

TAILWINDS

GENERATIVE AI TO PROPEL YOUR ORGANIZATION

BUILT ON  **Amazon Bedrock**
 POWERED BY  **IBM Watson Assistant**



Using an AI-Powered Solution to Enhance First Responder Behavioral Health and Performance

Pyroc Technologies INC, known as Pyroc, is a company dedicated to enhancing the care and performance of first responders. Starting with firefighters, who represent more than 52% of the global first responder population, Pyroc is focused on addressing the unique challenges firefighters face, such as allostatic load proposed as 'Firefighter Syndrome.' Innovative Solutions, a Premier Tier AWS partner, has collaborated with Pyroc to develop an AI Co-Pilot designed to assist firefighters and fire departments in managing wellness, making critical decisions, and more. This case study explores the partnership between Pyroc and Innovative Solutions and the creation of the AI Co-Pilot using Amazon Bedrock and IBM Watson Assistant.

BUSINESS OBJECTIVES

- 1** Provide real-time assistance to firefighters and fire departments.
- 2** Enrich decision-making to prepare for a complex and diverse list of emergencies.
- 3** Extend career longevity by helping mitigate and navigate the long-term 'wear and tear' of the job that impacts public safety.
- 4** Improve the overall safety and effectiveness of firefighting operations.

The motivation behind these objectives was to leverage AI technology to support the critical need for a real-time tool that produces personalized, unique, and optimum performance ranges to help firefighters and fire departments.

57%

Today, **almost 57% of firefighters are battling PTSD** which affects every fire department and their operational performance within North America.

This innovative tool will help prepare for, mitigate, and navigate the PTSD domain, among others, found inside Pyroc's 'Firefighter Syndrome' framework. Our partnership activated a proactive tool that, instead of continuing to accept a reactive position, will be used to help proactively change how we care for and optimize the performance of our firefighters.

THE CHALLENGE

Society is facing a mental health crisis, and firefighters are responding to an exponential increase in volume and complexity of 9-1-1 calls, facing many challenges including exposure to carcinogens, the risk of heart disease, and the physical and mental strain of the job.

94%

Over 94% of active firefighters have reported experiencing a critical incident and often respond with a 'knee jerk' stress-induced reaction intended to help them cope.

These challenges and incidents can result in a buildup known as allostatic load that lead to long-term health issues and impacts the effectiveness of firefighting operations.

In 2022, Pyroc conducted a survey that resulted in 100% of their respondents saying if they had evidence they were 'not ok' they would use that evidence and seek help. Pyroc sought to address this response by providing an AI-powered tool that could deliver personalized guidance and instant access to vital information and resources.



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THE PARTNER SOLUTION

Innovative partnered with Pyroc to create an AI Co-Pilot using Amazon Bedrock and IBM Watson Assistant. Amazon Bedrock provided a secure gateway to AI models, allowing the AI Co-Pilot to access and process large amounts of data efficiently. IBM Watson Assistant was utilized to build a conversational interface that firefighters and fire departments could interact with to receive guidance and information.

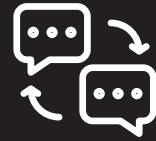
THE AI CO-PILOT INTEGRATION PROVIDES



Real-time data analysis and recommendations.



Access to a vast knowledge base of firefighting techniques and medical information.



A conversational interface for easy interaction during high-stress situations.

This solution directly addresses the challenges faced by firefighters and fire departments by offering support and information that can improve decision-making during stress-induced incidents and reduce workplace injuries. Pyroc is hopeful to have a powerful 35% reduction in PTSD claims.

TRANSFORMING THE CUSTOMER EXPERIENCE

The AI Co-Pilot will help set a new standard in the industry by integrating cutting-edge AI technology into the critical field of emergency response.



Providing instant, reliable support to firefighters when they need it most.



Reducing the cognitive load during emergencies, allowing firefighters to be more focused.



Enhancing the safety and efficiency of firefighting operations.



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WHAT THE CUSTOMER IS SAYING

In October of 2022, Pyroc released their cutting-edge analytical process for 'Firefighter Syndrome.' The parameters of this framework include several different domains that collect and analyze a combination of job-specific, inter-related medical, social, and psychological conditions. This involves pathophysiological injuries at the molecular and cellular level of every system in the body that interact adversely with behavioral and social functioning due to the very nature of firefighting.

Firefighters who adopted 'firefighter syndrome' have taken appropriate measures to interpret and apply the data provided by specialized care providers. They continue making choices that empower them to remain in service and a valuable asset to protecting civilians.



"My only issue is I will retire before I get a chance to use it. I wish I had this tool 27 years ago!"

Capt. Scott Donahue
27 YEARS OF SERVICE



"The biggest thing that I liked, honestly, is the whole thing. It's something that has never been done and needed to be done."

Firefighter Kyle Bress
5 YEARS OF SERVICE

These success stories validate how the partnership between Pyroc and Innovative Solutions to develop an AI Co-Pilot is a vital extension of Pyroc's overall solution called FLASHPOINT. Firefighters who use the AI Co-Pilot are empowered to utilize their strong critical thinking skills to adapt behaviors and seek appropriate assistance, resulting in significant improvements in their ability to manage complex situations, quality of life, and functioning. Surveys and testing have resulted in early indicators of the tool's ease of use and acceptance within the community, and the actionable insights and connection to Pyroc's personalized performance and optimization insights have been identified as a vital need. Pyroc forecasts that more than 38% of this community will step up to be early adopters of the AI Co-Pilot.

THE KEY BUSINESS RESULTS

65%
REDUCTION

Improved on duty firefighter performance and career longevity, with a possible **65% reduction in the evaluation and recovery cost of workplace injuries**. To put this into perspective, a 10% reduction would result in savings of nearly \$79 billion across North America.

48%
IMPROVEMENT

Improved health, quality of life, and functioning of firefighters off duty, empowering firefighters to achieve a **48% improvement in behavioral health response in both off and on duty care**. This impact the fact that firefighters commit suicide at a 38% higher rate than the general public.

32%
IMPROVEMENT

A measurable increase in operational performance and asset management. Here, Pyroc expects to generate well over a **32% improvement in operational efficiency and accuracy after implementation**.

80%
REDUCTION

Enhanced training, procurement analysis and operational workflows within fire departments previously impacted by 'firefighter syndrome' are now slated for significant impact, experiencing up to 80% reduction in time-to-generation.

WORK WITH A GEN-AI PARTNER

This AI Co-Pilot will make a significant impact on the company, its customers, and citizens across North America. By leveraging Amazon Bedrock and IBM Watson Assistant, the solution is positioned to have a powerful impact on improving firefighters' safety, health, and performance outcomes, enabling them to re-prioritize protecting citizens.



Amazon Bedrock



IBM Watson Assistant

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