Best Practices in Cognitive Computing

Marydee Ojala 2

Driving Toward Cognitive Computing Breakthroughs

In the U.S., it's a rite of passage to get your driver's license when you're 16. If you live in most other parts of the world, you're probably thinking "That young, really?" Yes, really. My father taught me how to drive in the family car, which had an automatic transmission. He was an engineer, so he also trained me to listen to the gears as they shifted. My mother reminisced about when she learned to drive in a car that had a manual transmission. She also talked about listening to the gears…

Sean Coleman, BA Insight . . . 3

Key Considerations in Maximizing the Value of Cognitive Search

I am a firm believer in The 7 Habits of Highly Effective People, *by Stephen Covey. If you've not read this book, it is worth the time. I mention this because my focus at BA Insight is around Covey's second habit, which is, "Begin with the end in mind." Seems simple, right? Well it is, but it's also quite rare. When approaching any enterprise search project, at any phase, I always try to come back to this idea…*

Anand Subramaniam, eGain. . 4

AI-Powered Customer Service: Use-Cases and Real-World Examples

Cognitive/AI technologies for customer engagement are white hot. No wonder professionals, who had removed AI from their resumes, are scrambling to add it back in! As a pioneer in cognitive/AI solutions for customer service and engagement, eGain has not only developed cutting-edge technology but also proven use-cases and best practices over the last two decades. In this article, we discuss four use-cases that have already enabled blue-chip companies to transform—not just improve—customer service and engagement…

Produced by:

KMWorld Magazine
Specialty Publishing Group

For information on participating in the next white paper in the "Best Practices" series, contact:

Stephen Faig
Group Sales Director
908.795.3702
sfaig@infotoday.com

LaShawn Fugate
Account Executive
859.361.0667
lashawn@infotoday.com

KMWorld
KMWorld.com

Driving Toward Cognitive Computing Breakthroughs

By Marydee Ojala, Conference Program Director, Information Today, Inc.

Marydee Ojala

Marydee Ojala is conference program director for Information Today, Inc. She works on conferences such as Enterprise Search & Discovery, which is co-located with KMWorld, and WebSearch University, among others. She is a frequent speaker at U.S. and international information professional events. In addition, she moderates the popular KMWorld webinar series.

Ojala is based in Indianapolis, Indiana and can be reached at marydee@infotoday.com.

In the U.S., it's a rite of passage to get your driver's license when you're 16. If you live in most other parts of the world, you're probably thinking "That young, really?" Yes, really. My father taught me how to drive in the family car, which had an automatic transmission. He was an engineer, so he also trained me to listen to the gears as they shifted. My mother reminisced about when she learned to drive in a car that had a manual transmission. She also talked about listening to the gears.

One summer, I was going to be driving across the country with a friend from university. Her car was a stick shift. I didn't know how to drive it. My mother called several car rental places until she found one that would rent us a car with a manual transmission for a day. We spent that day working on gear shifting, putting into practice all that gear listening my father had insisted on. It was a wonderful experience, and I've preferred manual transmissions ever since. I've even driven a farm truck that taught me the meaning of compound low.

I like the feeling of control that you get from "driving stick." I can choose when to move from one gear to the next rather than be at the mercy of whoever designed the automatic transmission's decision on optimum timing for gear shifting. Next on the horizon: Autonomous vehicles. I haven't experienced driverless cars yet, but they have interesting possibilities.

Gearing Up

Although I learned my driving skills a bit in reverse from the actual progression of automotive technology, I find parallels between automotive transmissions and search technologies. We started out being in charge of what computers did. Literally, we are issuing commands and the computer followed those commands. Then we moved from manual transmissions to automatic. Computer code took over from command language. Both simplified our lives. We didn't have to think about when to shift gears. Although I'm a fan of manual transmissions while driving a vehicle, I wouldn't readily return to the days of command code.

Now it's the turn of algorithms and cognitive search. To my mind, autonomous cars and cognitive computing have a lot in common. They rely on technology to get to their destination.

Sean Coleman, CTO and Chief Customer Officer, BA Insight, has a comment that nicely sums up, for me, the value of cognitive search. As one of the goals of search systems, he says, "Users Should Not Have to Actually Perform a Search." I love this concept. Users don't have to remember arcane search commands; they don't even have to think about putting words into a generic search box. Instead, the search system figures out what they need and automatically delivers it to them. It's the ultimate in push rather than pull technology. Users don't have to pull answers to their questions, the system pushes it to them. Essentially, it knows what they need to know.

> ***"Making good decisions is central to successful businesses. For customer service, this means moving away from rigid scripting and rule-based systems into a more intelligent understanding of the problems customers face."***

Coleman views cognitive search as having five key goals. Besides the zero-search goal, it is about returning fast results, finding relevant information on the first page, not having to click more than three times, and making sure search success is achieved by 95% of users. I'm told that autonomous cars are programmed not to exceed the posted speed limits, but I'm pretty sure that there's no speed limit for receiving search results. Coleman puts it at between three and six seconds. It takes me longer than that to back out of a parking space.

I would think it's axiomatic that relevant information should appear immediately, but relevancy is frequently easier to talk about than to deliver. As Coleman points out, it takes intelligent tagging, good metadata creation, and effective text analytics. With enterprise search, in particular, personalizing search results leads to greater relevancy. That's where BA Insight's machine learning capabilities come in.

Clicking around randomly sounds like grinding gears to me, so the "not more than three clicks" rule makes a lot of sense. A measurable goal of 95% of users succeeding in their searches is impressive, and Coleman presents some interesting ideas about measuring search success.

Shift Into Reasoning Technologies

Over at eGain, cognitive and artificial intelligence (AI) technologies for customer engagement are tearing up the roadways. Anand Subramaniam, Senior VP of Worldwide Marketing, calls them "reasoning technologies" that learn from past experiences to find solutions for new ones. Think of that autonomous car that finds the optimal route from one place to another.

Making good decisions is central to successful businesses. For customer service, this means moving away from rigid scripting and rule-based systems into a more intelligent understanding of the problems customers face. To provide good solutions that quickly resolve these problems, eGain employs AI technologies that put customers on the proper roadway rather than leading into dead ends.

Flexibility is key to good decisions, and eGain uses AI technologies to help out here as well. Its ability to work with incomplete, ambiguous information yet still learn from the past fuels successful customer engagement. Decision making is not a cut and dried process. Thus, it is ripe for AI involvement.

Whether you prefer driving a manual or an automatic transmission car or want to experiment with self-driving vehicles, you should test drive some of the exciting cognitive computing opportunities. Put the pedal to the metal and embark on the journey. You don't need a driver's license to head toward cognitive computing breakthroughs. ▮

Key Considerations in Maximizing the Value of Cognitive Search

By Sean Coleman, CTO and Chief Customer Officer, BA Insight

I am a firm believer in *The 7 Habits of Highly Effective People,* by Stephen Covey. If you've not read this book, it is worth the time. I mention this because my focus at BA Insight is around Covey's second habit, which is, "Begin with the end in mind." Seems simple, right? Well it is, but it's also quite rare. When approaching any enterprise search project, at any phase, I always try to come back to this idea. What is success? When are we done? What does finished look like? These are all different ways of saying, "Make sure you have **goals**!"

I'll share with you what I see as the core goals that should be the outcome of any search system. Regardless of whether you call it Enterprise Search, Insight Engines, Site Search, or Portal Search, these goals still apply.

Goal 1: Searches Should Return Fast Results

- *Specifically*: Search results should be returned in an average of three seconds or less for more than 70% of searches, and they should never be longer than six seconds.

Goal 2: Users Should Find Relevant Information on the First Page

- *Specifically*: Users should see relevant information on the first page of search results at least 70% of the time, determined by whether they interact with an item in the search results.

Goal 3: Users Should Not Have to Click More than Three Times

- *Specifically*: It should take no more than three clicks for users to get to the information they are seeking for at least 90% of searches.

Goal 4: Users Should Not Have to Actually Perform a Search

- *Specifically:* The search system should understand users and their relationships to data and proactively suggest content to them.

Goal 5: 95% of Users Should Succeed in their Searches

- *Specifically*: Less than 5% of users should abandon searches. By abandon, I am referring to users who run a search and end their sessions without clicking on any filters or results.

Make no mistake, these are hard numbers to hit. At BA Insight, we focus on making each of these goals achievable. Here's how:

Goal 1: Searches Should Return Fast Results

BA Insight's SmartHub software provides the user interface components and query engine that allow for a high-performance search implementation. Its out of the box responsive/mobile-ready design means that regardless of the platform, the user experience is optimized. Its query engine supports integration with multiple search engines including Elasticsearch, Elastic Cloud, Azure Search, SharePoint Online/On premise, and SOLR (coming soon). This capability provides organizations the flexibility to deploy the best search engine for their specific use case or infrastructure.

> ***"Tracking and reporting on metrics associated with any search system is key to understanding the success of the system."***

Goal 2: Users Should Find Relevant Information on the First Page

Relevancy is a direct result of the availability of data, quality of metadata, and intelligence wrapped around the user's query.

Our ConnectivityHub provides over 70 out of the box connectors to enterprise systems. Our experience is that most users need to search three or more sources to ensure relevant content is returned.

Our AutoClassifier provides intelligent tagging, metadata generation, and text analytics to make content findable. Content must be tagged with metadata, and metadata creation is not something you can burden end users with.

As previously mentioned, a major component of our SmartHub is its query engine. The most important key to delivering quality relevancy is to personalize results to users. SmartHub uses machine learning to adjust the relevancy of results per user, ensuring relevant information is delivered based on roles, departments, or other attributes.

In environments where finding the correct information would require users to enter complex searches, they should be able to ask questions of the search system. SmartHub fully supports Natural Language Query and can interpret questions in natural language and return relevant results based on an understanding of what users need.

Goal 3: Users Should Not Have to Click More than Three Times

This goal builds upon the previous one and points to the key aspects of a search UI. Facets, which also require metadata, must be configurable to present filtering options to users. As an example, think about the search experience in Amazon. Facets are also a key feature of our SmartHub product.

Our Smart Preview tool provides single click access to a mobile-ready instant preview of an entire document regardless of location, further reducing the clicks required to validate the results presented to users.

Goal 4: Users Should Not Have to Actually Perform a Search

This goal introduces the concept of zero search, or the ability of the system to proactively provide access to content that users consider helpful.

Our SmartHub tool allows end users to specify areas of interest and preferences and automatically delivers content to them based on their input or existing profile. For example, if a presentation that was used to train users in a particular job role has changed, then the updated version of that PPT could be proactively pushed to all users in that role.

Goal 5: 95% of Users Should Succeed in their Searches

For users to succeed in a search, they need to find what they are looking for. That much is clear. The approaches reviewed in the above goals all speak to how this overarching goal can be met. But how can this goal be *measured*? Tracking and reporting on metrics associated with any search system is key to understanding the success of the system. You must be able to report on at least the major goals outlined above, and hopefully on a large range of other attributes to help manage the search system over time.

Our SmartHub application comes with a built-in, fully featured analytics tracking and reporting application, ensuring organizations have access to reports and metrics across the entire search experience. These metrics are then leveraged to increase the chances of users succeeding in their searches. Prior successful search activity, combined with machine learning, automatically recommends potential searches and information to users. As users type, suggestions are delivered based on successful searches run by others. On search results pages, additional information is recommended based on what other users have found to be useful. ▮

AI-Powered Customer Service: Use-Cases and Real-World Examples

By Anand Subramaniam, Senior Vice President, WW Marketing, eGain

Cognitive/AI technologies for customer engagement are white hot. No wonder professionals, who had removed AI from their resumes, are scrambling to add it back in!

As a pioneer in cognitive/AI solutions for customer service and engagement, eGain has not only developed cutting-edge technology but also proven use-cases and best practices over the last two decades. In this article, we discuss four use-cases that have already enabled blue-chip companies to transform—not just improve—customer service and engagement.

1. Understand and answer

Virtual assistants (VAs) help businesses wow customers with natural language understanding and distinctive self-service, while helping them cut costs and build brand equity. The best VAs are also multilingual and communicate in multiple modes—text-to-text, text-to-speech, speech-to-text, and speech-to-speech. Importantly, they know what they don't know. When unable to answer the customer's question, they escalate to human-assisted customer service with full context from the self-service interaction. For the VA to be able to do this out of the box without integration work, it needs to be an integral part of an omnichannel customer engagement hub which consolidates omnichannel interactions, knowledge, AI, analytics, and administration into one platform.

eGain AI clients understand and answer:

A large government organization in the UK uses the natural language capabilities of eGain Virtual Assistant™ to understand and answer questions from taxpayers, with intelligent and seamless escalation to live chat when necessary. Deployed in time to support the critical tax returns period, eGain Virtual Assistant and eGain Chat™ helped deflect 77% of their phone calls within the first six weeks of the deployment!

2. Guide search and processes

While VAs are good at answering questions of low-to-medium complexity, AI reasoning technologies can guide customers and contact center advisors through interactions of higher complexity. Reasoning can guide users to the next best steps in their search for the correct answer or in-service processes such as troubleshooting and advice. This conversational, dialog-driven guidance is based on intelligent understanding of the problems faced by the customers as well as customer service expertise drawn from the best agents.

AI reasoning applies learnings from past cases to find solutions for new ones. Learning should be derived through a curated model rather than a fully automatic one, especially when the stakes are high, to ensure the best outcomes and process adherence. Watch out for pretenders like rigid scripting and rule-based systems—they tend to put agents and customers in conversation cul-de-sacs and dead ends, especially when the customer goes off-script (which is quite common). Moreover, such legacy systems are difficult and expensive to maintain.

eGain AI clients guide:

- *A global bank uses eGain's patented AI reasoning technology to guide a largely novice agent pool through best-practice interactions across 11 countries, while reducing training requirements by half.*
- *A leading telco guides 10,000 contact center advisors and associates in 550 retail stores with eGain AI for a 37% improvement in First-Contact Resolution (FCR), 50% improvement in advisor speed to competency, and a 20% boost to their NPS (Net Promoter Score).*
- *A multi-play CSP reduces unwarranted "No Fault Found" handset returns and exchanges by 38% with AI-guided problem resolution in the contact center.*
- *A white goods giant saved $50M per year by reducing unnecessary truck rolls through AI-guided problem resolution in the contact center.*

3. Help decide

According to an executive survey by Grove Critical Thinking, when presented with the proposition "bad decisions cost my organization time and money," 70% of survey respondents either agreed or strongly agreed. Moreover, 82% of respondents either agreed or strongly agreed with the statement "Bad decisions harm my organization's reputation in the marketplace." Decision-making for customer engagement is business-critical—it could spell the difference between boom and doom!

Again, unlike rule-based systems that start breaking down as decisions become more complex, AI reasoning helps make decisions with a flexible approach, working with incomplete or ambiguous information and by comparing similar decision-making scenarios from the past. The output could be the final decision or be one of the decisions in a larger customer engagement and contact center management process.

eGain AI clients decide:

- *An insurance giant decides how to precisely route customer queries to the right agent, with decision-making powered by eGain AI.*
- *A global media and legal services giant makes decisions on whether to take on malpractice lawsuits based on multiple factors like the amount of damages, win rates in the past for any given topic, tendencies of specific courts/judges.*

4. Comply with regulations

Enforcing compliance amidst ever-changing industry regulations, whether it is for content, access, or actual customer interactions makes customer engagement challenging for companies, particularly in highly-regulated industries. In fact, 70% of compliance professionals expect increased regulations, 59% expect increased personal liability, and 69% expect compliance staffing costs to rise, per Thomson Reuters. This is where AI can add immense value by guiding agents through the compliance maze.

eGain AI clients comply:

- *A marquee global bank uses eGain AI to guide advisors through a step-by-step dialog, and industry-compliant questions, to qualify and onboard small business clients.*
- *Another bank serves wholesale clients in multiple countries with a single eGain-powered AI system that incorporates the global parent's best practices, while considering local regulations in those countries.*
- *Utilities clients use AI guidance not only to resolve customer problems but also to help them avert safety hazards such as gas leaks, while complying with regulations on who asks and does what and when. This is not just mission-critical customer service—it is life-critical!*

Next steps

The best way to pilot AI is through a real-world trial in a production setting. That's exactly what eGain Try+Buy for AI offers, along with no-charge guidance to quick value and no obligation to buy! Contact us at info@eGain.com to learn more. ▮

Anand Subramaniam

Anand Subramaniam is senior VP of Worldwide Marketing for eGain. Prior to eGain, Subramaniam served in executive and marketing management roles in a range of organizations from cloud startups to companies such as Oracle, Autodesk, and Intel. He holds an MBA from the University of California at Berkeley and an MSME from the University of Rhode Island.

For more information on the companies who contributed to this white paper, visit their websites or contact them directly:

BA Insight
7 Liberty Square, Floor 3
Boston, MA 02109
PH: +1.339.368.7234
Web: www.bainsight.com/smarthub
Contact: sales@BAinsight.com

eGain Corporation
1252 Borregas Avenue
Sunnyvale, CA 94089, USA
PH: +1.408.636.4500, +1.888.603.4246
Fax: +1.408.636.4400
Web: www.egain.com

Produced by:

KMWorld Magazine
Specialty Publishing Group

Stephen Faig
Group Sales Director
908.795.3702
sfaig@infotoday.com

LaShawn Fugate
Account Executive
859.361.0667
lashawn@infotoday.com

For information on participating in the next white paper in the "Best Practices" series, contact:
sfaig@infotoday.com | 908.795.3702 | lashawn@infotoday.com | 859.361.0667

KMWorld
www.kmworld.com

Information Today, Inc.
www.infotoday.com