

Enterprise ChatOps: The Power of Collaboration

**“ChatOps brings in the work you are already doing,
and places it in the context of the conversations you are
already having.”—James Freeman**

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ChatOps addresses the problem of how distributed companies can best manage complex, “always-on” services that place a tremendous demand on IT operations.

Introduction

ChatOps addresses the problem of how distributed companies can best manage complex, “always-on” services that place a tremendous demand on IT operations. The challenges of such operations include:

- Workers who are distributed across time zones
- Individual (siloed) efforts to resolve issues
- A lack of visibility and collaboration, the result of siloed efforts
- Wasted time and duplicated work, the result of siloed efforts

ChatOps allows such businesses to manage and maintain operations and technical teams through a collaborative chat interface.

Following are terms we find associated with ChatOps:

ChatOps: the practice of powering development and operations processes with robots (bots) within a group collaboration tool.

Chatbots: software applications that run automated tasks from within a group collaboration tool. The tasks are usually simple and repetitive—the kind of work that computers perform much faster than humans.

Group collaboration tool: a digital workspace that empowers an organization, where IT and operations work and conversations happen.

Channel: a virtual, often topic-based, chatroom where conversations take place and are documented for all members to see.

You Already Use Consumer Bots

If you have used a personal assistant, such as Apple’s Siri or Google Assistant, you were chatting up a Chatbot. Advances in artificial intelligence and natural language processing have allowed for the development of consumer bots that take care of simple repetitive tasks for us. We can, for example, ask a bot about the current temperature on our favorite beach. We don’t need to download a weather app, access the app, or manually enter the location.

Consumer interactions with bots are marked by their one-on-one nature, one user and one external system. In an enterprise system environment, interactions are more complex and focused on internal systems.

Who Coined “ChatOps”?

The term “ChatOps” was first used in 2013 by GitHub—that highly distributed company with employees (“Hubbers”) spread throughout the world. The day-to-day operations of running a complex, always-on, distributed service strained both development and operations teams. Individual Hubbers used phone calls and long email threads to resolve issues. As GitHub grew, the toll from wasted time, duplication of work, and lack of systemic collaboration became hugely costly.

GitHub developed a new practice (ChatOps) to encourage visibility and communication. The new practice impacted both technology and culture.

ChatOps as a Technology Changer

The practice of ChatOps brings people, a group collaboration tool, and Chatbots together. Similar to consumer bots, enterprise Chatbots automate repetitive tasks, so users experience those tasks as quick and easy. ChatOps users no longer need to switch between applications to perform each task. Chatbots run between the group collaboration tool and users’ systems / applications to gather data, execute commands (automate tasks), and leverage such things as machine learning and analytics.

When practicing ChatOps, IT operations staff interact with their systems and tools via a conversational user interface (UI). Chatbots abstract everyday tools during conversation, and interactions within the UI provide a high degree of visibility, which fosters collaboration. Visibility encourages not only the sharing of best practices, but supports workers in helping coworkers whose efforts may be wrong or headed toward undesirable outcomes.

However, saving time and money are not the only benefits. Sure, those are great, and they look amazing on a spreadsheet, but there is also the human factor.

ChatOps as a Culture Changer

The visibility and collaboration mentioned above supports technical excellence, and it also increases comradery that is often difficult to build within distributed work forces. The conversations that take place within a ChatOps UI foster employee engagement as people start to interact directly with each other in real-time, live conversation. When that happens, we see an increase in comradery, willingness to help, and overall employee satisfaction.

ChatOps is not all about work. Many teams create non-work-related channels, where teammates post memes and funny pictures, or even have Chatbots pull down football game scores. These casual interactions make workdays pass more pleasantly. The interactions also help distributed workers get to know, like, and trust each other. The result is happier teams.

ChatOps provides visibility and collaboration to support technical excellence, and it also increases comradery that is often difficult to build within distributed work forces.

Enterprise Chatbots are, first and foremost, a new way of exposing internal services to a wider audience within the company in a much simpler and more accessible way.

The Role of Chatbots in an Enterprise Environment

As opposed to the consumer space, the services that enterprise Chatbots provide or connect to are usually internal ones—the services provided by or endorsed by the enterprise's IT department. Enterprises commonly run hybrid IT systems:

- modern
- legacy
- systems of record

The value that Chatbots provide in the enterprise is thus shaped by this common hybrid enterprise landscape.

Accessibility is a major benefit because Chatbots help users easily tap into information that would take several clicks to obtain or must be aggregated from multiple sources. Enterprise Chatbots are, first and foremost, a new way of exposing internal services to a wider audience within the company in a much simpler and more accessible way.

Artificial intelligence will gradually provide further value-add for Chatbots by helping to make better sense of the untapped insights and knowledge that voluminous enterprise data contains. Artificial intelligence also acts as a personal assistant to improve the productivity of your teams.

A Summary of ChatOps Benefits

Visible: Enterprise Chatbots expose internal services to a wider audience within the company in a simple, accessible way.

Automated: Chatbots make task automation easy, repeatable, and low risk. For example, in January of 2017, a Micro Focus® customer (University of Pretoria) found a 60 percent increase in service desk utilization and logging of high-quality data for major incidents. That improvement was due to the automation that Chatbots provided IT practitioners who were responsible for updating incidents.

Transparent: Although ChatOps enables real-time collaboration between people in a chat channel, you don't need to be on ChatOps when conversations happen to benefit. When you log into your chat channel, you will see holistic conversations and assigned tasks. There's no need to log into multiple backend systems; your ChatOps sign-on provides a single authentication to get the right information from backend systems.

Transformative: All the benefits listed above can result in significant savings of time, money, and effort. Those resources can then be put towards innovation to really not just move your business forward, but accelerate it like never before.

Incident Management, with and without ChatOps

You know the drill. You're happily immersed in your productive, day-to-day routine when someone in the system notices that something is catastrophically broken. What's wrong? What needs to be done? Who should do it? Where are those people? Wherever they are, their productive, day-to-day routine is disrupted while a degree of panic and turmoil reign. You've all been sucked into a black hole of resources and time. .

Use Case of a Major Service Disruption without ChatOps

Here is how a major service disruption is traditionally handled:

- The operations center receives an event notification via email or text. Operations staff begin basic diagnostics.
- Non-operations staff are likely making independent attempts to trouble-shoot. Those side conversations divert them from their regular jobs.
- The severity or impact of the issue warrants escalation to an incident war-room.
- The incident coordinator uses valuable time (often a couple of hours) finding the right people and establishing a flow / exchange of ideas.
- Every person who joins the phone bridge needs to be informed about the issue and war-room attempt to remediate it. Those side meetings divert current war-room participants from the task at hand.
- During the war-room, each person works on a segregated system of his or her particular expertise—service desk, application monitoring, infrastructure monitoring, web or application team information, database or server group information, etc. Efforts are siloed.
- War room participants need to convey their siloed findings over the phone bridge. This turns into an exercise in "tell and not show." Participants must rely on guessing what their colleagues are describing.
- In cases where findings are too complex to describe, such as data and graphs, a participant must use email to share information. For the receiving participants, switching between phone conversations and long email threads is time-consuming and distracting.
- Changes to the incident must be manually entered in the service manager UI. Changes can include: creating the incident ticket, updating, assigning / re-assigning, adding notes, and closing the ticket.
- The issue is resolved.
- The incident is undocumented. The incident coordinator schedules a retrospective to document both the root cause and the steps to resolve the incident. The retrospective takes time away from regular work tasks and often forces participant to rely upon their memories of the incident. Documenting memories of a chaotic war-room introduces the likelihood that details will be omitted or disputed.

When practiced within IT Incident Management, ChatOps quickly yields improvements to the mean time to repair (MTTR) issues and improves collaborations across teams that were previously siloed. The result, in general, is more productive and happier IT practitioners.

How a Major Service Disruption Would Be Handled with ChatOps

You're happily immersed in your productive, day-to-day routine when your ChatOps channel alerts you to a major incident. The people, Chatbots, and systems necessary to solve the problem are instantly available. It's no guarantee against panic, but it does make the best use of your time and resources.

Here is how a major service disruption is handled when practicing ChatOps:

- The initiating event pops up in an existing ChatOps channel that monitors such events.
- All the members of the channel see the event and begin triage. The collaborators communicate and assist each other.
- The severity or impact of the issue warrants escalation to using Chatbots that pull information from all the affected systems—service desk, application monitoring, infrastructure monitoring, web or application team information, database or server group information, etc.
- The information is visible to everyone in the ChatOps channel. The information powers conversation and helps drive more informed decisions across people, teams and skills.
- When collaborators use a Chatbot, its actions are logged within the conversation timeline, allowing all participants to gain visibility to everything that has already been tried.
- Collaborators identify a root cause and decide on a solution that is given to a Chatbot to run.
- The issue is resolved.
- Because everyone sees and confirms that the solution works, there is no need for a retrospective. All information, actions, and discussions are captured and logged for any future audit or similar issue.

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Use Case Summary

Without ChatOps: Help desk personnel interact with a variety of different operations personnel, development teams, and help desk tools. Diagnosis and problem-solving communications occur in a phone bridge, long email threads, and side conversations that are time-consuming and error-prone.

With ChatOps: Help desk personnel and incident managers are all in the same channel where the conversations need to happen. Diagnosis and problem-solving communications occur in and are documented by the group collaboration tool, and work is carried out by Chatbots. This visibility and automation help teams resolve the disruption faster—with less duplicity of work and less risk.

Enterprise Readiness Requirements for ChatOps

When you evaluate group collaboration and Chatbot solutions, take your unique enterprise requirements and constraints into consideration. Make sure that the solution you choose meets your enterprise needs.

Here are examples of “enterprise readiness” requirements:

- The solution must be secure and not redundant:
 - Features such as authentication, role-based access, and end-to-end security are key.
 - The user context is maintained from the group collaboration tool to IT systems so that permissions and access are controlled on the IT system’s side.
- The solution must comply with your enterprise’s regulatory requirements. Typically:
 - You require detailed logging and auditing. When a Chatbot performs an action on an ITOps system, that system logs the performing user.
 - Many enterprises require the entire solution to reside on premise and will not accept a cloud solution. Some require at least their group collaboration and IT data to reside within their home country.
- The solution should minimize users’ learning curve and need to relearn:
 - The language that is used to interact with different IT systems or Chatbots should be the same or similar. Similarity reduces the learning curve of the IT practitioners as they adopt and practice ChatOps.
 - The solution supports more than one group collaboration tool that is transparent to the end user. (You are likely to use more than one group collaboration tool in a large geographically and organizationally distributed enterprise.)
- The solution should reduce lock-in. You want to give IT the ability to switch between group collaboration tools without redoing the ChatOps solution.
- The solution must adapt to and support the scale of the enterprise.
- The solution should be extensible, so you can add additional capabilities as the solution matures.

Enterprise Readiness Requirements for ChatOps

CHOOSE A GROUP COLLABORATION TOOL

If you plan to adopt ChatOps, you must choose and adopt a group collaboration tool. Many group collaboration tools are currently available, and more coming every day. Notable group collaboration tools include:

- Mattermost
- Microsoft Teams
- Slack
- HipChat
- Campfire
- Rocket.chat

A Micro Focus customer (University of Pretoria, 2017) successfully adopted ChatOps by introducing it to small teams. Within a few weeks after roll-out, the growth was organic. Other teams and groups saw how the ChatOps teams worked, collaborated, had fun—and dealt with fewer emails!

Group collaboration tools generally offer similar, essential features—a chat channel, mainly persistent / searchable chat, Chatbot integrations, and APIs to connect to 3rd party systems.

These are the essential features of a group collaboration tool.

However, some group collaboration tools offer additional features that range from what your enterprise considers attractive to must-haves. Some group collaboration tools are SaaS based, and some are on-premises. Some provide features such as localizations and others do not. You must weigh the pros and cons of each to decide which is right for your organization.

BEGIN SLOWLY

Because ChatOps brings profound changes to enterprise technology and culture, Micro Focus recommends starting slowly. Expose a small team to your group collaboration platform and Chatbots. The Micro Focus customer mentioned earlier (University of Pretoria, 2017) successfully adopted ChatOps by introducing it to small teams. Within a few weeks after roll-out, the growth was organic. Other teams and groups saw how the ChatOps teams worked, collaborated, had fun—and dealt with fewer emails!

Over time, you can gauge the interest in ChatOps, and modify and tweak your practice as you see fit. No two organizations practice ChatOps in the same way. For example, one organization might roll ChatOps out as described above, while another organization might introduce it as a mandate.

IDENTIFY FUNCTIONAL AREAS TO INCLUDE

Micro Focus recommends that you begin by identifying your most used tools and the most common activities performed by those tools. Let ChatOps improve work efficiency where it can have the most significant impact.

Equally desirable introduction points are the areas where you normally waste time and effort. Let ChatOps remediate those areas. For example, when a service desk system logs a major incident ticket, it's common for IT agents to manually input a series of journal updates. Sometimes, important information is not captured, because it is forgotten in the turmoil of investigation and diagnosis. With ChatOps, such information is automatically stored back into the targeted service desk system.

DEFINE METRICS

Lastly, you want to define metrics, so you can measure achievements and monitor progress for getting the desired value from ChatOps. Your choice of metrics is vast and will focus on your organization's particular pain points.

A far-from-exhaustive list of metrics:

- MTTR
- Duration of an incident ticket going from "open" to "in-progress"
- Total hours spent on an incident

The Micro Focus Solution

The Micro Focus IT Operations Management (ITOM) division has built their next generation of Chatbots by extending an already-proven open source Chatbot platform that is an extension of Hubot. The solution is designed to work on top of our existing products and suites.

While some ITOM products and suites have dedicated Chatbots, that does not mean our Chatbots are designed to work in a siloed fashion. The Chatbots are part of the larger practice of ChatOps, interfacing with other users and Chatbots across your enterprise via a group collaboration platform.

What We Offer

Enterprise Ready: We make sure our Chatbots have authentication capabilities and are secure end-to-end.

Ease of Use: Ease of use is extremely important to us, just as it is to you. We believe that new technology is adopted when that technology is easy to use. All Micro Focus Chatbots use a common syntax and offer a help command in which the Chatbot tells the user exactly what it does.

Extensive Coverage: Micro Focus can deliver new integrations and unlock a wide array of complimentary use cases.

Conversational Framework: Our Chatbot platform has the ability to engage in fully guided and semi-guided conversations with end users. These conversations eliminate the need for end users to memorize commands or all the parameters that are expected as part of a command.

Looking Ahead

As mentioned earlier, enterprise Chatbots must meet a different set of requirements than consumer bots. With that in mind, Micro Focus continues to develop Chatbots across our portfolio, with more coming soon.

Conclusion

The Chatbot disruption began in the consumer space, with companies such as Apple and Google releasing quickly-adopted chat tools powered by Chatbots. Although still very new, it's clear that ChatOps will continue that disruption into the enterprise space, resulting in changes to ITOps that are as profound as the DevOps revolution was to application development.

The practice of ChatOps is being adopted by enterprises that understand agility as the key differentiator between success and failure in our fast-paced, mobile world. The ChatOps practice brings two key benefits to enterprise IT—accessibility and artificial intelligence. The resulting savings of time, effort, and dollars can be used for innovation that will truly accelerate your business.

New ITOM products and suites include:

- Service Manager (SM) bot
- Operations Manager i (OMi) bot
- Universal Configuration Management Database (uCMDB) bot Data Center Automation Suite (DCA) bot
- Operations Orchestration (OO bot)

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