Transform into a Data-Driven Organization Using The Agile Data Maturity Model

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Data-driven or Data-aware?

Big Data, Artificial Intelligence, Predictive Analytics. Raise your hand if you've heard executives talk about how these technologies make their companies more data-driven. We have. One often hears that data and information assets are critical for gaining competitive advantage in the marketplace. A number of surveys conducted as recently as 2018, show that a growing number of executives across industries are investing in and deriving "value" from investments in Big Data and Artificial Intelligence. However, this same group of respondents express concerns that they have been too slow to change their corporate culture.

Growth in technology investments indicate that executives are certainly aware of their data assets, but does technology alone make an organization data-driven? Curious to find out the answer to this question? We recently surveyed executives from organizations across different industries and found that 68% believed they operated like a data-driven organization. Yet when we then asked tactical questions about their data operations, surprisingly only 25% of those companies actually operated like a true data-driven organization.

This gap between executive vision and operational reality is quite common as many leaders believe that simply investing in technology will improve their ability to manage and maximize the value of their data assets. Evolving from being
data-aware to data-driven requires more than just monetary investments in Big Data or Advanced Analytics tools. Data-driven organizations take the necessary steps needed to develop their internal culture and operational capabilities to ensure data becomes a part of the way they think and act every day.

So, what exactly is a data-driven organization? To keep things simple, we define a data-driven organization as having the following 3 characteristics:

1. Leverages data as a core capability and monetizes this asset to generate internal & external value
2. Provides timely access to data for improved decision making
3. Continuously measures and monitors both external and internal business environments in an automated manner.

Why weren't the organizations we surveyed able to progress from being data-aware to data-driven? Because they simply did not have a realistic, logical, step-wise plan for building the capabilities required of a data-driven organization.

What Areas Must Transform?

Becoming a data-driven company is not as simple as flipping the switch on a technology tool. It is a significant undertaking for any organization because it requires new ways of thinking and operating the business.

Data-driven companies transform their operations across three areas:

1. **People** - requires developing data focused skills and educating employees about how to responsibly leverage data to successfully execute their job roles
2. **Processes** - includes naming standards, policies and procedures which ensure availability and build trust in data assets
3. **Technology** - comprises of the systems and applications that help to create a single source of truth and securely promote sharing of data assets across the enterprise.

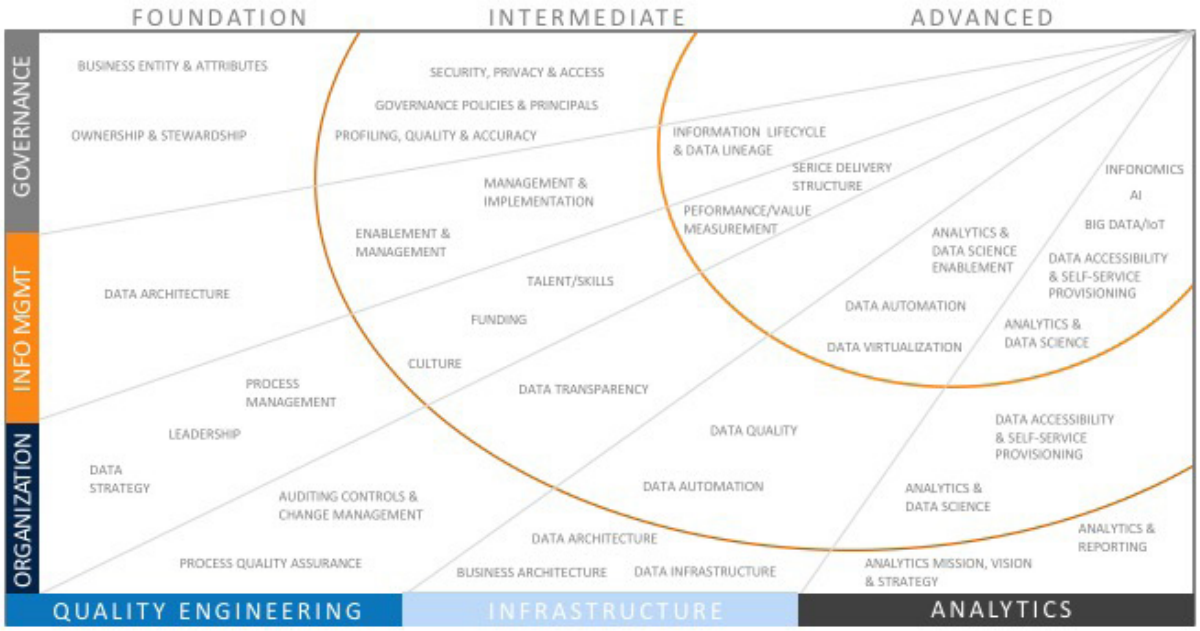
Where Do We Start?

Those companies looking to transform often ask us, “where do we start?”. Determined to help organizations start the process – and successfully transform – xScion recommends developing a modular, implementable roadmap. We examined existing data maturity frameworks to combine their best practices and address the individual shortcomings from each one, which resulted in creating the Agile Data Maturity Model™ (ADMM). The ADMM is a scalable, executable framework that shows organizations where they are today on their data journey and what is required to mature into a data-driven organization.

ADMM allows one to quickly realize that data alone is more extensive than simply a corporate asset. Data should be viewed as a corporate capability which must be developed, maintained and matured. Data that is used solely as an asset will not impact strategic goals. If data is utilized as a capability, it becomes a critical component of operational processes that can be analyzed by various stakeholders to drive improvements for a vast number of Enterprise Key Performance Indicators (KPIs).

ADMM assesses data as a capability across 6 dimensions, each having multiple, supporting functions:

1. **Governance** - establishes the framework to transform corporate data into valuable, actionable information
2. **Information Management** - distributes information to those through the development, execution and delivery of corporate practices that enhances the value of data and information assets
3. **Organization** - ensures that the Enterprise has the leadership and commitment for delivering data maturity
4. **Quality Engineering** - commits to the discipline that information quality is a corporate objective and is managed, monitored and published
5. **Infrastructure** - creates a framework for transforming corporate data into corporate information that is scalable, measurable and reliable
6. **Analytics** - turns data into information, and this knowledge provides new insights for actionable intelligence.



AGILE DATA MATURITY MODEL

Our experience has shown that every organization has their own data journey with a different starting point and operational gaps, yet all have a similar end goal of becoming data-driven. ADMM categorizes functions as Foundational, Intermediate or Advanced so that your organization can prioritize their investments for addressing operational gaps. Would it make sense to measure performance or value from your data assets before creating a data strategy? Or, consider the effort required to produce an Advanced Analytics plan prior to establishing the discipline of Data Architecture? We recommend you start by establishing and maturing your Foundational Capabilities before advancing to the next levels of Intermediate or Advanced capabilities.

ADMM is a comprehensive framework that provides your organization with a step-wise, logical approach for prioritizing investments to address functional gaps in your organization's data operations. Rather than invest immediately in technologies that provide Big Data, Artificial Intelligence or Predictive Analytics, you need to first consider what processes and capabilities are required to support and fully utilize these technologies. It is crucial to understand that the benefits of these robust data technologies can only be maximized when data is a central focus of your corporate culture and business processes.

ADMM Case Study

The best plans in the world are no more than great ideas unless they are successfully implemented and executed. ADMM is not only a valuable planning tool, but also an executable roadmap that identifies gaps in your data capability and provides detailed remediation plans. To put this into context, let's walk through a real example of how ADMM was leveraged to help a client assess, identify and remediate operational gaps in their Data Governance Program.

About the Client
A large healthcare nonprofit that facilitates transplants, needed a better solution for utilizing their data. If they could have access to diverse sets of data, it would allow them to make timely decisions, improve transplant acceptance practices and potentially increase the number of organ transplants. We leveraged the ADMM to assess the client's data gaps and provide an executable strategy for improving several data capabilities, including Data Governance.

As a result, Data Governance challenges were easily identified. We discovered multiple data versions, a siloed approach to data management, and inconsistent standards and knowledge sharing across systems and business units. To address governance issues, the client required a business case and internal support for the technology, culture and team changes required for success.

Step 1: Assessment and Gap Analysis

Business, Operations and IT stakeholders contribute to building and improving data as a capability and therefore provide an important perspective to understanding gaps. For Data Governance, gaps associated with each capability or function highlight improvement opportunities as defined in the remediation plan and help to prioritize resources. Remediation activities focus on changing culture, training and skills, re-thinking operations, and adopting new technologies. The chart below shows a sample of gaps and associated remediation activities.

Example: Data Governance Gaps and Remediation Activities

Data Governance Gaps LEGEND

🔴	Requirement Not Met
🟡	Requirement Partially Met
🟢	Requirement Fully Met

Capability #1 - Data Owners & Stewards Council

	Requirement Description
🔴	Consists of cross-functional stakeholders that publishes guidelines and assesses data maturity on a regular schedule (e.g. quarterly) and actively engages to check data quality for all legacy systems and corporate data stores
🔴	Included those responsible for all corporate data and actively accountable for defining data access standards and policies for all business entities and data domains
🔴	Establish as discipline that regularly develops and assesses information data and compliance standards for data quality against industry best practices and adapts them to evolving business needs

Remediation Activities

1. Identify cross-functional stakeholder group from interviewees to serve on council.
   - Chief Technology Officer
   - Chief Data Officer
   - Data Architect
   - Director IT Operations
   - General Counsel
   - INFOSEC
   - Senior Director HR
   - Customer Service Manager
2. Develop and publish council charter (mission, accountability/scope).
3. Create and publish council guidelines where they are easily accessible to all employees and customers (e.g. Intranet).
4. Conduct quarterly assessment on data stewardship & ownership maturity.
   - Continuously adapt governance to corporate needs and initiatives

Capability #2 - Data Architecture

	Requirement Description
🟡	Defined with proper conceptual, logical and physical models and associated quality controls and change management processes
🟡	Defined to include data/Information flow diagrams and physical & logical architecture diagrams for all corporate information systems

Remediation Activities

1. Inventory current enterprise data model by business unit.
2. Conduct data model gap analysis by function within each business unit.
3. Define data/Information flow diagrams, physical & logical architecture diagrams for all corporate information systems.
4. Capture and maintain end to end data flows from sources to target systems in a data lineage tool.
5. Inventory all system of records by business, portfolio and domain.

Step 2: Address Gaps

As noted in the example above, the first remediation plan was focused on creating a Culture of Shared Accountability. A common challenge with adopting a data-driven culture is defining clear roles and assigning shared accountability. In working with our client, we created various groups to support the Data Governance program as follows:

- **Data Governance Office** - includes senior leadership; held responsible for organizing and facilitating efforts of the Data Governance Council
- **Data Governance Authority** - includes Business and IT stakeholders; defines policies, standards, requirements, guidelines and data definitions, while ensuring these efforts are consistently followed as established as part of the overall program
- **Data Governance Champions** - consists of representatives from various business units; who implement and execute the policies and procedures that are developed in a more centralized fashion by the Data Governance Authority.

The table below outlines each of the three groups and their roles and responsibilities.

Example: Sample Roles and Responsibilities of Data Owners & Stewards Council

Group Name	Stakeholders	Responsibilities
Data Governance Office	1. General Counsel 2. CDO 3. CIO 4. CTO	• Organize and facilitate efforts of the Council to ensure regular communication, review and improvement of policies, procedures, standards and rules • Secure commitment from all DG Authorities to the consistent application and implementation of policies, procedures and standards • Define corrective actions for non-compliant systems and/or business units
Data Governance Authorities	1. Data Quality 2. Data Services 3. INFOSEC 4. Data Architecture 5. SW Engineering	• Define and apply formal processes for defining policies, standards, requirements, guidelines or data definitions • Develop success measures for business or technology function • Define and contribute the policies and procedures for the Information Standards Improvement Plan
Data Governance Champions	1. Membership 2. Business Architecture 3. Organizational Excellence 4. Contracts	• Promote enterprise standards for implementing data policies and standards • Serve as liaison between Data Governance Authority and staff to provide open communication channels

Step 3: Selecting an IT Data Governance Vendor

The market and consumption of electronic data continue to grow at a very rapid pace. These trends, coupled with tightening budgets, require executives to place the "right bets" on their IT spend. Evaluating various Data Governance tools require a clear understanding of your organization's needs as well as vendor offerings and product features. An example of how benchmarking was used to evaluate various Data Governance tools is below.

For technology-related gaps, we developed a comprehensive solicitation package which was used to assess various Data Governance tools. The Data Governance Tool Assessment example below shows which criteria were used to evaluate various Data Governance tools. By conducting secondary market research, our team identified a short list of candidate products. In this example, "Vendor 1" achieved the highest total score for their Data Governance product. Then the product functional scores were combined with financial analysis and benefits for each product, resulting in a business case that was presented to the executive team.

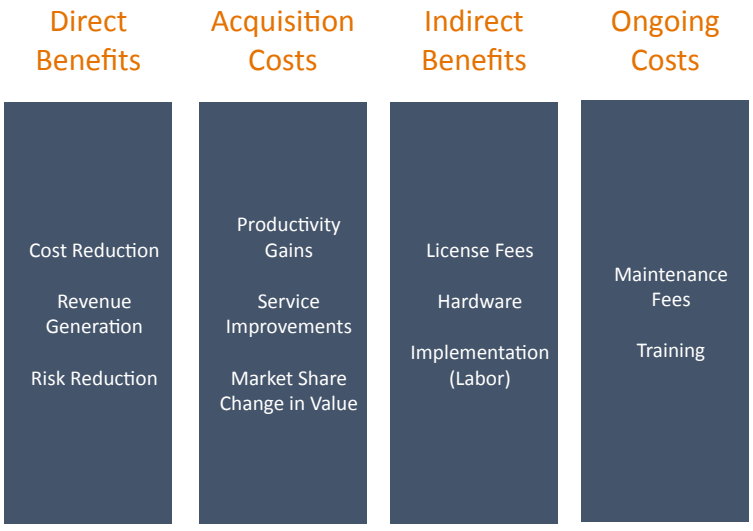
Example - Data Governance Tool Assessment

Criteria Weight %	10	10	10	10	10	10	10	10	10	10	
Vendors	Connect to various data sources via out-of-box connectors	Automatically collect and catalog metadata into the repository	Enrich with business glossary terms and other attributes, and associate business terms to technical metadata	Understand and insight into lineage, usage and quality of data	Build and visualize relationships among metadata objects	Collaborate & share knowledge across business and IT via crowd-sourced annotation	"Google" to find related data via intelligent search	Govern the standard, administration and access of metadata	Provide smooth user experience	Architecture compliance and ease of operation & administration	**TOTAL SCORE**
Vendor 1	2.30	1.50	2.40	2.10	1.20	0.60	1.15	1.20	1.70	3.50	17.65
Vendor 2	2.10	1.30	2.40	2.00	1.20	0.60	1.15	1.10	1.70	3.40	16.95
Vendor 3	2.20	1.20	2.30	1.60	1.20	0.60	1.20	1.00	1.80	3.50	16.60

Features and functions alone are not sufficient for creating a business case for investment; Total Cost of Ownership (TCO) and Return on Investment (ROI) are key metrics executives require when deciding where to invest on technology. Given the rapid pace of change, it is more important than ever for business leaders to have a complete picture of direct and indirect costs as well as the valued benefits. A common misstep is failing to consider costs beyond just acquiring technology. TCO takes a long-term view, calculating for acquisition, integration, maintenance and support and on the flip side, the model accounts for productivity gains, risk reduction, revenue and/or market share gains.

The diagram on the right shows sample criteria for inclusion in a TCO model. "Value" means different things to different organizations and is seldom easy to quantify. However, it is a critical component to any business case because products are assessed against goals specific to your organization, not just generic criteria.

Example - Total Cost of Ownership Criteria



Step 4: Results

xScion helped the client to fully understand their current challenges, the value of investing in a governance program, and most importantly, the business risks associated with inaction. The results included:

- Targeted opportunities for improving Data Governance
- Established roles and accountability for management of data assets
- Assessed technology products against customer needs
- Benchmark analysis for various Data Governance tools based on costs, benefits and overall value.

Leveraging ADMM at Your Organization

To help you understand where you are on your data journey, we've created a free 3-minute self-assessment designed to identify a baseline of your current capabilities and find steps to progress through Foundational, Intermediate and Advanced levels to a reach a fully optimized state.

Take the online survey at **www.xScion.com/ADMM**.

Most executives would agree that data is one of the most important assets in their organization today. So, the next time you refer to your company as data-driven we hope that you state this with full confidence knowing that your data capabilities are maximizing business value and return from this core asset – your data.

ABOUT XSCION SOLUTIONS

xScion is a NextGen Technology Consulting Firm that helps companies modernize their IT and business operations. Our team helps leading Healthcare, Financial Services and Nonprofit companies improve their business processes through innovative solutions including AppDev, DevOps, Data Services and Agile Transformation.
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Vikas Arya has spent nearly 2 decades helping Government and Commercial organizations plan and execute their business and technology strategies. He lead the creation of the ADMM to help companies address the disconnect between executives' vision for how their company utilizes data and daily operations.

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