

# Data Modernization

## Transforming your Data Estate

Deliver accelerated business outcomes with Data and AI

Modernize your information architecture

Transform and rapidly adapt to new business needs and technologies

Paul Christensen

[ptc@us.ibm.com](mailto:ptc@us.ibm.com)

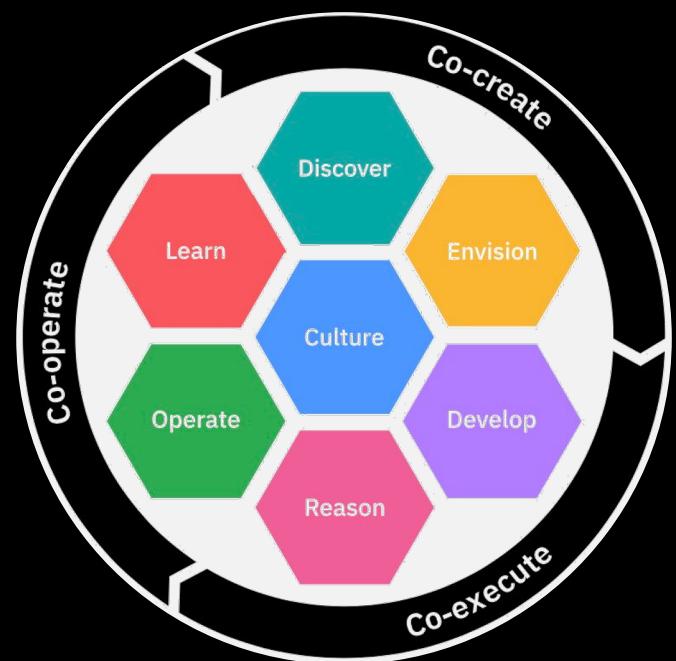
# Data Modernization: Accelerating results with Data, AI and Analytics

**Anchored:** on **business objectives**, outcomes desired, and measures of success. *Understanding that data matters*

**Agile:** co-create to **accelerate delivery** in focused sprints that allow your business to “keep the lights on” and address potential “red flags” early

**Actionable:** **drive innovation** and **remove blocking factors** with the strategies, architectures, and action plans we develop together. *Accelerating production and transformation*

the Data, AI and Analytics content within the **IBM Garage Method**

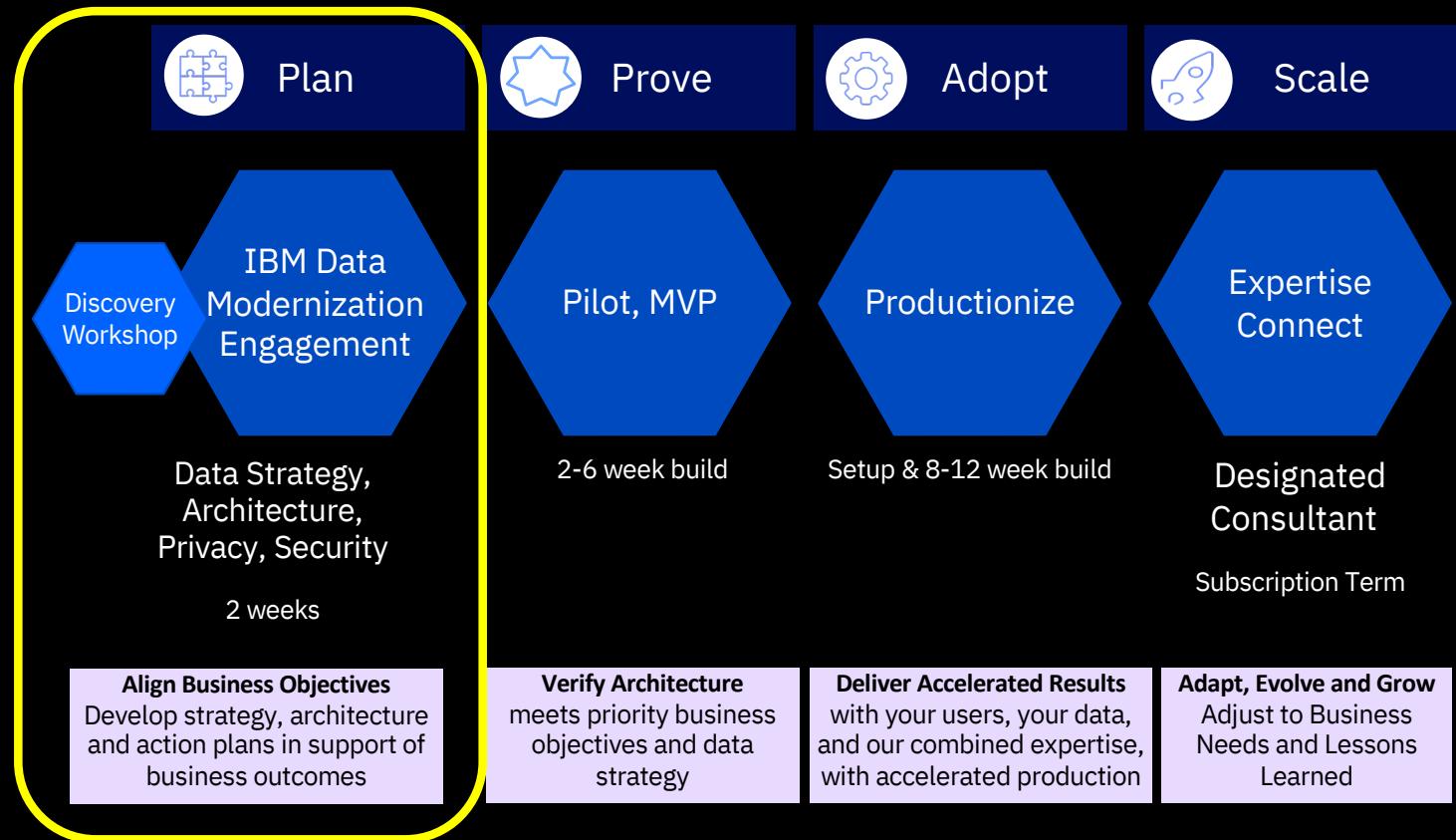


<https://www.ibm.com/cloud/garage/innovate/practices>

# HOW WE DELIVER

## Innovation and transformation IBM Data and AI Expert Labs

Align Data Strategy with Business Goals to accelerate delivery and plan to scale and adopt

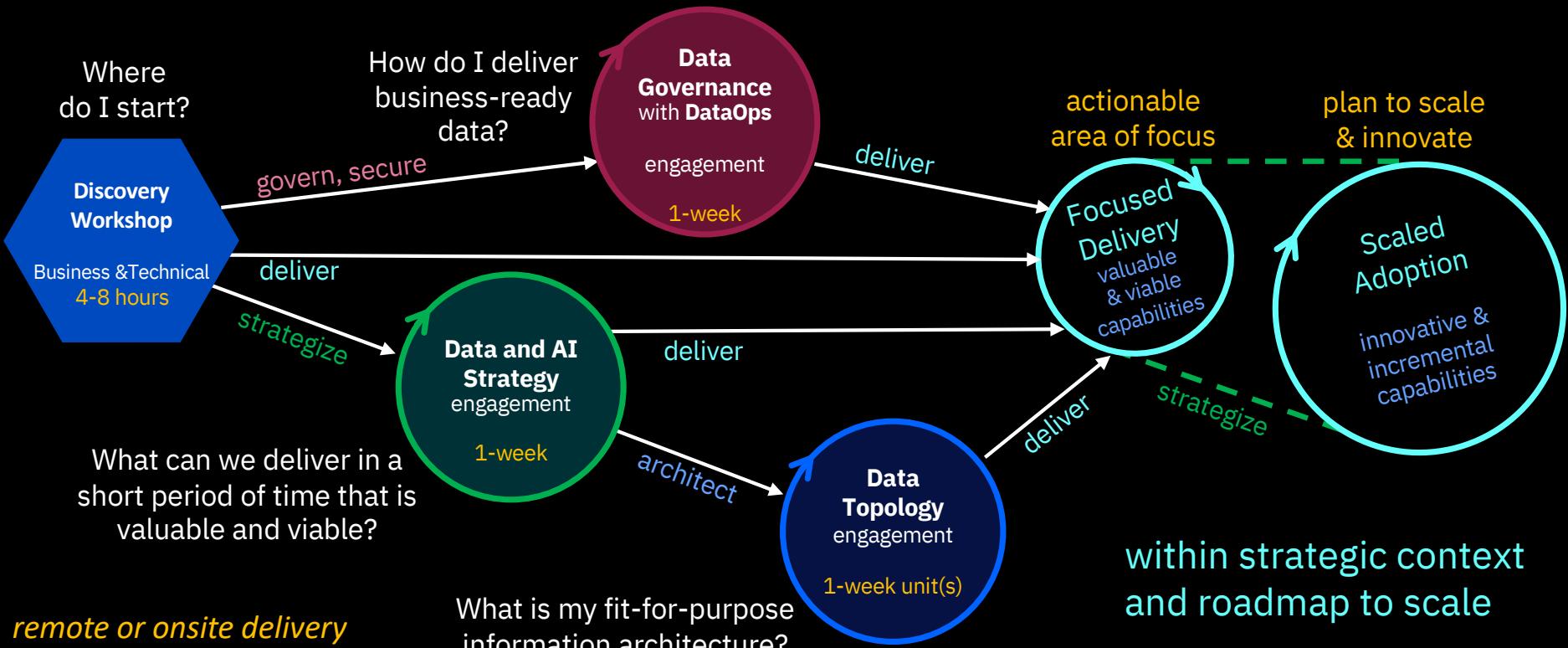


# IBM Data Modernization: transform your Data and AI estate

Start with your business objectives  
and outcomes desired



Deploy and deliver a  
valuable and viable solution



# The challenge: Data Modernization and Transformation

**50%** of enterprise data warehouse projects fail to deliver expected business results  
– *Gartner, 2007* \*

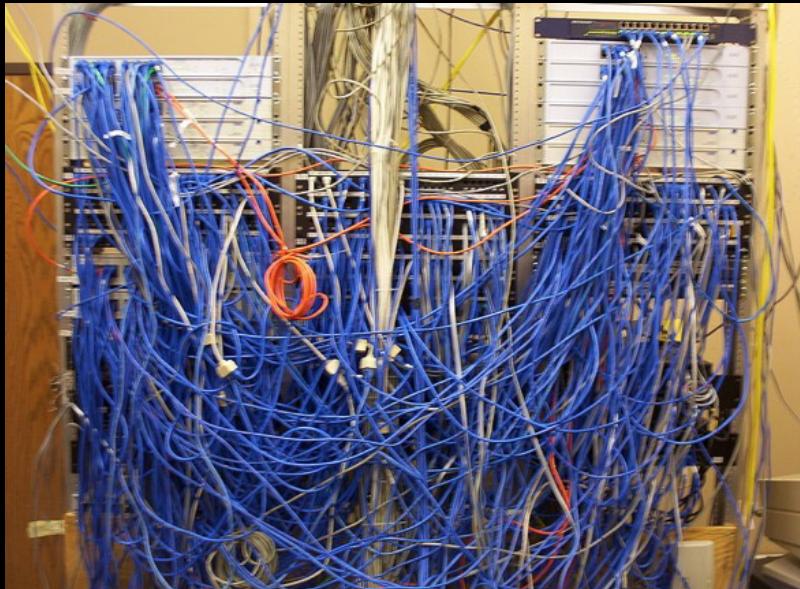
**85%** failure rate of data lake projects,  
according to some analysts \*

*“You can’t afford  
to ‘fail fast’ with data”*  
- *Neal Fishman*

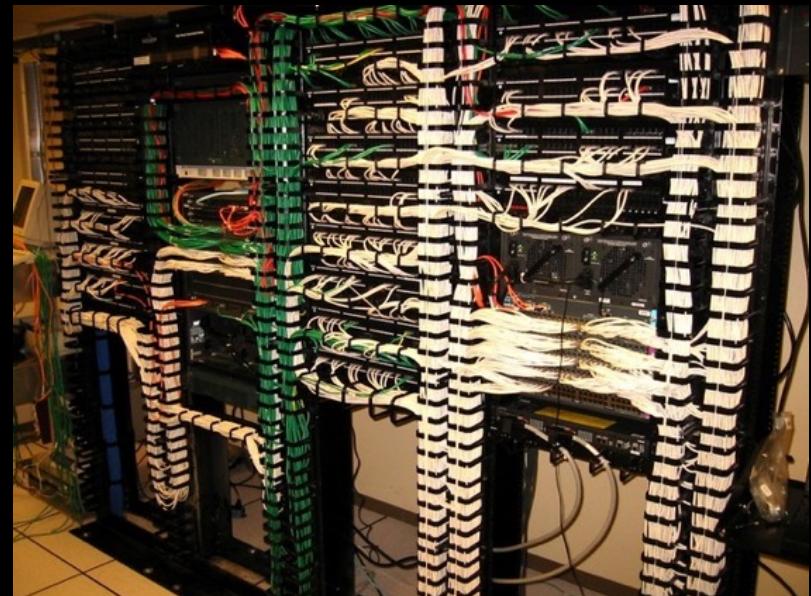
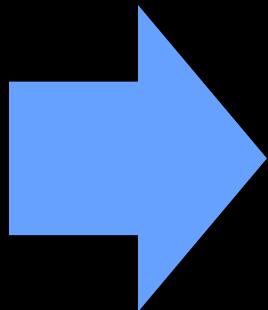
*“Traditionally, big data projects  
are where agile goes to die”*  
- *Paul Christensen*

# Accelerate business results with a data-centric approach that adapts to future needs and technologies

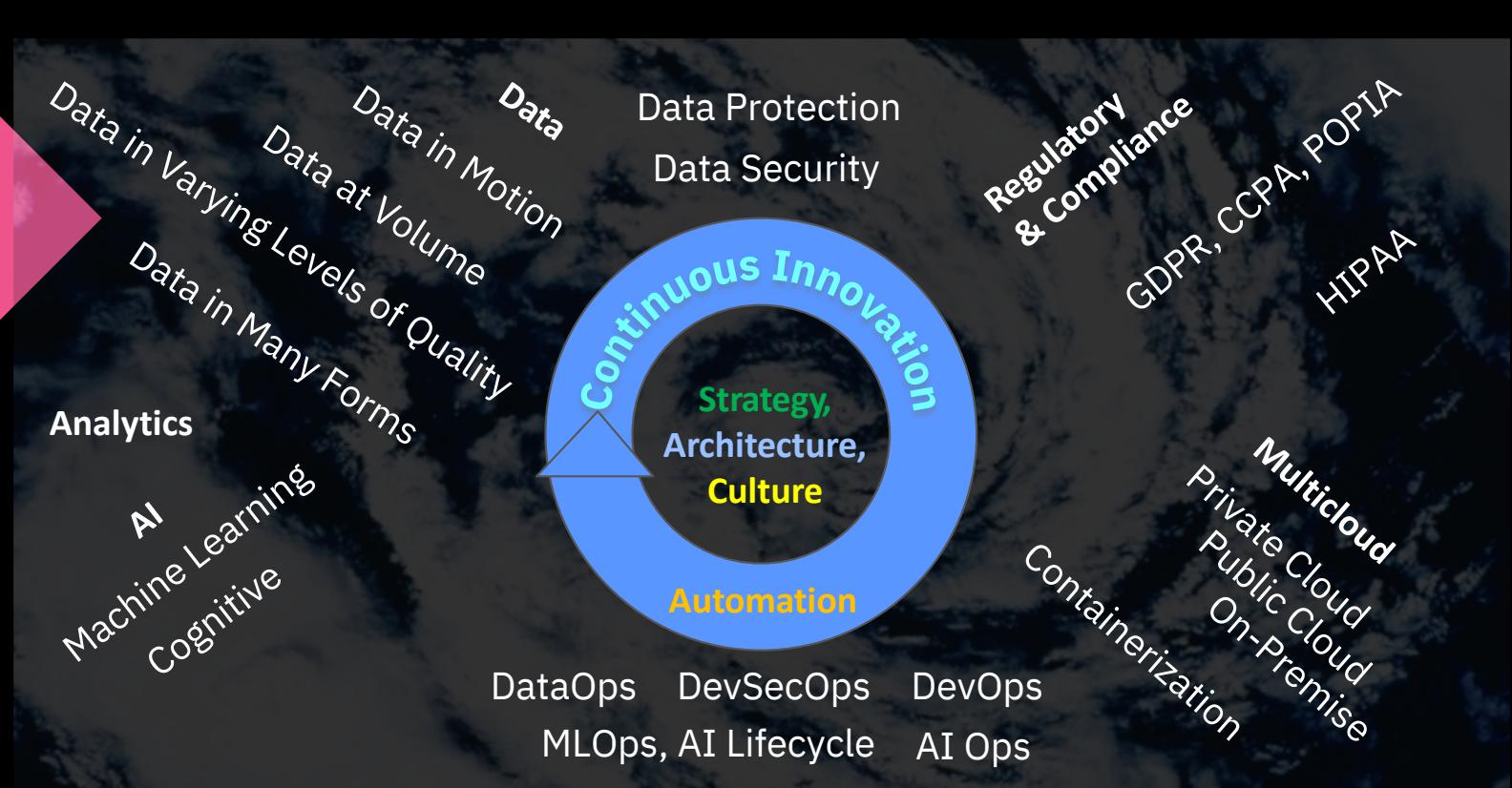
*Instead of focusing on tactical projects  
and postponing strategic data design ...*



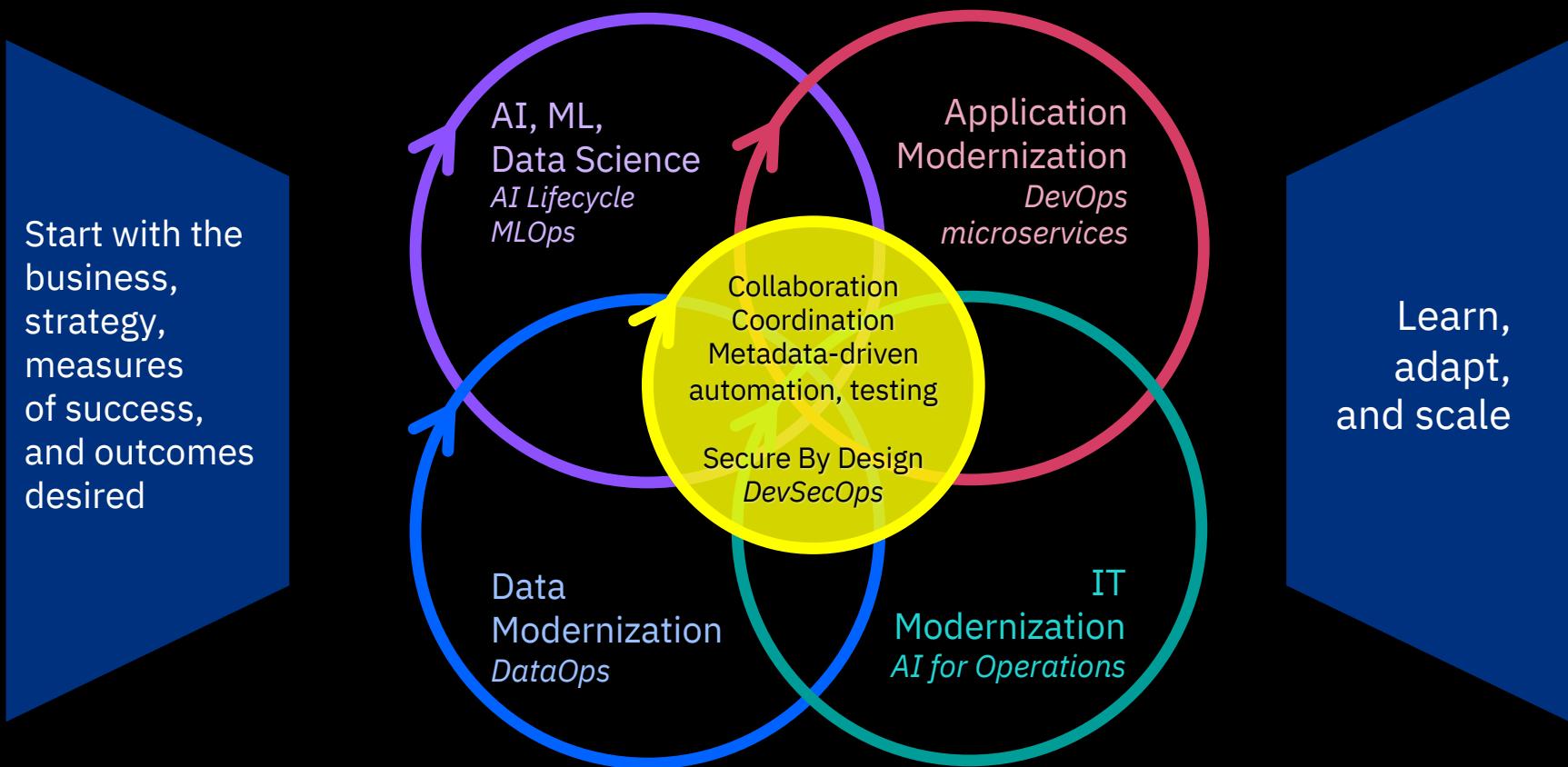
*Leverage data as a strategic asset,  
and architect for the future*



# Simplify and support the competing demands of today's hybrid, multi-cloud world with the right data strategy and architecture



# Agile innovation and transformation with Data and AI enabled with distributed hybrid-cloud architectures



# Data Modernization: co-create to deliver data-centric outcomes with Data and AI

*“We’re a \$1B division,  
and in 1 week you gave us more  
insight across our lines of business  
than we’ve been able to get  
in 18 months!”  
- Financial services provider*



Outcome  
Driven



Relentless  
Innovation



Specialized  
Skills



Accelerated  
Results

Surface the most valuable and viable area of focused delivery leveraging data-centric practices

Learn-by-doing with your experts and ours to deliver accelerated business outcomes

Scale innovation and success across your business as you transform and modernize your data estate, and infuse AI for competitive advantage and operational efficiency

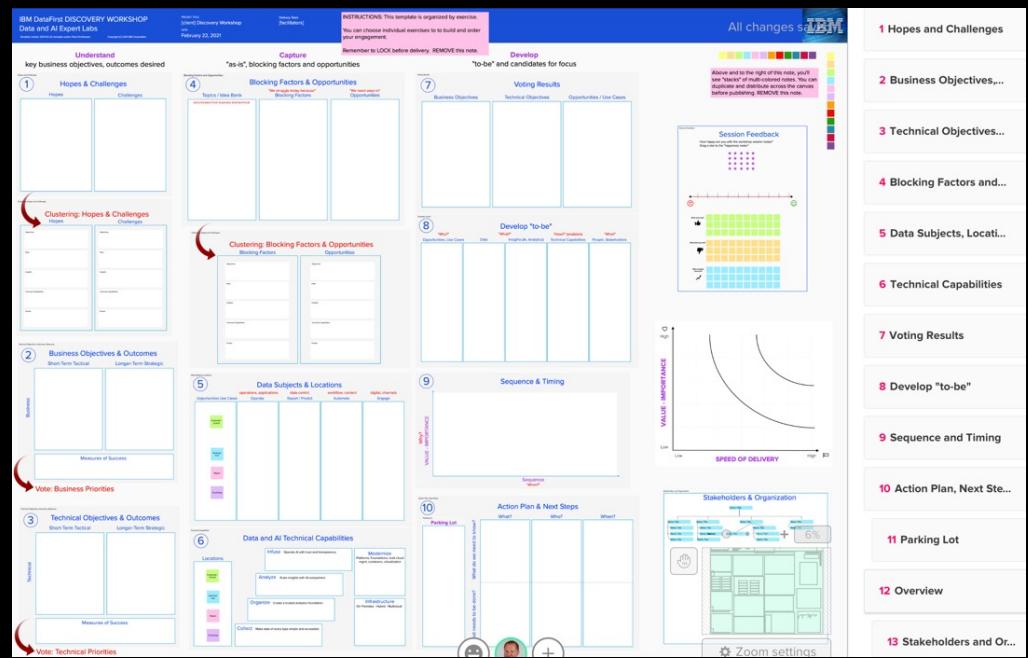
# IBM Discovery Workshop – high level focus and planning

Where  
do I start?

Identify an actionable area of focus (candidate business use cases)  
to deliver accelerated business outcomes with data and AI

Together, your experts and ours will:

- Understand key business objectives and outcomes desired (business, technical)
- Capture “as-is” opportunities and blocking factors, data, information architecture, infrastructure, people
- Develop “to-be” opportunities, data, technical capabilities and people
- Document Action Items / Next Steps



# IBM Discovery Workshop: getting started

Identify an actionable area of focus (candidate business use cases) to deliver accelerated business outcomes with data and AI

1 hour prep-call (learn tooling)

4-8 hour delivery

## CLIENT PARTICIPANTS (varies by workshop)

Executive Sponsor | Line of Business Lead | IT Lead  
Chief Data Officer or Enterprise Data Architect  
Data Subject Matter Experts  
Business Intelligence Lead | Data Science Lead

## REMOTE REQUIREMENTS

- Prep call with all participants before engagement
- Each participant should have their own computer
- WebEx or web conferencing (audio + video)
- Web browser (Chrome, Firefox, or Safari)
  - access to Mural.co tooling

Half-day	2 x half-day (remote)	Full-day (onsite)	Agenda Topic
9:00 – 9:30	9:00 – 9:30	9:00 – 9:30	<b>Introductions</b>
9:30 – 10:15	<b>DAY 1</b> 9:30 – 10:30	9:30 – 10:30	<b>Objectives and Outcomes Desired</b> <ul style="list-style-type: none"><li>• Business view</li><li>• Data and Insights/AI views</li><li>• Technology view</li></ul>
10:15 – 10:45	10:30 – 11:30	10:30 – 11:30	<b>Industry point-of-view and use cases</b>
10:45 – 11:00	<b>DAY 2</b>	11:30 – 12:30	<b>* BREAK *</b>
11:00 – 11:45	9:00 – 10:15	12:30 – 13:45	<b>“as-is” opportunities and blocking factors</b> <ul style="list-style-type: none"><li>• Opportunities &amp; Challenges (Gaps) aligning to objectives</li><li>• Users, data sources, data flows, systems, dependencies</li></ul>
11:45 – 12:00	10:15 – 10:30	13:45 – 14:00	<b>* BREAK *</b>
12:00 – 12:45	10:30 – 11:30	14:00 – 15:30	<b>“to-be” desired future-state, focus</b> <ul style="list-style-type: none"><li>• Desired future capabilities and measures in context of business objective</li><li>• Alignment to business goals</li><li>• Data, capabilities, components</li></ul>
12:45 - 13:00	11:30 – 12:00	15:30 – 16:00	<b>Action Plan and Next Steps</b>

# IBM Data Modernization: summary

## Why

- Break the “log jam” of competing business objectives and priorities, teams, data and AI needs, to **deliver accelerated outcomes**
- Build the foundation for **rapid response** to new objectives and technologies, and becoming a **data-centric organization**
- **Learn-by-doing** “co-creation” equips your teams with the techniques and practices

## How

- Mobilize the **cross-functional team** (business, data, AI, IT)
- Develop a prioritized **area of focus** for accelerated deployment
- Identify **strategic context** and plan to **scale** and innovate

Remote or  
on-site delivery

## With

- Your existing investments and new capabilities to address gaps
- IBM and partner delivery expertise to implement
- 4 core re-usable engagements with end-to-end playbooks:
  - **Discovery Workshop**
  - **Data and AI Strategy**
  - **Data Governance with DataOps**
  - **Data Topology (Information Architecture)**

## To Deliver

- Accelerated outcomes to the business with Data and AI
- **Early success** with rapid pilots (2-12 weeks)
- **Strategic context to scale** and adopt beyond initial area of focus in an agile and incremental way

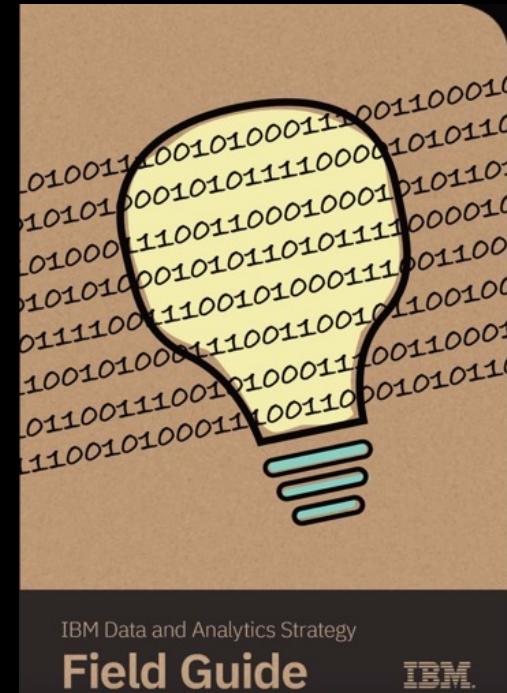
# Accelerate results with Data, AI and Analytics

## Transform and Modernize your data and AI estate

**Anchored:** on **business objectives**, outcomes desired, and measures of success. *Understanding that data matters*

**Agile:** co-create to **accelerate delivery** in focused sprints that allow your business to “keep the lights on” and address potential “red flags” early

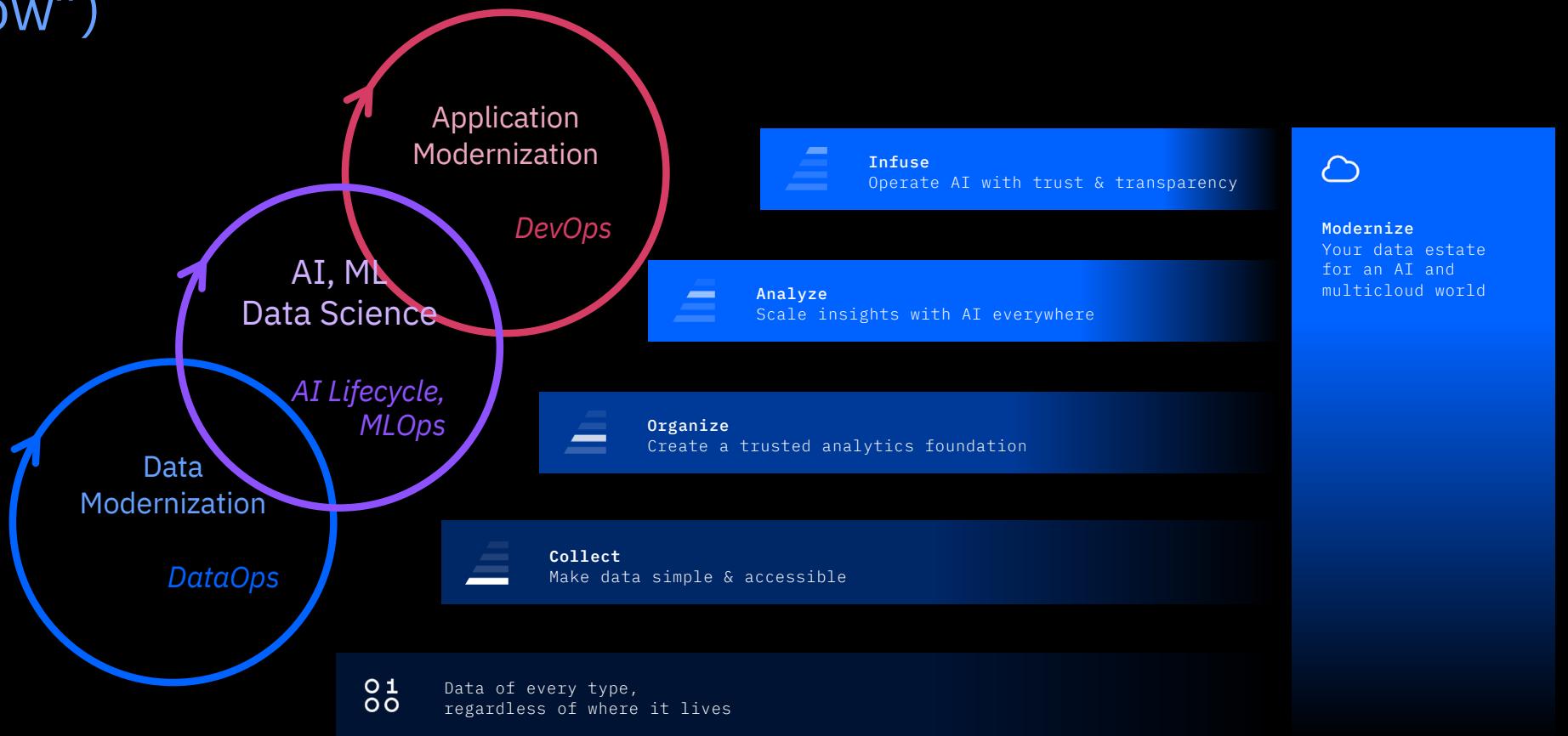
**Actionable:** **drive innovation** and **remove blocking factors** with the Strategies, Architectures, and Action Plans we develop together. *Accelerating production and transformation*



<https://www.ibm.com/cloud/garage/content/field-guide/data-analytics-field-guide/>

# IBM Data Modernization engagements

# Innovation with Data, AI, and Applications (“how”)

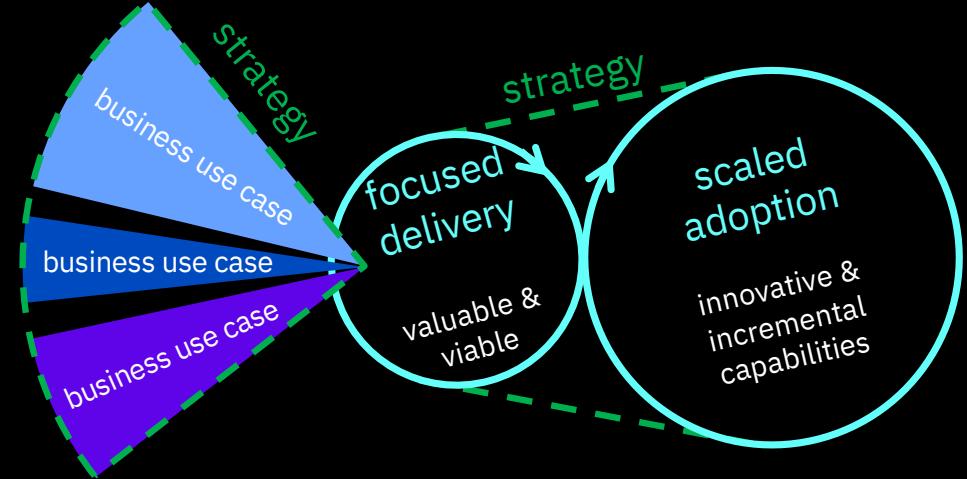


## Anchored: accelerate delivery and scale with “just enough” strategy

*Recognize data as an asset of value across multiple business use cases*

*instead of cutting to the “minimum” ...*

We leverage “just enough strategy” to surface valuable and viable area(s) for accelerated (focused) delivery across multiple business use cases, lines of business, or teams



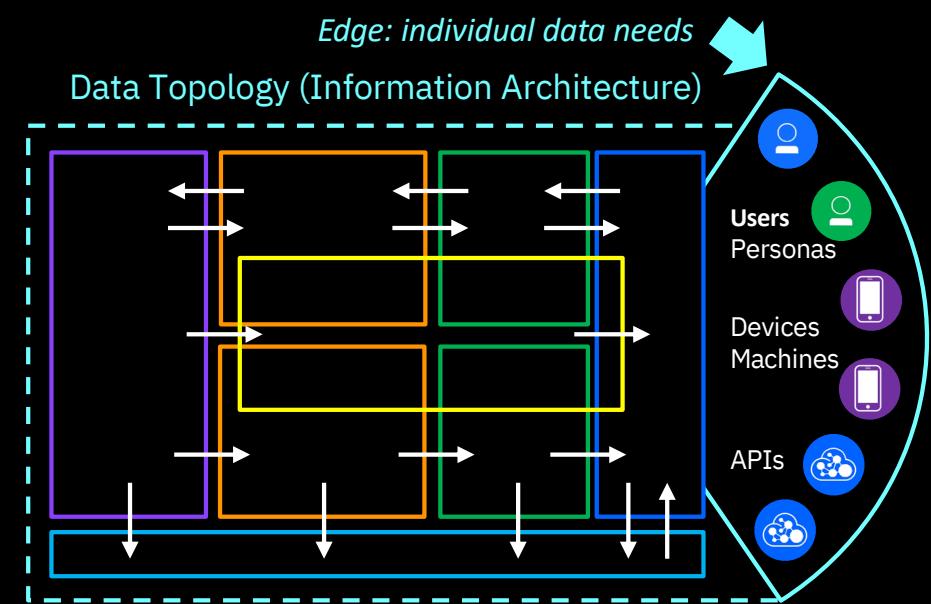
## Agile: transform and rapidly adapt to new business needs focus on the users (personas, APIs, devices) of an ecosystem

*“Single source of the truth”  
is an objective not an architecture*

*instead of starting in the center (consolidation)  
and trying to physically align the silos ...*

We start at the edge (users, personas, APIs, devices) to develop fit-for-purpose, distributed information architectures

Adapt and grow over time to deliver new capabilities and adopt new technologies



<https://www.coursera.org/learn/ibm-data-topology/>  
<https://www.coursera.org/learn/ibm-data-privacy>

# Actionable data modernization

Every data modernization engagement is focused on accelerated and **actionable delivery of business outcomes** with Data and AI

Together with your experts, we co-create the strategies, architectures, roadmaps and action plans to deliver accelerated results with a plan to scale and transform

“Strategy without execution is hallucination.”

*\*Karl Moore – Forbes - May 31, 2012*



## Area of Focus

All engagements are fixed-duration and developed within an area of focus.  
The level of focus within an organization determines the the level of detail.



### Corporate or Division-level “macro”

- Example: \$1B credit card services division within a Financial Services Company
- 7 lines of business - assembled business, data, and technical leads for each

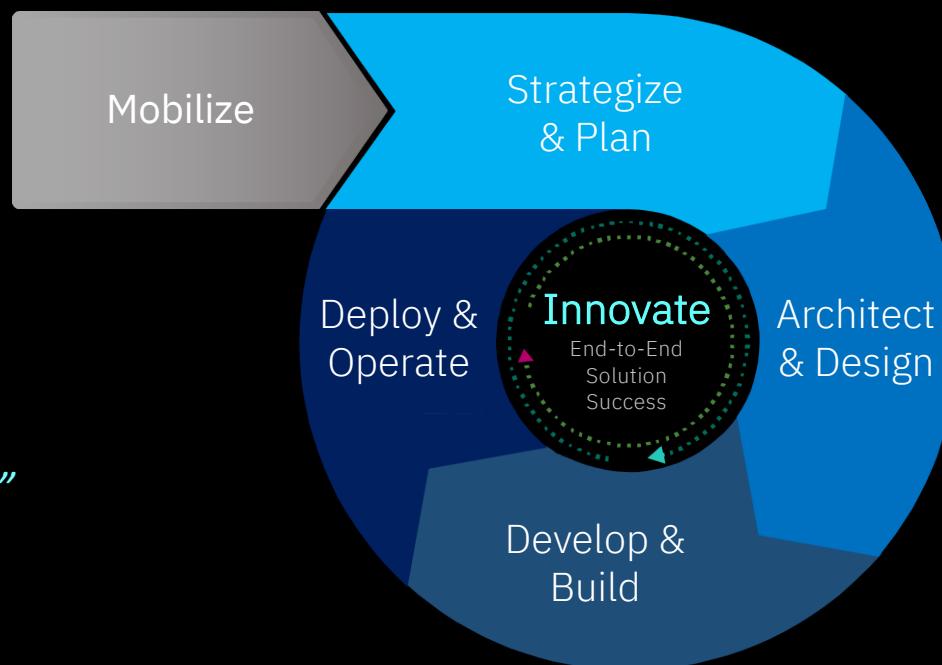
### Team-level “micro/more-detailed”

- Example: Campaign Management team (marketing and promotions) within a large retail organization
- 3 core teams (campaign analysts, data engineers, data scientists)

## Deliver accelerated business outcomes with Data and AI (“how”) focused within strategic context

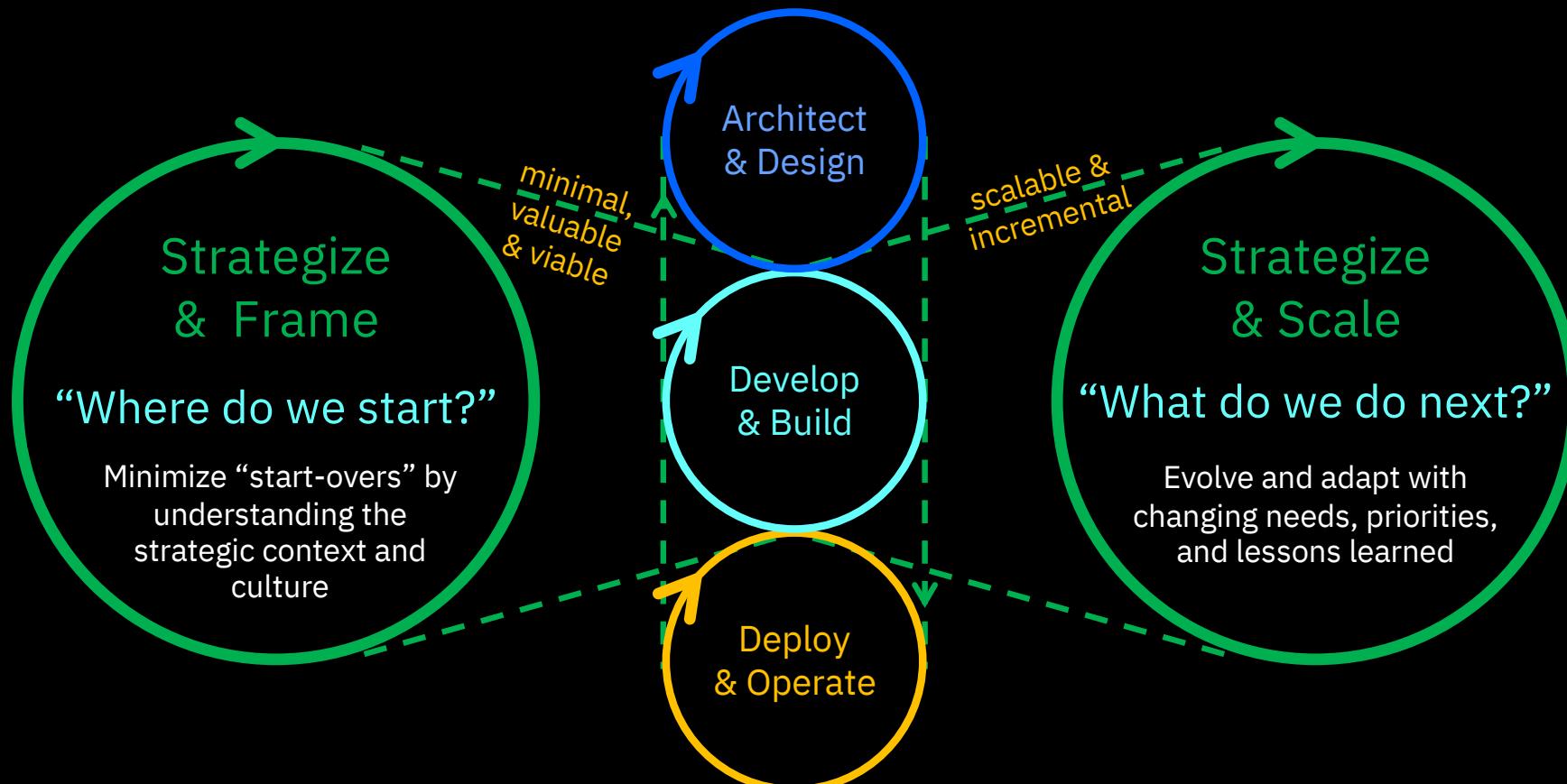
*“No amount of AI algorithmic sophistication will overcome a lack of data [architecture] ... bad data is simply paralyzing.”*

– MIT Sloan



- Strategize to break the “log jam” of competing business objectives and priorities to focus delivery
- Modernize your information architecture
- Transform and rapidly adapt to new business needs and technologies (“data-centric”)

# Data Modernization: driven by, and influencing strategy (“how”) innovation cycles “how do we deliver?”





# IBM Data and AI Strategy engagement

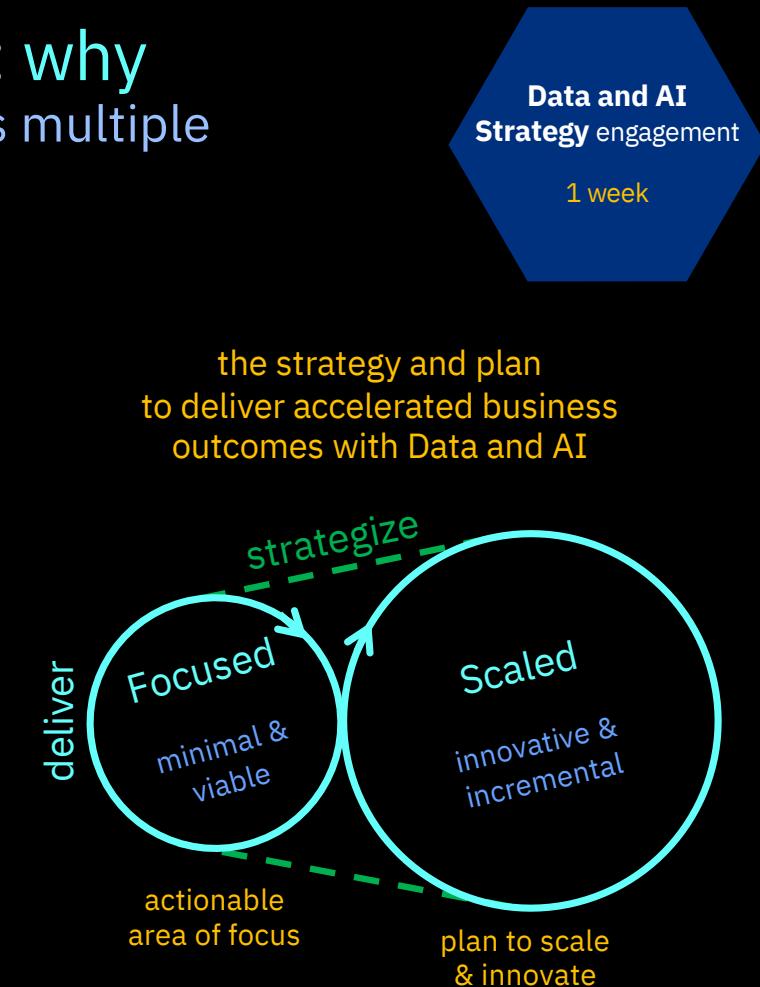
*Build an actionable data and AI strategy across multiple business use cases*

# IBM Data and AI Strategy engagement: why

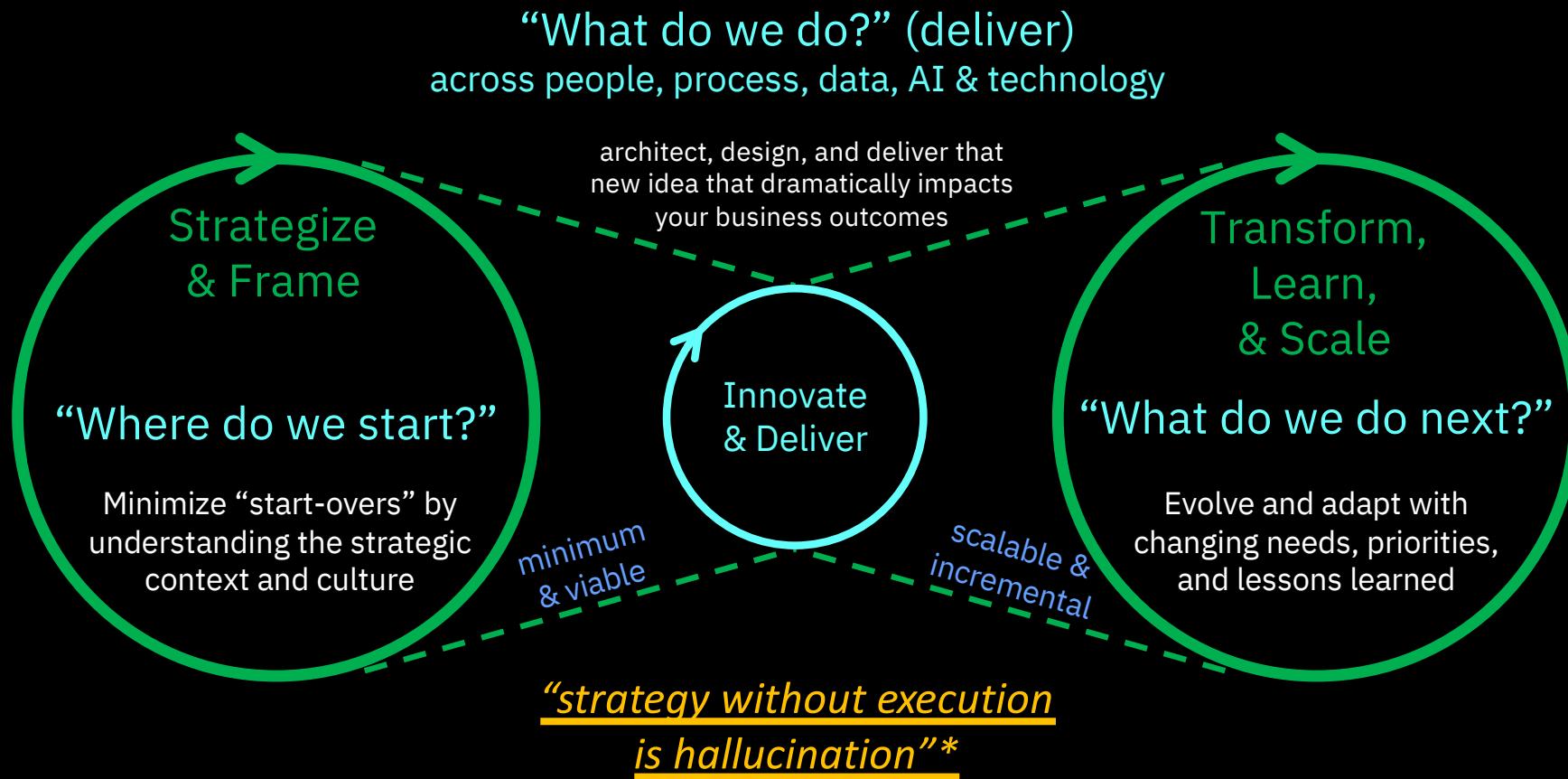
Drive data modernization and transformation across multiple business objectives and priorities

Mobilize the cross-functional team  
business, data, AI, IT

- Break the “log jam” of competing business objectives and priorities, teams, data and AI needs, capabilities and technologies
- Develop a prioritized area of focus for accelerated deployment and the plan to scale and innovate
- Build the foundation for **rapid response** to new objectives and technologies, and to becoming a **data-centric** organization (learn-by-doing)



# Strategic Context (“why”?): Simplified View



# Data Strategy – identify minimal, viable, and valuable start

What can we deliver  
in a short period of time  
that is valuable and viable?

Align multiple business objectives and priorities to drive  
data transformation within an area of focus

Together, your experts and ours will:

- Assemble the cross-functional team (Business, Data, IT) to align and focus against a common set of goals and objectives
- Identify data needs across multiple teams, multiple lines of business, or industry use cases
- Uncover current (“as-is”) data topology and blocking factors to achieving success
- Develop desired future-state (“to-be”) to deliver desired outcomes and to address technical and business inhibitors
- Build action plan for focused delivery and scale

**Scope:** area of focus from discovery workshop across multiple objectives (business use cases, lines of business, locations)

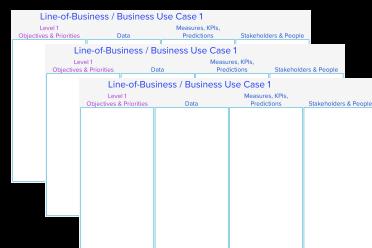
**Duration:** 4 days x 4 hours, remotely delivered

**Deliverables that follow:**

- 1) Daily Mural board walkthroughs (PDFs)
- 2) Data Strategy report (PPT)
  - Observations, Challenges, Recommendations
  - Objectives, Outcomes, and Measures
  - Cross-functional data needs within focus
  - Stakeholders and Measures
  - Technical capabilities / enablers (ref architecture)
  - Conceptual future-state data topology
  - Action Plan for selected starting area

# Core elements of an actionable Data Strategy

A data strategy is the foundation to becoming a data-driven organization by connecting your business plan and priorities to your data and AI needs to deliver value to the business.



**Business Needs and Priorities across multiple business use cases**



**Stakeholders and People**

**Critical Success Factors, Measures/KPIs, and Predictions**



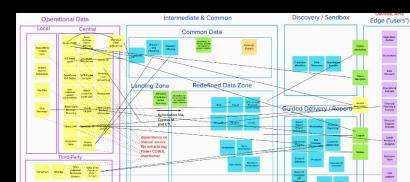
**Grouping of Data needs across objectives**



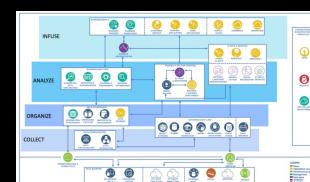
**Blocking Factors and Remedies**



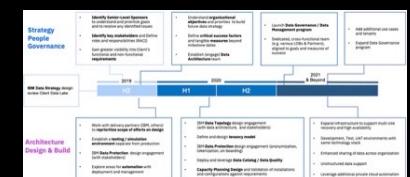
**Gap Analysis**



**“As-Is” Data Topology and Data Flows in context of objectives**



**Technical Enablers**



**Action Plan with owners, dates, and sequencing**

# IBM Data and AI Strategy Engagement ([AN400](#))

Drive data modernization and transformation across multiple business objectives and priorities

**1-week remote delivery or on-site**

## CLIENT PARTICIPANTS

Executive Sponsor / Chief Data Officer (days 1 & 5)

Line of Business Leader(s) (days 1, 2, 4, 5)

Technology / IT Lead (days 1, 3, 4, 5)

Enterprise Data Architect (all days)

Data Subject Matter Experts (all days)

## REMOTE REQUIREMENTS

- Prep call with all participants before engagement
- Each participant should have their own computer
- WebEx or web conferencing (audio + video)
- Web browser (Chrome, Firefox, or Safari)
  - access to Mural .co tooling

<b>DAY 1</b> HALF DAY	<b>Business Objectives &amp; Priorities</b> Understand business strategy and objectives <ul style="list-style-type: none"> <li>Longer-term / Innovation</li> <li>Shorter-term / Keep the Lights On</li> </ul> Business Use Case prioritization and development <ul style="list-style-type: none"> <li>Objectives &amp; Priorities, Data, Measures/KPIs/Predictions, Stakeholders</li> </ul>
<b>DAY 2</b> HALF DAY	<b>Business and Data Challenges</b> "As-Is" Data Topology and Data Flow in context of given use cases Blocking Factors and Opportunities for each use case
<b>DAY 3</b> HALF DAY	<b>Technology Objectives &amp; Enablers</b> Key technology drivers, priorities, capabilities, challenges, obstacles: <ul style="list-style-type: none"> <li>Longer-term / Innovation</li> <li>Shorter-term / Keep the Lights On</li> </ul> Conceptual "to-be" topology
<b>DAY 4</b> HALF DAY	<b>Actionable Starting Point &amp; Next Steps</b> Use Case prioritization and feasibility Scope and Success Factors Action Plan and Sequencing
<b>DAY 5</b> HALF DAY	<b>Final Deliverable Readout</b> Final readout and revisions with all stakeholders

**Data and AI Strategy engagement**  
1 week



**Data Topology**  
engagement  
  
1-week units

# IBM Data Topology engagement

*Develop your fit-for-purpose  
information architecture*

# Unwind the “big data hairball”

“Single source of the truth” is an objective, not an architecture

Traditional approaches to data and analytics projects often start with technology and assume some level of centralization and consolidation.

However, monolithic data architectures fail to recognize the distributed, specialized needs of the business and the individuals (users, devices, APIs) within



# Data Topology architecture engagement: why

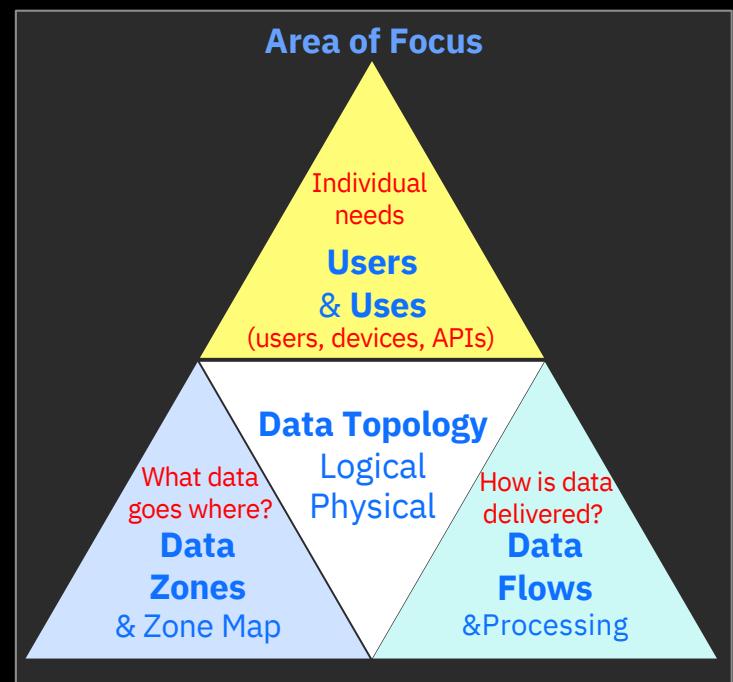
## Modernize and transform your information architecture

Data Topology  
engagement  
1-week units

Data topology is a user-centric approach to develop data-centric information architectures that will:

- Deliver the **specialized data needs** of users (users, personas, devices/machines, APIs)
- Simplify the organization, flow, management and protection of data
- More-rapidly **adapt** to future needs and adopt new technologies

<https://www.coursera.org/learn/ibm-data-topology/>



# Data Topology - modernize and transform your information architecture

What is my fit-for-purpose information architecture?

Together, your experts and ours will use data topology practices to develop your information architecture:

- **Users** (personas, devices, APIs) and their uses of data
- Data classification (**zones**) by key characteristics (location, privacy, security)
- **Data flow** and processing by key characteristics (latency, volume)
- **Build action plan and suggested roadmap**

Develop your information architecture within a prioritized area of focus

**Scope:** area of focus (minimal, viable, valuable) developed within prior engagement

**Duration:** 1-week units [4 days x 4 hours] depending on scope and depth (conceptual, logical, physical)

**Deliverables that follow:**

- 1) Daily walkthroughs (PDFs)
- 2) Data Topology design (PPT)
  - Objectives and Area of Focus
  - User profiles (users, data subjects, uses of data)
  - Data sources and persistence
  - Data Flows and Processing
  - Logical component architecture, capabilities, locations, select characteristics
  - Action Plan and High-level Roadmap

# IBM Data Topology Engagement ([AN401](#))

Modernize and transform your information architecture

**Data Topology**  
engagement  
1-week units

1-week units based on scope and depth  
remote delivery or on-site

## CLIENT PARTICIPANTS

Executive Sponsor / Chief Data Officer (days 1 & 5)  
Line of Business Leader(s) (days 1, 2, 4, 5)  
Technology / IT Lead (days 1, 3, 4, 5)  
Enterprise Data Architect (all days)  
Data Subject Matter Experts (all days)

## REMOTE REQUIREMENTS

- Prep call with all participants before engagement
- Each participant should have their own computer
- WebEx or web conferencing (audio + video)
- Web browser (Chrome, Firefox, or Safari)
  - access to Mural .co tooling

<b>DAY 1</b> HALF DAY	<b>Objectives &amp; Foundations</b>  Business objectives and priorities Who are the stakeholders and measures Area of Focus / Who are the Users
<b>DAY 2</b> HALF DAY	<b>“Unconstrained” logical topology</b>  Technology-agnostic topology What is the data? (users and uses, systems of record) (Zone Map and Data Flow) by segmented users/devices/APIs, shared and unique data needs
<b>DAY 3</b> HALF DAY	<b>“Constrained” topology</b>  Choose up to 5 top-priority constraints to further-refine topology. Understand current-state topology if one exists
<b>DAY 4</b> HALF DAY	<b>Action Plan and Next Steps</b>  What is the delta between future and current-state topology? Build Action Plan and Sequencing
<b>DAY 5</b> HALF DAY	<b>Final Deliverable Readout and Next Steps</b>  Final readout and revisions with all stakeholders

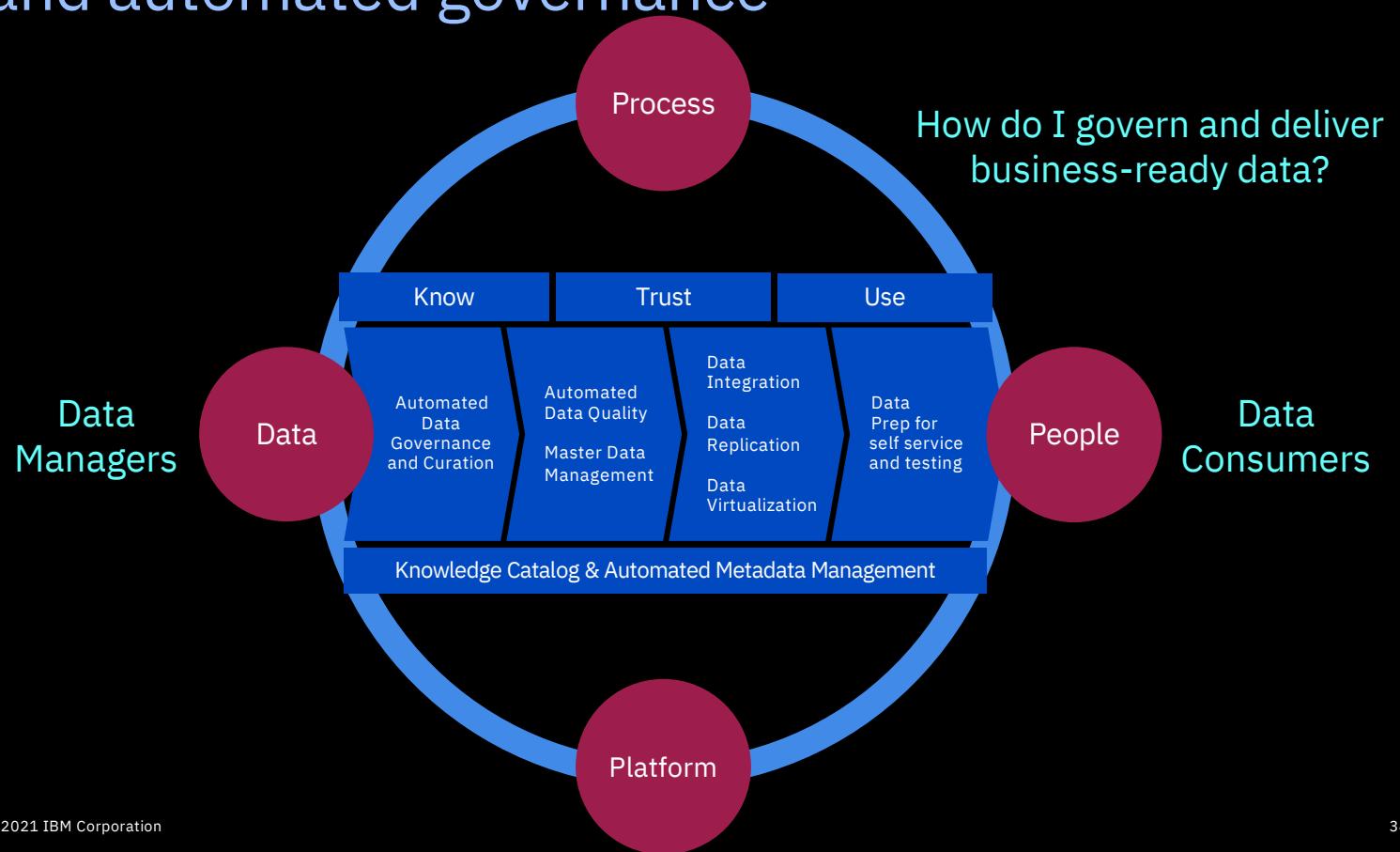
# IBM DataOps and Governance engagement

*Leverage automation and DataOps practices to optimize data delivery*

# Organize and deliver business-ready data faster with DataOps and automated governance

*“DataOps is a collaborative data management practice focused on improving the communication, integration and automation of data flows between data managers and data consumers across an organization.”*

- Gartner



# DataOps engagement (Data Governance)

How do I deliver  
business-ready data?

Align business objectives to data pipeline requirements  
to deliver business-ready data within the area of focus

Together, your experts and ours will:

- Prioritize business objectives to data delivery requirements
- Identify people, roles, and skills
- Review example process maps and automation
- Identify technical architecture and capabilities
- Build action plan and refine roadmap

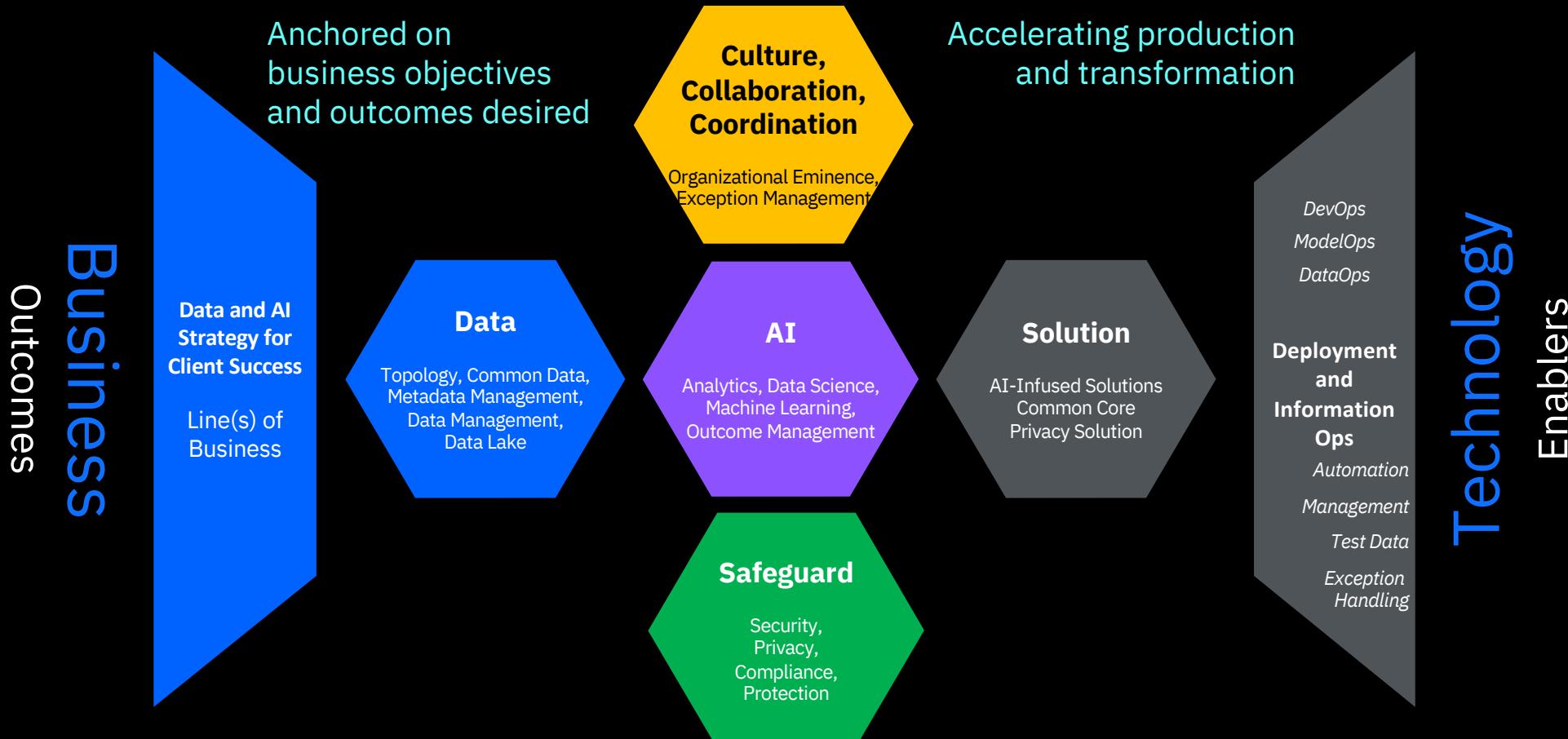
**Scope:** area of focus (minimal, viable, valuable) architected within Data Lake Design engagement

**Duration:** 4 days x 4 hours, remotely delivered

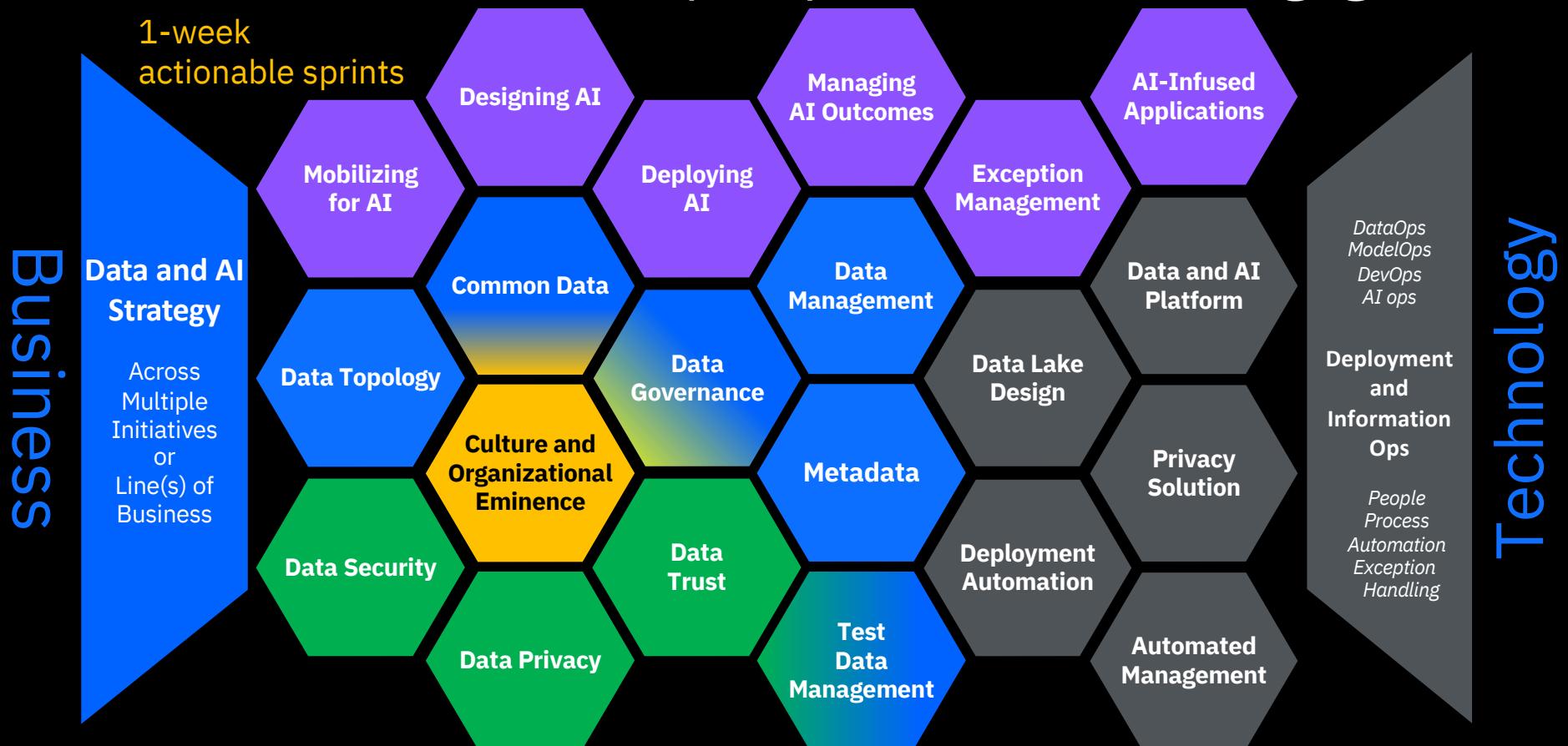
**Deliverables that follow:**

- 1) Daily walkthroughs (PDFs)
- 2) DataOps logical design (PPT)
  - Business objectives and data delivery
  - People, Roles, Responsibilities
  - Processes, Workflows, Automation
  - Technical capabilities
  - Action plan and refined Roadmap

# IBM Data Modernization: themes



# IBM Data Modernization: expert practitioner-led engagements

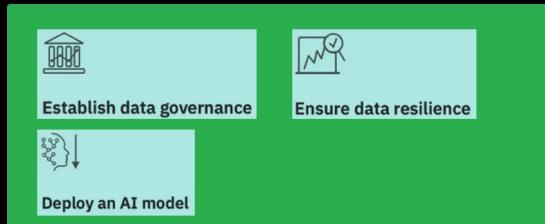


## IBM Garage Method: example Data and AI practices

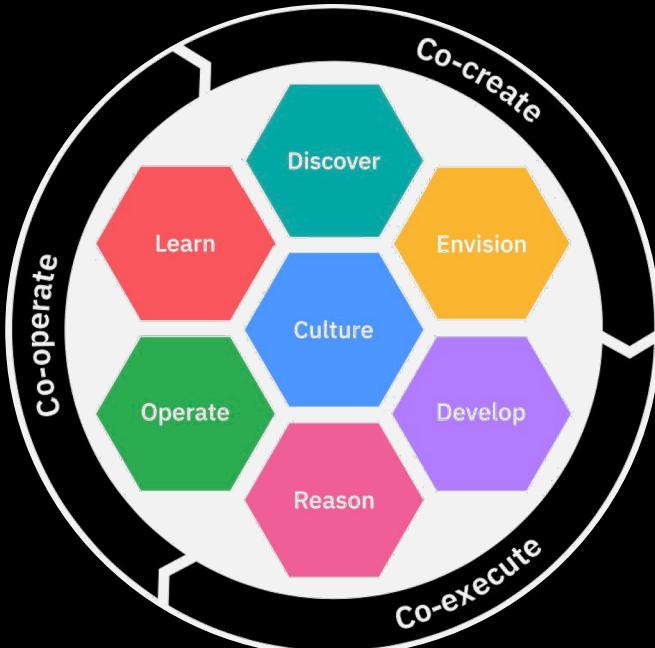
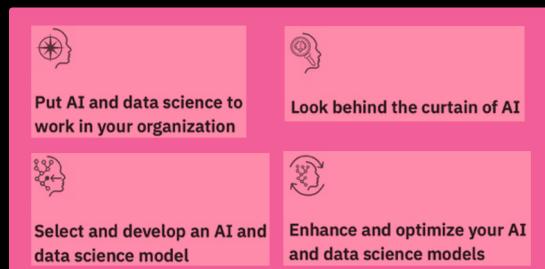
### Culture



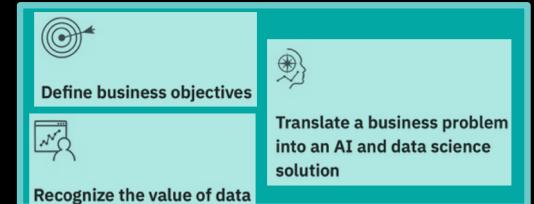
### Operate



### Reason



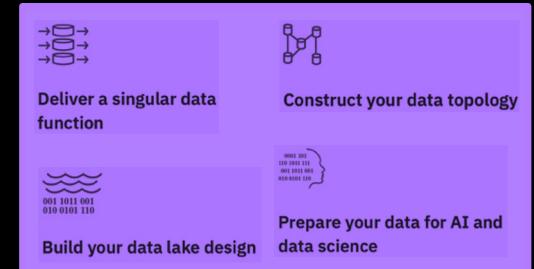
### Discover



### Envision



### Develop



<https://www.ibm.com/cloud/garage/innovate/practices>

# Innovation and transformation with Data and AI

