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Accion INNOVATION SUMMIT 2023

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Sofitel Dubai
The Palm Jumeirah
Dubai

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Transforming Your Business with Data and Analytics

A Maturity Model Approach

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Karteek Yadavilli

Car-thick yeah-duh-willy

- 2022: CDO Magazine - Top 40 D&A Consultant in North America
- Passionate about analytics, learning, sharing, ethics, privacy and data quality
- Data Strategy & Engineering Consultant
- Blogs extensively on these topics

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Sriram Bajrang Bulusu

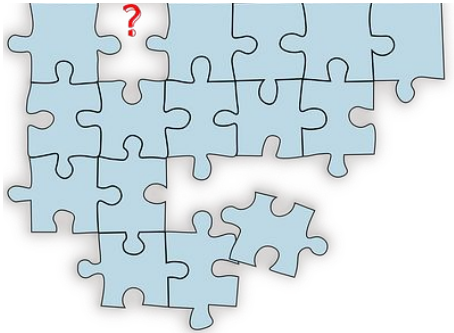
Shree-raum baj-rung boo-loo-soo

- Expert in Advanced Analytics with applications in Financial Services, Banking, Healthcare, Retail, Community Capital, Lending and Credit Risk.
- Proficient in Cloud Technologies: Hybrid Cloud for SaaS/PaaS services, Azure, GCP, and AWS

Table of Contents

Common problems experienced

- Cloud: Reliability issues in customer KPI reporting
- Education: Inability to measure marketing effectiveness on pipeline conversions
- Retail: Third-party analytic provider constraints
- Retail: Limitations of packaged CDP for segmentation and campaign efforts



Common problems experienced

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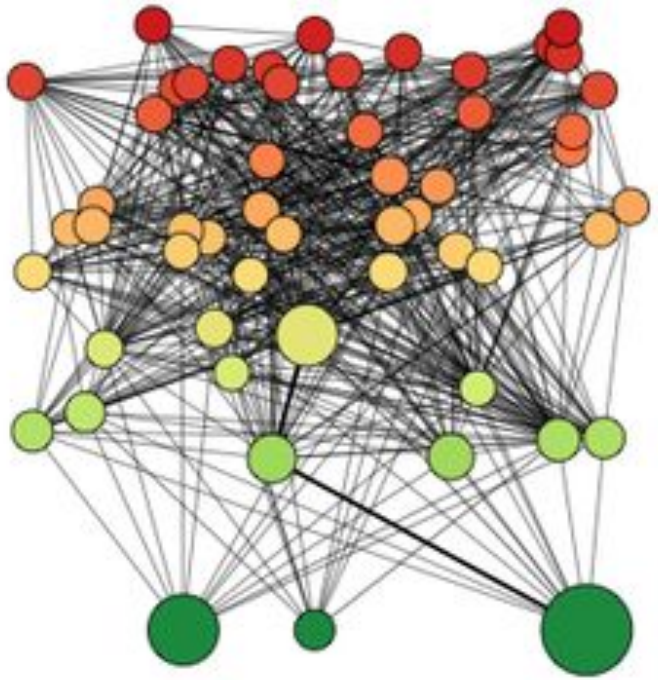
- Telecom Infrastructure: Inability to modernize analytics and consolidate 10 data warehouses into 1
- Dental: Scalability issues with analytics ecosystem during expansion into other partners
- ERP (Legal): Risk of refunds multiple times per quarter
- BPO: Executive-level reporting difficulties due to complex source data ownership and processes



What do all of these problems have in common?

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- Gaps that are not evident at the outset
- Tribal knowledge
- Inconsistent analytics/data delivery
- Operational inefficiencies
- Inability to modernize their tech stack
- They all needed a structured assessment led discovery and execution process.

What is a Maturity Model?

A framework for assessing and measuring an organization's level of maturity in a particular area.

What is a Data and Analytics Maturity Model?

A framework to assess how effective an organization is in leveraging its data and analytics to achieve its business objectives

What does a maturity model assessment enable?

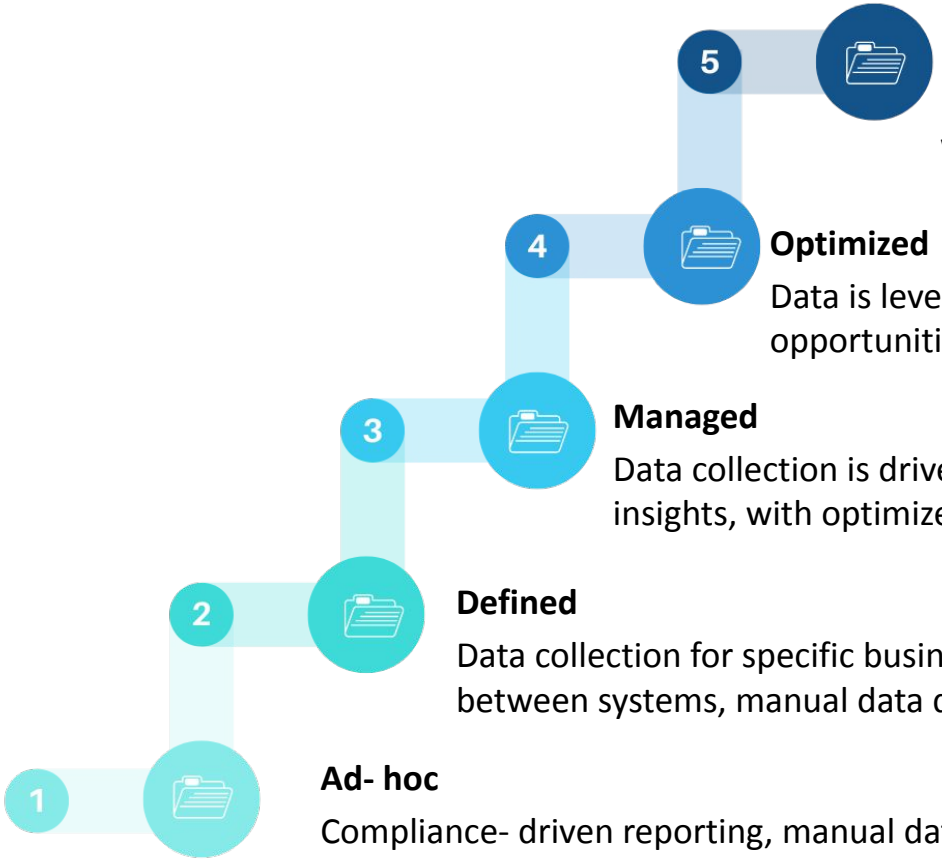
- Helps prioritize initiatives and establish a roadmap for data and analytics modernization.
- Provides a common language to align stakeholders and create buy-in
- Measure progress over time, and to demonstrate the value of data and analytics initiatives to the broader organization.
- Unleash Innovation: Overcome Uncertainty

Accion Labs D&A Maturity Model

The model focuses on five key interdependent areas:

- Data Collection and Management
- Analytics Generation
- Decision Making Culture & Enablement
- Operations & Excellence
- Governance and Compliance

Accion D&A Maturity Model: Stages & Characteristics



Innovating

Data is a strategic asset and a key driver of business success, with optimized & integrated data integration & accessibility

Optimized

Data is leveraged to drive innovation and create new business opportunities, with fully automated data integration and accessibility

Managed

Data collection is driven by business objectives and informed by data insights, with optimized data integration and accessibility

Defined

Data collection for specific business purposes, basic data integration between systems, manual data quality checks

Ad- hoc

Compliance- driven reporting, manual data collection, limited data integration between systems

Data Maturity

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Focus Area	Level 1: Ad-hoc	Level 2: Defined	Level 3: Managed	Level 4: Optimized	Level 5: Innovating
Data Sourcing and Integration	Manual	Basic automation	Automated	Continuous improvement	AI-driven
Data Engineering	Manual	Basic automation	Automated	Advanced	AI-driven
Data Quality and Completeness	Manual	Basic automation	Automated	Continuous improvement	AI-driven
Data Discoverability	Limited	Basic	Standardized	Advanced	Agile
External Data	No	Limited	Comprehensive	Advanced	Agile

Analytics Maturity

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Focus Area	Level 1: Ad-hoc	Level 2: Defined	Level 3: Managed	Level 4: Optimized	Level 5: Innovating
Right Questions	Basic	Standardized	Automated	Continuous improvement	AI-driven
Right Methods	Basic	Standardized	Automated	Advanced	AI-driven
Analytics Influencing Decisions	Minimal	Basic	Proactive	Continuous improvement	Agile
Adoption of Analytics	Limited	Basic	Standardized	Advanced	Agile
Use of Insights in Operations	Limited	Basic	Comprehensive	Advanced	Agile

Decisions Maturity

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Level	Ad-hoc	Defined	Managed	Optimized	Innovating
Processes	Lack of defined process	Basic processes	Standardized processes	Continuous improvement	Agile decision-making processes
Data and analytics availability	Limited	Basic data and analytics support	Proactive monitoring and observability	Integration with business processes	AI-driven decision-making
Governance and compliance	Limited focus	Basic measures in place	Comprehensive program in place	Integrated processes	Agile innovation and transformation processes
Decision-making talent	Limited focus	Basic talent dev program exists	Formal talent dev program exists	Advanced talent dev program exists	Robust talent dev program

Operations Maturity

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Maturity Level	Level 1: Ad-hoc	Level 2: Defined	Level 3: Managed	Level 4: Optimized	Level 5: Innovating
Data Ops	Manual	Basic automation	Automated	Continuous improvement	AI-driven
ML Ops	No	Basic automation	Automated	Advanced	Agile
Observability	Basic	Basic	Proactive	Continuous improvement	Predictive
External Services	No	Limited	Comprehensive	Advanced	Agile

Governance Maturity

Maturity Level	Level 1: Ad-hoc	Level 2: Defined	Level 3: Managed	Level 4: Optimized	Level 5: Innovating
Privacy	Limited	Basic	Comprehensive	Continuous improvement	AI-driven
Security	Limited	Basic	Comprehensive	Integration with data governance	Agile
Compliance	Minimal	Basic	Comprehensive	Continuous improvement	Agile
Enablement	No	Basic	Formal	Advanced	Robust

Assessment framework - 1 of 2

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Identify Stakeholders	Assess Current Ecosystem	Scoring Criteria & Weightage refinement	Conduct the assessment	Identify gaps and develop an action plan
Identify sponsors and stakeholders Define Role and responsibility Different stakeholders may be identified per stream	Gather information on existing D&A infrastructure Evaluate data governance policies Assess data quality and availability Assessment itself should be consistent	Define metrics to evaluate D&A maturity Assign weightages to each metric based on organizational priorities	Conduct stakeholder interviews and artifact review Evaluate data architecture and technology infrastructure	Identify areas for improvement and develop an action plan Create an activity map for different focus areas Gaps and action plans vary per stream

Assessment framework - 2 of 2

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Agree on a desired future state and create a roadmap

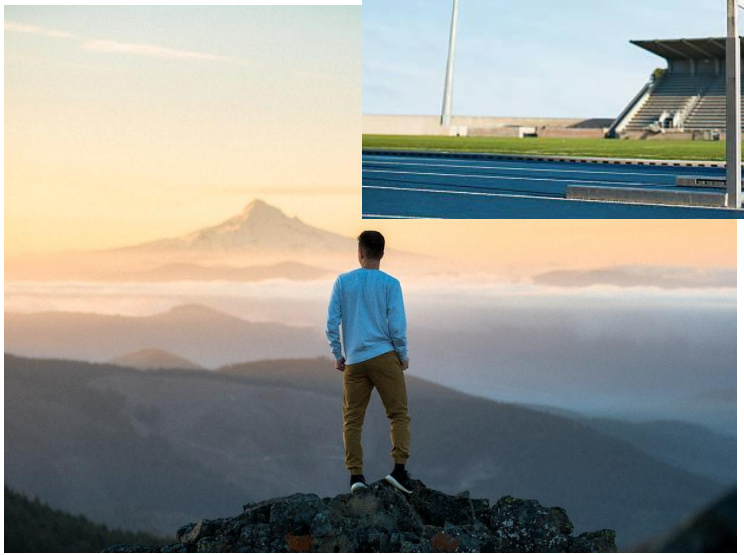
- Define a future state for D&A capabilities
- Develop a roadmap for the next 12, 18, 36, and 60 months
- Should be developed for the organization as a whole and then broken down into work streams

Identify champions and monitor progress

- Identify champions for each D&A focus area
- Establish a plan to monitor progress and course correct
- Monitor consistently across all streams to ensure alignment to big picture goals

Transformation is a mindset & not a project

- Be Agile & Adapt Quickly
- Innovation =
  Creativity + Execution
- Think Solutions.
  Not Problems
- Be comfortable
  Being uncomfortable



Gartner D&A Activity Map

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Objectives	Create the D&A Vision and Strategy	Manage the D&A Function	Align D&A to Business Outcomes	Develop the D&A Organization and Talent	Create and Maintain Analytics Content	Integrate and Manage Data	Govern Data & Analytics Assets
Activities	Forge the Vision	Prioritize Project Proposals	Establish a KPI & Metrics Framework	Plan Strategy to Develop Skills	Create and Maintain Semantic Models	Describe Data Assets	Determine Which Assets Need Governance
	Design the Strategic Plan	Manage Projects	Quantify the Value	Recruit Talent	Create and Maintain Enterprise Reports	Organize Data Assets	Set Governance Policies
	Create the Functional Design	Monitor Portfolio Health	Innovate the Business Model	Develop Data Literacy	Create and Maintain Visual Dashboards	Integrate Data Assets	Enforce Governance Policies
	Implement the Strategy				Create Advanced Analytics Models	Share Data Assets	Communicate Governance Policies

Gartner

Best vs the rest

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IT Score for D&A Activities in Which Most Mature D&A Functions Differentiate Themselves

Create the D&A Vision and Strategy	Manage the D&A Function	Align D&A to Business Outcomes	Develop the D&A Organization and Talent	Create and Maintain Analytics Content	Integrate and Manage Data	Govern Data & Analytics Assets
Forge the Vision	Prioritize Project Proposals	Establish a KPI & Metrics Framework	Plan Strategy to Develop Skills	**Create and Maintain Semantic Models**	Describe Data Assets	Determine Which Assets Need Governance
Design the Strategic Plan	**Manage Projects**	Quantify the Value	Recruit Talent	Create and Maintain Enterprise Reports	Organize Data Assets	**Set Governance Policies**
Create the Functional Design	**Monitor Portfolio Health**	**Innovate the Business Model**	Develop Data Literacy	Create and Maintain Visual Dashboards	Integrate Data Assets	**Enforce Governance Policies**
Implement the Strategy				**Create Advanced Analytics Models**	Share Data Assets	**Communicate Governance Policies**

Catalysts for D&A Analytical Maturity

- Leadership Support
- Objectivity and Neutral View
- Organizational Alignment
- Analytics Infrastructure
- Change Management
- Expertise and Resource Bandwidth
- Industry Benchmarking
- Flexibility
- Continuous Learning
- Measurable Goals and Continuous Improvement

Your journey depends on where you are starting and where you want to go…

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Innovation in D&A

1. D&A Innovation for everyone: The rise of Information Concierge & how to actually take it to the next level
2. Beyond Big Data: Is Spark losing its sparkle?
3. Are we ready for distributed analytics? The case for Data Mesh
4. Test Data Management: Beyond governance
5. Supercharging Your Data Insights: Knowledge Graphs with Natural Language Queries

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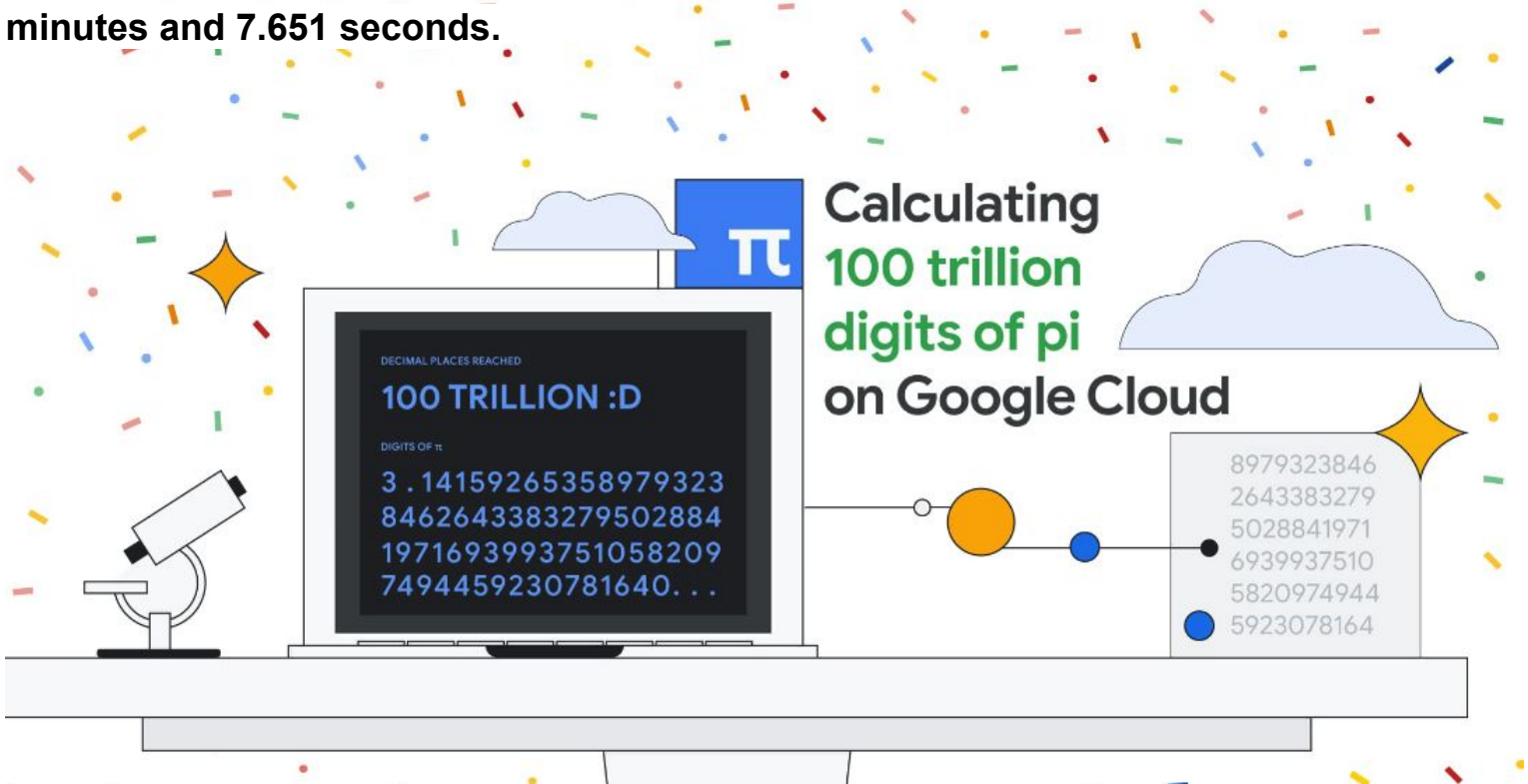
Appendix

Google has put its cloud to work calculating the value of Pi all the way out to **100 trillion digits**, and claimed that's a world record for Pi-crunching.

The ad giant and cloud contender has detailed the feat, revealing that the job ran for **157 days, 23 hours, 31 minutes and 7.651 seconds.**



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Jet Propulsion Laboratory
California Institute of Technology

Education | Intern Learn

Image credit: NASA | + Expand image

Let's go to the largest size there is: the known universe. The radius of the universe is about 46 billion light years. Now let me ask (and answer!) a different question: How many digits of pi would we need to calculate the circumference of a circle with a radius of 46 billion light years to an accuracy equal to the diameter of a hydrogen atom, the simplest atom? It turns out that 37 decimal places (38 digits, including the number 3 to the left of the decimal point) would be quite sufficient. Think about how fantastically vast the universe is. It's certainly far beyond what you can see with your eyes even on the darkest, most beautiful night of sparkling stars. It's yet farther beyond the extraordinary vision of the James Webb Space Telescope. And the vastness of the universe is truly far, far, far beyond what we can even conceive. Now think about how incredibly tiny a single atom is. Isn't it amazing that we wouldn't need to use many digits of pi at all to cover that entire unbelievable range?

Industry Data & Analytics Maturity Models

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	Models					
	DAMA	**DCAM**	**CMMI**	**IBM**	**Stanford**	**Gartner**
Number Of Domains	11	8	6	4	2	7
Number Of Subdomains	>4	112	25	10	6	Unknown

Maturity Models on Data Domains

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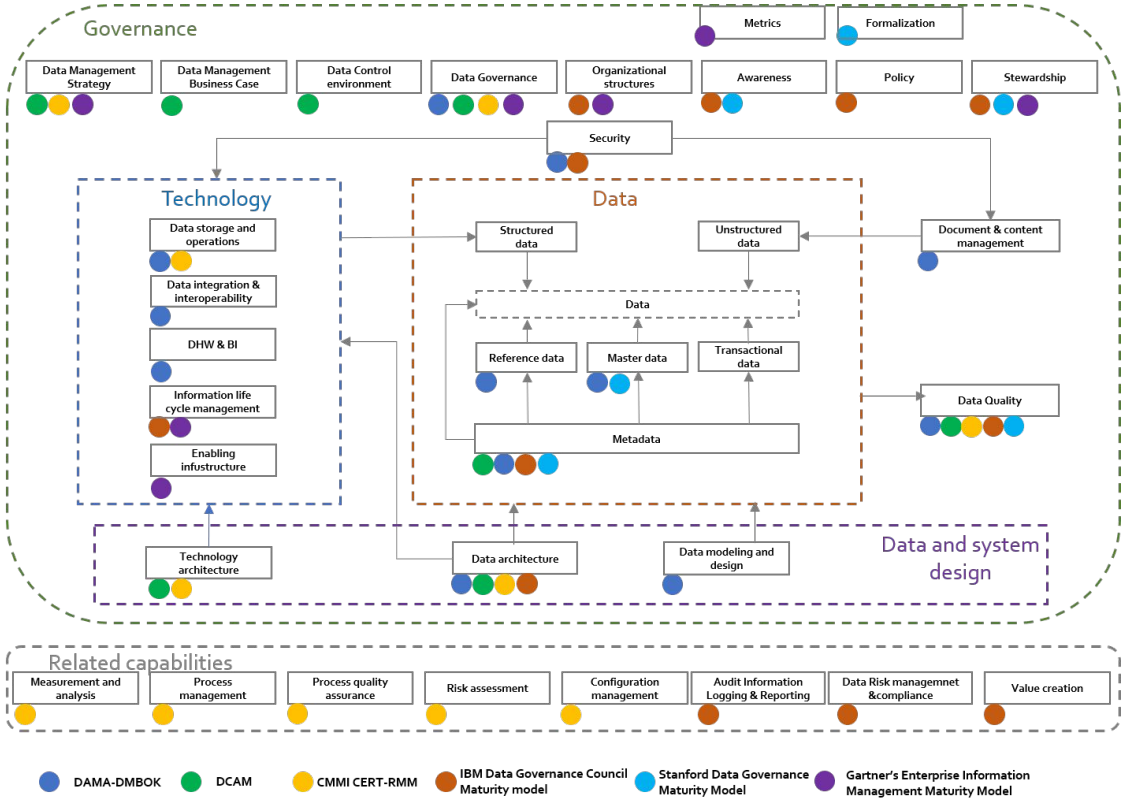

Steps to Mature

- Establish a clear vision for data and analytics: Articulate a clear and compelling vision for how data and analytics will be used to drive business value, and communicate it to all stakeholders.
- Secure leadership and stakeholder buy-in: Obtain buy-in from senior leaders and key stakeholders, including business and IT, to ensure that the vision for data and analytics is aligned with overall business objectives.
- Assess the current situation: Evaluate the current state of data and analytics within the organization, including data sources, systems, processes, skills, and governance.
- Specify future state requirements: Identify the future state requirements for data and analytics, including data quality, data integration, analytics, governance, and talent.
- Analyze the gaps: Conduct a gap analysis to determine what needs to be done to close the gap between the current state and future state requirements.

Steps to Mature

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- Map out an implementation plan: Create a roadmap for how the future state requirements will be achieved, including timelines, budgets, and key initiatives.

- Implement a data governance framework: Establish a comprehensive data governance framework that ensures data quality, security, and compliance, and provides oversight and decision-making authority for data and analytics.

- Build an enterprise data architecture: Develop an enterprise data architecture that defines the data sources, data models, data flows, and data storage mechanisms needed to support the future state requirements.

- Encourage quick iterations: Emphasize rapid prototyping and experimentation to validate new ideas and approaches quickly, and iterate until the desired outcomes are achieved.

- Foster a culture of continuous improvement: Adopt a continuous improvement mindset and continuously assess and refine data and analytics processes, systems, and governance to ensure they remain relevant and effective over time.

Benefits of moving to higher stages of maturity

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- Moving to higher stages of maturity in data and analytics can bring a range of benefits to an organization, including:

- Improved decision-making: By having access to high-quality data and advanced analytics, organizations can make informed and data-driven decisions, leading to better outcomes and increased competitiveness.

- Increased operational efficiency: By standardizing and automating data and analytics processes, organizations can reduce manual effort, reduce errors, and improve the speed and reliability of decision-making.

- Better risk management: With a comprehensive data governance framework in place, organizations can better manage the risks associated with data and analytics, including privacy, security, and compliance.

- Enhanced customer experiences: With a deep understanding of customer behavior and preferences, organizations can deliver personalized and relevant experiences that improve customer satisfaction and loyalty.

Benefits of moving to higher stages of maturity

- Improved innovation: By embracing rapid prototyping and continuous improvement, organizations can be more agile and responsive to changing business needs, and be better positioned to drive innovation and growth.

- Increased business agility: By having a single source of truth for data and analytics, organizations can make faster and more informed decisions, and be better equipped to respond to changing market conditions.

- Attraction and retention of top talent: Organizations that invest in data and analytics are more likely to attract and retain top talent, who are motivated by the opportunity to work on challenging and impactful projects.

- Increased revenue: By leveraging data and analytics to drive growth and improve customer experiences, organizations can increase revenue and profitability.

DIY

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- Evaluate your current processes: Review the processes your organization currently uses for data sourcing, integration, quality, governance, analytics generation, decision-making, and culture.

- Identify strengths and weaknesses: Identify the strengths and weaknesses of your current processes, and assess how well they align with the characteristics of each maturity level.

- Engage with stakeholders: Engage with stakeholders across the organization, including business leaders, data and analytics practitioners, and IT, to gather their perspectives and insights on the current state of data and analytics maturity.

- Use a maturity assessment tool: Use a structured assessment tool, such as a questionnaire or a self-assessment survey, to gather data and quantify your organization's current level of data and analytics maturity

DIY

- Analyze the data: Analyze the data collected through the maturity assessment tool and evaluate the results to determine your organization's current level of data and analytics maturity.

- Identify areas for improvement: Identify areas for improvement and prioritize them based on their impact and feasibility.

- Develop an action plan: Develop a comprehensive action plan to address the identified areas for improvement, including specific goals, timelines, and responsibilities.

- Monitor progress: Monitor progress over time, and conduct regular assessments to track your organization's progress and identify areas for further improvement

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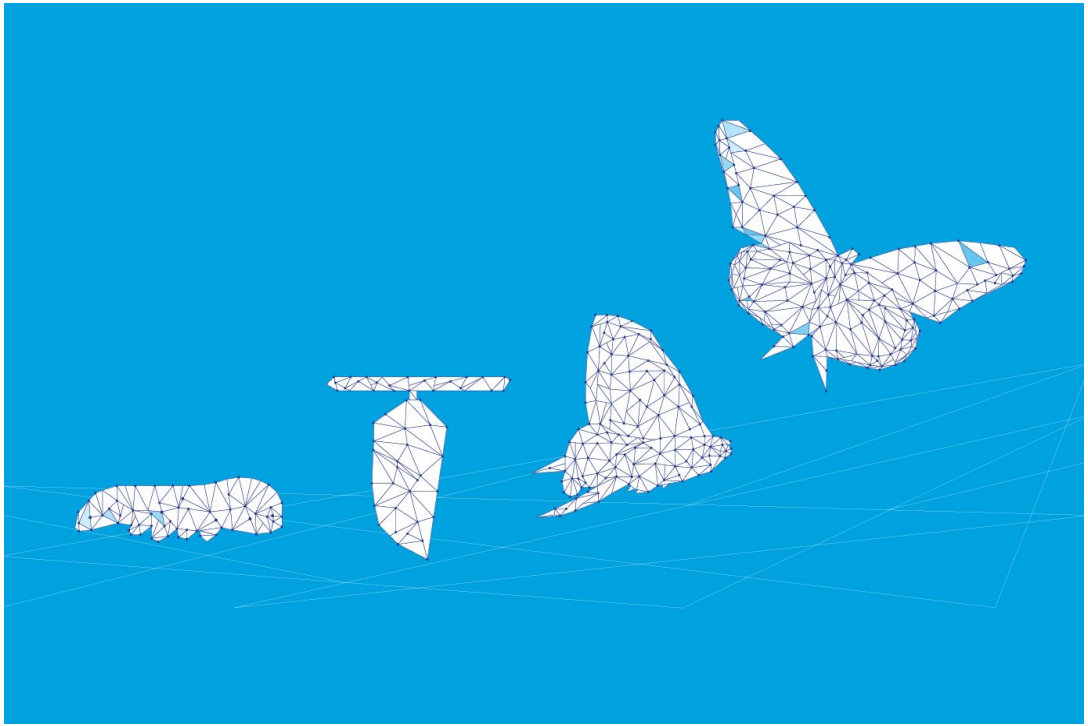

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