognitive systems primarily work with natural language text and require natural language processing capability for a specific language. In future generations of cognitive systems, they are going to accommodate a variety of media beyond text, such as audio, image, video. So continued advancements in this dimension will be dependent, obviously, on the various disciplines of computer science such as speed and image processing and pattern recognition, all again of which are underway.

The fourth area here is that cognitive systems are increasingly being deployed to be widely available and accessible over web portals, mobile apps, and the Cloud. So in the future, as the adoption of cognitive-based systems increase, they are eventually going to spread to become ubiquitous.

This feature could include a marketplace, millions of cognitive agents or avatars that are driven by the explosive adoption of mobile devices and an upsurge of machine-to-

machine interactions.

So tomorrow's -- we believe that tomorrow's cognitive computing fabric will be really interwoven into technology, such as social media, therefore, really touching all of our lives.

And then, finally, cognitive systems will need to increase in scalability to support wide applicability, and huge advances have been made in this way.

So compare and contrast. Just in the past four years, in 2011, the version of IBM's Watson system that beat the reigning champion on the U.S. television show Jeopardy, it required 90 IBM Power 750 servers. By 2014, Watson was 24 times faster. It had 2,400 percent improvement in performance and was 90 percent smaller.

So, in the future, cognitive systems will be offered as a fabric, and IBM has already made Watson technology available as a platform in the Cloud, which is opening up new domains and industry-specific applications such as IBM Kenexa

Talent Insights for HR professionals.

So moving forward, let's move into the next section and apply cognitive computing to the problems that we're trying to address in talent analytics and transforming HR with cognitive computing. So the HR profession is undergoing a major transformation, and this is probably not news to anyone.

You know, given the workforce challenges that you see on the left here of shifting demographics, the rise in the independent worker, social and mobile business, globalization of organization, and this is absolutely not intended to be a complete list here.

But this is causing a shift in the HR professional's imperative to transition to or to expand further as a strategic business partner and find new ways for acquiring talent, developing leadership and the workforce, optimizing the way in which we do work, looking at recognition, and retaining top employees.

You can't go to any -- any conference these days on workforce management without analytics being front and center, talent analytics as front in center, as the way in which HR professionals need to start to adopt to help make that transition.

The challenge, though, is that analytics is really in its early stages within the work -- in the workforce, in applying to the workforce. So, as an example, over 40 percent of organizations are limited still to basic reporting. This is pretty much where the bulk of companies, obviously with exceptions, who have been able to adopt and move into the next realm of predictive analytics. But for the most part, we are having to make decisions based on what has happened in the business currently and in the past.

So, not surprising though, because, you know, even a simple workforce analytics project has multiple steps and multiple people involved, ranging all the way from getting access

to data, working with IT to prepare the data, working with HR data scientists, or working with the central analytics COC to help analyze that data and -- analyze and validate the data, derive certain insights, and collaborate with their business partners to understand specific actions and to reflect that in assets such as reports.

There are quite a number of different roles that are involved and quite a number of steps that are also involved. So this poses a lot of implementation challenges, such as because some of the core skills that are needed to -- to be able to do what we just talked through are not traditionally part of an HR professional's background in terms of information management, analytics capabilities, and so forth.

So the current workforce approaches that we all know and love and have used, and so forth, are based on a typical path, which is understanding the state of the business using descriptive analytics, looking at different areas that -- based on the data that is available,

moving into predictive, to be able to answer different types of questions of -- propensity questions to proactively look ahead in the business to understand what could happen and what will happen.

And then, very importantly, applying prescriptive analytics, looking at business rules and other techniques that help to define specifically actions that can be made. But, again, this path -- this path is pretty challenging for a lot of HR professionals, given the fact that it typically needs computer science, information management science, operational research type of background.

This will not change in terms of the need for HR professionals to adopt analytics to help with that pursuit and expanding the role as a strategic business partner. There are both internal drivers and external drivers that are forcing analytics to be used within the workforce.

So this, in reality, is the perfect

storm. It is the perfect place where cognitive computing can actually power the transformation in talent analytics. If you think back to the characteristics that we walked through in terms of what is cognitive computing, and the characteristics that cognitive computing has and can provide, this is fundamentally transformational.

For example, with Watson Analytics we are able to pull together a unified analytics experience to bring both descriptive, predictive, and in the future prescriptive capabilities without the HR professional having to know how to do that. All of that capability is embedded within cognitive computing techniques.

The ability to interact in natural language with a cognitive system, it is very well with, again -- with, again, the types of analysis that an HR professional typically wants to work within and the experience they want to have, and the ability to have a guided analytics experience where a system is proposing and surfacing

insights that they may not have thought of initially.

So I'd like to give an example here, and this is using IBM Kenexa Talent Insights, which is powered by Watson Analytics, and just to walk through how this actually happens in reality. So, in this case, what you see is -- within Talent Insights, you have the ability -- the system has determined the starting point based on the data that it has already learned. And it is giving me a starting point to start exploring my questions.

I can also -- if I want, I can specifically type in a question, as you see here. I have had to take screenshots, because I am not able to show a video here, but -- had to take screenshots, but you can see here typed in a question, and what it will do, then, is it looks at the question and determines from the data how to best answer that question. I didn't have to type it in query language. I typed it in English.

What Talent Insights does, then, is it looks at, of the data that is available, where to best start. I didn't have to assess it/analyze it myself. Talent Insights did that on my behalf.

From this point, after I have typed in a question, Talent Insights has immediately surfaced out results, and the results in the form of visualization that show the relationships in the data based on the questions that I have asked.

Also, it is also looked at defining it -- it has also recommended and surfaced a visualization that best maps to and would help to answer the question and help me to then take this and work with my business partners to look at and understand and explore where to go and what this was telling us in terms of specific actions, as well -- in terms of looking at discovery of new insights, what you see in the top kind of sort of left, which has been highlighted, is Talent Insights also -- by understanding and modeling

the data, it is recommending and surfacing additional insights that I can then go in and explore and connect with what I have already looked -- explored and assessed.

So, in summary, using Talent Insights as an example, which is powered by Watson Analytics, we can see -- if you think back to the three characteristics of cognitive computing around discovery, and here it is creating new insights from HR data, it is helping with decisions by providing, really, a bias-free recommendation.

And, third, the engagement -- you can see in terms of the interaction, it's through natural language. It's understanding the terms and definitions of an HR professional through both the natural language processing as well as through customizations that are made through an HR ontology.

So in the last section here, I will cover how to get started and now to approach cognitive computing types of projects. And you

will see quite a different pattern than if I was suggesting an approach be used to either build out, you know, this -- to start an engagement on using the traditional method.

So with the cognitive computing approach, there are really four phases here. The first is defining a clear business problem, and this is so critically important in terms of being able to shape the questions that you would then pose. There is no ramifications, having said that, of changing a question and asking -- you know, asking cognitive systems something different that you have -- if you change your mind. That's kind of the beauty of it.

But defining the business problem in terms of we could pose these questions, but so what? How is that going to impact the business in terms of what we are trying to figure out and why? So from there we define the relative questions that we want to start to explore.

Second is identifying the data, and this, again, is where advancements in cognitive

computing help, and also the application of data preparation services.

So in the traditional manner and traditional approach, we would understand the data that we need to be collected, we would apply a whole series of techniques to profile for, you know, outliers, understand characteristics in the data such as the quality of the data, duplicates, et cetera, we would cleanse the data, we would transform that data.

With cognitive computing, it is doing that on your behalf in terms of profiling the data and surfacing out what the characteristics of that data are. So you can make decisions on what to do from that point.

Third, you interact and explore, and this is truly the fun part of it where you ask questions. Interact with the system. You're not programming the system. You're not programming a model. You are interacting with the system, and basically jointly working through a problem.

And then, fourth is looking at the

actions that need to be taken thereafter. And those actions can be taken in the form of or can be created in the form of collaborating with other business partners or working with those who have a workforce science background and can bring the best practices and skills and proven methods of action definitions to bear here in looking at specific actions.

Other recommendations that I have here, I'm looking at pitfalls to avoid when working through an analytics project. The first one is actually not being too HR-centric. And this may sound funny based on, you know, what I just finished mentioning, but one of the transformations from -- in talent analytics is connecting the workforce to the business in terms of what changes, what things need to happen in the workforce to really improve the business.

So this really causes us to look beyond the boundaries of the data that we typically have and how we typically look at programs that support the workforce, but,

instead, look at it from the business perspective. What are the business objectives? How does the business make money? What are the clients that the business serves? And using that perspective in analytics projects.

The second is -- relates to data. So, of course, there is the term that we all know and love around garbage in garbage out. But you can get stuck in that too quickly, meaning there is a degree of -- to which we look at the quality of data.

Working through a project where you get to a point where the data is perfect, you will have missed the point of interaction in making the decisions. But starting with data that you are not sure of can also lead to not -- you know, to incorrect results in the analysis. So the point being, understand the characteristics of the data and understand when enough is enough that can get you started using -- can get you started in asking questions with a certain degree of confidence on the data.

Third is, you know, not putting -- the intention here is not to position analytics as a substitute for human judgment. And this, again, is -- this is a good example of where cognitive analytics and systems employ -- like Talent Insights that use talent -- that use cognitive computing can act as an advisor and as a -- you know, a sponsor here in working through different problems to suggest recommendations. Ultimately, you have the -- you make the decision based on what you are seeing.

And then, moving forward, a couple of others that I will suggest here as well, which have been themes in what I have recommended earlier, is link to the business strategy. This is so important and is the reason why -- called out the first stack around understanding the business problem, because undoubtedly there are tons and tons of different problems that we can address.

And, you know, again, it is a bit -- you can get from Point A to Point B very quickly

using cognitive computing. However, you have to keep asking the question of, so what? And the "so what" relates to the business strategy.

The other element that I would -- or other recommendation I would call out is demonstrating repeated ROI, meaning incremental ROI. Working through a problem, look at the -- what does the result show, what does it mean, and what actions can be taken, and using the outcomes of those actions to feed into the next set of analysis. This can be very quick or it can take some time, but important to look at the impact of the decisions and the actions that are made in terms of influencing what next to take on. And also, really importantly, to show the return on investment to partners, so that you move from a push model to a pull model in terms of insights on the workforce.

So one last slide, I will just -- that I will quickly go through here is that we recently announced IBM Kenexa Talent Insights as part of our Kenexa open HR initiative, and we

announced this yesterday at the talent analytics summit in New York City. And our open HR initiative refers to both open talent management and open talent analytics.

So open talent management, opening it up for partners to be able -- recognizing that our clients are working in a heterogeneous environment. And the SAP alliance is an example of this, where we are able to, through the use of connectors and user interface APIs to be able to connect in different capabilities from those two portfolios.

And the same is true for open talent analytics, again, based on cognitive computing and being able to provide services that complement the cognitive computing capabilities, such as HR data services and workforce consulting services.

So with this, I -- this is the end of the session here, and I believe I will turn it back to you, Mike, for questions.

MODERATOR: Thank you. Before we turn

to our audience questions, and we do want to encourage you, if you have questions, go ahead and ask them now. We do have a couple of announcements.

First, SHRM wants to, again, thank IBM for sponsoring today's program. IBM's talent analytics and survey data help drive business outcomes. To learn how IBM Kenexa Solutions can help you create a smarter workforce, visit the IBM Talent Analytics and Survey home page by following the links in the webcast player, or on the webcast page on SHRM online, or visit www.ibm.com/smarterworkforce.

So I want to go ahead now and take the first of a couple of questions. Let's start here with an audience member who asks, "For companies that adopt systems such as the ones you've described, what have been the clear outcomes, and how long before such outcomes are realized?"

MS. RYAN: Right. So that depends, too, on the type of cognitive system that is put in place. Now, as I mentioned that there is a

learning phase that cognitive systems will work through.

So if you are using cognitive capabilities from, for example, Watson Advisor, there is a learning phase where if you think of the oncology example, where all of that information is essentially made available and ingested into Watson, and it learns -- literally learns every stitch of text that you give it. And there is a learning phase, essentially like taking it to school, where you pose questions and look at the answers and help to guide it.

Once it graduates, once it finishes that learning phase, then that is typically when people put it into production. So it depends on the type -- the content and the type of information.

The math version of Watson, which is Watson Analytics, which Talent Insights uses, is pretty instantaneous in terms of the learning phase, and "instantaneous" in quotes meaning it depends on the amount of data that is being used

within those systems.

So as in the case of the math version, you send it data, it will immediately model that data, and apply the HR ontology to understand the relationship and the correlations and the information about that data that has been ingested, and then you start.

MODERATOR: Another audience member asks, "Do you believe this type of technology will replace the current HRIS function?"

MS. RYAN: I think it will replace the current HRIS system, but it will complement it, absolutely. So existing systems are fit for purpose. They have a very specific role, and we hope -- you know, and in a lot of cases a very, very good role.

And the amount of data that gets created by the applications that are used, that data is reusable, and that data is what can be used in cognitive systems. That is kind of one of the beauties of cognitive systems where you can bring in massive amounts of data and it will

go to work over it. So I don't think those systems -- I do not believe those systems go away. I believe that cognitive systems complement them.

MODERATOR: Continuing with audience questions, another audience member asked, "For the type of solutions that you have been describing, what size company will reap the" -- I'm sorry. I just stumbled over that. "For the type of solutions you have been describing, what size company works best?"

MS. RYAN: Yes. So I would -- two thoughts on that. I would give a very different answer today than I would have been able -- than I would have given probably, you know, four years ago, four or five years ago. Because of the advancements in processing, computing technology, price of hardware, and just advancements we have made in understanding how to apply cognitive, that -- you know, you can pretty much get started now, which opens it up for companies of a wide range of size.

So, as an example, in the Talent Insights case, we are working with companies that have less than 1,000 employees. We are also working with clients who have thousands of employees, hundreds of thousands of employees. So it is -- really, the -- you know, the factor, the driving factor is less of the size of the company, but more so where -- you know, the understanding that people have about what is the art of the possible, and their ability to look at things and how to do things differently, because the technology is there now today to do things differently, and costs have gone down substantially with systems now available in the Cloud of Cloud SaaS services.

If you think back to the -- you know, the Jeopardy example, and I gave, you know, some pretty specifics on the changes there, that was all unprimmed (phonetic). Now, a lot of that technology and the technology we are using in Talent Insights is Cloud SaaS-based.

MODERATOR: I have a couple here, just

on -- let me put them together -- on the type of background of someone in this area. One audience member asks, "With talent analytics, does the analyst need to understand sequel and databasing?" Another audience member asks, "What professional development opportunities would you recommend for HR professionals to become more involved in data science?"

MS. RYAN: Okay. Great questions. Well, take the first one, which is on the skills needed to do this. So the skills are very different for -- if you were to build this -- your own using a traditional method versus if you are to use a cognitive computing approach.

So if you think back to the example that I showed where I typed -- I showed through the screenshot, essentially I had typed in a question, Talent Insights surfaced a visualization that represented a response. The skills that are still needed are, you know, analytical thinking, and looking at the response and comparing it and assessing relative to what

the -- you know, what is seen in the business and what would be a reasonable answer.

So it is not necessarily saying vetting out, but using the information to look at and analyze what do you do next. Didn't have to build any models, didn't have to work through data integration methodologies, didn't have to build a warehouse, didn't have to build data markets. That is -- all of that is encapsulated in cognitive systems and cognitive services, for example, which Talent Insights uses.

So that is kind of what I would look at for -- you know, for cognitive systems. If you are to build on your own, you would absolutely need to have created those -- all those skills that I just mentioned, data integration skills, data warehousing skills, and/or rely on your IT group for that.

But quite often what has happened over the -- you know, at least the last three to five years, or probably more five to eight years, depending on the type of organization, HR groups

have built up their own shadow database systems. So they have had to bring in, you know, DBAs and folks who understand how to manage -- deploy and manage and run database environment.

So the skills -- I guess the net is the skills that you would need, if you were to build on your own, are very different. They are typically in information management, operations research, analytics processing, i.e. everything that is encapsulated under today's data scientist role.

The cognitive systems -- like I said, you still need deductive reasoning. You still need analytical thinking to look at a response and figure out, what next?

I think the other part of the question is any recommendations on where to go next to continue learning. And there are -- I would recommend, there are sites that we can make available through SHRM to cognitive computing learning online, and that would probably be my best recommendation. There are probably a couple

of different sites that I would recommend that have specific courses that can be taken.

MODERATOR: Continuing with audience questions, an audience member asks, "Is this system currently used in hiring? And is it being used for pinpointing talent matches?"

MS. RYAN: Right, right. Those are the scenarios that we are working with our clients on is exactly that. And I want to tie this actually to the earlier question about, you know, existing systems. And I know the question then was very specific to, you know, the existing HRIS type of system.

But if you think about the ATS systems that are in place, data generated from those ATS systems can be used in conjunction with cognitive systems like Talent Insights to help with the hiring process and provide another level of insight that you may not necessarily get through the ATS system. So we are very much -- that scenario is a very real scenario that is being used.

MODERATOR: Another audience member asks, "Which areas" -- I'm sorry. "Do you have" -- the question is, "Do you have any applications that work for selecting candidates for global mobility assignments?"

MS. RYAN: Well, you can -- that is a realistic scenario that could be used. When you look at global mobility, it would be a matter of -- you know, again, if you think through the process that you would use to work through a global mobility decision, in identifying what is the data that would be relevant for making the decision, and then looking at the results that would be -- that would surface.

So it's, you know, the whole four steps of identify the problem, what really of global mobility are we trying to look at, what problem specifically are we trying to look at, is it the cost, the -- or is it the -- you know, the eligibility of employees for global assignments. There is a lot of different factors. So really getting specific about the problem, identifying

the data, posing the questions, and looking at what do you do.

It is -- I realize I am giving an approach versus a very specific answer, but that really is the way in which you start off on these types of, you know, analysis is that -- it kinds of forces that process that I mentioned.

But the good news is you get to, you know, information and insights a lot quicker than if you were to have to build everything up.

MODERATOR: For our audience members, before you close today, we hope you'll take a moment to give us your thoughts about this webcast. The icon on the right of the dock on the bottom of your screen, it's a reddish one that looks like a checklist with a checkmark, points to an evaluation form. You can bring that up by clicking the icon or it will pop up on the screen when we wrap up in just a few minutes here. Your input helps us assess today's program and plan for future events, and we really appreciate it.

At this time, if you have been with us for most of the program, you can now download a certificate of your participation. You can use this as proof of attendance if you are asked to provide that by either SHRM or the HR Certification Institute in an audit.

You do not need to have the certificate to claim the credit. If you don't have the certificate, we can still provide you the information you need in the case of an audit. But if you would like to download it, click the icon on the left of the bar at the bottom of your screen. It's the purple one and shows a speaker in front of a classroom.

Continuing here with audience questions, audience member asks, "Based on your review of the Watson engagement advisor, can it be inferred that the advisor can handle a training session and take questions based on the scope of the knowledge base?"

MS. RYAN: Hmm. That's a great question, and I would see no reason why it

couldn't. I guess that's the kind of short answer.

MODERATOR: All right. And continuing with questions on knowledge base, another audience member asks, "The knowledge base that powers these systems, what is the source of the data that it contains? Is it captured from other sources, or is it manually or specifically entered into the system?"

MS. RYAN: Yes. The source is what you bring. So the source of -- and just kind of expanding that out, what you bring can be from systems like transactional systems, it can be from sources of information that you handcrafted, it can be from sources of data that has been exported from the data management component of other applications. It literally can be from anywhere.

It can be from surveys, it can be from assessments, and for -- you know, specific to, you know, the workforce. If you think of the oncology example that I mentioned earlier, all of

that data for which the Watson Corpus was built was based on literature very, very specific to oncology and surrounding material.

So in the workforce example with Talent Insights, those systems that I mentioned are common -- are examples of where you could source data and bring that data. So this is an area where the data integration -- so getting data from Point A to Point B continues to be automated as a service -- over time as a service within the cognitive systems.

And not only getting the data in but working through that hard stuff I mentioned about understanding the state of data, so you get to a level of confidence in knowing what is that state of data, so that when you look at the visualizations you've got confidence in what you're looking at and/or you see anomalies that you can go back to and quickly look at how you might change things. You might need to modify or, in most cases, correct the data.

MODERATOR: Let's see if we can

squeeze in just a couple more questions in our minutes remaining. Let me put together a couple from the audience. One audience member asks, "How well do cognitive systems work in companies with overseas offices or with a workforce with several languages represented?" Another audience member asks, "How do cognitive computing systems adjust to a diverse workforce? Is it sensitive to language, culture, and other differences in people?"

MS. RYAN: Okay. Yes. So, again, these are all great questions. This -- the short answer is currently cognitive systems, like Talent Insights, the natural language processing capability is in English. And the reason why it's in English right now and there absolutely are plans, at least within the -- you know, within our Watson family of products to most definitely expand out to other languages.

The tricky thing, the thing that is different with natural language processing than with text, say, if you were just typing a

question on, say, Google, right, where you type in a question and you can do conversions, you can convert it into different languages, and so forth, or when you do a translation of an application into a different language to work within a different country.

The difference with natural language processing is it's actually looking at the context of what you are typing in, and that is the hard part. That is the hard part for -- from the, you know, computer science perspective.

So every time we look at a new language, it is not just a matter of us -- you know, of Watson having to figure out how to translate, but really understand the context of phrases and meaning of terms used together, words used together in a different language.

I mean, we can all point to probably out own examples of where, you know, a direct translation from one language to another just didn't quite work and you didn't quite understand what really the gist of it was. So that's kind

of the backdrop -- you know, the backdrop to the short answer, which is English today, so in those countries that have English as a primary language or as a business language, these systems can absolutely work.

MODERATOR: And the final question an audience member asks, "Are there any other HR analytics solutions that leverage cognitive computing?"

MS. RYAN: There are not, is the short answer.

MODERATOR: All right. With that question and answer, we --

MS. RYAN: Insight --

MODERATOR: Sorry about that. I didn't mean to interrupt.

With that question and answer, we are going to bring to a close today's webcast.

As we close, a couple of final thanks. First, to our presenter, Jackie Ryan, for the insight she provided in today's program; and, finally, our thanks to you in the audience for

participating today and for choosing SHRM for HR webcast.

That concludes today's program.

(Whereupon, the above-entitled matter went off the record.)

C E R T I F I C A T E

MATTER: Webcast: Talent Analytics in the New Era of Cognitive Computing

DATE: 06-11-15

I hereby certify that the attached transcription of page 1 to 62 inclusive are to the best of my professional ability a true, accurate, and complete record of the above referenced proceedings as contained on the provided audio recording; further that I am neither counsel for, nor related to, nor employed by any of the parties to this action in which this proceeding has taken place; and further that I am not financially nor otherwise interested in the outcome of the action.

Neal R Gross
