How Artificial Intelligence Technologies Transform IT Support in the Pharmaceutical Industry

Artificial Intelligence (AI) is getting into more and more aspects of our personal and professional lives. Our favourite streaming services give us recommendations based on AI algorithms, for example, and search engines are increasing their use of advanced AI technologies. AI is also transforming IT support, including in the pharmaceutical industry.

The use of AI in IT management and support in the pharmaceutical industry is being driven by the rapid progression of technologies like natural language processing (NLP) and machine learning.

So, we are not talking about solutions that replace the human capacity for critical thinking, problem-solving, and creativity. The real power of AI in IT management comes from:

- Automating repetitive tasks
- Enhancing the user experience
- Making IT teams more productive
- Improving IT infrastructure and strategic planning

In other words, you still need IT experts, both internal and external, to support business operations, address challenges, and plan for the future. AI technologies augment the work of your internal team and IT partners to modernise the approach of your organisation and allow your resources to focus on where they can add the most value.

Using AI Technologies in Help Desk Management and IT Planning

There are six main areas where AI can transform IT support in the pharmaceutical industry:

1. Automated problem detection and resolution
2. Ticket routing and categorisation
3. Automated support response
4. Enhanced knowledge retention
5. Predictive analytics
6. Support for large IT projects

Automated Problem Detection and Resolution

The best case scenario in relation to IT issues is where the issue is detected and resolved before users are even aware they exist. AI technologies make this possible by monitoring your organisation's IT infrastructure and application estate, as well as endpoint performance and user behaviour.

This monitoring can happen in real time so issues can be automatically identified and, in many cases, automatically resolved. Even where automatic resolution is not possible, IT staff can be notified about the issue so they can start working on a fix. The IT team can even communicate with users that they are aware of the issue before a support ticket is ever raised.

Not only does automated problem detection and resolution improve the user experience, but it also reduces the number of help desk tickets generated, reducing the strain on your IT resources.

Ticket Routing and Categorisation

When users raise tickets, AI technologies can route them to the right person or department, as well as categorising the tickets according to predetermined criteria. This prevents delays in ticket responses and ensures the highest priority tickets are dealt with first.

Automated Support Response

One of the avenues that a support ticket could be routed through is an automated response resolution service. This is often referred to as self-service IT, where the AI system uses NLP to understand exactly what the user is asking before providing a solution. In other words, it is more than a simple chatbot, as AI technologies enable conversational ticketing.

An example we can use to demonstrate the benefits of automated support response is a project for a large biopharmaceutical corporation where we introduced the ServiceNow Virtual Agent product.

The benefits of this solution include reducing the response time for requests and providing 24/7 support to users. The trickiest part of the implementation was training the system to understand the specific terminology, knowledgebase articles, phrases, and keywords the

staff would use to interact with the virtual support agent. The training is essential to ensure accurate and concise results, and it must be updated on a regular basis.

One of the key strengths we identified and expressly wanted to focus on was the virtual agent's ability to handle repetitive and low-level queries, enabling service desk staff to focus on more complex issues. After a short period of time, we also observed improvements in the accuracy and consistency of responses, as well as reduced errors and enhanced user satisfaction.

Improve Knowledge Retention

Knowledge retention in IT departments is a significant issue. As part of their day-to-day experience, IT support personnel build up high levels of knowledge on organisation-specific IT issues. If one of these people then leaves the company, large portions of the knowledge they have leaves with them.

AI help desk solutions also build up organisation-specific knowledge over time, but that knowledge is always retained by the company, significantly improving knowledge curation.

We can again use the example highlighted above to demonstrate the ability of AI to improve knowledge retention. The solution we implemented included a feature where the AI analysed incidents reported by users before making recommendations to the Service Desk on topics for new knowledgebase articles. This reduces errors in responses and accelerates response times.

Two of the main benefits of AI-powered knowledge retention include:

- Reduced training time: The knowledgebase solutions we implement tangibly helped the onboarding process as new recruits have access to a wealth of information about the organisation's systems and processes.
- Better decision-making: Our knowledgebase solution provided the organisation's IT team with access to data and insights that enabled them to make more informed decisions about system improvements.

Predictive Analytics

IT management is about planning for the future as well as supporting day-to-day operations. AI technologies can help with this future planning, especially in the collection and analysis of past data and using that data to predict the future. This enables data-driven decision-making in the planning of IT infrastructure, budgets, and resources.

Going back to our direct experience of delivering AI solutions in the pharmaceutical industry, our implementation of ServiceNow Predictive Analytics enables proactive rather than reactive maintenance and support. The system identifies potential issues before they become problems, allowing our IT team to take preventative measures, ensuring smooth operations and less downtime.

What's more, with the help of AI and machine learning, the system has become smarter over time. It's able to learn from past incidents and provide even more accurate predictions, continuously improving its performance.

Supporting Large IT Projects

IT technologies can also play an important role in large IT projects within pharmaceutical operations. An example is upgrading to a newer version of the Windows operating system. Some of the steps in that process include getting a full picture of your app estate and then repackaging apps to work with the new operating system. Traditionally, these steps would have been completed manually. With AI technologies, they can be almost entirely automated, freeing up your IT team to concentrate on other aspects of the project.

Other Applications of AI in the Pharmaceutical Industry

AI technologies are playing an increasing role across the pharmaceutical industry. Some examples include:

- Compliance with 21 CFR (part 11) where AI can use the vast amounts of data produced during pharmaceutical manufacturing operations to identify, report, and fix problems.
- Making sense and gaining deeper insights into the vast amounts of chromatographic data generated in modern pharmaceutical laboratories.
- Supply chain management and demand forecasting.
- R&D, particularly in relation to quality improvements in the product development process as well as new drug discoveries.
- Predictive maintenance for laboratory equipment such as high-performance liquid chromatography equipment, as well as for production line equipment.
- Management of personalised treatments for patients, including wearable technologies.

The IT infrastructure in your pharmaceutical organisation will need to support the above processes, workflow changes, and business opportunities. Therefore, it makes sense to optimise IT support and management with the latest technologies and best practices, including AI.

AI and the Future of IT Support and Management

It is impossible to predict where AI-related technologies will take us in the future. What we do know is there are opportunities for pharmaceutical companies to utilise the proven AI technologies that exist today to enhance IT support and management functions.

To learn more about how to take the next steps in introducing AI into your IT operations, get in touch with us at Westbourne IT today.