

The Future of Collaboration is Cognitive

AI-Powered Collaboration Will Provide Demonstrable
Productivity Improvements

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Q2 2019



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Executive Summary

Cognitive collaboration, defined as the application of artificial intelligence to business knowledge and workflows, is poised to transform collaboration and customer engagement by bringing cognitive learning and information sharing to all facets of interactions. Cognitive-powered applications and services offer the opportunity to transform customer engagement by applying predictive and real-time analytics to optimize routing of inbound customer interactions to the ideal agent. They bring context to live interactions, enabling meeting participants to see in real-time information about each other to improve participant engagement. And, they offer the opportunity to transform interactions between humans, applications, and devices; enabling analytical insights into historical and real-time data that provide actionable information capable of improving physical and virtual interactions and workspaces.

To take advantage of cognitive collaboration's ability to deliver measurable business value and competitive advantage, IT leaders should:

- Evaluate cognitive technologies for their applicability in the workplace and to improve customer engagements
- Determine use cases for potential pilot deployments
- Evaluate current and planned vendor capabilities
- Develop a means to quantify the benefits of cognitive collaboration to their specific business functions, looking for opportunities to increase revenue, decrease cost, or create identifiable process improvements
- Plan to quickly adopt cognitive capabilities to achieve competitive advantage

Challenges in Modern Collaboration

Business collaboration has undergone a rapid transformation in the last thirty years. Once almost all interaction, internally and externally, was phone-based. Today, while voice remains a critical component of communications, interactions have now evolved into an omni-channel environment where people collaborate in real-time and non-real-time, across voice, video, and messaging, from anywhere, on virtually any device.

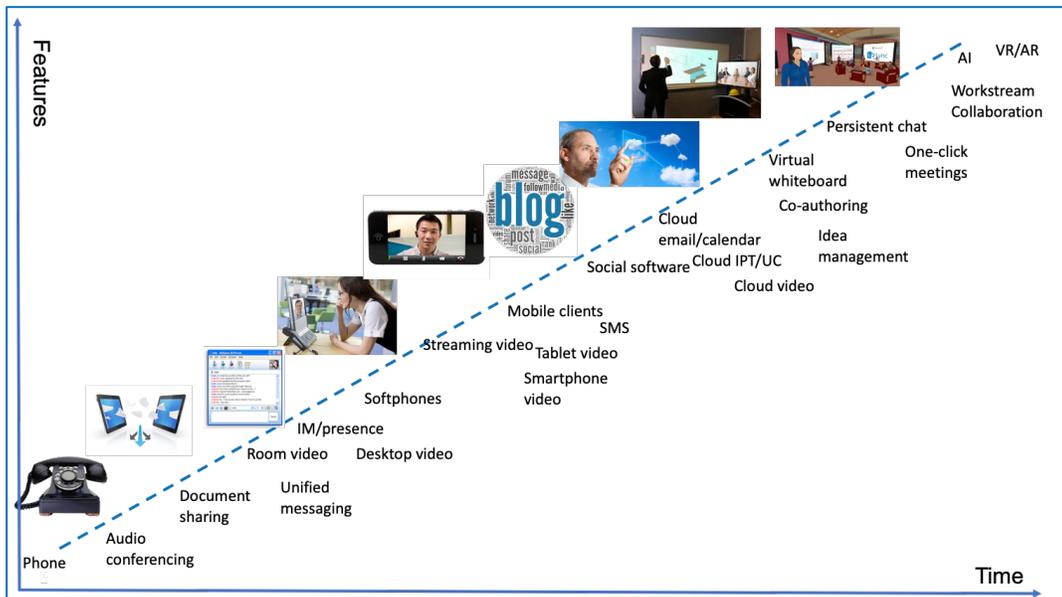


Figure 1: Evolution of Collaboration

Despite the increasing ways that people have available to them to collaborate, demonstrable value of business benefit for investments in collaboration technologies remain elusive, just 21% of the more than 600 companies benchmarked by Nemertes for our most recent Unified Communications and Collaboration study reporting that they had identified specific productivity increases associated with their deployments of new tools.

Why, despite the growing number of collaboration apps, improvements in richness of experience, and increasing availability of features like videoconferencing and team collaboration are organizations still struggling to realize measurable value for their investments? IT leaders cite several factors:

- **Ease of Use:** In many cases apps aren't intuitive, meaning that to drive adoption organizations must invest substantial, and often limited, resources in training.
- **Lack of Context:** In an ideal world, collaboration applications shouldn't exist as standalone apps, rather they should enable workgroups to collaborate around the work they are doing, using relevant and contextual data, be it responding to customer inquiries or sales opportunities, managing projects, or development software. For example, with contextual and intelligent collaborative technologies, a delay in pushing out an update to software code could trigger an alert into a team collaboration channel, resulting in a team member starting a meeting that

automatically invites all other members of that workspace. A cognitive agent would share relevant data into the meeting that participants can manipulate to see the impact of resource adjustments on the workflow.

- **Barriers to Collaboration:** Only about one-third of our research participants have extended team collaboration applications into the contact center, meaning that back-office personnel are unable to effectively collaborate with customer service agents. In an ideal world, collaborative applications aided by cognitive capabilities, would seamlessly connect all employees into a common, contextual workspace.
- **Long Delays:** More than half of the 500 participating organizations in Nemertes' "Visual Communications and Collaboration: Research Study 2018-19" report that it typically takes more than five minutes to start a meeting due to challenges in getting everyone to launch software apps, properly configure their systems, and join the meeting. Once the meeting begins, the first several minutes are often used up with introductions, and late arrivals may not be properly announced. Cognitive capabilities to identify participants and make information about them easily accessible provide for a more engaged workgroup.
- **Frequent Task Switching:** When collaboration apps stand alone, individuals spend a great deal of time trying to find relevant information rather than collaborating directly around documents, information streams, and other relevant data. Task switching between apps, or searching for the right file, project plan, or code means delays, and use frustration, rather than productivity gain, integrating unified communications, collaboration, and customer engagement applications eliminates task switching, enabling people to collaborate in the context of projects, tasks, documents, and/or data.

AI to the Rescue!

Artificial intelligence, trained via machine learning, offers the potential to address the aforementioned issues limiting measurable benefits from implementation of new collaboration apps. AI identifies patterns in behavior to improve access to relevant information. In the context of collaboration, AI offers several significant potential use cases:

- **Intelligent Agents:** Intelligent agents provide a voice-based means of interacting with endpoints and data, enabling everything from starting a meeting, to accessing features like meeting recording, to capturing action items during a meeting. Intelligent assistants, mated to data stores, can even enable meeting participants to query other applications, for example to request project management status, inspection reports, or current readings from a manufacturing facility monitoring system.
- **Robotic Process Automation:** RPA enables automation of common tasks, activities, or responses to business events. For instance, an anomaly in a supply chain could trigger a bot to share relevant information into a team collaboration channel used for monitoring the supply process. RPA offers the ability to reduce staffing costs and human error, while saving human time for more complex tasks.
- **Chat Bots:** Text or voice bots used for interaction between people and applications or data sources, enable individuals to query a virtual agent to obtain necessary

information. Internally, a chat bot could be used to retrieve information, for example, allowing a sales manager to obtain real-time sales reports or other data.

- **Intelligent Facilities Planning:** AI technologies within videoconferencing endpoints can enable counting of human participants. This creates the ability for facilities managers to track room utilization. By knowing how many people typically use a meeting room, facilities planners can analyze their meeting spaces to determine if they have enough space, too much, or if existing rooms should be expanded or reduced in size. Obtaining this information allows organizations to make intelligent build-out decisions, potentially saving money in wasted meeting room space, or the cost having to go back and rework meeting room configurations.
- **Relationship Intelligence:** AI can not only count the number of humans in a room, but can also identify who those people are by matching their facial profiles with a known picture (typically obtained from a corporate directory). Once the AI platform knows the participant, it can use a cognitive application to provide contextual information about participants. For example, Cisco's People Insights enables participants to see names and titles of each other, and hover over a participant to obtain additional information including their role, and publicly available biographical information such as past positions, social media posts, and related news items. By knowing the specific participants in a meeting, via matching attendees to a corporate directory, the cognitive platform saves the time participants normally spend on their own searching for attendee info (e.g. via web searches) and eliminates challenges related to multiple people sharing the same name.

AI brings numerous opportunities to improve customer engagement, as well, enabling insight into how various customer interactions affect customer sentiment, upsale opportunities and retention. Cognitive insight across various interaction channels enables analysis of success beyond simple agent efficiency in responding to and closing tickets.

Examples of cognitive-powered customer interaction technologies include:

- **Natural Language Processing (NLP):** NLP enables IVR platforms to understand spoken or writing languages, including providing for real-time translation between an agent and customer's native languages.
- **Chat Bots:** Chat bots eliminate the often-complex navigation of an IVR with a more natural text or natural language voice-based conversation, and allow customers to take advantage of self-service capabilities to address issues, reducing agent utilization.
- **Predictive Analysis:** AI algorithms predict customer behavior based on a variety of pre-programmed or learned factors, such as past behavior, regional trends, and behavior of other customers with similar demographics.
- **Customer Sentiment and Real-time Speech Analytics:** AI capabilities monitor live calls or chats and provide real-time guidance to customer service agents, enabling them to improve customer satisfaction and ensure that the information they are providing is relevant to the customer inquiry.
- **Intelligent Routing:** Leveraging AI, customer engagement platforms are able to improve the routing of inbound customer interactions by leveraging data related to

past interactions, the inquiry type, anticipated complexity, and real-time agent availability.

Nemertes' *Digital Customer Experience: 2018-19 Research Study* shows that more than 75% of the ~625 participating companies were using, or planning to use AI by the end of 2020 to improve customer interactions.

The Many Benefits of Cognitive Collaboration

As noted, cognitive collaboration broadly defines the application of AI to improve collaborative experiences. Cognitive collaboration represents the next big leap in collaboration, bringing contextual experiences, people insight, and workstreams to collaboration platforms to generate identifiable gains in productivity, business value, and workforce engagement. As shown in the following examples, cognitive collaboration includes the broad capabilities offered by AI, virtual assistants, chat bots, and participant recognition, all designed to improve collaboration efficiencies. Approximately 41% of 600 participating companies in Nemertes' *Unified Communications and Collaboration: 2018-19 Research Study* are using or planning to use AI by the end of 2019 to improve collaboration.

More Effective Meetings

Cognitive collaboration, applied to meetings, improves meeting productivity and user experiences by ensuring that relevant information is available to participants at meeting start, during the meetings, and after the meeting concludes. By integrating features like facial recognition with access to content stores into meetings, participants can quickly discover who is in a meeting, learn about their roles and backgrounds, and enable fast access to shared content such as documents, video streams, or project management tools, or other data provided by business applications. The end result is more effective collaboration by eliminating task switching and time spent looking for relevant information, as well as improving relationship building among virtual, distributed participants.

Within the meeting, an intelligent assistant could transcribe the meeting, capture action items, and distribute a recording link to participants after the meeting ends. In these examples, the intelligent assistant speeds the time to start a meeting, and ensures that relevant information is readily available before, during, and after the meeting.

Improved Workplace Efficiency

Cognitive, virtual intelligent assistants can potentially do anything from enabling individuals to control meeting applications and endpoints with their voice, e.g., "*Hey XXXX, start my 2:00 PM meeting,*" to proactively offering to start a meeting, e.g., "*I see you have a 2:00 PM meeting, would you like me to start it?*" In these examples, an AI-powered virtual agent could start the meeting app, activate a video conferencing room system and/or interactive digital whiteboard, and notify the host when all inviting participants have joined the meeting. The agent could even open relevant documents based on identifying links in a calendar entry, documents associated with a team space, or past interactions among team members. Additional benefits come from using mobile devices to interact with

collaboration endpoints. For example, a videoconferencing system equipped with proximity detection could identify a meeting participant entering a conference room, realize that they have the room booked for an 11:00 AM meeting, and offer to start the meeting, all without any action from the participant. It could dial out to all remote participants, saving participants the time of looking up meetings in their calendar, clicking on links, and waiting to join. This example of intelligent endpoints eliminates the need for, and the complexity of, having to use an in-room remote control or touch-screen device to launch a meeting and improves join speed for remote participants.

Improved Customer Interactions

IT and business leaders cite three primary benefits from applying AI to improving customer interactions, these include:

- **Improved Customer Satisfaction:** Thirty percent of organizations cite improved customer satisfaction as the top benefit of AI. By getting customers more accurate answers more quickly, or by predicting what they may need before frustration sets in, they can improve customer satisfaction. Improved customer satisfaction typically translates into higher retention, greater opportunity for upsell, and higher net promoter scores.
- **Reduced Cost:** AI helps contact center agents spend less time on calls, according to 24% of the research participants. AI also helps simply reduce the number of calls for 16% of participants. Together, both end up reducing costs because organizations need fewer agents to handle customer interactions.
- **Enable New Sales:** For 12% of the research participants, AI helps them sell more by providing agents information based on customer behavior; or by providing customers suggestions of what else they may want to buy based on previous buying patterns or similar purchases from other customers.
- **Reducing Agent Turnover:** Almost 25% of organizations are seeing increasing agent turnover versus 7.8% who are seeing a decrease. Improving the efficiency of agents, coupled with real-time sentiment analysis tools to enhance their ability to respond to customer attitudes, as well as increasing the ability of agents to collaborate with back-office personnel all empower agents, and should lead to reduced turnover.
- **Improve Analytics for Business Decision-Making:** Customer engagements generate a great deal of valuable information that organizations can leverage for everything from improving marketing campaigns, to discovering flaws in products, to highlighting opportunities for process improvement. AI powered analytics, including real-time voice and text monitoring, can provide business leaders with instant access to customer inquiry trends.

Measuring the Value of Cognitive Collaboration

For collaboration investments to be successful, they must offer identifiable return on investment, typically measured via cost savings, improvements to customer-facing metrics, increase revenue, and/or improvement in an identifiable business process.

Cost Savings

Organizations typically identify cost savings associated with collaboration improvements in a variety of ways. The first, and arguably the oldest, is via reduction in travel. By increasing the ability of distributed teams to work remotely, successful organizations are often able to eliminate a portion of travel that may have previously been required to achieve desired outcomes. But travel reduction is only a small portion of the potential to leverage cognitive collaboration to save money. Additional opportunities come from the following:

- Shortening project lifecycles to reduce resource requirements and time to complete tasks. These benefits are typically achieved by providing the right information to the right people, at the right time, to accomplish specific tasks.
- Improvements in meeting space utilization leading to tangible cost avoidance from over-constructing of meeting space, or having to add additional meeting space to support unforeseen demand.
- Leveraging chat bots to support specific, repetitive requests, and to increase speed of customer interactions, leading to more efficient use of customer service agents and reducing customer churn.
- Intelligent routing of customer inquiries to ensure that an inbound customer service request is routed to the person best able to handle the case, improving agent utilization efficiency, increasing the likelihood of first-call resolution and customer retention.
- Improving employee engagement, especially for remote workers, that reduces turnover and training costs.
- Better supporting remote worker programs to reduce real-estate costs.

Revenue Enhancements

Revenue gains come from leveraging collaboration technologies to improve initial sale, or upsell and to uncover new sales opportunities. Examples include:

- Increasing close rates by delivering a higher quality pre-sales experience that uses video, that provides participants with participant insight information, and/or that enables meeting hosts to quickly share information relevant to closing the sale.
- Sharing of business operational data into collaborative channels, enabling sales and product teams to make real-time adjustments in selling strategy, pricing, and marketing campaigns to optimize sales opportunities.
- Equipping agents with information that leads to improve upsell opportunities and increase the lifetime value of each customer, including past customer buying behavior, order history, and potential likelihood of cross-selling additional products.

Productivity Improvements

Nemertes finds that approximately 20% of research participants are able to measure quantifiable productivity improvements associated with their investments in collaboration technologies (encompassing all applications). For those who, most see a gain of between 5 and 20%. (Please see Figure 3.)

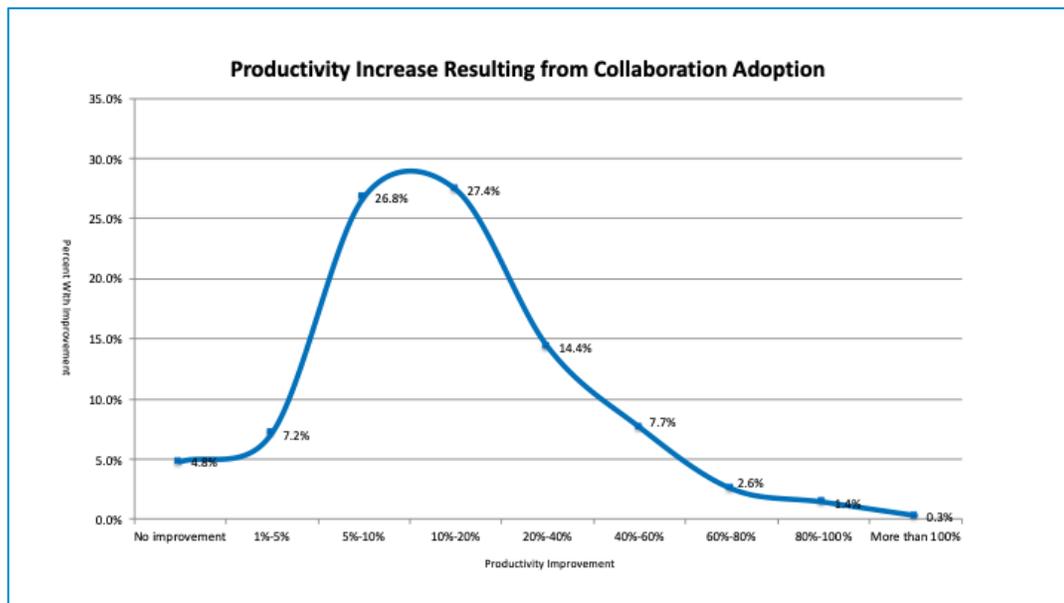


Figure 2 Productivity Increase from Collaboration Application Adoption

The key to achieving these productivity increases is to get people to actively use the tools that IT provisions. Here, cognitive collaboration, by improving ease of use and integrating collaboration into the context of business workstreams, offers the opportunity drive further measurable productivity gains.

Evaluating Cognitive Collaboration in Your Organization

Analyzing applicability of cognitive collaboration in an organization starts with a solid understanding of workstyles, personas, and processes for which application of AI can provide demonstrable results. IT leaders should:

- Develop use cases: Identifying opportunities to leverage cognitive technologies to improve access to information, endpoints ease of user, and collaborative experiences for distributed workgroups as well as external and customer-facing teams. Often this starts with surveying employees to discover pain points related to collaboration such as difficulty using existing systems, or the lack of contextual integration between collaborative platforms and business applications.
- Identify key sources of internal and customer-engagement data that cognitive platforms may be able to leverage to improve internal and customer-facing collaboration.
- Determine reporting requirements, identifying opportunities to derive positive business value from greater insight into internal processes and customer engagements.
- Evaluate vendor capabilities and roadmaps. Vendors in the collaboration and customer engagement market are rapidly attempting to leverage cognitive technologies to differentiate themselves from their competitors. Consider two factors in your evaluation: the ability of existing vendors to deliver business-focused cognitive features, as well as potential opportunities to achieve further benefit by

consolidating vendors. For example, an organization that uses separate meeting, voice, team messaging, and videoconferencing platforms may find limited ability to leverage AI across all apps without first integrating, or moving to a single vendor for different collaborative capabilities. Those using consumer services are not going to be able to take advantage of cognitive technologies that integrate business data into collaborative applications

- **Begin Pilot and Test Cases:** Consider an agile approach in which cognitive capabilities are quickly rolled out to test groups. Typically, these will involve teams that are generally open to new technology, have expressed concerns related to the limitations of current collaborative capabilities, and frequently engage in activities that involve the need for distributed workgroups or customer-facing functions to meet.

Conclusions and Recommendations

Cognitive collaboration, the application of artificial intelligence and machine learning to improve collaborative experiences, offers the opportunity to deliver measurable business value. Examples include integrating context into collaboration applications, enabling support for virtual assistants to improve access to information, intelligent bots and call routing for enhanced customer experience, and improved endpoint interaction to speed meeting start times. Cognitive technologies offer tangible benefits to optimize facilities planning, increase sales close rates, and to increase customer retention. IT leaders should:

- Evaluate cognitive technologies for their applicability in the workplace
- Determine use cases for potential pilot deployments
- Evaluate current and planned vendor capabilities
- Develop a means to quantify the benefits of cognitive collaboration to their specific business functions, looking for opportunities to increase revenue, decrease cost, or create identifiable process improvements
- Plan to quickly adopt cognitive capabilities to achieve competitive advantage.

About Nemertes: Nemertes is a global research-based advisory and consulting firm that analyzes the business value of emerging technologies. Since 2002, we have provided strategic recommendations based on data-backed operational and business metrics to help enterprise organizations deliver successful technology transformation to employees and customers. Simply put: Nemertes' better data helps clients make better decisions.