A D A P T +C

ASSESSING & ADVANCING ANALYTICS CAPABILITY MATURITY

NOVEMBER 2016

THE ADVANCED ANALYTICS CHALLENGE

Despite increased opportunities to capitalize on data and advanced analytics, organizations struggle to develop their analytics capabilities

COMMON CHALLENGES

"I know that my competitors are using data to answer critical questions, what questions should I be trying to answer?"

"I've hired this whole team of analytics people, but they don't know where to start"

"I am not sure if I have 'good data,' or the right data"

"My boss really wants me to use all this data and I don't know how to make the best use of it"

"I bought a tool but I'm still not getting the analytics answers that I need"

"I want to make sure I'm getting everything I can out of the data that I have"

"We have all this data but we really don't know how to use it effectively"

"We developed some analytics that have enabled us to make data-driven decisions, but if we want to be better and mature further, what else should we be doing?"

"I've made this large investment in analytics but my leaders just aren't using the information"

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THE SOLUTION

The ADAPT+C solution provides a common language, shared vision, and a framework to assess and build analytics capabilities

ADAPT+C SOLUTION

ADAPT+C addresses the most critical analytics problems with an inclusive solution that ensures analytics are implemented in a 'best fit' approach because we do not believe "one size fits all." Throughout the approach, the six ADAPT+C elements (described in detail on Slide 5) will be carried through to provide a consistent framework and language for the approach.

THE PROBLEM IS...	THE SOLUTION PROVIDES....
Organizations have pieces of the puzzle but can't see the whole picture	+ A comprehensive and holistic framework to consider all parts of an organization
Organizations have started the journey to analytics but are unsure of next steps	+ A clear and transparent path to success
	+ A flexible and agile methodology
Organizations have analytics but aren't using them effectively	+ A common language for analytics
	+ A series of best practices derived from industry standards
Organizations don't know what value they can achieve with analytics	+ An objective way to measure progress and show value

ADAPT+C APPROACH

Our flexible approach is designed to help organizations build a vision of their analytics capabilities and quickly start delivering

ROADMAP

MATURITY MODEL ASSESSMENT

KEY ACTIVITIES: Collect information about the organization's current state through interviews/surveys; Set goals for analytics maturity and identify gaps; Identify key capability hurdles for the organization to identify opportunities for supporting assessments

KEY OUTPUTS: Current state maturity scores; Target maturity scores; Identification of recommended supporting assessments

ANALYTICS VIGNETTES

KEY ACTIVITIES: Conduct a series of interviews to identify analytics goals and conceptualize analytics scoping; Simulate the vignette in order to identify the necessary analytic capabilities

KEY OUTPUTS: Analytics scoping provide details about the data, analytic technique(s), people, technology, and process needed to approach the opportunity

ANALYTICS PROJECTS

KEY ACTIVITIES: Purposefully select analytics opportunities which will show quick win return on investment; Partner with key stakeholders to collect data, use technological tools, and bring together domain knowledge; Analyze data to develop model

KEY OUTPUTS: Analytics product that answers a key business question; Portion of a business case to support an analytics investment

SUPPORTING ASSESSMENTS

KEY ACTIVITIES: Conduct supporting assessments that provide further insight into current state scores; Develop a roadmap to prioritize and sequence capability building activities

KEY OUTPUTS: *Assessment outputs are dependent on type performed;* examples include: Analytics Training Inventory, and Roadmap (guides implementation and is informed by the previous three assessments)

IMPLEMENTATION

KEY ACTIVITIES: Lead key activities and initiatives to improve analytics capability (e.g., stand up a technology sandbox, establish a community of interest, develop a data scientist talent management model)

KEY OUTPUTS: *Outputs are dependent on type of implementation, but can include:* Analytics Portfolio Management Plan, Data Governance Model, Data Science Talent Management Plan
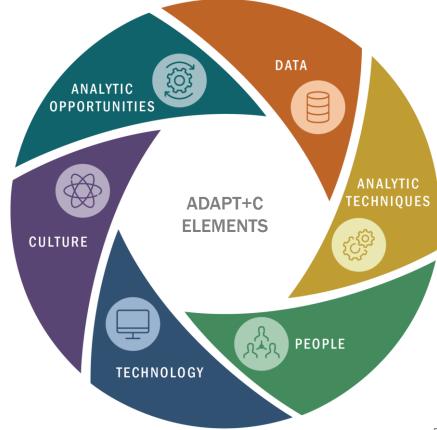
ADAPT+C ELEMENTS

ADAPT+C is a framework that represents the elements that must be considered when implementing analytics in an organization

ADAPT+C ELEMENTS

The six parts of ADAPT+C represent the elements that must be considered when developing advanced analytics capability for an organization. At each stage of the approach, the six elements provide the framework for the assessment and analysis and are continued through implementation and beyond. The elements form the structure for the assessing capability, scoping analytics opportunities, and implementation.

+ **ANALYTIC OPPORTUNITIES**: Considers new and existing use cases to further apply analytics to improve organization mission and operations

+ **DATA**: Considers opportunities to use new and existing data sets and better manage and govern data in support of analytic projects

+ **ANALYTIC TECHNIQUES**: Considers the analytic tradecraft and techniques that may be applied in order to generate insights from data

+ **PEOPLE**: Considers the set of human capital programs required to develop a talented and capable team of analytics practitioners

+ **TECHNOLOGY**: Considers the optimal ways to use existing and new technologies including applications, data platforms and infrastructure to perform analytics projects

+ **CULTURE**: Considers the set of organizational mechanisms that communicate, share and reinforce the value of analytics across the organization to change the behavior of the staff

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MATURITY MODEL ASSESSMENT

ADAPT+C's maturity model assessment provides organizations with a clear view of their current state analytics capability maturity across six defined elements

MATURITY MODEL ASSESSMENT

The Maturity Model Assessment consists of targeted data gathering (e.g., interviews, document review) and scoring sessions to identify an organization's current state maturity score against a defined, 5-point scale. These current state scores, combined with target scores, enable organizations to view their maturity against industry benchmarks, identify high-priority focus areas, and identify tactical next steps and additional assessments needed to advance maturity.

ANALYTICS VIGNETTES

The vignettes use analytic opportunities to simulate how an organization would develop an analytic product and consider the required organizational needs

ANALYTICS VIGNETTES

Analytics scoping provides detailed information about each opportunity and simulates how the organization would make use of its analytics resources in order to meet the analytics goal. Analytics scoping discussions are divided into seven key sections to represent the different elements required for production.

SAMPLE VIGNETTE

1. ANALYTICS GOAL
Specifically defines the analytical question being addressed

Apply data science to an organization's data to understand and predict outcomes

2. DATA NEEDED	3. APPLIED TECHNIQUES	4. PEOPLE NEEDED	5. TECHNOLOGY REQUIRED
Determines the data needed to address this sub-question	*Determines the techniques needed to address this sub-question*	*Identifies who needs to be involved in addressing this question*	*Identifies technology the organization should build or purchase, and use to address these issues*

2. DATA NEEDED	3. APPLIED TECHNIQUES		4. PEOPLE NEEDED	5. TECHNOLOGY REQUIRED	
• Data Set 1 • Data Set 2 • Data Set 3 • Data Set 4	Machine Learning	Natural Language Processing	• Division 1, Team 2 • Division 3, Team 4 • Stakeholder A • Stakeholder B	**SHORT TERM** • Tableau or D3 • Python • R or Orange • Postgres or MySQL	**LONG TERM** • Hadoop • Hive • Spark • Hbase or Accumulo
	Optimization	Regression			
	✓ Simulation	✓ Statistical Processing			

6. KEY ORGANIZATIONAL CONSIDERATIONS
Identifies what should be considered when trying to reach goals

7. PROCESS APPLIED
Describes how all of the pieces fit together to address the question

KEY CONSIDERATIONS
- Are leaders prepared to use the information to make data-driven decisions?
- Are there organizational practices that need to change in order to make use of the analytic opportunity?
- How will the approach be used across the organization to support other teams?

Collect Data Set 2 → Identify Asset Groupings from Trend Data → Trend Groupings → Simulate Changes to Scores → Simulation 1.1

Identify Trends Among Data Set 3 & 4 → Trend Data
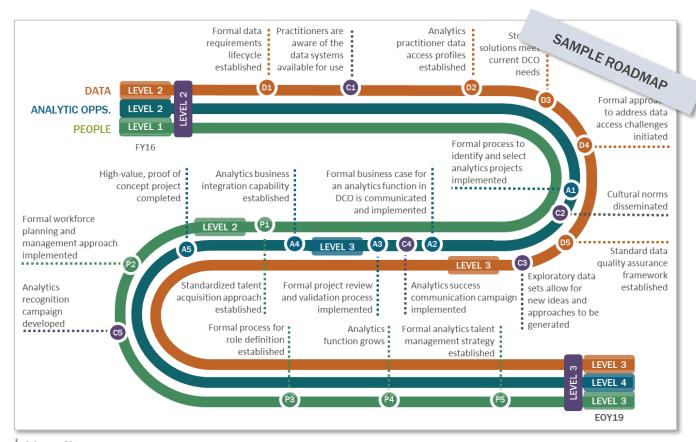
The maturity model assessment and analytics vignettes culminate in a strategic roadmap that outlines key milestones to advanced analytics maturity

ADAPT+C ROADMAP

The ADAPT+C Roadmap outlines the actions and next steps defined by the Maturity Model Assessment, Analytics Project Assessments, and Supporting Assessments. The roadmap includes key milestones across elements, as well as markers that denote at which point the next level of analytics capability will be achieved.

ANALYTICS PROJECTS

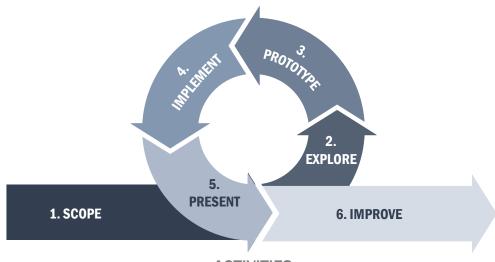Aside from simply assessing capabilities, the organization can also develop analytics projects that show the value of analytics within the organization

ANALYTICS PROJECTS APPROACH

Our agile approach to developing and implementing the Analytics Projects means that we will continuously improve our analytics and rapidly respond to change. The repeatable work cycles allow the team to iterate and continuously develop in increments. Once the vignettes are completed, and the scope is defined and articulated, the Analytics Projects use a 6-phase approach to implementation; Scope, Explore, Prototype, Implement, Present, and Improve.

ACTIVITIES

1. SCOPE	2. EXPLORE	3. PROTYPE	4. IMPLEMENT	5. PRESENT	6. IMPROVE
+ Analytic question	+ Investigate data	+ Identify candidates	+ Deploy	+ Convey and clarify	+ External validation
+ Data content	+ Explore data	+ Develop models	+ Test	+ Visualize and utilize	+ Assess and update model
+ Operational requirements	+ Sample data	+ Validate			

SUPPORTING ASSESSMENTS

ADAPT+C includes a suite of supporting assessments which supplement and add depth to findings uncovered in the maturity assessment

SUPPORTING ASSESSMENTS

Beyond just measuring an organization's analytics capability maturity, ADAPT+C uses a series of supporting assessments (selected based on client need) to focus in on critical areas of analytics maturity, helping organizations to identify underlying root causes and prioritize action moving forward

ANALYTIC OPPORTUNITIES	DATA	ANALYTIC TECHNIQUES	PEOPLE	TECHNOLOGY	CULTURE
+ Project Pipeline Analysis	+ Data for Enterprise	+ Analytic Techniques Portfolio Review	+ Data Science Competency Assessment	+ Analytics Technology Platform Gap Analysis	+ Culture Audit
+ Use Case Analysis	+ Data Discovery	+ Analytics Integrity Assessment	+ Analytics Team Assessment	+ Cloud Analytics Reference Architecture Framework	+ Analytics Marketing & Branding Review
+ Analytics Portfolio Analysis	+ Data Sharing	+ Model Validation	+ Analytics Training Inventory & Recommended Curriculum	+ Data Center Migration and Optimization	+ Analytics Leadership Assessment
+ Analytics PMO Assessment	+ Data Reuse	+ Analytics Report Audit	+ Position Description Review		+ Analytics Communications Audit
+ Implementation Simulation Review	+ Data Harmonization	+ Data Visualization Analysis	+ Strategic Recruiting Assessment		+ Customer Stakeholder Analysis
+ Analytics Solution ROI Calculation	+ Data Translation				
	+ Data Ops				
	+ Data Strategy and Operational Assessment				

Booz Allen offers a suite of services that support execution of the roadmap and ensure continued progress towards advancing analytics capability maturity

IMPLEMENTATION SUPPORT

Upon completion of the ADAPT+C assessment, an organization will have a complete understanding of its strengths and weaknesses, and a tailored roadmap to guide further investment decisions. Booz Allen's implementation support will draw from the firm's extensive consulting expertise and deliver targeted services which support the elements/organizational areas with the greatest need.

ANALYTIC OPPORTUNITIES	DATA	ANALYTIC TECHNIQUES	PEOPLE	TECHNOLOGY	CULTURE

Sample Recommendation: Improve project management of analytics projects

Sample Recommendation: Increase data access for analytic practitioners

Sample Recommendation: Develop a talent acquisition strategy to hire the best data scientists

Sample Recommendation: Increase leadership literacy of analytics to improve data-driven decision-making

Sample Implementation Resources
+ 3,000+ PMPs
+ PMO Guidebook
+ Field Guide for Data Science
+ Booz Allen Approach to Portfolio Management

Sample Implementation Resources
+ Booz Allen's Cloud Analytics Reference Architecture
+ Benchmarks of Data Access from across the Federal Government

Sample Implementation Resources
+ Hogan Test for Data Science Potential
+ Data Science Competency Framework
+ Booz Allen's University Recruiting Relationships

Sample Implementation Resources
+ Booz Allen's Approach to Executive Leadership Training in Analytics
+ Best Practices for Knowledge Management of Analytics
+ Top Ten Signs of Data Science Maturity

Booz Allen has applied ADAPT+C for several commercial and federal clients, including a long-term application at the Social Security Administration

SOCIAL SECURITY ADMINISTRATION ANALYTICS CENTER OF EXCELLENCE (ACE) – CASE STUDY

To meet the objectives of SSA's strategic plan the Analytics Center of Excellence (ACE) was charged with transforming the enterprise to a data-driven organization and serving as the functional leader for analytics. In order to transform, ACE needed to identify understand its current maturity then take action to improve maturity in the areas with the greatest need

MATURITY MODEL ASSESSMENT

ANALYTICS VIGNETTES

ANALYTICS PROJECTS*

SUPPORTING ASSESSMENTS

IMPLEMENTATION

MATURITY MODEL ASSESSMENT	ANALYTICS VIGNETTES	SUPPORTING ASSESSMENTS	IMPLEMENTATION
ACTIVITIES: + Tailored the **ADAPT+C maturity model**, and published and shared the model across the agency + Interviewed executives and created a **quick high-level agency assessment** + Created an **ADAPT+C self-scoring maturity assessment tool**, to enable the agency to score itself annually to track progress + Administered and collected maturity scores from all components to provide a comprehensive agency baseline maturity score in the form of an **ADAPT+C Scorecard** **RESULTS ACHIEVED:** + Clear understanding of current state maturity + A cohesive leadership team prepared to build capability together using the model	**ACTIVITIES:** + Analyzed the pipeline of analytic opportunities and using best-practice criteria, selected three vignettes + Interviewed stakeholders, including data owners, key stakeholders, and systems administrators to identify the required resources for the analytics vignettes + Scoped the time and resources required to complete the analytics project, and validated the information with master data scientists **RESULTS ACHIEVED:** Project approaches for three analytics vignettes: + Documented analytics goals + Identified data required + Planned for analytic techniques + Considered implementation needs and associated behavioral changes	**ACTIVITIES:** + Developed a competency assessment survey to assess staff skill proficiency + Assessed and audited technology and training resources to create enterprise-wide technology and training inventories for practitioners + Conducted a data access assessment, to identify key data access challenges, which may inhibit the creation of advanced analytics + Developed a comprehensive enterprise roadmap to guide capability efforts **RESULTS ACHIEVED:** Enterprise Capability Roadmap to document and prioritize key activities related to: + Improving data access + Increasing talent acquisition + Establishing scalable technology platforms for analytics	**ACTIVITIES:** + Conceptualized SSA's Community of Interest, including participants, recommended content for events (e.g., hackathon) + Crafted specific position descriptions outlining the roles and responsibilities of analytics positions + Reviewed and refined project selection criteria to ensure that analytics projects are selected correctly + Developed behavioral event interview questions to effectively hire data scientists **RESULTS ACHIEVED:** Specific products to best implement analytics capability based on the needs of SSA: + Community of Interest + ACE Project Selection Criteria + Data Scientist Interview Questions

SSA client chose not to conduct analytics projects at this time

THE PATH FORWARD

Booz Allen's ADAPT+C approach and a team of 500+ data scientists can help empower organizations with data

ADAPT+C POINTS OF CONTACT

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ABOUT BOOZ ALLEN

Booz Allen brings its pioneering work in advanced analytics—and the industry-leading expertise of its more than 500-member data science team—to transform our clients' data into actions that keep them competitive in today's data-driven economy. The first ever National Data Science Bowl, along with Booz Allen's recently launched Explore Data Science training program and Field Guide to Data Science is part of the firm's ongoing commitment to supporting data science education and awareness.