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Impact unleashed: practical examples of using data and analytics to maximize mission

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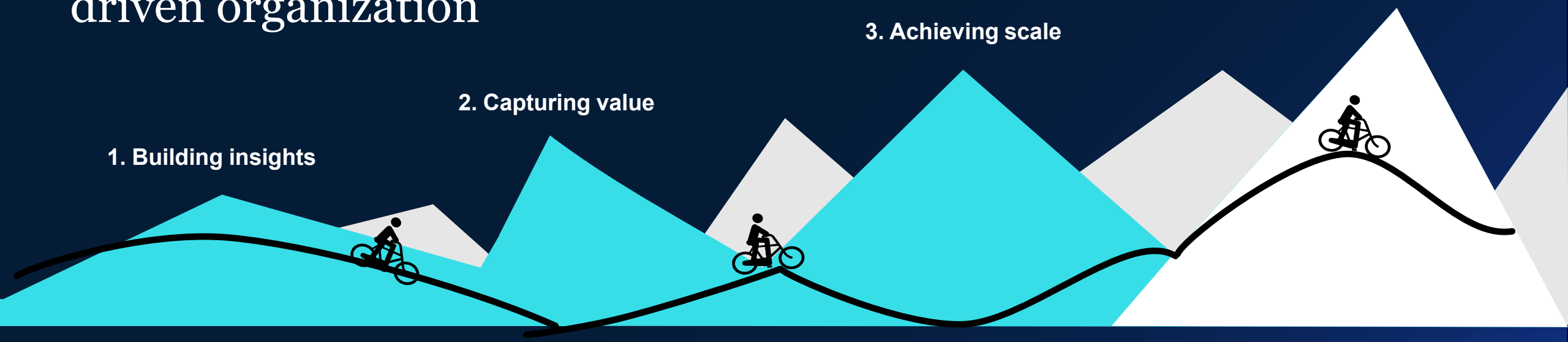
The journey towards the data-driven organization



Models used to generate clear insights for the business

Several pilots in analytics across the organization with limited clarity on business value

Analytics may be a defined function in IT, not yet led by business

Data not yet leveraged as an asset or fully integrated into the front line

Scope: 0-2% of operating budget affected by analytics

Senior leadership support is clear

Business "pulls" for more data / analytics, and business units are involved in shaping the use cases

Front line uses data

Data-driven decisions are sub-scale across enterprise

Scope: <5% of operating budget affected by analytics

Focus on analytics, with dedicated resources, investment, and organizational commitment

Data-driven decisions at scale, with a pipeline of use cases, spanning domains, functions, and business

Focus is on usage, adoption, and value

Scope: 15%-20% of operating budget affected by analytics

Data is a strategic asset and analytics is part of the cultural DNA

Organization is 'modern' and data-driven; functions are better integrated and siloes are dissolved

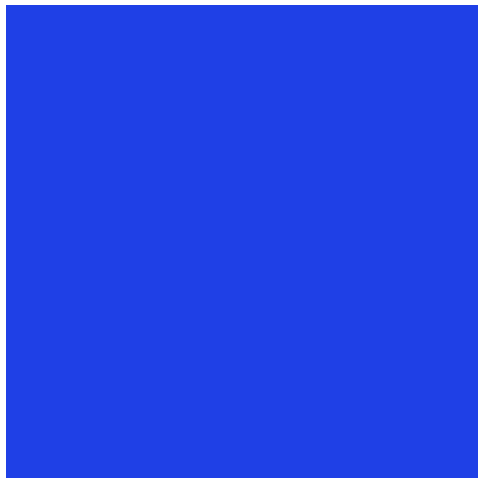
Insight-driven decision making and learning (both human and machine) is the norm

Scope: >50% of operating budget affected by analytics

A holistic enterprise data and analytics strategy should consider six elements

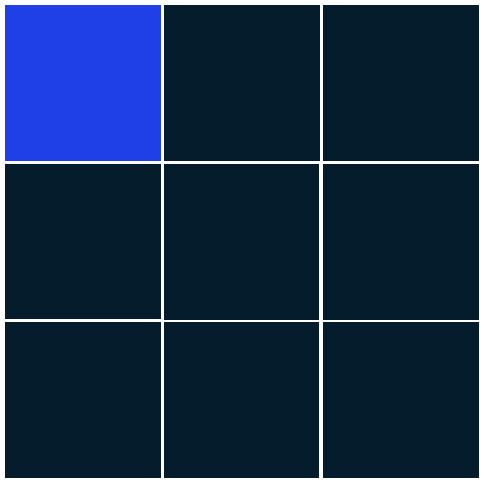
Strategy	**1. Value-Driven Roadmap**	Define a vision for how analytics could support the Agency's mission and deliver measurable value, and take a 'domain-based' approach
Capabilities	**2. Analytics Products**	Define specific opportunities to productize and deliver modular analytics components (e.g., models, algorithms)
	3. Data Products and Domains	Build high-quality, ready-to-use data products designed for reuse across common enterprise needs
	4. Platform & Services (e.g., data mesh, data hub)	Modernize the data and analytics technology stack to support analytics at scale
	5. People & Talent	Attract cross-functional and highly skilled resources to accelerate enterprise innovation
Deployment	**6. Operating Model**	Deliver work in a hub-and-spoke model that is customer-first and focused on adoption from Day 1 to sustain value capture over time

Take a “domain-based” approach to execution



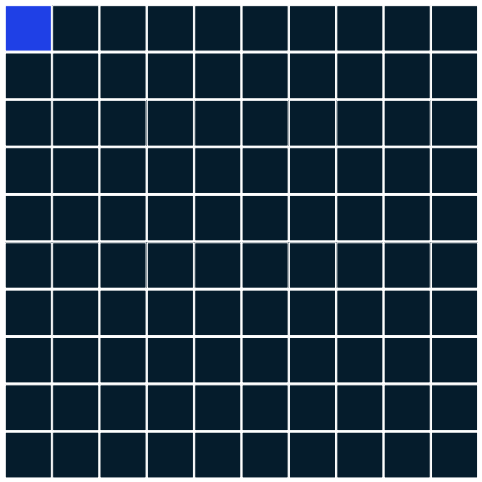
Entire enterprise –
Too big

Too many topics, data sets, and stakeholders to be able to get to meaningful impact quickly



Transforming a domain – Just right

Balance of end-to-end impact, leadership excitement, and achievable results in 6-12 month window



Use case –
Too small

Too niche to demonstrate material impact

Within a domain, define use cases as questions to be answered, not models to be built

Why we use a domain-based approach

Holistic domain transformation moves the needle quickly

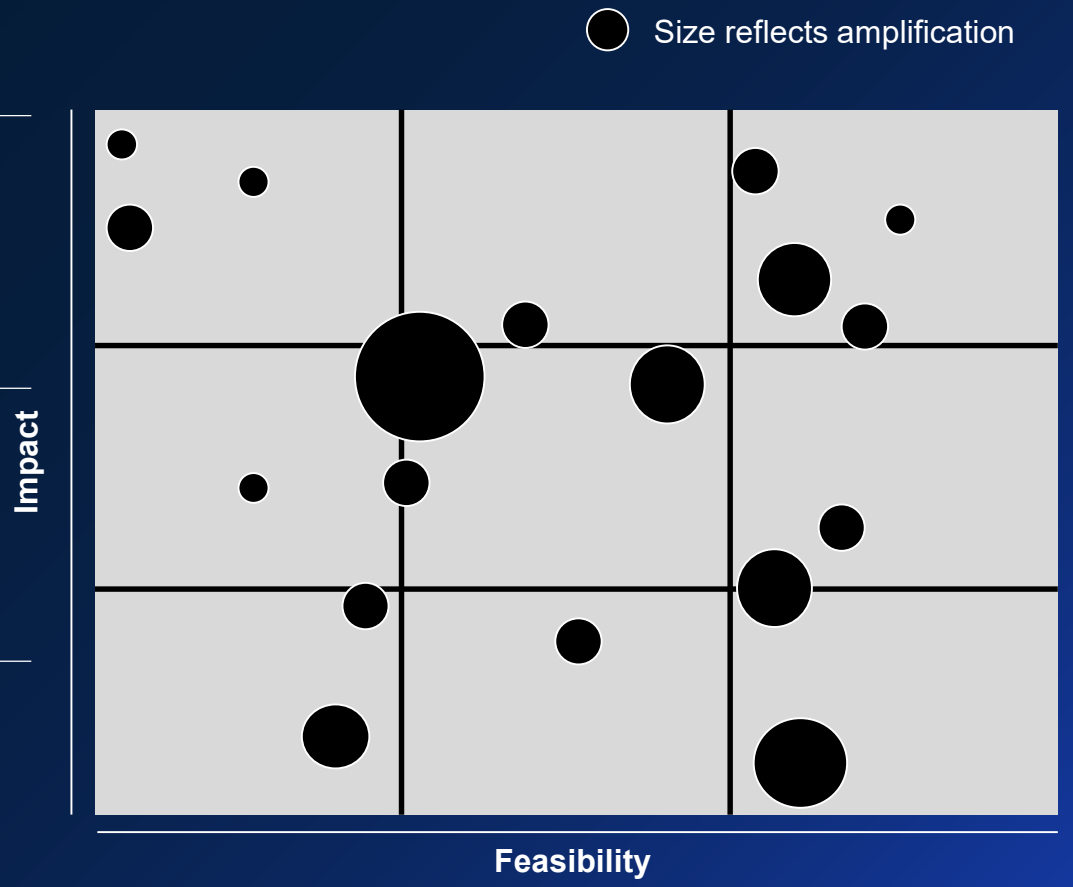
The impact is significant enough that there’ll be strong business sponsorship

Data and technical synergies (e.g., subsequent modeling become easier as data is already ready to use)

Change management synergies (overlapping stakeholders)

Prioritize those use cases based on impact and feasibility, but also amplification potential

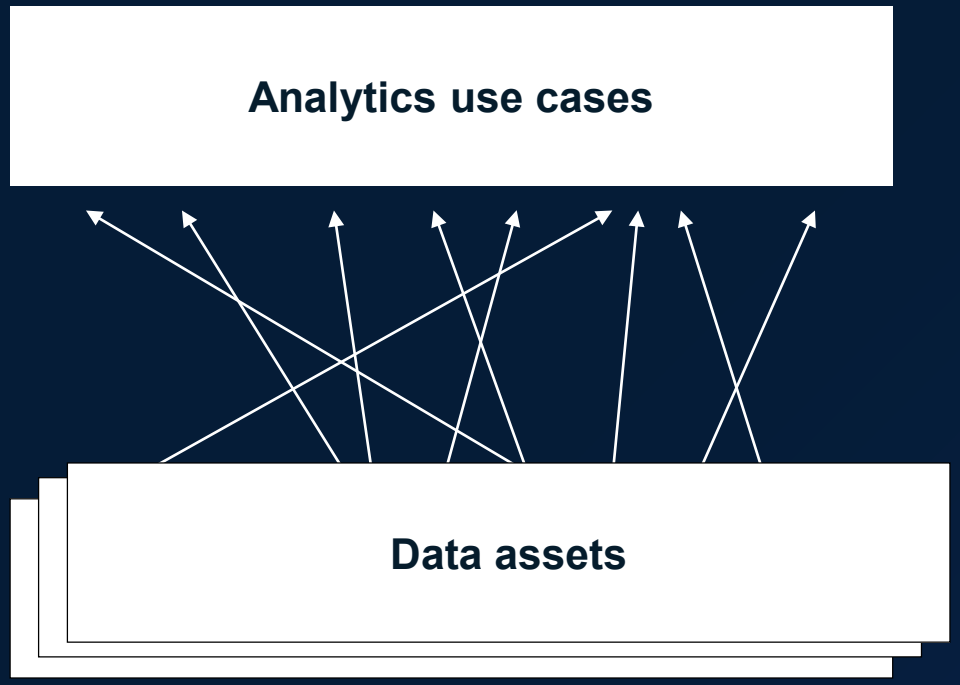
Prioritization criteria	Key question
Impact	What is the impact and timing against the aspiration?
Feasibility	What is the organizational ability to execute the use case (e.g., data, talent, technology)?
Amplification	Does the use case build the organization's ability to execute future use cases (e.g., reuse the data, build the talent)?



Use cases should have quantitative performance metrics and progress should be assess regularly

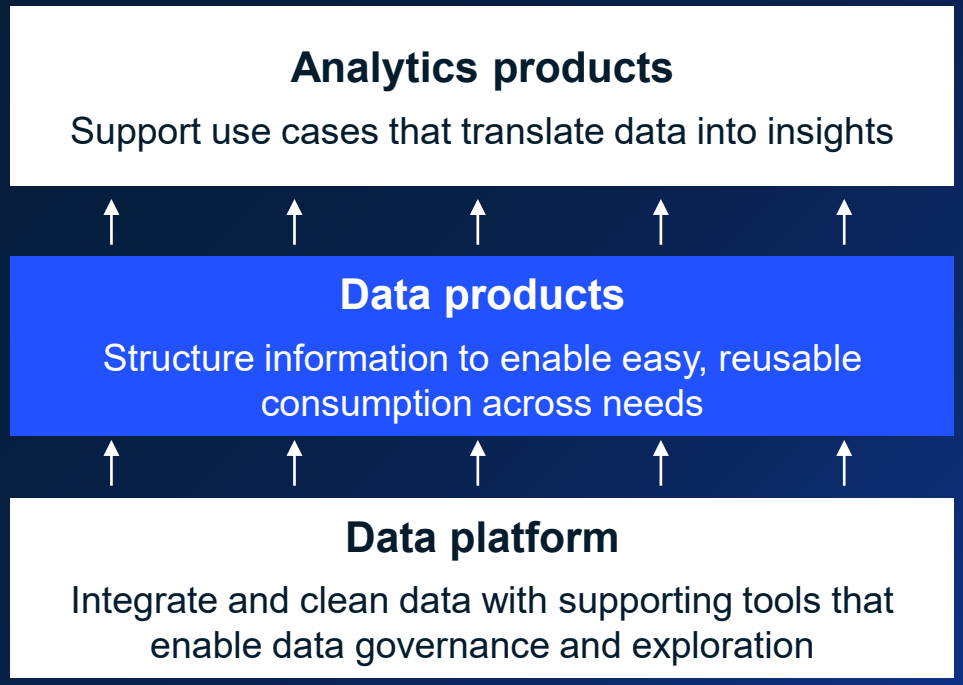
A successful data strategy shifts from isolated use cases to a product-based approach

Disparate data sourcing approach



Multiple data consumers tap directly into multiple data assets, creating use case-specific data assets, rework, and duplication. This is reactive and inefficient

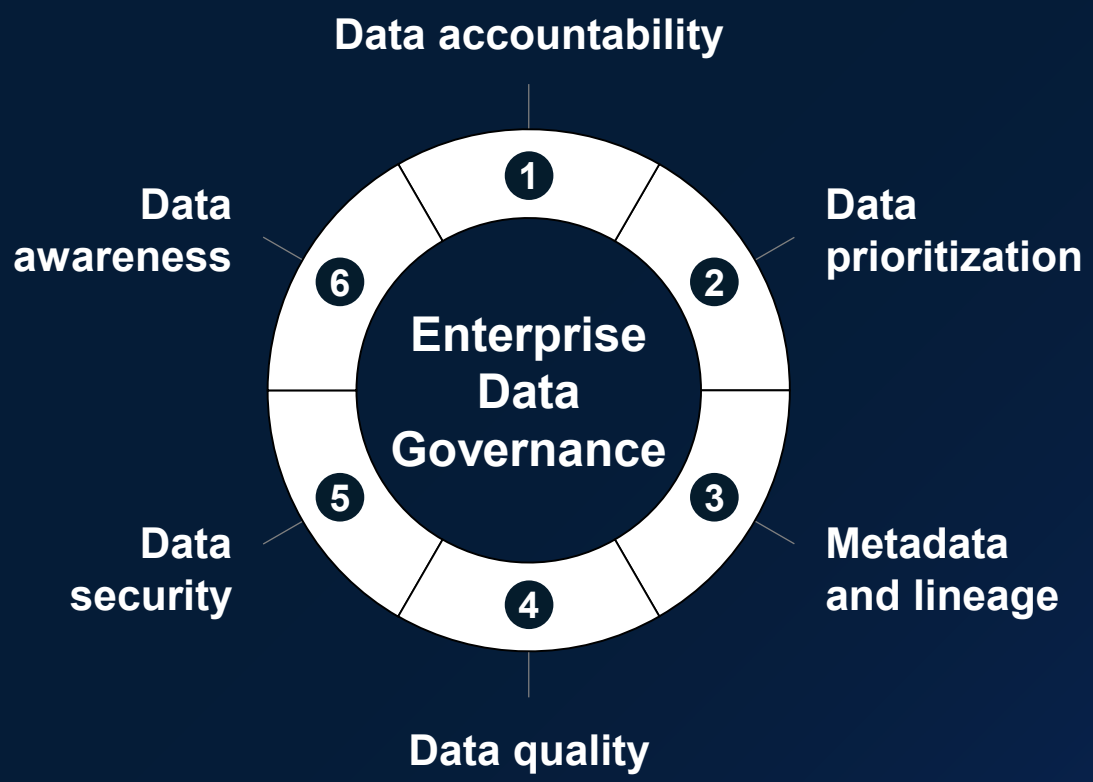
Benefits of data products approach



Data products are structured, easy to use, well-defined, automated sets of data that pull from a data platform, with reusable components to support analytics at scale

Clarify data governance, consisting of six major components

Preliminary



1. **Data Accountability** to define who is responsible and ensure ownership
2. **Data Prioritization** to focus effort on the data that matters the most
3. **Metadata and Data Lineage** to describe the data we have and where it comes from
4. **Data Quality** to ensure our data is clean and our data risks are managed proactively
5. **Data Security, Privacy & Ethics** to protect data assets and ensure sensitive information is safeguarded

   Data Retention to control the aging policies of data
6. **Data Awareness** to establish a data first culture through training and change management

Case example #1: State Department of Health

Data & analytics hub

Data engineers and data scientists

Develop ETL pipelines and build data and analytics products to fulfill use cases

Front-end engineers and visualization experts

Build interactive interfaces and visualizations to support customers and their use cases

Translators and relationship managers

Liaise with customers, translate needs and feedback, and define requirements

Customers

COVID-19

Childhood lead exposure

Long-term care

HIV

Program Owners: Articulate requests for analytics, guide what decisions need to be supported with timely data and analytics

Program Data Analysts: Continue to support ongoing program reporting / analytics needs. Support integrative insights and consistent dashboard development

Case Example #2: Advanced analytics to address housing challenges

The analytics enabled government leaders, planning commissions, housing agencies and policy makers to gain situational awareness on housing availability and make **rapid, informed decisions** based on the demographics needs on protecting and expanding affordable housing

Key questions answered

1 What is the current state of affordable housing?

County had a goal of creating 500k market-rate units and 140k affordable housing units by 2029

2 What needs to be protected?

Considered multiple parameters or variables which should be protected or considered such as the baseline of NOAH (naturally occurring affordable housing), accessibility, racial equity etc.

3 What are the scenarios to expand?

Simulated how housing production goal of 818,943 units can be achieved. Considering that 475,694 units should be affordable to households earning less than 120 percent of the area median income

Method

1 Data Aggregation and Homogenization

Brought data into a common framework to create a seamless, comprehensive understanding of regions' affordable housing landscape

2 Standardization of benchmarks analysis methods

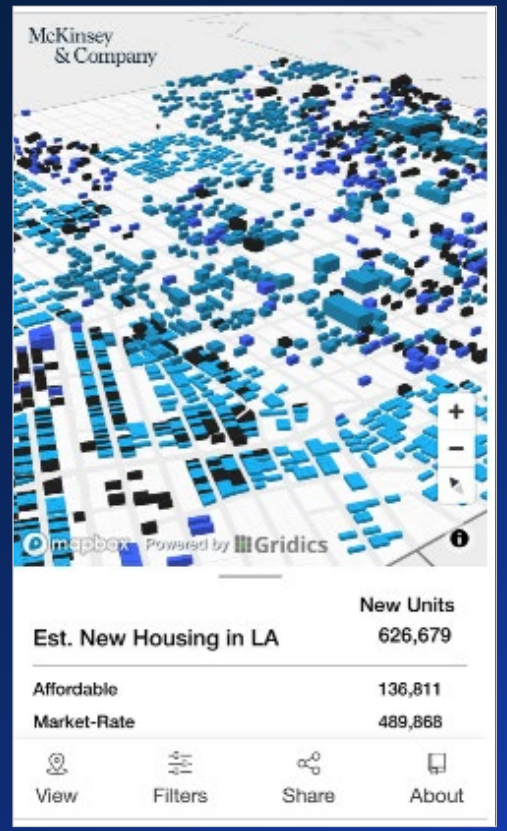
Created a standard benchmark for affordable housing typology and user profiles to effectively categorize affordable housing demand

3 "What if" simulations and visualizations

Created parcel-by-parcel simulation of possible affordable housing placement in Los Angeles in a digital twin model in Gridics; enabling city leaders to make data and model driven decisions

Analytics Products

1. **Assessment of existing affordable housing in the city**
2. **Multivariate analysis, scoring and composite index creation**
3. **Interactive housing capacity and affordability simulation**



In summary

- **Lead with domains:** Related use cases to narrow the focus to a few customer-based opportunities
- **Productize:** define and build data products and analytics products that support multiple use cases and reduce the burden of working with data
- **Be customer-first from day 1:** tie each use case to excited customers and partners, and iterate weekly with them (from conception through design, development, and adoption)
- **Do not wait for perfect data:** analytics efforts can get started with imperfect data[1], and increased data consumption leads to more prioritized and productive data quality improvement
- **Invest heavily in adoption:** success depends on customers using the products – focus early and consistently on the training and change management involved with successful adoption
- **Scale with the right model:** most transformations stall in “pilot purgatory” – to successfully scale, embed rituals that create transparency and drive culture change