

Operational Modernization

Helping ARMS take off by combining government knowledge and vendor partner agility.

30 August, 2022
Kendra Charbonneau
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Presenters.



Kendra Charbonneau

Director of Software Engineering, Parsons Corporation

An experienced Lead Software Engineer with 21 years of experience working in BES as a government Chief Enterprise Architect, Program Engineer, and Lead Systems Engineer. She has extensive knowledge of software application acquisition, as well as agile coaching and implementation.

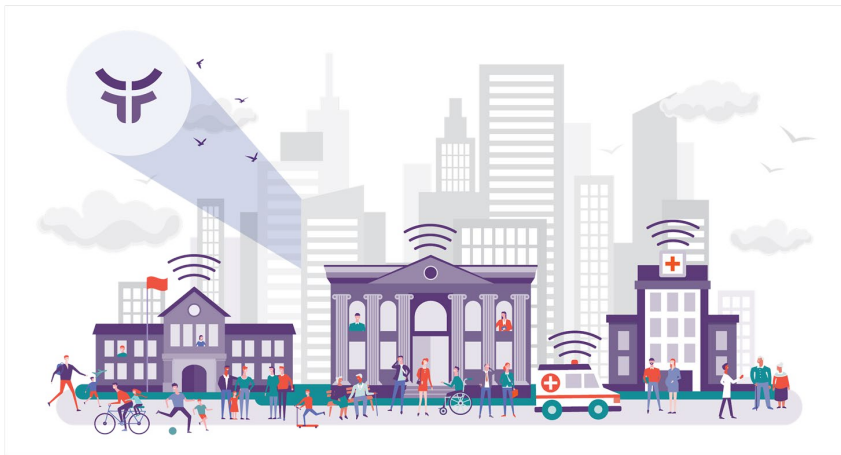


Delali Dzirasa

CEO, Fearless

The CEO and founder of Fearless, a full stack digital services firm with a mission to build software with a soul. Delali is also the founder of Hutch a digital services incubator with 20 companies. Delali has over 18 years of experience leading agile software teams and programs.





Hi, we're Fearless.

We build software with a soul. Our vision is to create a world where good software powers the things that matter.

We're serious about creating software that makes the world a better place. We want to build tools that empower communities and make a difference, so we take on projects that have a lasting impact.



We've worked with government for 13+ years.

Fearless' customers include:

- Department of the Air Force (USAF)
- KesselRun (USAF)
- BESPIN (USAF)
- Department of the Army
- Defence Intelligence Agency (DIA)
- National Security Agency (NSA)
- US Citizenship and Immigration Services (USCIS)
- National Archives and Records Administration (NARA)
- Centers for Disease Control (CDC)
- Centers for Medicare and Medicaid (CMS)
- General Services Administration (GSA)
- US Department of Agriculture (USDA)
- Office of Personnel Management (OPM)
- Department of Veterans Affairs (VA)
- National Institute of Health (NIH) / National Center for Biotechnology Information (NCBI)
- Smithsonian Institution
- Small Business Administration (SBA)
- State of Maryland
- State of New Jersey
- State of Connecticut
- State of Florida
- Exelon
- Maryland Food Bank
- New York Harbor Foundation
- NFL



State of Maryland



U.S. General Services Administration



U.S. Citizenship and Immigration Services



CENTERS FOR MEDICARE & MEDICAID SERVICES



State of New Jersey



CENTERS FOR DISEASE CONTROL AND PREVENTION



NATIONAL ARCHIVES AND RECORDS ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE



State of Connecticut



U.S. DEPARTMENT OF THE AIR FORCE



MARYLAND FOOD BANK



U.S. OFFICE OF PERSONNEL MANAGEMENT



State of Florida



U.S. DEPARTMENT OF THE ARMY



THE IRVING EDUCATION FOUNDATION
NEW YORK HARBOR SCHOOL



State of Virginia



U.S. Small Business Administration



NATIONAL INTELLIGENCE AGENCY



NFL



National Institutes of Health



Smithsonian



NATIONAL SECURITY AGENCY



BUREAU OF OCCUPATIONAL EDUCATION



KESSEL RUN



BESPIN



U.S. Department of Veterans Affairs

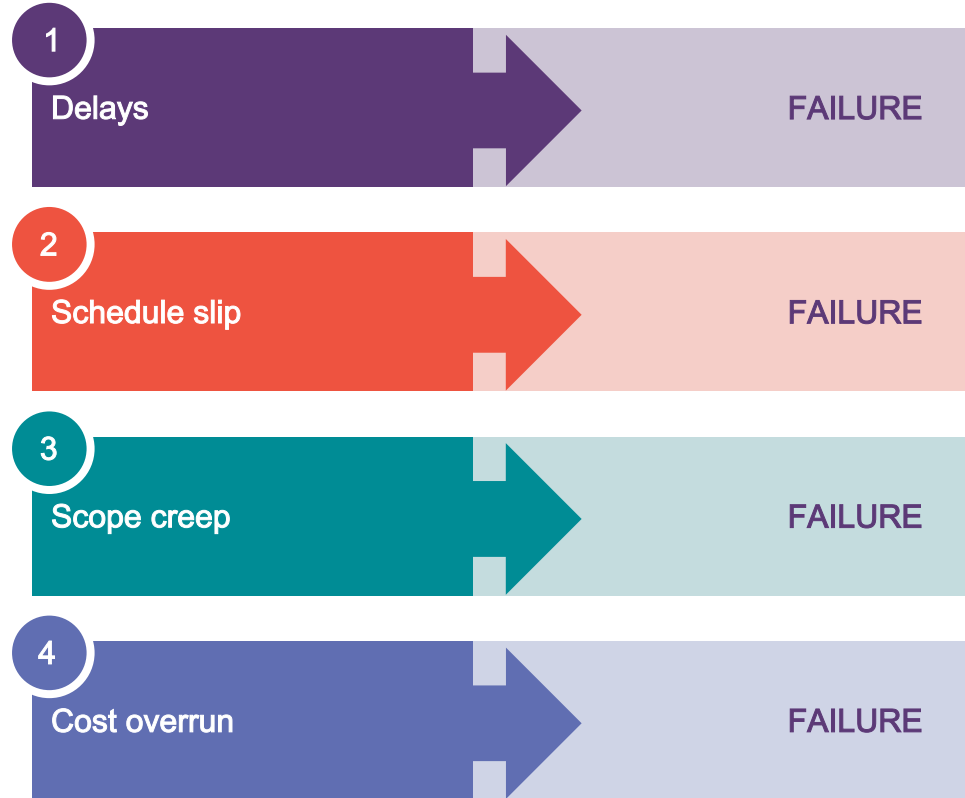


Exelon



In that time, we've
seen some problems
come up over and over.

And all of these problems increase the
risk of project failure.



The old guard.

Steady does it.

- Change introduces risk.
- Do what's proven to work.
- Mission critical system must be reliable.
- New approaches seen as threatening to job security.

The new guard.

Innovate or die.

- Change is constant.
- Consistently iterate and try new things.
- Make things better over time.
- Old approaches seen as threatening to successful delivery.

Dual perspectives.



The Yvonne and Charlie effect.





“I want to **create new opportunities** to enable technology discovery and collaboration with industry **to identify and deliver leading -edge solutions** across the government.”

- **Cares deeply** for the program and mission.
- **Focused on outcomes;** if services and products don't succeed, her reputation is on the line.
- Believes **new technologies and workflows are needed** at scale across government.
- Feels that we need to do business differently to **disrupt the status quo** of government services.
- Has innovative ideas, but **limited buying authority and budget.**
- Finds it **hard to scale innovation** when fighting for funding.
- Needs agile partners who understand how to **deliver results** and return on investment.
- It's not just about cool new technology or workflows, **its about balanced innovation to enhance capabilities long -term.**



Charlie

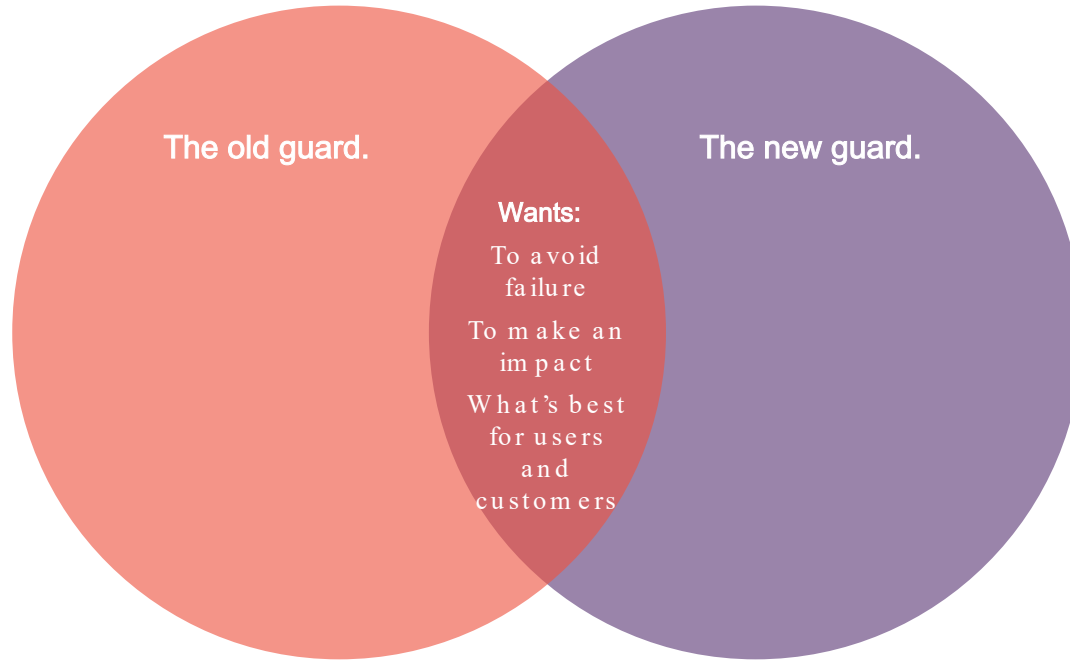
Stalwart Gov -Lifer



“I believe that **government serves the people.** I’ve seen services change over the years and want to help the public by **ensuring that government makes judicious changes.**”

-
- Has been working in govt for years and **knows how to get things done** in his agency.
 - Oversees a portfolio of large contracts and **doesn't have time to learn all the newest trends.**
 - Wants to **provide the continuity** that keeps the government running.
 - Feels that he **can't afford to be a guinea pig;** needs proven solutions he can understand.
 - Is comfortable in his role and finds it **hard to unlearn ingrained methodologies** like waterfall.
 - **Needs new frameworks** to assess risk and performance differently.
 - Worries that innovative digital services companies are risky; **wants proof that digital transformation has staying power.**
 - Needs to **understand the security and bottom -line value** of new solutions and companies.



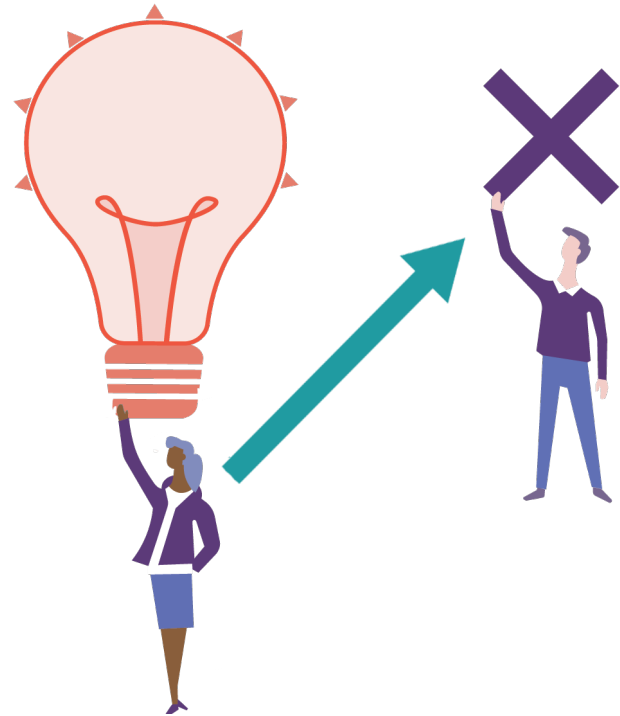


These two groups share some common goals.
But they often end up working against each other.



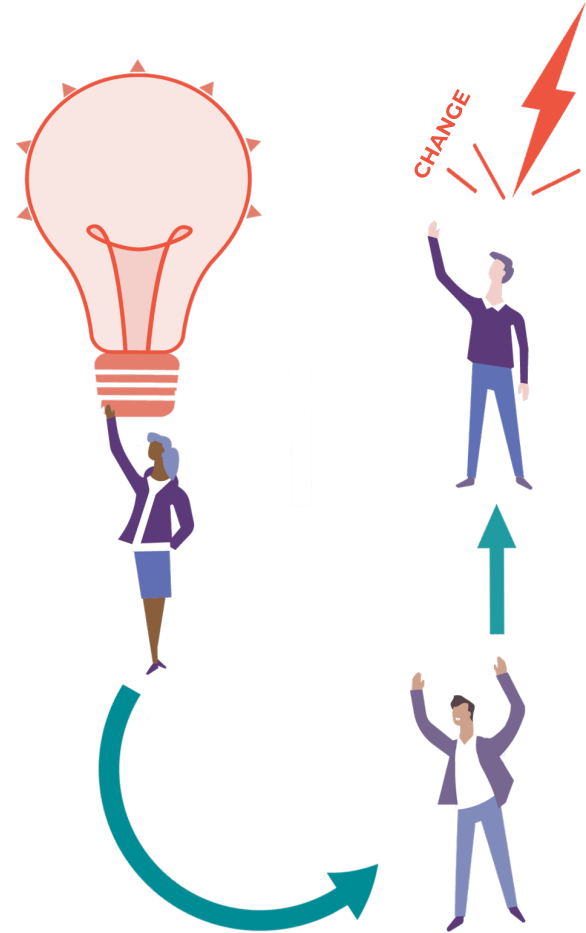
Use case #1: Sabotage.

- Yvonne wants to build innovative new technologies.
- Charlie thinks that's risky and **actively blocks Yvonne from moving forward.**



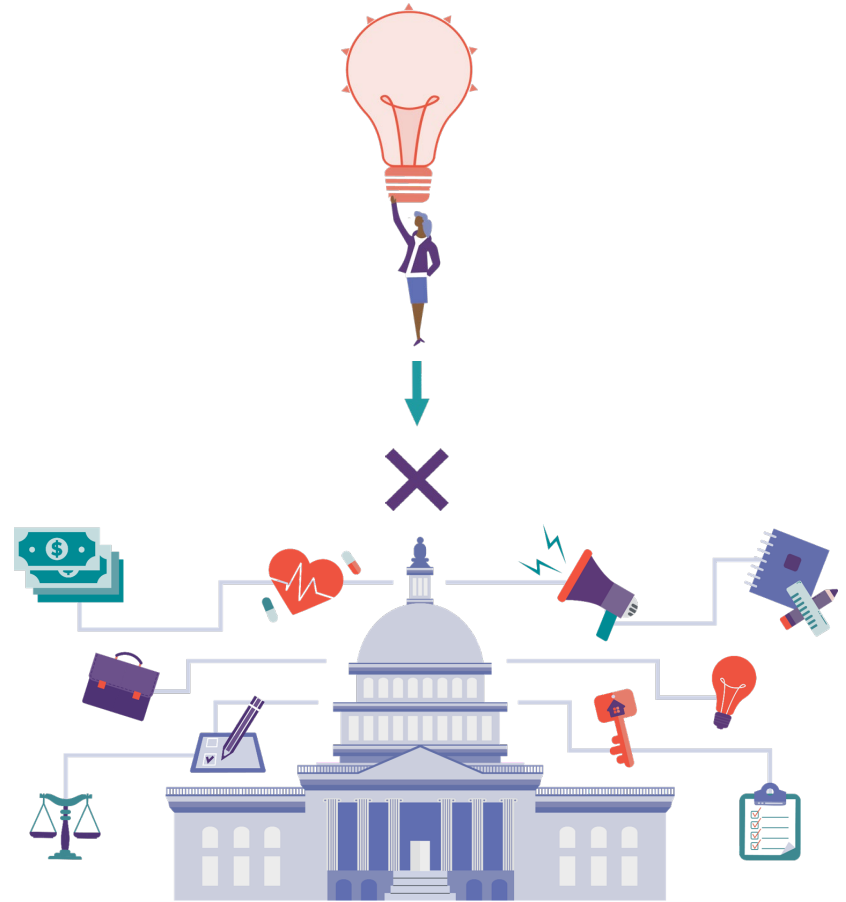
Use case #2: Outflanking.

- Yvonne wants to build innovative new technologies.
- Charlie thinks that's risky and actively blocks Yvonne from moving forward.
- Yvonne goes around him, and **Charlie is forced to adopt changes he doesn't believe in.**



Use case #3: Shiny object syndrome.

- Yvonne is able to innovate and builds some cutting-edge prototypes.
- But Yvonne doesn't understand the whole ecosystem, so she's **not able to scale them and integrate them into the ecosystem.**



Use case #4: If it ain't broke don't fix it syndrome.

- Charlie is worried about breaking systems, and believes that the old ways work fine.
- He doesn't adopt new approaches or technologies that could improve the technology in his portfolio.
- This means that **he can't field new features or capabilities quickly.**



ARMS

case study

Modernizing the Aviation Resource Management System (ARMS) so flight and jump supervisors can make informed resource allocation decisions.



ARMS case study

The problem.

- ARMS Program Office under -delivered or failed to deliver new capabilities for the past 15 years.
- New capability was developed several times in the past and unable to integrate to the legacy application.
- Current development effort was more than 18 months behind schedule and the likelihood of successful integration was low.
- Recently delivered capability had also failed to integrate.



ARMS case study

The results of the problem.

- A3 Customer and field users lost confidence in the ARMS Program Office's ability to deliver new capability. Because of this, they continued to cut its budget.
- A3 customers found other ways to meet requirements outside of the ARMS system.
- This resulted in manual rework, additional effort on the part of the ARMS Program Office, and duplicated data through multiple systems.



Original ARMS application.

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U.S. AIR FORCE

File Edit View Resource Training Flight Jump System Data Reports

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Jump Data

Jump Type	Jump Condition	Jump Duty
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FOR OFFICIAL USE ONLY

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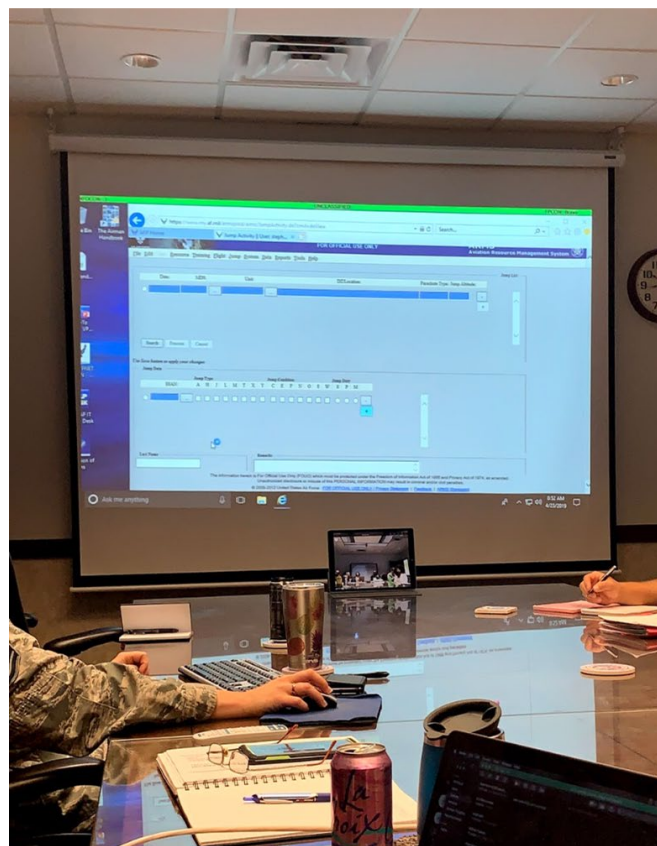
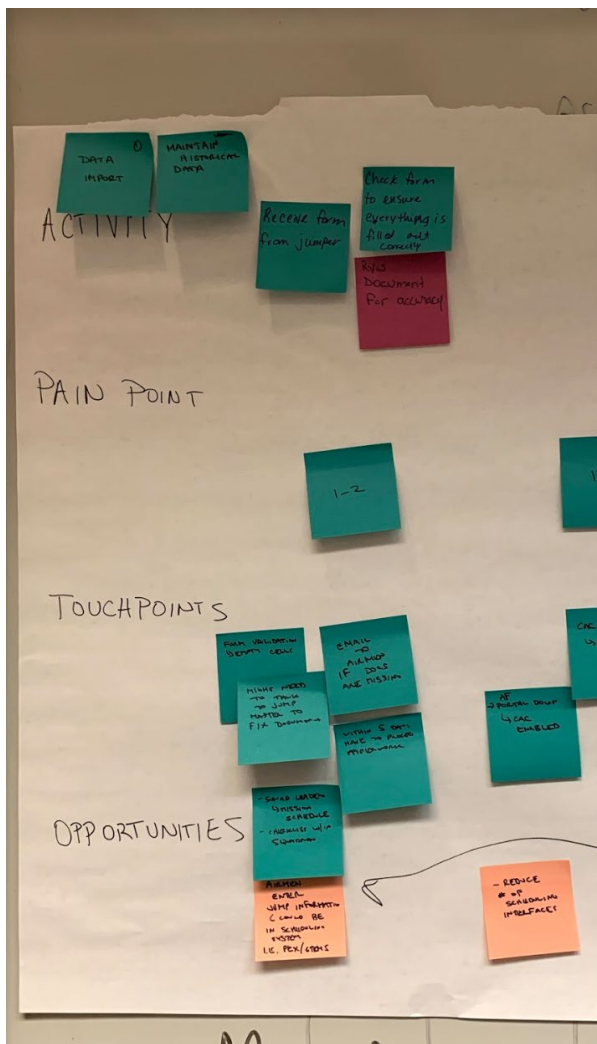
ARMS case study

What we did.

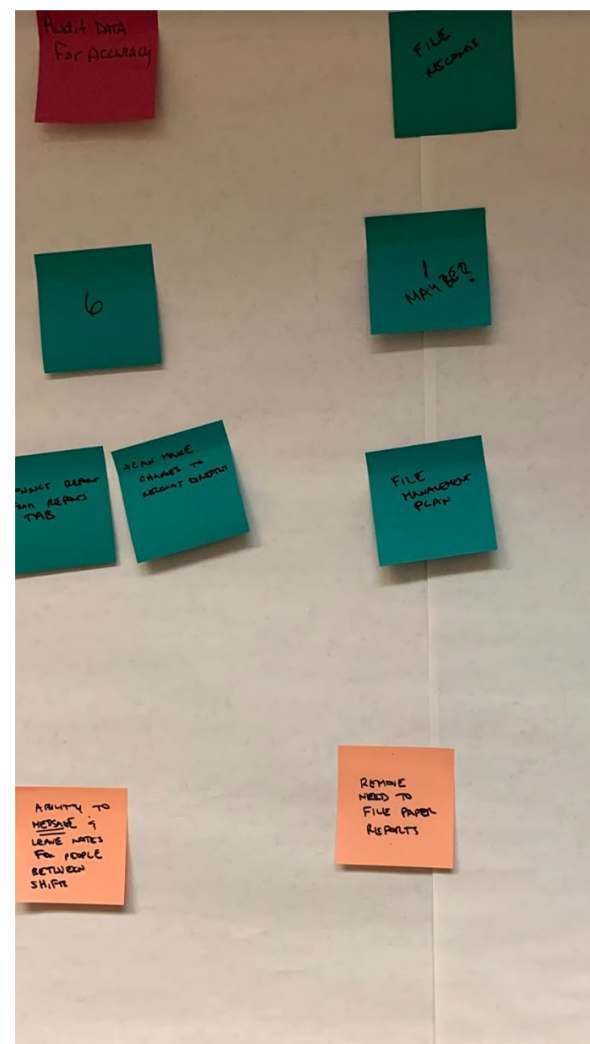
Fearless was tapped to help solve these problems. But we didn't know what we didn't know, and we ran into issues early on.

To make real progress, we had to bring together the old guard and the new. We began modernizing ARMS collaboratively with USAF developers, providing software development coaching as we went. We also worked to shift from a waterfall to agile approach.





Discovery session.

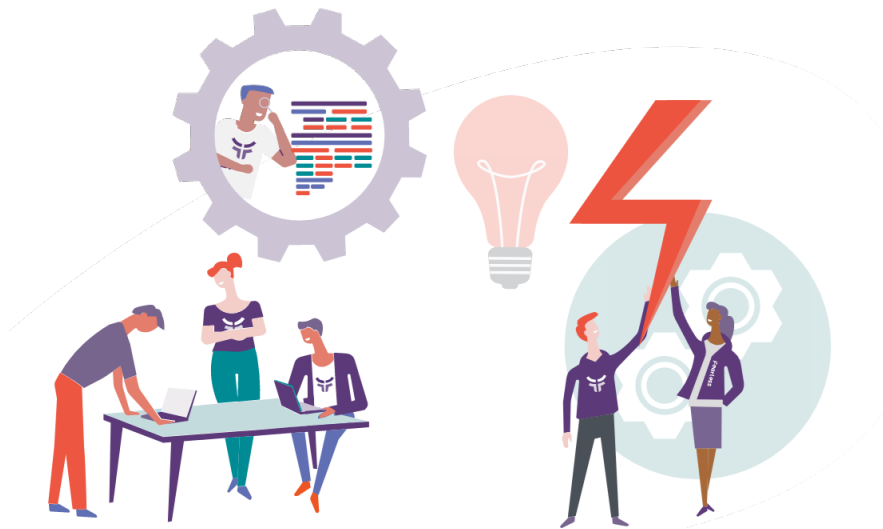


Root cause analysis findings.

- Lack of required skill sets or missing critical skill sets.
- Lack of defined processes or well disciplined development processes.
- Complex tech stack.
- High technical debt.
- Lack of Product Owner engagement.
- Siloed teams for new capability and sustainment activities.

The key factor we found was that **the** **program was substantially underfunded** **for** the legacy application.





What we tried.

- Engaged with contractor team to discuss challenges.
- Devised a cohesive strategy to work as a single team to deliver capability.
- Communicated plan with Product Owner and had them prioritize the work to be completed.
- Integrated new capability team and sustainment team to work as a single team.
- Held Big Room Planning sessions in-person.
- Added skill sets to the team.
- Implemented a disciplined agile approach adhering to Scrum framework.

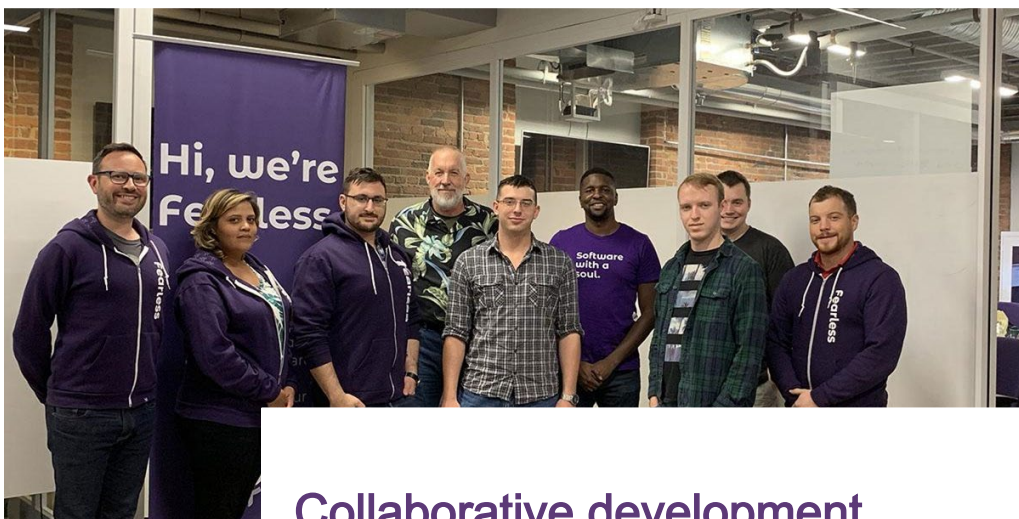


A one -team approach.

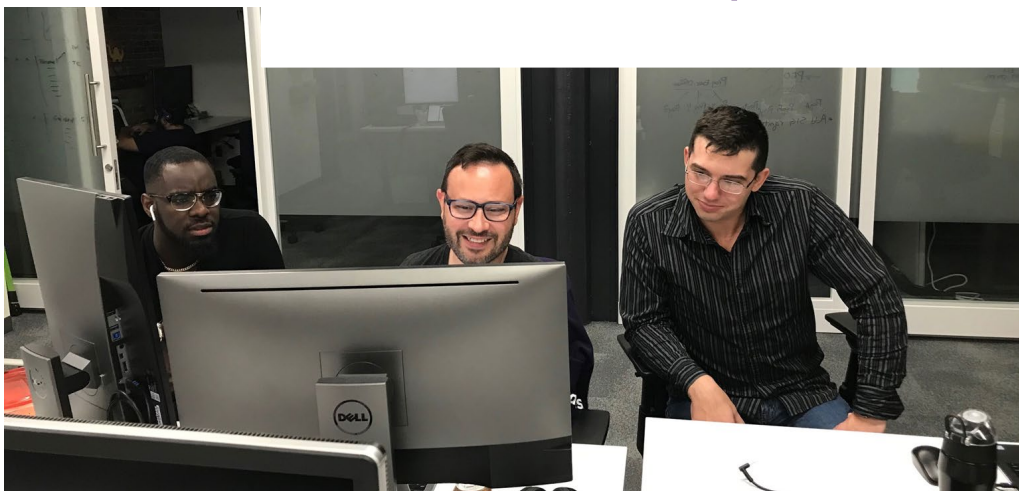
We built a trusting relationship with our customer, who ensured that everyone was marching to the beat of the same drum.

- We initially faced some challenges around different tech stacks, silos, and technologies used by teams across our customer's PMO.
- Our customer was critical in tackling this problem, and they opened doors, provided transparency, and united these teams around a common mission.
- This provided insight into program requirements that may have not been fully uncovered in a siloed environment.
- It also created a more cohesive team and allowed us to align and improve agile practices.

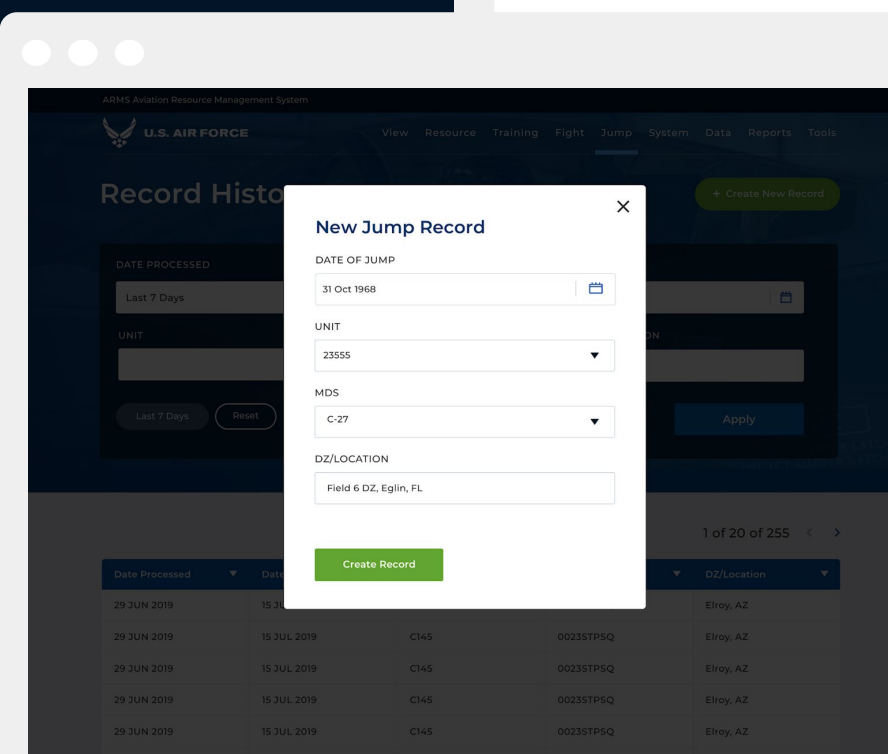
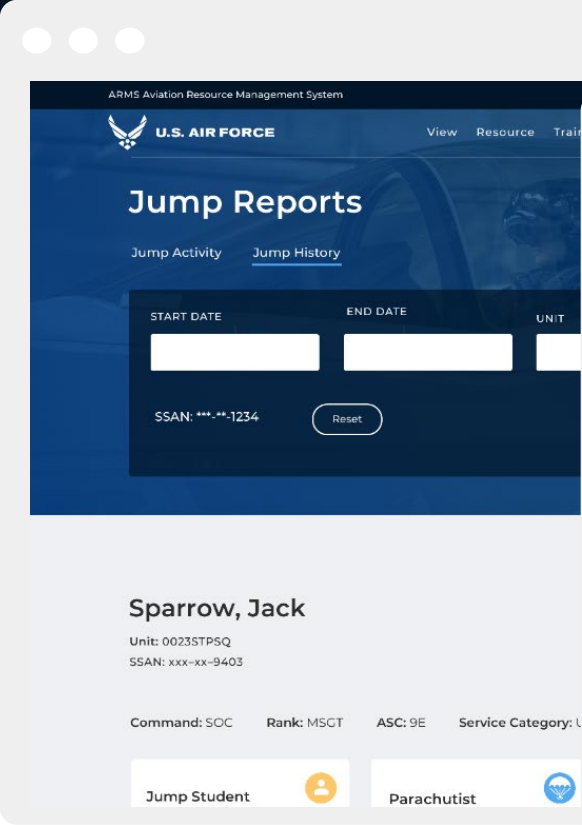
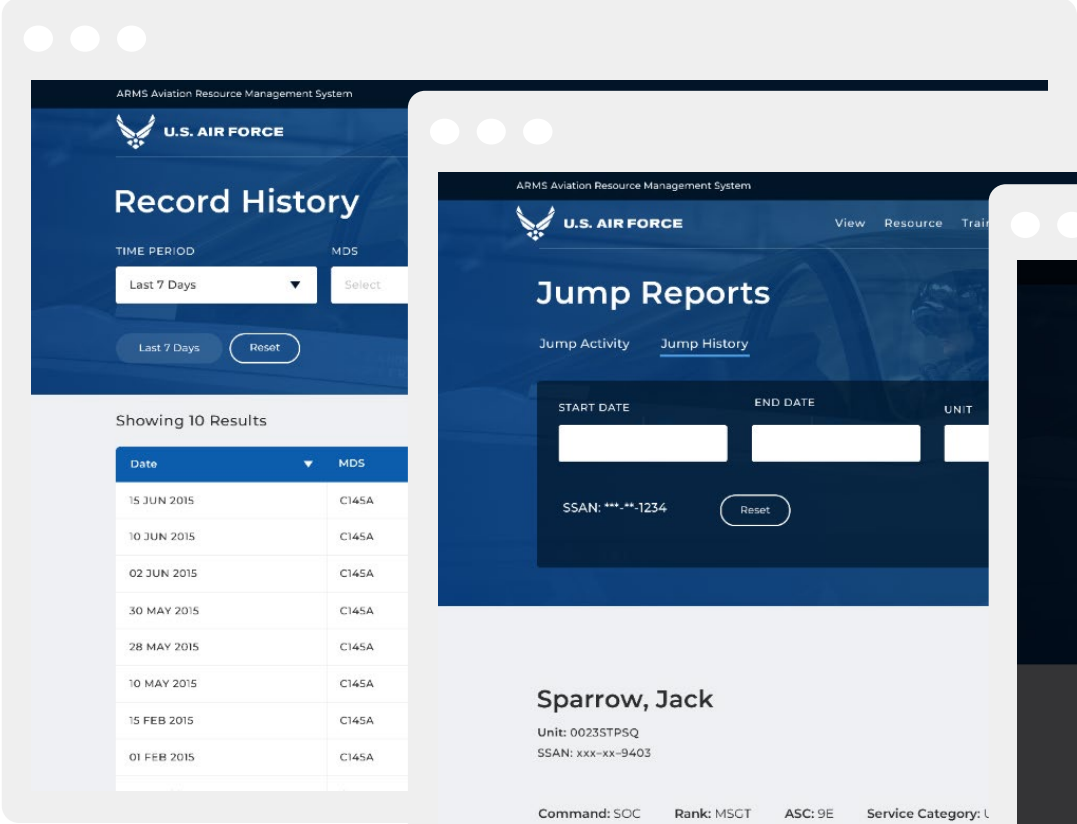




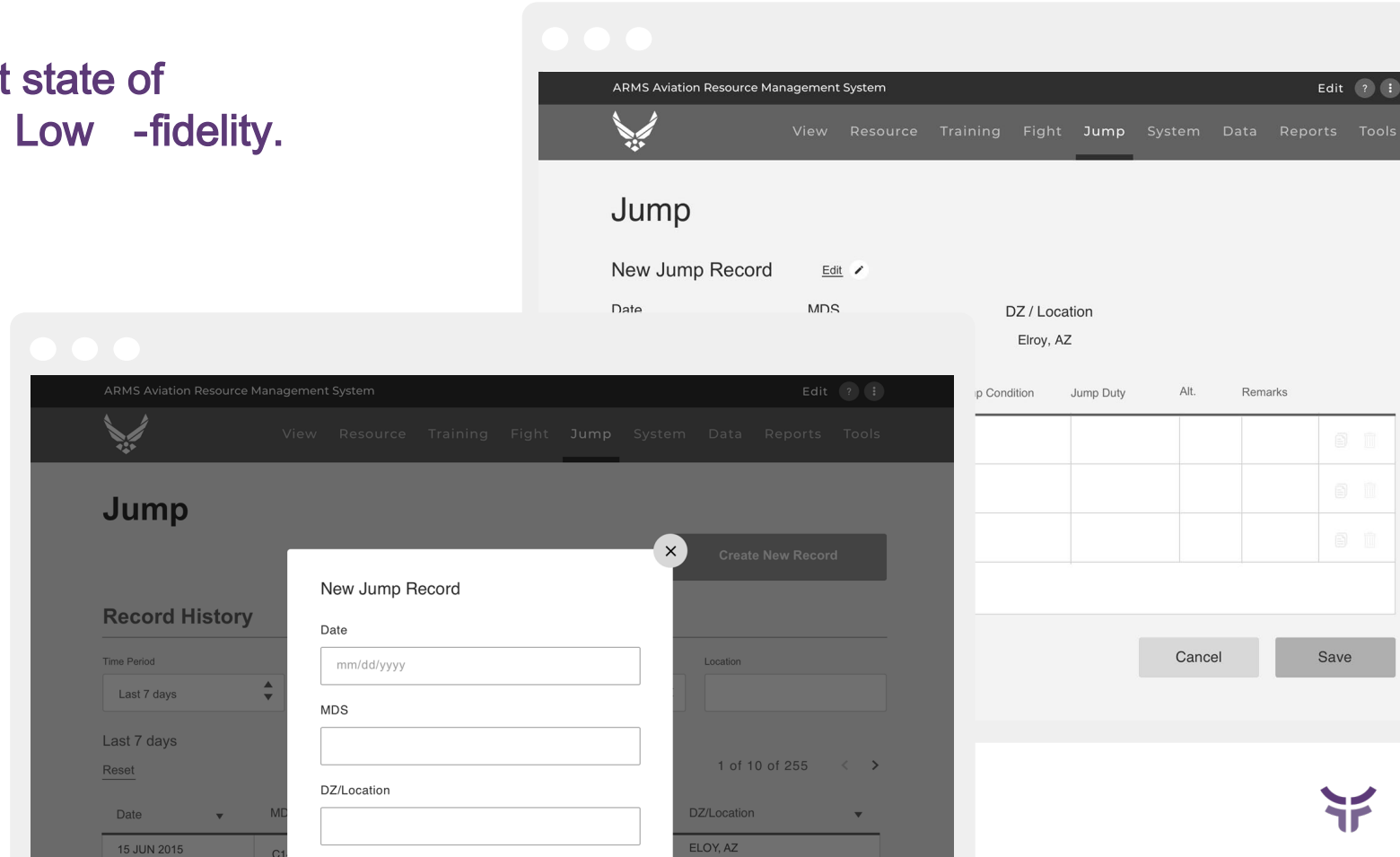
Collaborative development.



Current state of ARMS: High -fidelity.



Current state of ARMS: Low -fidelity.



Outcomes.

- Migrated the applications dev and test environment to the Cloud on time.
- Automated IaC for the dev and test environments.
- Delivered critical fixes.
- Can deploy as needed, but have demonstrated 2 week development and delivery cycles.
- Sustainment team can support cloud environments, has gained agile knowledge, and is working cohesively with the new capabilities team.
- Funding has been added for the sustainment of ARMS for the first time in 15 years; ARMS had been funded at 1.3M (with only 400K development), and now we're funded at approximately \$4.3M (and projected \$6M).

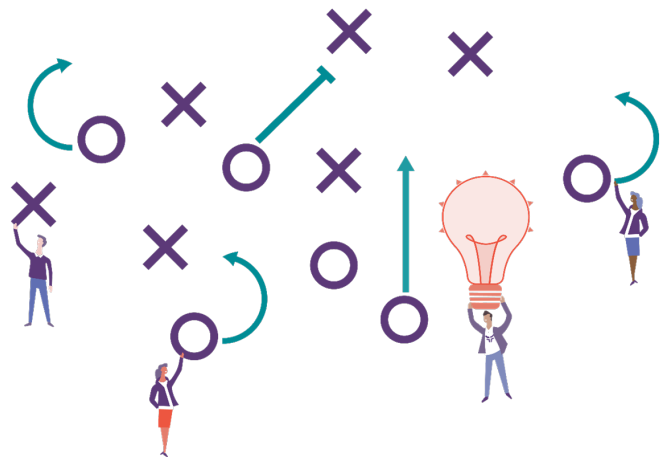




What we learned.

- Agile principles must be followed in their entirety for the maximum benefit.
- A “one team” approach is critical. The Product Owner, development team, and program management leaders have to be united around the same vision and problem for true agility.
- New capability can’t be built independently of sustainment work. That’s what makes DevOps principles so important.
- An agile contract and contractor are critical to ensuring new priorities can be achieved for the end user.
- Understanding users, building to meet their needs, and measuring satisfaction is essential to agile development.
- Team members get easily frustrated with too much chaos, and highly skilled developers will move on when there is too much down time and churn.
- Collaborative toolsets are critical to remote teams, and they enable transparency and creativity.
- Agile contracting enables contractors to swap resources out as needed to better meet user needs.
- Operational Modernization is a future-forward approach that focuses on user needs, as opposed to sustainment contracts that focus on keeping the lights on.





Fearless resources.

- [Agile playbook](#)
- [Scrum playbook](#)
- [User stories playbook](#)
- [Product management playbook](#)
- [DevOps playbook](#)
- [Context-driven testing playbook](#)
- [User personas playbook](#)
- [User experience design playbook](#)
- Find more at fearless.tech/playbooks



Questions?





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