The Expanding Role of Chatbots in Enterprise Collaboration

Smart virtual personal assistants are set to change the dynamics of enterprise collaboration. The ongoing integration of chatbots into a popular collaboration platform provides a look at what the future may hold.
EXECUTIVE SUMMARY

The global market for smart virtual personal assistants (SVPA), or chatbots, is growing exponentially. What was valued at $113 million in 2015, according to Transparency Market Research Inc., is expected to reach $994.5 million by 2024. Google’s Home and Allo, Apple’s Siri, Microsoft’s Cortana and Amazon’s Alexa are popular examples of smart virtual assistants.

However, these offerings have all been predominantly used in the consumer space for activities such as booking movie tickets, identifying restaurants, providing sports and weather updates, creating reminders for events, texting and calling friends, playing music, etc.

There has been less activity in the area of enterprise chatbots that might, for example, schedule meetings, follow up on activities with colleagues, carry out daily corporate activities such as filling out a timesheet, conduct training and more. This could lead to significant enhancements in employee collaboration, while providing huge savings for the organization.

In our view, SVPAs are a disruption waiting to happen in the enterprise collaboration space, with plenty of opportunities and compelling business benefits. This white paper spells out an approach for embracing SVPAs in the context of Microsoft SharePoint, the leading enterprise collaboration platform, and assesses potential outcomes that can be achieved within the Microsoft ecosystem.
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A NEED TO COLLABORATE

While it is vital for employees to work together cohesively as a team, the dispersed nature of work and the workplace often poses limitations to personal interactions. These geospatial and physical world challenges have created islands of disjointed knowledge within a global organization.

This disconnection has driven many organizations to seek out collaboration technologies that promise to simplify communication, improve productivity and nurture a collaborative business entity. In a recent report, the majority of respondents sought improvements in productivity, sales and competitive advantage. These organizations realize that collaboration is essential to the digital business of the future.2

Approaches to enterprise collaboration will likely be driven by technologies that employees - particularly millennials - prefer to use today for communication and data sharing, including social networking, the cloud and mobile devices. MarketsandMarkets forecasts that the enterprise collaboration system market will grow from $47.30 billion in 2014, to $70.61 billion in 2019.

The Fragmented Enterprise Collaboration Market

A wide range of enterprise collaboration tools exists today, from niche systems to collaboration suites developed by software majors. Figure 1 offers a snapshot of the various forms of enterprise collaboration software.

Enterprise Collaboration Market

<table>
<thead>
<tr>
<th>Type of Collaboration Software</th>
<th>Leading Products</th>
<th>Area of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration Platforms/Suites</td>
<td>Microsoft SharePoint, IBM Connections, Jive</td>
<td>Company-wide applications intended to replace traditional intranets.</td>
</tr>
<tr>
<td>Team Collaboration</td>
<td>Slack, Yammer, Cisco Spark, Confluence</td>
<td>Connecting users/teams to work together; deep integration with team messaging tools.</td>
</tr>
<tr>
<td>Micro-blogging Applications</td>
<td>Salesforce Chatter</td>
<td>Associated with specific functions such as CRM.</td>
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<tr>
<td>Consumer-grade Social</td>
<td>Facebook for Business</td>
<td>Popular social network modified for enterprise business use.</td>
</tr>
<tr>
<td>Document Collaboration</td>
<td>Box, Dropbox</td>
<td>Cloud storage with collaborative features focused on document sharing among teams.</td>
</tr>
</tbody>
</table>


Figure 1
In addition, significant overlap exists among the functionalities offered by products in this space. For instance, IBM Connections and Microsoft’s Yammer address similar challenges. Figure 2 provides a comparative view of the leading enterprise collaboration products across important features.

### Feature Comparison of Leading Solutions

<table>
<thead>
<tr>
<th>Feature Description</th>
<th>Microsoft SharePoint</th>
<th>IBM Connections</th>
<th>Jive</th>
<th>Slack*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration &amp; Security</td>
<td>✔️</td>
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<td>Collaboration Analytics</td>
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<td>Document Collaboration</td>
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<td>Content Management</td>
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<td>User Personalization</td>
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<td>✔️</td>
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</tr>
<tr>
<td>Team Messaging and Chatroom</td>
<td>✔️</td>
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<tr>
<td>Knowledge Management</td>
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<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Synchronous Communication</td>
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<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Mobile and Application Integration</td>
<td>✔️</td>
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</tbody>
</table>

* Although Slack is not a collaboration platform, it is a fast-growing product in the collaboration market and has gained significant popularity in a very short time. Forrester predicts Slack to release an enterprise version in 12 months. (Source: “Enterprise Collaborative Work Management Q4 2016,” Forrester, October 2016.)

Figure 2

Microsoft’s SharePoint has dominated the enterprise collaboration space, and the company has significantly scaled up its solutions to keep pace with growing market changes and user expectations. For this reason, we will take a closer look at SharePoint capabilities (on-premise and cloud) to analyze and understand how it is geared up to embrace the SVPA movement.

### SHAREPOINT, OFFICE 365 AND ONEDRIVE

SharePoint came into existence at the turn of the millennium as a document management and storage system. While SharePoint 2003 and 2007 made significant in-roads into document handling, SharePoint 2010 was the first release in which the software began to resemble a holistic enterprise solution, focused on helping organizations work together in new ways.

This was followed by the very popular SharePoint 2013, which focused on improving collaboration (through wikis, blogs, dynamic portals, instant messaging and videoconferencing), reducing customization (with a significant number of out-of-the-box features) and analyzing data (through business intelligence capabilities). The rise of intranets powered by SharePoint 2013 was another collaboration boost.
With businesses' need to contain costs while driving scalability, Microsoft released Office 365: SharePoint on the cloud. Office 365 began with support for Microsoft Office applications such as Word, Excel and PowerPoint, Exchange Server for handling e-mails and Lync for instant messaging. OneDrive was an important addition to the Office 365 suite, as it provided users with one place to store, sync and share files across devices. This enabled collaboration over the cloud, which propelled the product into an intelligent collaboration platform.

**Evolution of Intelligent Collaboration: Office 365**

To build intelligence into the collaboration platform, machine learning techniques were introduced as part of the Office 365 suite. Office Graph is the underlying intelligence fabric that wraps all components of Office 365, and maps relationships between people and information within the environment.

As part of the intelligence layer, Office 365 introduced Office Delve (discovery of information), ready-to-go portals (targeted experience and social), mobility (accessing content through different devices) and power BI (analytics on the cloud).

By adding Office Delve to the Office 365 suite, Microsoft flipped the traditional search paradigm, making it proactive and personalized. The system prompts relevant information, based on user activity (working on projects and documents, interacting with colleagues) and connections (people they work with), rather than having the user search for the right content. This personalized search experience ultimately improves productivity.

**Future Layer: SVPAs and More**

What began as a simple, on-premise document management and storage system for SharePoint (the foundation layer) has evolved into an intelligent content management and collaboration tool, supporting both on-premise (in the latest version of SharePoint 2016) and cloud (Office 365) solutions (the intelligence layer) (see Figure 3, next page).

On top of this, SVPAs can now work with the intelligence layer to transform last-mile transactions. For starters, Microsoft has already integrated the Skype messenger into its Office 365 suite. SVPAs can be integrated with the Skype messenger, with a hook to tap insights and information from Office Delve. By doing this, end users and their SVPA can work from a common window to access many types of transactions.
What began as a simple, on-premise document management and storage system for SharePoint has evolved into an intelligent content management and collaboration tool, supporting both on-premise and cloud solutions.

By using SVPAs on top of Delve, a bot can be commanded to discover and fetch only relevant results. In effect, the system funnels an already personalized search to obtain the specific result. The question that emerges is whether there is a tangible advantage of using an SPVA on an intelligent collaborative framework.

Imagine a need to obtain an old document that was archived by the organization. Delve might not have this document at the top of its discovery tree, as relevance is based on the individual’s recent activities and interactions. The individual, therefore, must revert to the traditional form of search to retrieve the required document, requiring time and effort. Using an SPVA and Delve, users can instruct the SPVA with key inputs, and the chatbot can carry out the search while users focus on other important tasks (see Figure 4, next page).
Using an SPVA to Search Documents

![Image of SPVA interface searching for archived document](image)

Given technology advancements, personal virtual assistants are no longer simple, instruction-driven chatbots. They gradually grow into smart personal virtual assistants. An SVPA associated with a particular user can begin to understand the tasks offered by its human counterpart, and can learn on the job as humans do.

Whether successful or not, any completed task becomes a part of the solution for carrying out similar, future tasks. Individuals can identify all their routine tasks, from filling out a time sheet, to planning the day’s schedule, and instruct the SVPA to execute on them, using a supervised approach. Since the SVPA interacts with the intelligent layer, it would be aware of all the activities the user conducts. This can also serve as input toward building intelligence that informs activities in the future and enables unsupervised performance.
QUICK TAKE

How SVPAs Can Transform Enterprise Collaboration

The following use cases are indicative of how we see SVPAs evolving over the next few years.

Running Daily Errands

Most employees follow a general routine with their daily tasks, no matter the nature of the job. Once integrated with the individual’s work machine, the SVPA application can carry out routine tasks with simple instructions (see Figure 5).

For starters, the SPVA can pick up information from an e-mail box and calendar, and present a snapshot of important e-mails, the daily meeting schedule and task reminders. It could also help submit monthly bills for claims and run test scripts for server administrators.

SPVA Assistance with Daily Tasks

![Figure 5](image_url)
Running Meetings

Given the time and labor costs they consume, meetings do not always deliver effective outcomes. A good deal of time is spent coordinating participants’ availability and meeting rooms, following up on action items, preparing minutes, reviewing redundant updates and so on. When you add in the time spent by participants preparing for the meeting, the result is a substantial use of resources across organizations.

If meeting duration can be reduced by, say, 10%, organizations would glean significant savings. This could happen if SPVAs were used to coordinate participants’ calendars for availability, and offer suggestions to the meeting host, who could then determine a mutually convenient time.

SVPAs could be used to save meeting time and effort in several other ways:
- Take meeting notes, prepare action items with deadlines, and e-mail summaries to participants, based on the host’s approval.
- Follow up on action items with the respective stakeholders, based on proximity to deadlines.
- Check with participants for updates/documents before the meeting starts and deliver it to the host. This would increase efficiency by setting the context for the meeting ahead of time (see Figure 6).

Increasing Meeting Efficiency

Figure 6
Tagging Documents

To retrieve documents for future use, they must be semantically tagged during upload. However, many organizations possess documents that are not tagged because they lack governance policies, or the documents have been migrated from legacy systems.

SVPAs can be trained to tag documents, both in bulk and one at a time. Initially, an individual needs to instruct the SVPA to help it understand documents and map tags to it. Over time, the SVPA’s intelligence can build, until it becomes an expert in document tagging based on the amount of documents it has processed and the intelligence gathered in correlating documents with tags.

Conducting Induction Training

An SVPA can be taught to carry out induction training because these programs tend to be very well-structured and defined, with minimal changes.

To begin, an HR employee can guide a virtual assistant to understand the significance of the training program and provide responses to probable questions that might be raised. When the virtual assistant cannot answer a query, it can connect with the HR contact, get a response and reply to the employee after the session. The virtual assistant can decide to respond based on the uniqueness of the query and its own experience with clarifying questions.

If there is a change in the induction training, the virtual assistant could be notified, and would ask clarifying questions to recalibrate its understanding of the new training content, and then effect change. In such instances, the HR team would need to conduct trial runs with the virtual assistant until flaws are ironed out and the virtual assistant is deemed competent.
As smart virtual private assistants become involved in day-to-day activities, the dynamics of organizational collaboration and communication will be upended.

LOOKING AHEAD
SVPA and bot technology is still at a nascent stage. While Slack, Facebook Messenger and Amazon’s recently launched Lex are fast becoming popular chatbot development platforms, Microsoft is leading the pack of emerging solutions that are well positioned to move chatbots into the enterprise collaboration space. User experience will still be a key factor, with ease of use and functional capabilities acting as the prime enablers of SVPA applications.

As SVPAs become involved in day-to-day activities and begin working closely with human counterparts, the dynamics of organizational collaboration and communication will be upended. Work will no longer be restricted to collaboration and communication between humans; instead, human-to-SVPA and even SVPA-to-SVPA interaction will become commonplace.

For organizations looking to introduce SVPAs, it is important to analyze the existing digital landscape, identify strategic business processes and develop a roadmap. Starting small and choosing low-hanging fruit will aid employee exposure to cognitive technologies at an early stage.

For example, collaboration using SVPAs through chatbots could be a starting point to move toward a sophisticated conversational (voice-driven) automated work experience in the future. Reskilling training programs, change management policies and building employee confidence on job safety will be critical to achieve a smooth alliance between SVPAs and employees.

A future proliferated with specialized agents for different activities is not too far off. The real challenge to adopting SVPAs will be humanizing them to ease employee familiarity and willingness to work with them. Ultimately, the digital maturity of an organization will be dependent on the digital maturity of its employees.
FOOTNOTES


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