



# EMPOWERING FINANCE OPERATIONS AND SHARED SERVICES WITH ENTERPRISE COGNITIVE ASSISTANTS

DIGITAL ADVANCES ARE TRANSFORMING HIGH-PERFORMING HIGH-VOLUME BUSINESSES

Advances in big data, data analytics, and artificial intelligence are transforming the way corporations compete and how they interact with customers, vendors, and distributors. Amid this transformation, few parts of the enterprise are being forced to adapt more, or faster, than the finance function and shared services.



Within the finance function, CFOs, more than ever, are no longer expected to constrain their attention to their traditional mandates alone, i.e., accounting, financial planning and reporting, treasury, tax, and working capital management. At the same time they ride herd over those activities, CFOs also are expected to play a meaningful role in driving strategic planning for the business. Why? For starters, the CFO, more than anyone else in the corporation, has the broadest visibility into how the enterprise is performing, and the deepest understanding of how different levers impact its bottom line. And now, with advanced data analytics and the promise of artificial intelligence, CFOs have more tools than ever at their disposal to help draw insights from that broad visibility.

Shared service organizations are undergoing a similar transformation. Once focused largely on cutting costs, they're increasingly expected to leverage their capabilities and expertise to become revenue-generating agents in their own way, whether by taking on outside clients or using new data analytics capabilities to provide insights that can help their internal customers grow revenue and/or pull a greater share of revenue to the bottom line. According to the Global Shared Services 2017 Survey Report by Deloitte, shared service centers are increasingly performing not just transactional work but also more complex, knowledge-based processes. What's more, 13 percent of the respondents to the survey this year said their shared service centers had found ways to monetize their assets by providing services to other organizations.



## THE DIGITAL TRANSFORMATION WAVE – A CONFLUENCE OF EMERGING TECHNOLOGIES

The foundational technological developments helping to transform the role of the CFO and shared services are digital, cloud, big data, advanced analytics, and artificial intelligence (AI). AI applications include both machine learning—a type of artificial intelligence in which computers learn from repeated interactions with data—and cognitive computing.

While AI captures more of the headlines these days, it is the amount of data available to corporations today—orders of magnitude greater than it was even a decade ago—that enables AI's reach. Today's corporations are no longer restricted primarily to internal data in answering key questions like: What are our revenues, costs, and margins? Which customers give us the most business? Which are most profitable? Companies also have access to a wealth of data from external sources, including social media and third-party aggregators, as well as from online and mobile interactions with customers that weren't available in the past. "The problem for many companies now is that there is so much data you don't know what to look at and how to make sense of it," says the chairman and CEO of a company developing a big-data-based analytical platform for investors, traders, and researchers. In response to this explosion of data, software and data science companies have developed, and continue to develop, new analytics and data visualization tools to help corporations make sense of it all. A little over a decade ago, the well-equipped CFO may have had access to an enterprise resource planning system with modules for accounting and financial reporting, which could, perhaps, populate a dashboard with point-in-time snapshots of the company's financial condition. That's no longer enough. Today's most sophisticated analytics systems can process stunning volumes of data from sources both internal and external and provide real-time analysis of that data. They can go beyond



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describing what has happened to predicting what will happen, and, increasingly, prescribing a course of action to deal with the projected outcome.

Artificial intelligence is making much of this possible. And as that science becomes more refined, CFOs, shared service leaders, and other business users will find it increasingly fast and easy to take advantage of data analytics, often without the need to rely on data-science intermediaries.

## A NEW GENERATION WORKFORCE TO BOOST FINANCE EFFICIENCY

CFOs, and the leaders of their companies' shared services centers, will need fast and easy access to data analytics if they're going to meet their obligations to help drive strategy and find new ways to grow the business.

Right now, instant access to information—never mind analysis—remains a pipe dream for most finance and shared service executives. While consumers can ask Siri for directions to the theater and let Alexa send their monthly payments to their credit card company, corporate finance executives looking for quick information on business operations typically have two options: skillfully navigate one or more information systems on their own for reports, or punt the question to an underling who will then track down the information and report back to them, sometimes taking hours, if not days, to complete the assignment.

Soon, that shouldn't be necessary. Artificial intelligence, which includes cognitive computing and natural-language processing technologies, offers the capability to develop conversational systems that will allow finance executives to get instant answers to finance questions—about billings, receivables, payables, cash flow, costs, financial metrics, and more—from their own enterprise cognitive assistants. In fact, experts see these enterprise cognitive assistants—these new additions to the workforce—doing much more than fetching information. They'll also be able to make forecasts, perform simple business processing tasks, and handle a wide range of customer service activities. Tools like these are already under development by companies such as Emagia, a provider of data-driven finance operations and management solutions, which recently launched its first enterprise finance cognitive assistant Gia—the very sort of tool that tomorrow's business leaders will increasingly rely upon.



Indeed, researchers and analysts at Gartner Inc. predict that by 2020, “55 percent of all large enterprises will have made use of at least one robot or ‘chat-bot’—a computer program that can simulate conversation with humans and respond to their questions.” Gartner also predicts that by 2021, more than half of all enterprises will be spending more on bots and chatbots than on traditional mobile applications.<sup>1</sup>

Solix Technologies, a big data platform provider, predicts that this will revolutionize how companies are accessing data. “The ability to leverage a robust big data repository, read and translate information from structured and unstructured data, and connect the dots to provide predictive insights will make Gia very useful to finance teams. Data-driven financial decisions are definitely a strategic opportunity that can deliver tremendous agility to the world of enterprise finance.”

**“AI will transform everything from operations to the customer experience. The deployment of AI technologies will create significant value, as companies will be able to predict customer needs in near real time while optimizing operations and supply chains in the background.”**

— Forrester Research

1. “Gartner’s Top 10 Predictions for IT in 2018 and Beyond,” by Louis Columbus, Forbes, October 3, 2017

## HOW ENTERPRISE COGNITIVE ASSISTANTS WILL HELP FINANCE OPERATIONS

### Secure and Instant Information at Your Fingertips

Tomorrow's enterprise-grade cognitive assistants promise to transform the capabilities of CFOs and shared service centers alike. Rather than rummaging through data systems on their own, or directing others to do so on their behalf, CFOs and other senior leaders will be able to ask these cognitive assistants, in plain language, for the information they need. The assistants will have the ability to respond on the fly to information queries, drawing on data from any and all of a company's enterprise systems, and to communicate via voice or chat on any mobile device, desktop, or tablet. Cognitive assistants will also be able to instantly analyze and report on these findings, spot trends, and make forecasts. Where needed, they will be able to produce documents from the company's enterprise system. And because they will be able to continuously learn and develop new skills, they will continue to make finance organizations that use them ever more productive. Finally, they will be able to perform a wide range of routine tasks, freeing finance and shared service employees to focus on higher-value activities.

**“With Gia, finance can now leverage the power of artificial intelligence to perform a number of tasks—from assisting executives with decision support to performing time-consuming operational tasks. Gia is the future of the digital workforce, and we look forward to leveraging its evolving capabilities to transform our customer businesses.”**

— Quoc V. Nguyen, VP - FAP Strategy, Best Practices & Offerings, Conduent, Inc.

### Skilled, Automated Operations at Digital Speed

Because they are imbued with machine learning and cognitive computing technology, cognitive assistants for the finance and shared service functions will be able to undertake activities that go beyond retrieving and analyzing data. They can be trained to perform business processing tasks such as processing credit requests, following up on unpaid invoices, creating payment dispute tickets, converting check images and bank statements into XL files, preparing entries for ERP systems, and performing internal audit checks on financial data. Credit processing requests alone can showcase a wide range of their capabilities: verifying customer addresses, verifying customer business licenses from government agencies, checking for bankruptcy alerts, getting credit scores from credit-rating agencies, and gathering financial statements from publicly available sources such as Yahoo Finance.

**“Machines can beat humans any time when it comes to searching through vast amounts of information in double-quick time while also performing other computations at the same time (e.g., comparisons, pattern analysis, graph analysis). Use cases involving vast amounts of data—whether structured (e.g., from your transaction or financial systems) or unstructured (e.g., legal texts, medical literature, or call center notes)—and in which decisions can be improved by taking as much of the data into consideration as possible are prime candidates for systems leveraging AI techniques.”**

— *Artificial Intelligence: A CIO's Guide to AI's Promises and Perils*,  
Forrester Research, Inc., January 9, 2017



### **Smart and Digital Services for an Enhanced Customer Experience**

Finance organizations spend a significant amount of time servicing end customers and dealing with suppliers and distributors. Cognitive assistants will have the ability to shoulder much of that burden by responding to incoming questions from those groups and guiding them through routine activities such as filling out credit application forms. They'll also be able to handle activities like credit limit processing, dispute and claims processing, payments processing, and more. Examples of this already exist. An oil and gas company, for example, recently embedded a conversational user interface into its existing self-service supplier portal to answer invoicing queries from more than 500 suppliers. After eight weeks of on-the-job training, the chatbot was able to successfully resolve an estimated 72 percent of supplier invoicing inquiries.<sup>2</sup>

### **Who Will Be Able to Use Enterprise Finance Cognitive Assistants—and How?**

Because they will be highly customizable, cognitive assistants will be able to work however

and wherever corporations wish—as personal assistants to CFOs and other senior finance executives, as digital shared service colleagues to finance and accounting shared services staff, and even as help desk agents for vendors, distributors, customers, or a corporation's sales staff.

### **Benefits to the Enterprise**

Cognitive assistants in finance operations will have the ability to help corporations reduce the cost of labor and boost productivity; enable instant 360-degree views of customers to help drive revenue and profits and boost customer satisfaction; assist in compliance activities by detecting and reporting on anomalies; improve operational efficiency in the finance function, and offer advice on improving cash flows to maximize financial performance.

As for CFOs and other business leaders tasked with helping to set strategy and drive profits, they won't just have to spend less time on mundane, transactional activities; they'll also be equipped with the data and insights they need to act as a strategic partner to the business.

2. "Amelia: Invoice Query Agent at an Oil and Gas Company," IPSoft, April 29, 2016 - <http://www.ipsoft.com/2016/04/29/amelia-invoice-query-agent-at-an-oil-and-gas-company/>

## THE STATE OF THE ART: WHERE COGNITIVE ASSISTANT TECHNOLOGY IS TODAY



The application of conversational user interfaces for enterprise-level activities is in its infancy. Still, as software company ThoughtWorks noted earlier this year, the advent of digital voice assistants such as Apple’s Siri, Amazon’s Alexa, and Microsoft’s Cortana are driving businesses to explore how they might use conversational UIs to better serve their customers.

It is likely that enterprise-level specialty interfaces like cognitive finance assistants will be purpose-built for the job rather than adapted from mass-market applications. In November 2016, Big Four accounting and consulting firm Deloitte noted that conversational UI startups had raised over \$200 million in the prior 18 months, with more money raised in the second quarter of 2016 than in the entire year 2015.<sup>3</sup> In fact, Deloitte added, “enterprises across a diverse range of sectors, such as financial services, retail, and oilfield services, have deployed chatbots to automate internal workflows or business-to-business interactions.” The firm noted that several of the biggest enterprise software companies are developing chatbot UIs for their operating systems, and dozens of startups have introduced customized chatbot solutions for enterprises across sectors and business functions.

Among the key players in this market space is Emagia, which has created a cognitive digital finance assistant it calls Gia. She—Emagia presents her as

female—understands and communicates in natural language and learns continually from context. In addition to responding to finance-related queries relating to accounts payable, accounts receivable, general ledger, audit, and compliance activities, Gia can perform administrative tasks common to shared service centers, including tasks related to credit, collections, cash application, accounts payable, and procurement. Gia also can function as a customer service agent through a company’s customer portal, or perform a similar role for its sales force.

“Gia will be a key partner to all finance operations staff, assisting them 24/7/365 and helping them to amplify their strategic value to the organization,” notes Veena Gundavelli, Emagia’s Founder & CEO.

Ideally—as is the case with Emagia’s Gia and its other enterprise order-to-cash management solutions—advanced tools like these will be easily integrated into, and compatible with, a corporation’s existing information systems. Seamless integration not only makes it easier and faster to begin deploying these innovative new technologies, it also makes it easier for cognitive assistants to learn from the information stored in existing systems.

**“In our finance shared services, we have to make decisions every day that impact relationships with customers, vendors, and business operations teams around the world. With Gia, we are able to have information at our fingertips for fast and accurate decisions.”**

— Terry Jordan Collection Manager,  
Volt Information Sciences

3. “The Conversational Enterprise: How chatbots can answer questions for both customers and employees,” by David Schatsky and Peter Gratzke, Deloitte Insights, November 4, 2016 - <https://dupress.deloitte.com/dup-us-en/focus/signals-for-strategists/era-of-conversational-user-interface-chatbots.html>

## THE BOTTOM LINE



THE SAME TECHNOLOGIES THAT ARE MAKING CFOs BETTER EQUIPPED TO SUPPORT THE BUSINESS **ARE AVAILABLE TO SHARED SERVICE CENTERS, TOO.**

CFOs have long strived to become a more strategic partner to the business. With the advances in big data and data analytics to date—and the promise offered by cognitive enterprise assistants—that’s no longer an admirable goal, but an imperative. With their unparalleled visibility into the enterprise and the drivers of its performance, they are ideally positioned to play this role.

Meanwhile, the same technologies that are making CFOs better equipped to support the business are available to shared service centers, too, which will only help them as they expand their portfolio beyond cost-cutting to revenue generation and business improvement.

In all of these efforts, cognitive enterprise assistants, equipped with artificial intelligence and the ability to communicate, instantly, in natural language, will make these undertakings easier.

“Advances in cognitive technologies are making it possible to provide increasingly accurate and relevant automated dialogues,” write David Schatsky and Peter Gratzke of Deloitte.<sup>4</sup> “For example, speech recognition software has made advances in reducing word error rates, and machine translation has improved thanks to deep learning techniques. Improvements in speech and language processing technologies are making chatbots more capable, expanding their potential applications across the enterprise.”

In short, Schatsky and Gratzke conclude, “the era of conversational enterprise computing is dawning” and “the time is right for enterprise business and technology leaders to size up opportunities to put this technology to work in their own organizations.”

Those that do not may find themselves at a permanent competitive disadvantage.

4. “The Conversational Enterprise: How chatbots can answer questions for both customers and employees,” by David Schatsky and Peter Gratzke, Deloitte Insights, November 4, 2016 - <https://dupress.deloitte.com/dup-us-en/focus/signals-for-strategists/era-of-conversational-user-interface-chatbots.html>.





## ABOUT EMAGIA

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Emagia Corporation, the creator of cognitive digital assistant “Gia,” is a leading provider of data-driven finance operations and management solutions. Best-known for its leading Enterprise Order-to-Cash Management (OTC) solutions, Emagia delivers highly innovative technology solutions to transform, automate, and optimize receivables, credit and collections processes for maximizing cash flow. More information is available at <http://www.emagia.com/products/gia/>.