

Partnering with Industry

Foundations of the Analytic Technology Industry Roundtable

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Introduction

Fostering the exchange of technical knowledge and industry collaboration are key values in MITRE's culture; connecting a significant market segment or industry is of high value to our government sponsors. To cultivate successful collaboration and partnerships between MITRE, government, and industry requires an atmosphere primed for interaction and engagement, an appropriate business model, and a leader to serve as a catalyst to accelerate and facilitate opportunities for all parties. This paper discusses the early stages of unification of and engagement of the analysis and analytic marketplace. The resulting work and activity has ultimately resulted in an industry roundtable. The activity shaped over time, with many companies, organizations, and individuals across a sequence of projects and efforts driven to encourage industry collaboration and alliance.

This paper details the history of how the Analytic Technology Industry Roundtable was shaped over a few years. The paper discusses the Roundtable's inaugural year and its mission statement, charter, and accomplishments. More importantly, the paper discusses how the roundtable formed and why the group is successful. It should be noted that this group focuses on partnerships and relationships. While the definition of partnerships and respective business motivators may have been slightly different for the mentioned parties, each party considers innovation and technological advancement to be the ultimate motivators for collaboration and partnership.

MITRE's Analysis Tool Shed (ATS) Lab Program, government, and industry have had years long partnerships that have been mutually beneficial to all parties. This work has included engagements that reinforce various sponsor missions and facilitate industry to provide greater support to government missions; by understanding needs and requirements, industry is able to build better solutions that their customers buy. Ultimately the lab facilitated the Roundtable through our engagement with industry partners. MITRE, government, and industry have all recognized the changing state of the industry and noted the mutual benefit of increased collaboration and interoperability. While such a group may have eventually and organically emerged, MITRE saw the need for fostering a roundtable with our industry partners to accelerate the process.

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Building Partnerships: Analytic Technology Industry Roundtable

Roundtable Overview

In November of 2015, a motivated group of analysis and analytic technology companies came together to discuss advancing their technologies and business in the government marketplace by addressing certain concerns and priorities together. With that the Roundtable hosted its first meeting. Founding membership consisted of about a dozen companies, and quickly expanded to sixteen. The Analytic Technology Industry Roundtable founding membership includes IBM, Centrifuge, MapLarge, Recorded Future, Cloudera, Lexis Nexis, FICO, MarkLogic, MongoDB, NetOwl SRA, Palantir Technologies, SAP NS2, Thomson Reuters, SAS, ESRI, and Tableau. The group has convened monthly since their kickoff. Meeting protocol, a mission statement and charter, a website, and other operating fundamentals have been established during the Roundtable's first year.

Charter and Mission Statement

The Roundtable is intended to be a focal point and voice for the analysis and analytic technology industry serving the government market. The objective of the Roundtable is to bring together leaders of analysis and analytic technology companies to have open dialogue and achieve common goals. Its membership seeks to address certain industry priorities and general topics of interest and concern as related to analytic and analysis technology.

By coordinating on key topics and interests, the Roundtable seeks to ensure U.S. government officials hear a cohesive industry voice. As an operator of federally funded research and development centers, MITRE is able to provide the Roundtable with a neutral environment, guidance, and structure. The Roundtable is engaging senior-level U.S. government sponsors to learn their organizational priorities and mission requirements as related to industry and to discuss and propose improvements for engagement between the U.S. government and industry. The Roundtable will use its collective knowledge, research, and resources to inform decision-makers and the U.S. government on topics related to analytic and analysis technology.

The Roundtable operates as a collaborative organization. Technology companies engaged in the analysis and analytic technology market supporting the U.S. government may join the Roundtable. The purpose of the Roundtable is to build strong, positive, relationships between industry and the U.S. government. The group seeks to achieve technical goals of community interest. The Roundtable also seeks to engage the U.S. government on topics of concern to the analysis and analytic technology community. The Roundtable seeks greater and higher quality communication between the U.S. government and the analytic and analysis technology community, leading to better solutions and additional support for the Roundtable mission.

Business and Market Influences

Collaboration has been "trending" in recent years, and the analytics and analysis marketplace is no exception; this industry has been advancing towards an even deeper level of interoperability

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and collaboration. Historically, roundtables and consortiums are established by individuals congregating with the intent to engage in meetings and discussions where each member has equal status or importance. Usually consortiums of competition and roundtables are driven by mutual interests and the desire to share non-competitive information and ideas.

Analytic engineering and technology companies have a wide range of topics that affect their businesses, and several motivators that may draw competitors to a roundtable. Exchanging information or gaining ground truth together may be mutually beneficial to their businesses. The analytic technology and analysis group quickly identified topics of interest to their circle: and decided to focus on initial key topics, which include: interoperability facilitated by an exchange model and acquisition and procurement. There is little question that the group will continue to add to these topics; as time passes, their priority list of roundtable topics continues to grow.

Guidance, mission priorities, technical requirements, and insight from our sponsors are invaluable. Learning about sponsor missions, gaining exposure to real-world experiences and examples, is important. The fledgling Roundtable group has been fortunate to develop relationships with a select set of senior-level government sponsors from different organizations. This requires individual commitment and attention to industry as well as to government and a solid understanding of both spaces.

As the marketplace has matured, industry partnerships have become more prevalent, and government customers have requested more interoperability for their missions. We have seen an increase in partner activity and collaboration, where industry must work more closely together in order to reap the highest possible benefits and ensure survival and longevity in a mission space.

Over a period of time, MITRE's ATS Lab has become an example of an intersection for industry and government working in the analysis and analytics space. Our industry partners are able to use the cross-corporate lab as a central resource for education and communication with our government work programs via MITRE. MITRE and government are able to leverage lab resources for general evaluation and testing purposes; more importantly, they may leverage the lab's trusted relationships with industry. The lab has earned a role and position of credibility and trust among our industry partners and government.

Analysis Exchange Model

As certain analysis capabilities have come to be considered common features in software applications within analysis mission spaces, vendors of analysis and analytic software continue to advance and cultivate what they produce, while seeking differentiators in this space. In seeking differentiators and continuing to advance and develop their respective unique capabilities, they help government achieve their unique missions. As an example, these common features might include creating basic social network link analysis diagrams or simple text-based search capabilities. Industry competitors are not vulnerable or threatened by creating partnerships and integration points surrounding these common technical features. Collaboration helps the entire industry to develop more business opportunities. By acknowledging a set of common technical features, competitors are able to focus on unique feature and capability development (what

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amounts to market differentiators), while still gaining the business benefits of competitive collaboration. Companies are able to use collaboration and consortiums, such as roundtables provide, to enhance and capitalize their non-competitive work, while protecting their competitive technologies.

A customer base may begin to demand interoperability or common standards. In the case of analysis and analytics, the government market has become more outspoken with their concerns about the lack of interoperability with analysis and analytic tools. Government has created a demand signal for interoperable analysis and analytics components, tools, and systems. While some companies expect to provide a single solution from start to finish, there are many use cases where this is not feasible, and the government is now putting forth new technical requirements for analytic and analysis tools to feature interoperability, integration, agility, and flexibility. Therefore, from the point of view of their customers, the need for collaboration was also real and pressing.

The Roundtable is designing an Analysis Exchange Model, intended to fill these interoperability requirements. While the ultimate design of this prototype depends heavily on chosen use cases and available analytic capability, its principal goals are to provide an architecture to publish and subscribe to sharable analytic results, create a data model that serves as a lingua franca for analytic results from different sources, and foster the adaptation of native analytic results into and out of this common exchange model. These essential elements can first be established in a shared exchange that can ultimately be enriched with greater orchestration of analytics on the shared results, long term storage of results identified as being important, and a greater involvement in the creation of final products derived from these results.

Acquisition and Procurement

A second priority for the Roundtable is acquisition and procurement within the government market. The group recognizes this area as a topic of concern, and there are many efforts to make improvements and changes in acquisition. The Roundtable members believe that, by working together, they may address acquisition improvement as a group and make a positive impact and statement. Additionally, they believe that their Roundtable work on interoperability will help strengthen their message and ability to positively impact change in acquisition and procurement.

The Roundtable is currently working on an Acquisition study, which includes a survey of acquisition topics of concern and interest. They believe that their work, findings, and recommendations will help them to explore solutions and suggestions for improving the acquisition processes in ways that are mutually beneficial to them and their customer base. This would result in better solutions for their customers and ultimately more business for the analytic companies serving the government market.

Intelligence analysts have been employing analysis software for their work for some years. The market has been exciting to watch over the past decade. This technology is rapidly advancing, and with this advancement comes challenges for slower moving government organizations with cumbersome acquisition processes. The analytics market has experienced challenges in serving

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the government market, such as the extensive length of acquisition cycle and process and suitability or fitness of the rapidly changing technologies that are being procured.

The analytics market place has a wide range of companies competing for government business. In recent years, many tech companies have more closely considered the acquisition cycle, costs of competition, system requirements, room for and profits in government business. The Roundtable group noted that requirements for government systems seem over-prescribed and over-constrained, which can be particularly limiting for technology companies that work and operate best in innovative, agile environments, with fewer inhibitors.

Silicon Valley companies include those that were and are relative newcomers to the government marketplace, and there are more established companies that have been serving the government market for some years. These companies all identify the same challenges in the acquisition space. In recent years, Silicon Valley has contemplated and considered just how best to serve the government market given acquisition constraints and other considerations that are impeding their goals and work. Programs such as the Defense Innovation Unit Experimental (DIUX) are seeking to reduce barriers between government and technology companies.¹

Similar industry groups, such as the Washington Cyber Roundtable, have also identified acquisition as a priority topic. Their report *Improving Cybersecurity and Resilience through Acquisition—Final Report of the Department of Defense and General Services Administration* cites similar areas of concern, focused on the cyber domain². Their report discusses the current acquisition process and lack of responsiveness and the acquisition gap for cyber services and products. The report makes suggestions and improvements, given the current state of acquisition.

Roundtable Fundamentals

Understanding the roles and motivations of different companies and their respective representatives is important in operating the Roundtable. Many software companies in the government market are looking to sell software, and they are also looking to build strategic relationships with FFRDCs and system integrators. More recently, the software industry has embraced a culture of partnerships. These partnerships typically fall into one or more general categories: strategic marketing, integration, technology, and financial.

Clear understanding and in-depth knowledge about the software industry, and what they sell to the government, is a necessary ingredient for working with such a roundtable and marketplace of software analytics companies. Engagement also requires a broad understanding of government needs and requirements in the business of analysis and analytics. Over time, the

¹ <https://www.diux.mil>

² <http://www.washingtoncyber.org/reports>

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analysis market has developed rapidly. This marketplace includes highly advanced and sophisticated systems (vs tools): big data technology, streaming analytic technology, etc.

Recognizing the need for and value of such a roundtable was only the first step toward its successful implementation. Certain key considerations were desirable and necessary as contrasted to those that should be avoided.

First, collaboration cannot pose a threat to the business of the assembled industry partners (membership) but rather must be viewed as a benefit, where each partner could provide its own unique value and gain the mutual advantage of what the other partners provided.

Second, the Roundtable should be a cohesive voice with equal representation from all parties/members involved. This way, it could avoid being led by any one partner where the others felt like they were there to supplement a single leader's effort.

Third, opportunities for collaboration must be recognizable. Participating membership must understand their current market climate and technology, identifying what was possible, both from the technical and business perspectives.

Fourth, the efforts have to be managed within the realm of what was achievable, essentially maintaining a dose of reality throughout. This means focusing on the challenges at hand, and pinpointing what was doable without grandstanding.

Fifth, protocol and process is important. Documentation, papers, tangibles, and face-to-face meetings matter for achieving real results and ensuring that participation exceeds just a token presence at the Roundtable. Each of those elements are important in the equation of business justification, as well as sales.

Sixth, the conversation must keep advancing and maturing. This requires facilitation on certain topics, such as engineering, acquisition, or market discussions. The Chair must help the group reach their strategic goals without dominating the conversation or influencing outcomes. The Roundtable must guide their own discussion, but may need assistance with advancement.

Seventh, collaboration from membership cannot compromise business processes and intellectual property. Thus any interoperability has to be realized without complete knowledge or exploitation by one company of another's features or systems. This means that some sort of structured reference exchange is necessary where products can be shared, but the valuable and proprietary methods by which they are produced can be retained by their providers.

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Summary and Looking Forward

Forming and shaping a roundtable group with a young and maturing industry market has been a delicate balance. Timing, business motivations and incentives, and a general spirit of collaboration were all critical factors in the early success of the group. We have also used positive motivators and influences from our government sponsors and other stakeholders to help us along the way. During their inaugural year, the group has developed a process and protocol and, more importantly, clarified their mission statement and charter. This has helped to articulate their purpose, define the Roundtable's value, and ensure their future. The Roundtable's mission and charter illustrates a clear path for continued success. We believe the founding membership is motivated. The founding membership has good communication skills, understands business motivations, and has agreed to collaborate with good intent to help their customers with their missions. These are the driving factors for success.