Workshop: Self-Service Data and Analytics for the Citizen Data Scientist

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Strategic Planning Assumptions

By 2019, citizen data scientists will surpass data scientists in the amount of advanced analysis produced.

By 2020, more than 40% of data science tasks will be automated, resulting in increased productivity and broader usage by citizen data scientists.

By 2020, the number of data and analytics experts in the business units will grow at three times the rate of experts in IT departments, which will force companies to rethink their organizational models and skill sets.

By 2020, users of modern analytics and business intelligence platforms that are differentiated by augmented data discovery capabilities will grow at twice the rate — and deliver twice the business value — of those that do not.
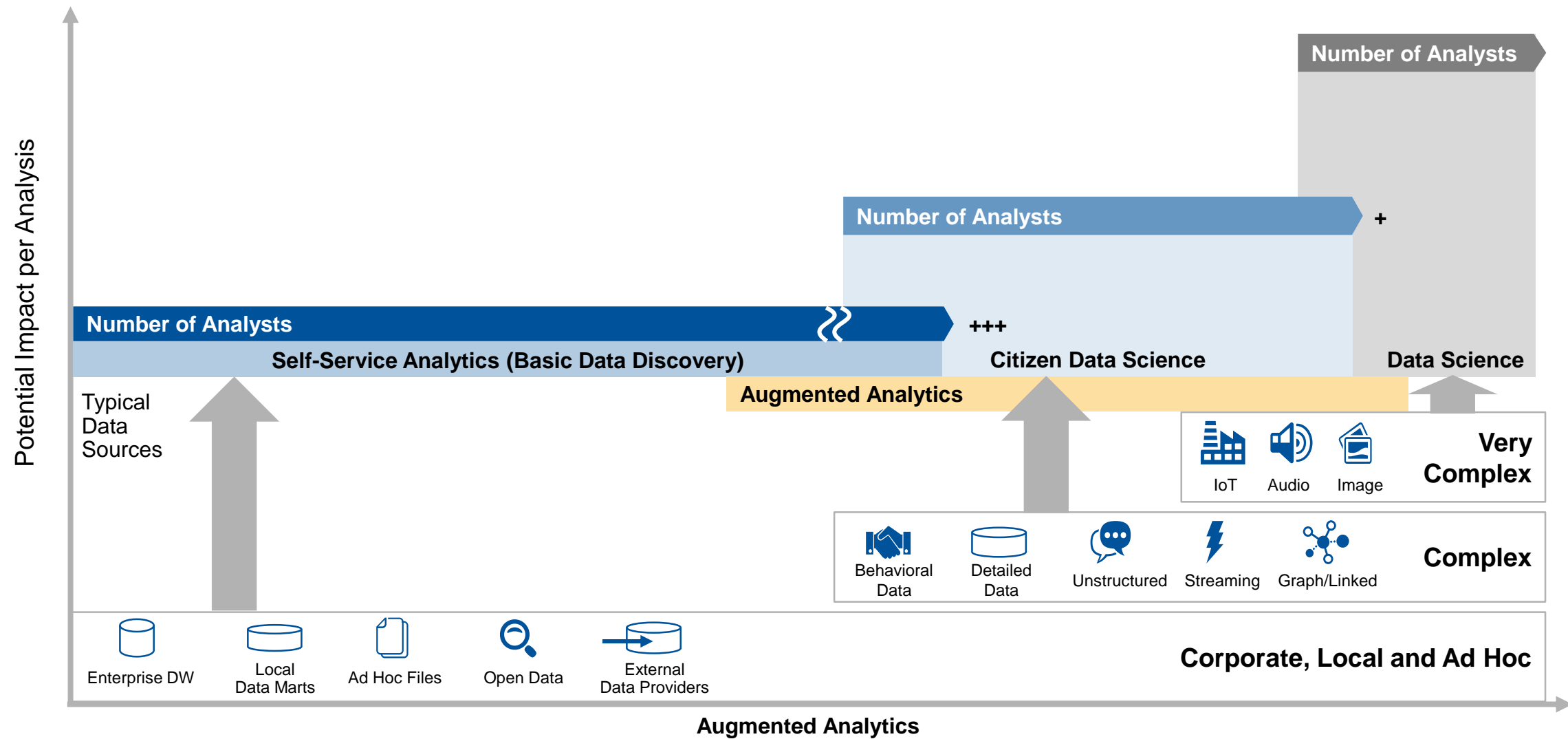
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Workshop Agenda

1. **Self-Service for the CDS Guidance**   1.   (15 Minutes)
   Take the Four Pillars End to End

2. **Group Exercise**   2.   (35 Minutes)
   Recommend a Self-Service for the CDS Approach
   Based on a Case Study

3. **Report Back**   3.   (30 Minutes)
   Share Your Decisions

4. **Summary and Next Steps**   4.   (10 Minutes)

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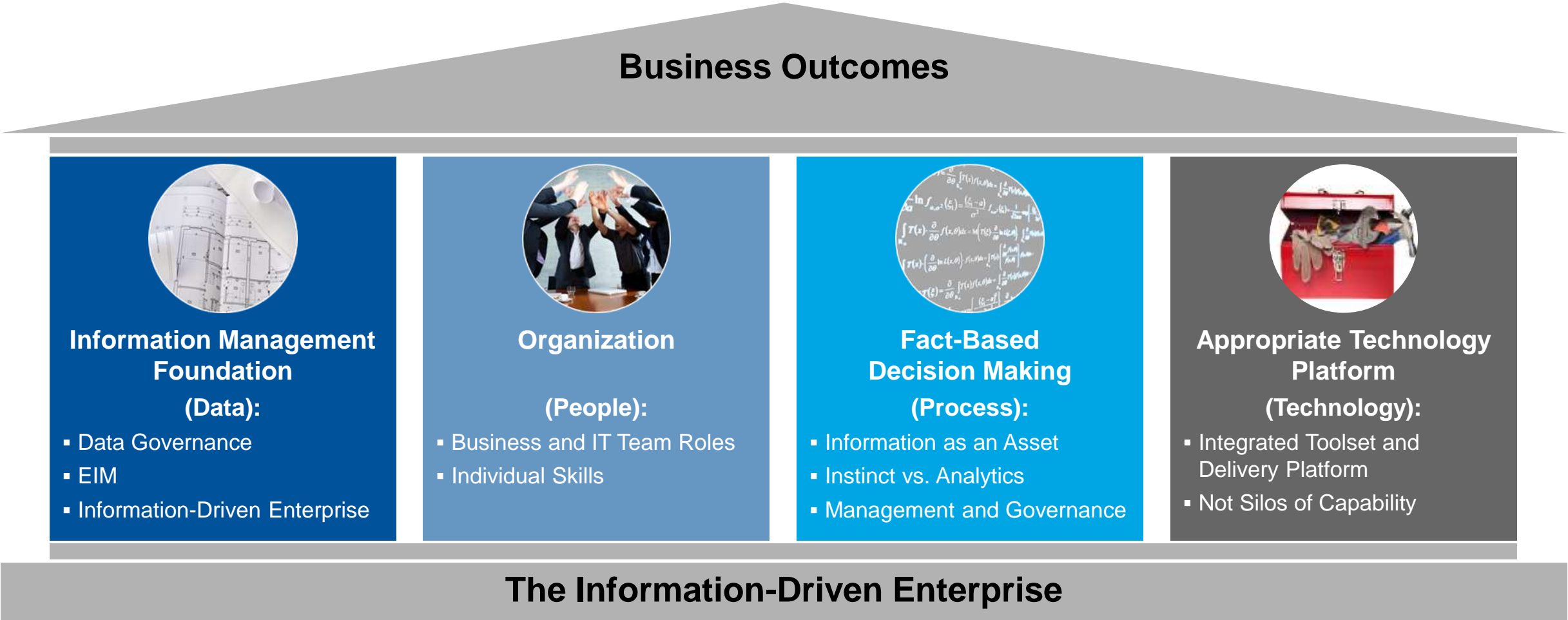
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Citizen Data Science

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Keep the Four Pillars in Mind

Business Outcomes

Information Management Foundation

(Data):

- Data Governance
- EIM
- Information-Driven Enterprise

Organization

(People):

- Business and IT Team Roles
- Individual Skills

Fact-Based Decision Making

(Process):

- Information as an Asset
- Instinct vs. Analytics
- Management and Governance

Appropriate Technology Platform

(Technology):

- Integrated Toolset and Delivery Platform
- Not Silos of Capability

The Information-Driven Enterprise

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Comprehensive Analytic Process — Where Self-Service Fits

Data	Insight	Action	Impact

Acquire
- ✓ Provision Internal and External Sources
- ✓ Evolve Toward a Logical Data Warehouse
- ✓ Incorporate Data Management
- ✓ Establish a Common Metadata Model
- ✓ Augmented Data Preparation
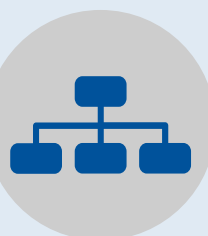
Organize
- ✓ Leverage Architectural Styles
- ✓ Provide a Common Data Access Layer
- ✓ Enable Self-Service Integration and Data Preparation
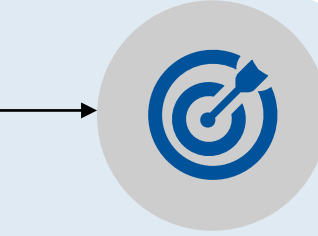- ✓ Enable Flexible Provisioning

Analyze

Deliver
- ✓ Leverage Existing Reports
- ✓ Extend Functionality
- ✓ Provide Reusable Components
- ✓ Establish a Multitiered BA Environment
- ✓ Augmented Data Discovery
- ✓ Augmented Data Science and Machine Learning

Measure
- ✓ Monitor Artifacts
- ✓ Facilitate Collaboration
- ✓ Measure the Value
- ✓ Share and Operationalize Findings

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Empower and Enable With Augmented Analytics

Augmented Data Preparation

Prepare Data

Algorithms detect schemas, profile, catalog and recommend enrichment, data lineage and metadata

Augmented Analytics

Share and Operationalize Findings

Insights are narrated in natural language or visualizations to focus user on what is important and actionable

Can be embedded in apps or conversational UI

Find Patterns in Data

Natural-language query

Algorithms find all **relevant** patterns in data

Models are autogenerated

Augmented Data Discovery
Augmented Data Science and ML

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Four-Tiered Analytic Architecture
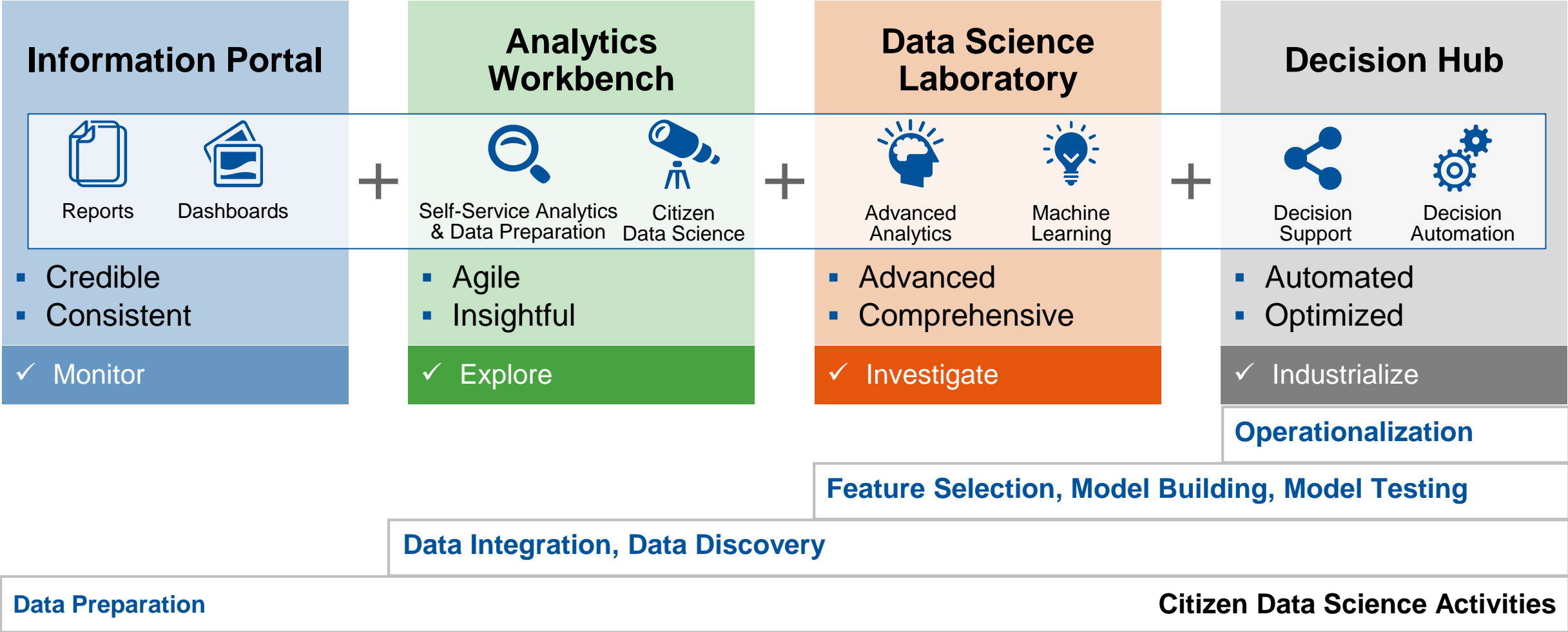
Information Portal		Analytics Workbench		Data Science Laboratory		Decision Hub
Reports Dashboards	+	Self-Service Analytics & Data Preparation / Citizen Data Science	+	Advanced Analytics / Machine Learning	+	Decision Support / Decision Automation
▪ Credible ▪ Consistent		▪ Agile ▪ Insightful		▪ Advanced ▪ Comprehensive		▪ Automated ▪ Optimized
✓ Monitor		✓ Explore		✓ Investigate		✓ Industrialize

Operationalization

Feature Selection, Model Building, Model Testing

Data Integration, Data Discovery

Data Preparation   **Citizen Data Science Activities**

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The Group Exercise

1. Form into groups of four or five people

2. Review the case study and discuss the considerations relevant to your case study

3. Devise a self-service approach including:

    – All four pillars of data, people, process and technology

    – The end-to-end BA process

4. Document your rationale and considerations

5. Prepare to present your findings

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Self-Service for the CDS Planned Approach

	Data	People	Process	Technology	Other
Data					
Insight					
Action					
Impact					
Other					

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Ground Rules

- Respect the speakers:

  - All ideas/comments are valid.

  - Please stay engaged.

- Speak up and request clarification.

- Make your point first — then explain it.

- Learn something new!

- Have some fun!

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Report Back

- Each team reports back to the whole group related to their use case:
  - Considerations, challenges, approach, priorities and rationale.
- Share your "aha" moments; how to apply this learning back to work.

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Recommended Gartner Research

▶ **Pursue Citizen Data Science to Expand Analytics Use Cases**
Joao Tapadinhas and Carlie J. Idoine (G00316089)

▶ **Citizen Data Science Augments Data Discovery and Simplifies Data Science**
Joao Tapadinhas and Carlie J. Idoine (G00314599)

▶ **Leading Upskilling Initiatives in Data Science and Machine Learning**
Peter Krensky, Shubhangi Vashisth and Douglas Laney (G00334219)

▶ **Augmented Analytics Is the Future of Data and Analytics**
Rita L. Sallam, Cindi Howson and Carlie J. Idoine (G00326012)

▶ **Eight Steps to Picking the Best Self-Service BI and Data Discovery Tool**
Cindi Howson (G00277712)

For information, please contact your Gartner representative.

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Summary and Next Steps

1. Thank you for participating!

2. Complete your feedback forms.

3. Keep in touch.

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