

SHELDON®

Providing Transparency Into the Federal Market
Using Big Data & Open Source Tools



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Background

- In 2019, PW Communications launched SHELDON to provide specialized analytics products to federal and commercial clients.
- SHELDON is a data driven advisory firm focused on providing transparency into U.S. government data with the goal of improving adoption of government-funded capabilities, reducing duplicative research and development efforts, providing situational awareness of the available market for goods and services in the USG, facilitating supplier sourcing, and more.
- SBIR funding timeline:
 - **2019:** Phase I SBIR award from the Air Force
 - **2019:** Phase II led by the Air Force with joint funding from the Navy, and Defense Technical Information Center.
 - **2022:** Follow-on Phase II led by the Navy with joint funding from the Air Force

SHELDON is a subsidiary of PW Communications, a leading provider of proposal support services to federal and commercial clients worldwide

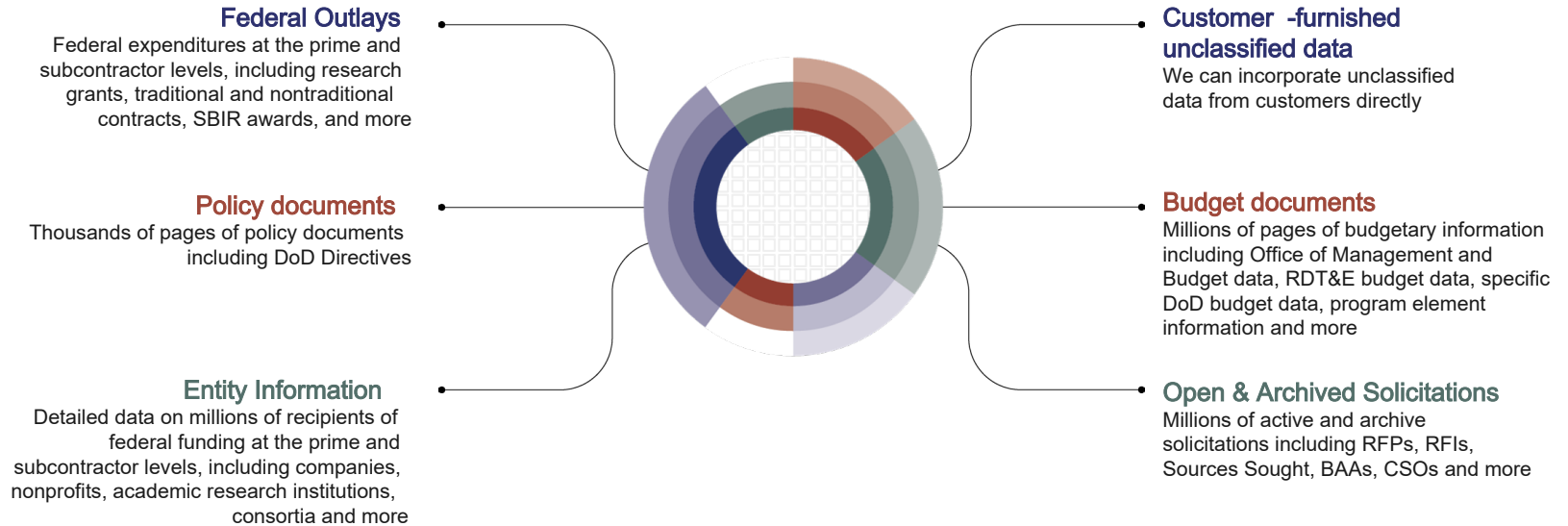
- Founded in 1996
- Certified woman -owned small business
- Top-secret security clearance

SHELDON clients include:



The SHELDON Dataset

The SHELDON dataset contains hundreds of open source federal and federally-adjacent datasets that have been unified to create a fully explorable, dynamic mirror of the federal government and all of the entities that it works with.



Solving Problems with SHELDON

SHELDON enables government stakeholders of all technical skill to use big data to answer questions and solve problems in areas like resource allocation, technology development and transition, benchmarking and success metrics, supplier sourcing, and more.

SHELDON facilitates answers to questions such as:

We're planning to direct resources into a key technology.

How much has the USG spent on that technology? What USG stakeholders have invested; and in what external entities (companies, universities, research institutions, not for profits, etc.)?

We're looking for an innovative new technology.

What existing USG vendors or research entities are doing related work? Can we leverage them? What other USG stakeholders are seeking/investing in similar technologies? Can we collaborate to reduce duplicative efforts, and to ensure our market research and investments drive next-generation innovation?

We're looking to solve a complex capability gap.

Who else across the USG is tackling related problems? How can we adapt their solutions to address our gap?

Several of our critical small vendors went out of business or grew into "large" businesses, and we need alternative sources of supply.

What other small businesses provide similar products/services to other USG customers?

How well is my organization achieving its priorities/objectives?

For

Example:

- My organization is focused on attracting innovative new suppliers. To what extent are we contracting with new vendors?
- Does my portfolio reflect modernization priorities? Are we directing resources into companies with the "right" capabilities?
- It's critical that we expand/diversify key aspects of our industrial base. Are we doing a good job of that?

I'm trying to connect suppliers in my organization's portfolio with transition partners and/or other relevant government customers.

What government stakeholders are seeking the capabilities / products / services my portfolio companies possess? How do I connect my suppliers with these potential end-users?

Am I investing adequate R&D resources to solve my organization's problems?

Am I prioritizing my organization's R&D investments appropriately?



What is SHELDON?

SHELDON is a data science consulting firm.

SHELDON has developed a unique dataset containing millions of data points related to U.S. government spending and the federal market. We partner with customers to leverage the SHELDON dataset to answer their questions and solve their specific problems.

We are not a software company selling a “one size fits all” product.

Instead, SHELDON’s data scientists build custom solutions for each customer based on their unique needs, workflows and technical proficiency. Solutions can take the form of static or interactive reports, interactive dashboards, raw data files, or custom developed software — all powered by our unique database.

Problem to Plan

PHASE ONE



Communicate Need

Client explains a high-level question or problem statement, and SHELDON translates it into data and analysis needs. A series of driving problem statements and questions guide the conversation.

PHASE TWO



Clarify Need

SHELDON identifies and proposes technical and data requirements: Which parts of the SHELDON data are required? Which added data sources need to be acquired? Which technologies and products are needed?

PHASE THREE



Statement of Work Developed

Clarify and finalize outputs, timelines, and costs. Client and SHELDON team review and update.

PHASE FOUR



Task Order Finalized

Budgets in place, teams finalized and work commences.

Analytics Products



Static Reports



Custom Interactive Dashboards



Data Files



Interactive Reports



Custom Interactive Applications

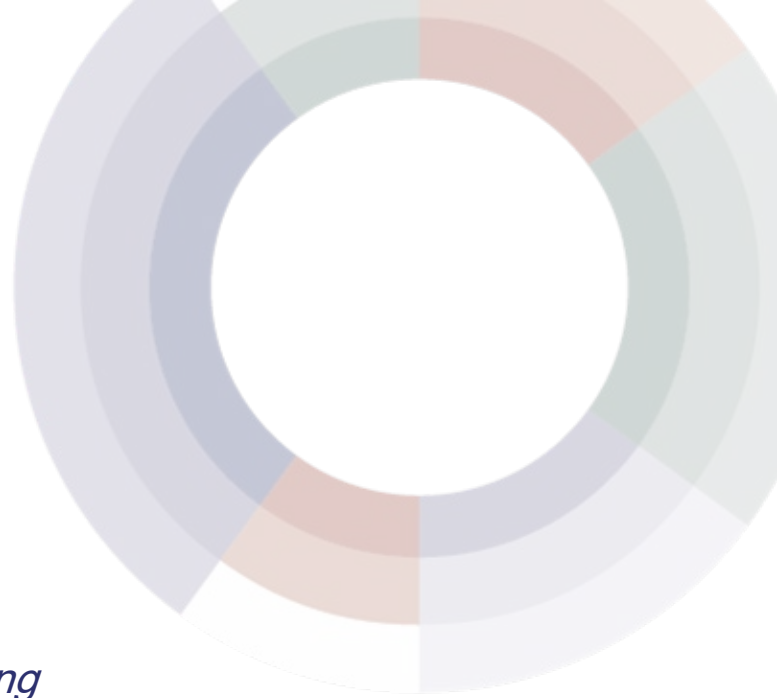


Other Custom Output

Sample Use Case:

Navy stakeholders are looking to solve a complex capability gap that will require an investment into a key technology (ex: Augmented Reality) and, among other things, are looking for innovative AR technologies.

What existing vendors or research entities are doing related work? Can the Navy leverage them? What other USG stakeholders are seeking/investing in similar technologies? Can the Navy collaborate?



Federal spend reports

Objective

Provide a detailed analysis of historic and future investment by the USG into any product, service or concept area, in turn:

- **Enabling USG stakeholders to make more informed, coordinated investment decisions** and **providing greater situational awareness of the available market for goods and services across the USG**
- **Enabling USG stakeholders to assess the impact of policies on outcomes**
- **Facilitating transition efforts by providing actionable insights into USG market opportunities**

Workflow

- **Develop term corpus:** SHELDON uses input keywords from SMEs and algorithmically develops a set of terms to describe a topic
- **Explore** incidences of terms across SHELDON dataset
- **Populate** templated interactive presentation with matched information

Final Deliverable:

- Full report (120+ interactive slides) & executive summary
- Suitable for nontechnical audience

[Example: Federal Investment in AR](#)

Custom Interactive Dashboards: Trelliscope

Trelliscope is an open source tool for managing, sorting, and visualizing large quantities of data. It is interactive, scalable, and infinitely customizable.

In 2020, NESTT partnered with SHELDON to determine if existing SBIRfunded companies could satisfy their capability gap, prior to releasing a BAA.

SHELDON identified 13000+ relevant SBIRfunded companies and used Trelliscope to sort and filter these matches, to create a shortlist of 40 relevant companies.

In this process, SHELDON introduced NESTT to Trelliscope: [NESTT Supplier Discovery \(2020\)](#)

In 2022, Trelliscope creator Ryan Hafen joined the SHELDON team.

SBIR funding has enabled significant improvements to the Trelliscope UI and functionality

Example: [TRELLISCOPE: AR Awards \\$30K+](#)

Questions?



Traditional Solutions

Enterprise Software Tools

- Expensive to develop and deploy.
- Standard, rather than customizable, features and user interface.
- Difficult to explore subsets of the data.

Marketplace Platforms

- One-size-fits-all design that forces the client to fit to the software, rather than fitting the software to the client.
- Require users to self-report; only
- valuable once they have been adopted by a critical mass of stakeholders.

Traditional Market Research

- Uses single, outdated data sources instead of catching the full breadth of what is out there.

Traditional Consulting Firms

- Do not prioritize transparency. They calculate numbers/figures in a “black box.”
- No incentive for customers to interact with data directly or to derive insights from the data independent from their services. These misaligned incentives add costs and time to the engagement.

The SHELDON Difference

SHELDON's oneof-a-kind dataset contains millions of disaggregated government and government -adjacent data points, unified into a single, usable resource — putting it at the forefront of what makes SHELDON special. Additionally, SHELDON prioritizes:

Transparency

SHELDON's interactive outputs allow the end-user to dig into the data, enabling them to extract more insights and understand how figures were calculated.

Data Integrity

SHELDON's dataset comes from diverse sources, leading to a more complete and honest answer.

Customization

SHELDON's analytics products are customized to the particular needs of the client.

Interactivity

SHELDON's analytics products emphasize interactivity so that users can understand the information at hand and use it to make data-driven decisions.

Affordable & Secure

SHELDON products don't have to be hosted on a server, leading to easy integration, virtually no monetary upkeep, and security benefits.