

HACKATHONS

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OFFICE OF TECHNOLOGY STRATEGIES (TS)

INTRODUCTION

You and your colleagues are tasked with developing innovative solutions to help Veterans with mild traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). How will your team find the best solution? A common strategy is for a team to sit together in a conference room and brainstorm on a whiteboard. What if you and your colleagues borrowed an inexpensive and effective approach from the innovative information technology (IT) industry?

Hackathons use brainstorming and coding sessions to stir up new ideas on a topic by creative problem solving. What issues could be solved if the Department of Veterans Affairs (VA), as an enterprise, adopted the use of hackathons to solve complex problems? This Tech Insight explores how hackathons work, offers guidelines for organizing a hackathon, and presents examples of how Federal agencies are employing hackathons to drive innovation.

WHAT IS A HACKATHON?

A [hackathon](#) is an event where people collaborate intensively on projects, primarily within the field of software development. Hackathons typically last between a day and a week and tend to have a specific focus. However, hackathons are [not limited to coders](#) and software developers, as anyone who has an interest in a topic can attend to learn, build, and share their creations.

At their best, hackathons create a “structure and process around idea development by demonstrating to employees that innovation is not only welcomed but also expected.” Hackathons promote idea and product generation, process improvement for customer experience, and growth. A participant does not need to have an idea to attend a hackathon. Ideas are generated in group brainstorming sessions by talking to others. Attendees develop an idea on their own or can collaborate with others on their idea.

HOW TO RUN A PRODUCTIVE HACKATHON

When planning a hackathon, it is important to set clear rules and goals, identify a concrete mission, and prepare attendees ahead of time. Teams consisting of three to four people tend to work best. It is also helpful to develop timelines to keep the team on track. Once these

guidelines are set, the hackathon begins with project introductions through discussions around current projects or ideas.

According to management consulting firm Booz Allen Hamilton's Innovation and Hackathon Teams, the following eight steps contribute to productive hackathons:

1. Develop an innovative ecosystem supporting hackathons.
2. Identify and deconstruct a problem that you want to solve.
3. Talk to end users and identify their needs and their challenges.
4. Develop diverse teams with a multidisciplinary focus, including business and marketing professionals, designers, data scientists, and developers.
5. Discuss potential solutions with team and select the best solution.
6. Prototype rapidly and seek validation upfront with your end users.
7. Incubate and support the best solutions post hackathon.
8. Develop mechanisms to test, pilot, and scale the best solutions.

At the end of the hackathon, a wrap-up session gives each project an opportunity to demonstrate accomplishments. A problem might not be solved at the end of the hackathon, but the event serves as a "[pit-stop](#) on a long journey to solve problems or as a training session to prepare participants for solving problems." After a hackathon ends, it is imperative to monitor and follow-up to ensure that there is an "after."

HOW GOVERNMENT AGENCIES USE HACKATHONS

Government agencies such as the National Aeronautics and Space Administration (NASA), the White House, and the General Services Administration (GSA) use hackathons to solve complex problems.

NASA uses hackathons to broach topics including space exploration and asteroids. To foster innovation around challenges faced at home and in space, NASA hosts an annual [Space Apps Challenge Hackathon](#). The 2016 Space Apps Challenge took place across 193 locations, spanning 72 countries, with 26 challenges in six mission-related categories: Aeronautics, Earth, International Space Station, Journey to Mars, Solar System and Beyond, and Space Technology.

In September 2016, the [White House Open Data Hackathon](#) showcased open data's contributions to government efficiency and effectiveness, improved lives, and spurred innovative thinking, job growth, and economic opportunity. Various agencies shared success stories at the Open Data Hackathon, and displayed data visualization tools in the Innovation Showcase that captured over 5,000 data assets. Open data is also used to support education and health research. For example, it is utilized for the Cancer Moonshot 2020 Project to help

quantify cancer statistics, assist researchers in having more access to testing materials, and provide opportunities to patients who want to participate in trials.

In April 2016, GSA hosted the first ever [Government-wide Earth Day Hackathon](#), bringing together 49 industry professionals, students, and government employees to find new, more efficient solutions to making a greener Federal government. Within the hackathon's six hour window, teams competed to build an automated software code generator and develop improved data visualizations for climate change indicators; developed a new web application for the National Institute of Standards and Technology that allows for customizable selection and comparison of building products' economic and environmental performance; and developed methods to present and compare energy and water use in U.S. Department of Agriculture Forest Service facilities.

HACKATHONS AT VA

VA conducts hackathons to identify innovation solutions and best practices that help drive IT strategy. VA's Office of Technology Strategies (TS) within the Office of Information Technology (OI&T) Architecture, Strategy, and Design (ASD) recognized a need for crowdsourced innovations. In 2013, TS held the MetLife TechJam hackathon in North Carolina, addressing mobile access and data quality for the Customer Data Integration effort. The Veterans Health Administration's (VHA) 2015 hackathon resulted in a [new healthcare application](#) that delivered data from FitBit fitness trackers into the Enterprise Health Management Platform (EHMP). VA is partnering with the private sector, non-profits, and Veterans to propel brain health solutions related to TBI and PTSD. In February 2016, the [VA Center for Innovation \(VACI\)](#) hosted hackathons in [San Francisco and Austin](#) to develop solutions for TBI and PTSD. The teams worked to develop their ideas and go from sprint to design to prototype by the end of the event. A panel of leading VA and industry experts, along with Veterans and caregivers, selected [six winners](#) to feature their innovation at VA's Brain Trust Innovation Showcase in April 2016.

In December 2015, the White House Office of Science and Technology Policy, National Institutes of Health, and VA collaborated with technology nonprofits and local agencies to host a day of [Mental Health Hackathons](#) across the nation to address suicide prevention. The Office of the Mayor of the City of Chicago hosted a hackathon focused on answering the question: How can we create one database of referrals for organizations that refer people to mental health and emergency services? Bayes Impact hosted a hackathon to build software prototypes and data visualizations using open data to address suicide among Veterans.

CONCLUSION

Companies and government agencies have begun experimenting with the use of hackathons over the last few years as a cost-effective way to reduce the risk of innovation. Public health and medicine have a long history and strong roots in experimentation and solving problems through iteration. Hackathons build upon this history while connecting with technology to find innovative solutions to a wide range of questions and problems.

How do you think hackathons can be used at VA to tackle complex problems?

Read more technology topics in [TS Tech Insights](#) and [Enterprise Design Patterns](#). If you have any questions regarding machine learning, don't hesitate to [ask TS](#) for assistance.

TS TECH INSIGHT SERIES

The monthly Tech Insight series aims to help readers make better decisions and be more informed customers (of Office of Information & Technology's products and services) by providing them with high-level overviews of technology issues that impact or will impact VA's Information Technology (IT) environment. Tech Insights introduce topics in an easily digestible fashion by presenting background information on the topic, clearly explaining its importance within VA, and providing recommendations for success from TS. View all TS Tech Insights [here](#).

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