Bridging the gap for Research Analytics:

Fostering Collaboration between Research Administration, Institutional Research, Enterprise IT, and Research Computing in Higher Education

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Objectives

1. Describe key foundations to consider for building a data/research analytics program
2. Provide a mental model/framework for cross-functional collaboration
3. Define strategies for moving cross-functional work forward

What is Research Analytics?

The science of analyzing data to inform decision-making in research administration.

Includes:

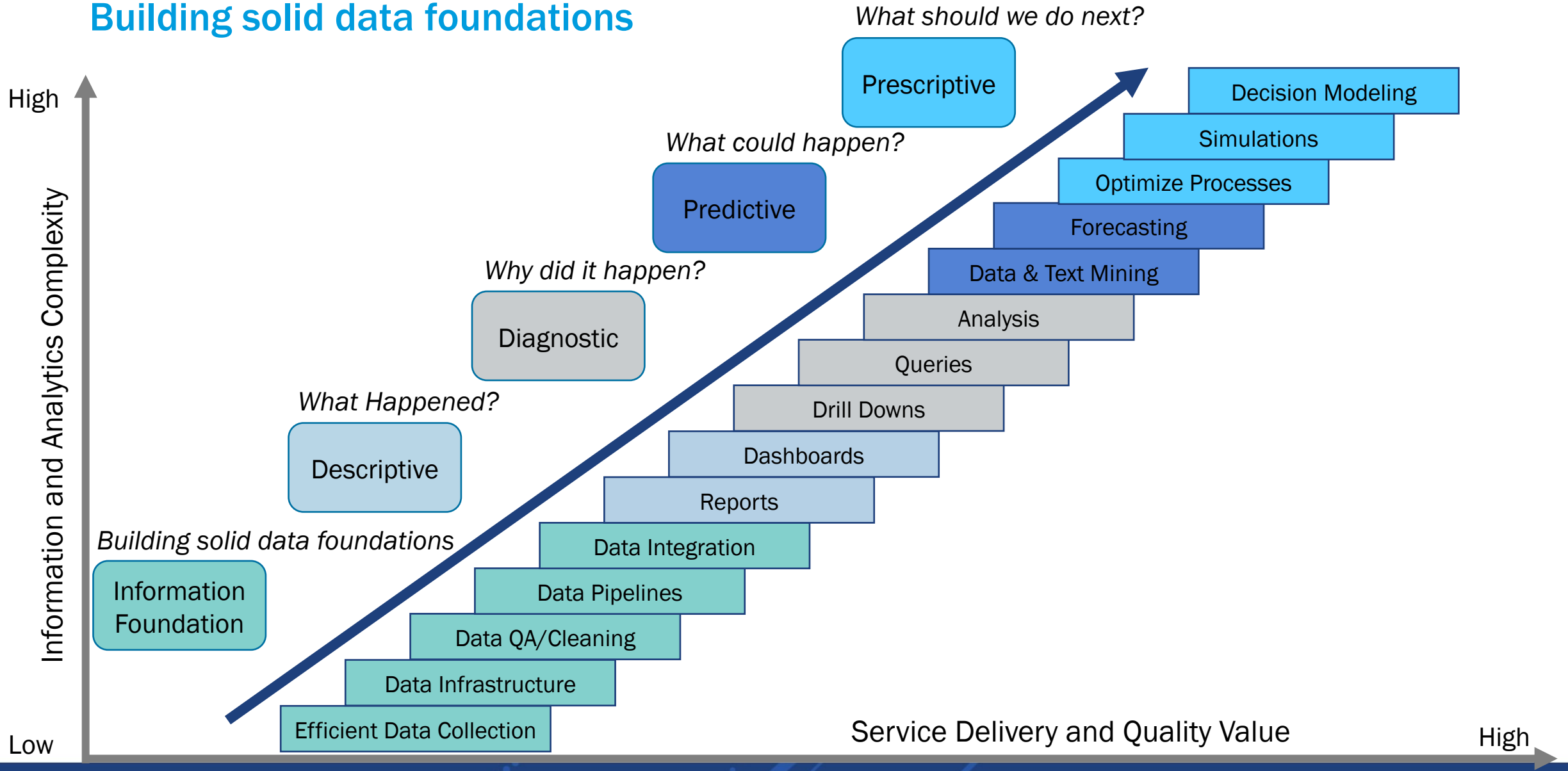
- Business Intelligence
- Administrative/Operational Data
- Assessment/Evaluation

- We engage in research analytics for strategic planning, decision-making, and enhance operations

Robershaw, Katherine and Wolf, Baron, Research Analytics: A Systematic Literature Review (February 18, 2023). Available at SSRN: https://ssrn.com/abstract=4363262 or http://dx.doi.org/10.2139/ssrn.4363262

Garbage in garbage out (GIGO)

Building solid data foundations



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McPheeters, Melissa, Tenenbaum, Jessie, Sales, Anne, & Clark David. (2021, November 29). Connecting Implementation Science and Data Modernization. https://online.hbs.edu/blog/post/prescriptive-analytics
https://www.inclusion.org/using-data-to-make-us-better/

Data as an asset

Data needs to be seen as more than a by-product of business processes.

To truly understand the value of data as an asset, it’s important to identify the key data assets within an organization.

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What is data silos?

Breaking down the silos – the path to value

Siloed resources can lead to redundancy, inefficiency, and increased costs.

Promoting cross-functional collaboration is essential in maximizing the value of data and resources

Data Democratization

Data Democratization is a data management approach that prioritizes access to data across an entire organization rather than keeping it restricted to a select few departments or teams.

This approach seeks to break down data silos, promote transparency, and empower employees with data-driven insights to make better decisions.

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The Balancing Act: Data Democratization vs Trust

*"The benefit of democratization is that **everyone has access**. The risk of data democratization? **Everyone has access.**"*

Data democratization is a good strategy only if supported by good governance and sharing policies.

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Can we trust the data?

- Ensuring quality of democratized data to avoid “garbage in, garbage out” situation by curating the data
- The need for training employees on data literacy and data management best practices

Data Governance

A shared vision, democratized data, support for people, and standardized processes are all part of a data governance plan.

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Building a Research Analytics Program – Taking Action

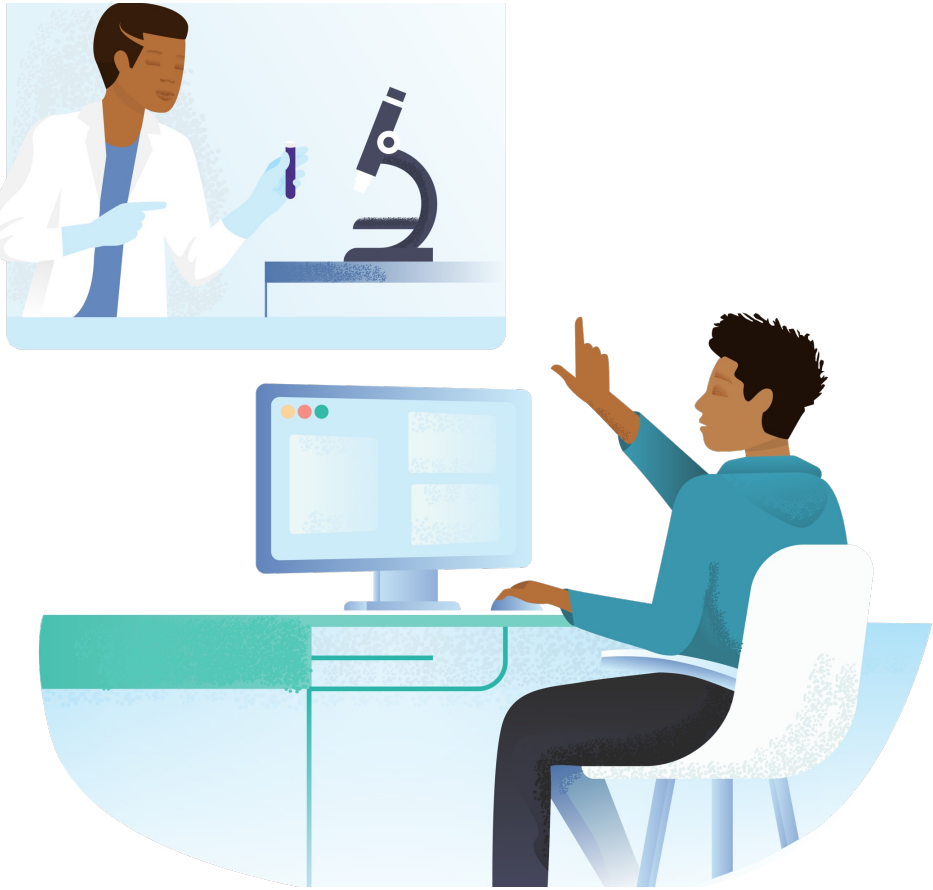
- Discussed Key Concepts & Values
  - Solid Data Foundations
  - Data Governance
  - Data as an asset
  - Data Democratization
  - Cross-functional collaboration
  - Creating value
  - Trust
  - Transparency
  - Quality

Building a Research Analytics Program: Where do I get started? Grassroots Efforts and Community & Coalition Building

- Coming together to advocate for something
- Broad organizational perspective – connecting dots
- Identifying common pain points, gaps, or needs across groups
- Identify who else is doing similar work
- Cross-functional
- Identify key partners
- Power in numbers

Typical Groups to partner with for Research Analytics

- Vice President for Research
  - Key business questions, leadership authority in research
- Research Administration
  - Business Context, Owners of key data assets, key biz questions
- Research Information Systems
  - Where the data lives, data stewards
- Institutional Research/Assessment
  - Knowledge of university data sources, how to request access
  - Data governance



Typical Groups to Partner with cont.

- Enterprise IT
  - Technology tools, networking, hardware, software,
  - Data classification & security, data storage
  - Cloud, applications, integrations
- Local IT
  - Help you set up your environment
- Research Computing / Research IT
  - Large-scale data strategies, optimizing code & workloads
- University Libraries
  - Services for students, faculty, & staff
  - Workshops on data management, data viz, open science
- Finance & Business
  - Financial Data, post-award processes

Others to collaborate with – Research Ecosystem

- ADRs, RD's, Department heads
- Researchers – open to collaborate

Mental Model

A mental model is a cognitive representation or framework that individuals use to understand, interpret, and navigate the world around them.

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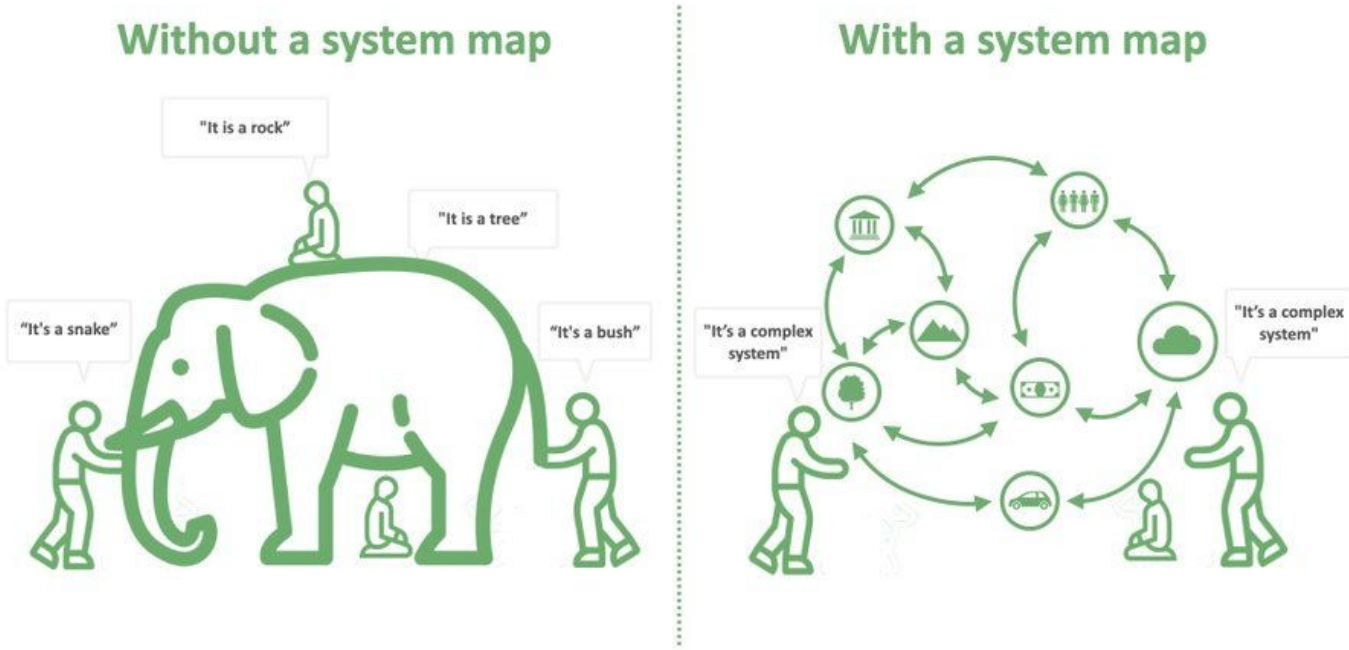
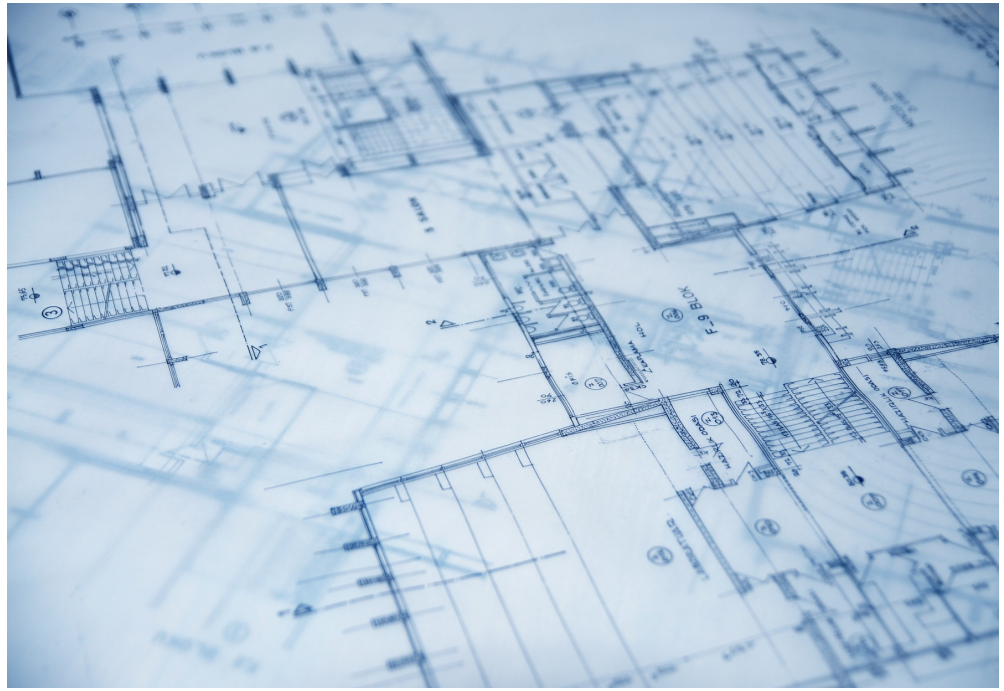
How to bridge the gap – Building a common mental model and framework for collaboration

- We all “grow up” in different professional homes
- Different mental models for what work looks like & how it gets done
- To bridge the gap, we need to start speaking the same language – work from a shared framework
- Empathy – listening

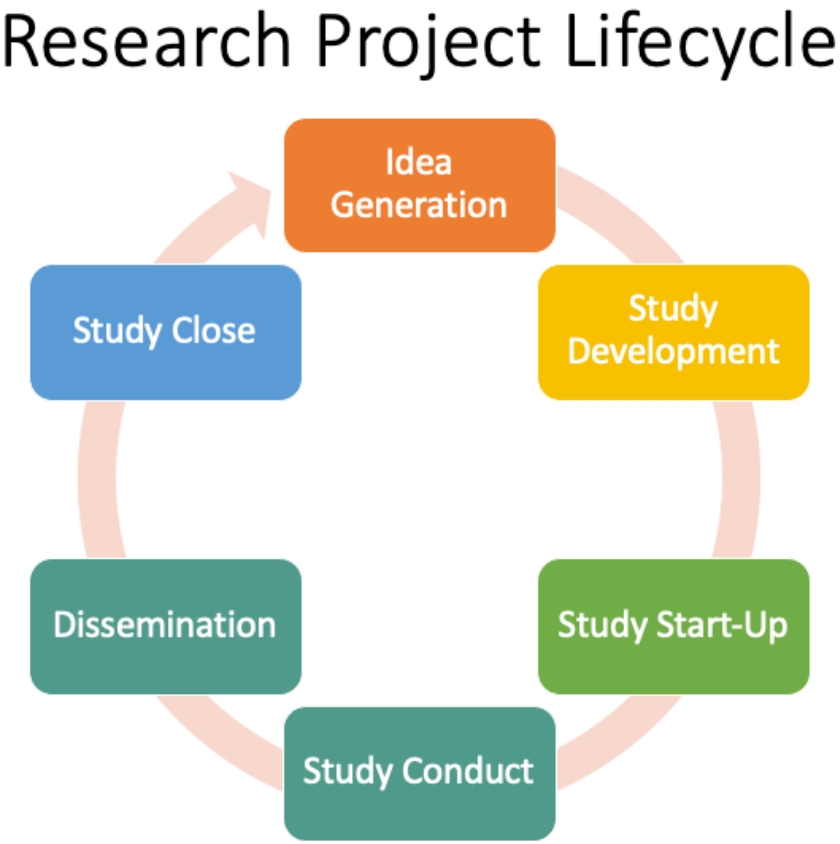


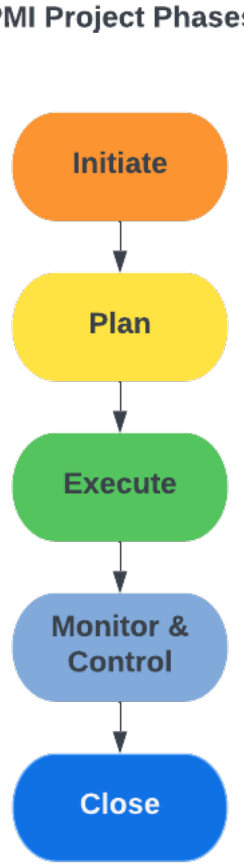
Building a shared framework – typical ingredients

- Overarching goals & objectives
- Shared Values and Principles
- Defined Roles and Responsibilities
- Communication Channels
- Decision-making processes
- Trust and Relationships
- Performance Metrics / Evaluation Criteria



What framework to use for collaboration?





PMI Phases mapped to research study, grants, and data workflows

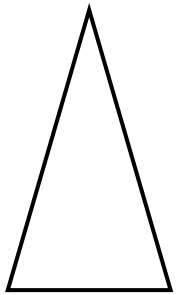
Audience	Project Manager	PI/StudyTeam	Grants & Contracts Administrators	IT/data
	PM Phase	**Study Phase**	**Grants Phase**	**Data Phase**
	Initiate	Idea Generation	Identify Funding	Identify data sources
	Plan	Study Development	Proposal development	Plan data management
	Execute	Study start-up	Study Account Setup	Data Acquisition/Collection
	Monitor & Control	Study conduct & Dissemination	Manage the award	Data processing & analysis
	Close	Study Close	Close the award	Dissemination, archive, preservation, destruction

Why is this important?

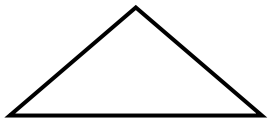
Because universities are complex networked organizations

1. **We rely on others to move work forward** (central offices, departments, units, subject matter experts, contractors)
2. **Teams are interdisciplinary/cross-functional.**
3. **There are many layers of relationships and communications**
4. **A single unit cannot do all on their own**
5. **We work with partners to move work forward and achieve goals**

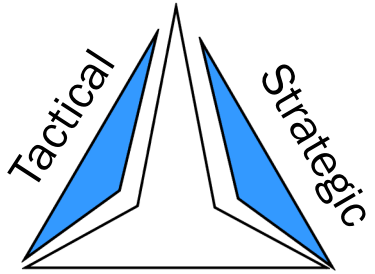
We are here



Hierarchical (top-down)

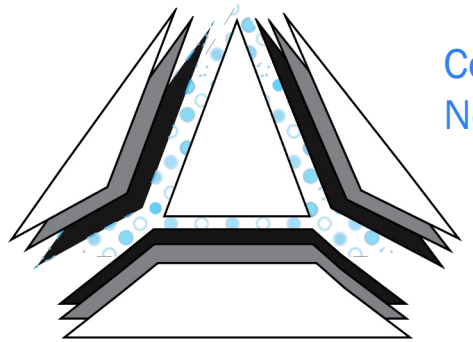


Flat org Structure



Core Competencies

Matrixed



Complex Networked

Foundations for Success – Important Elements

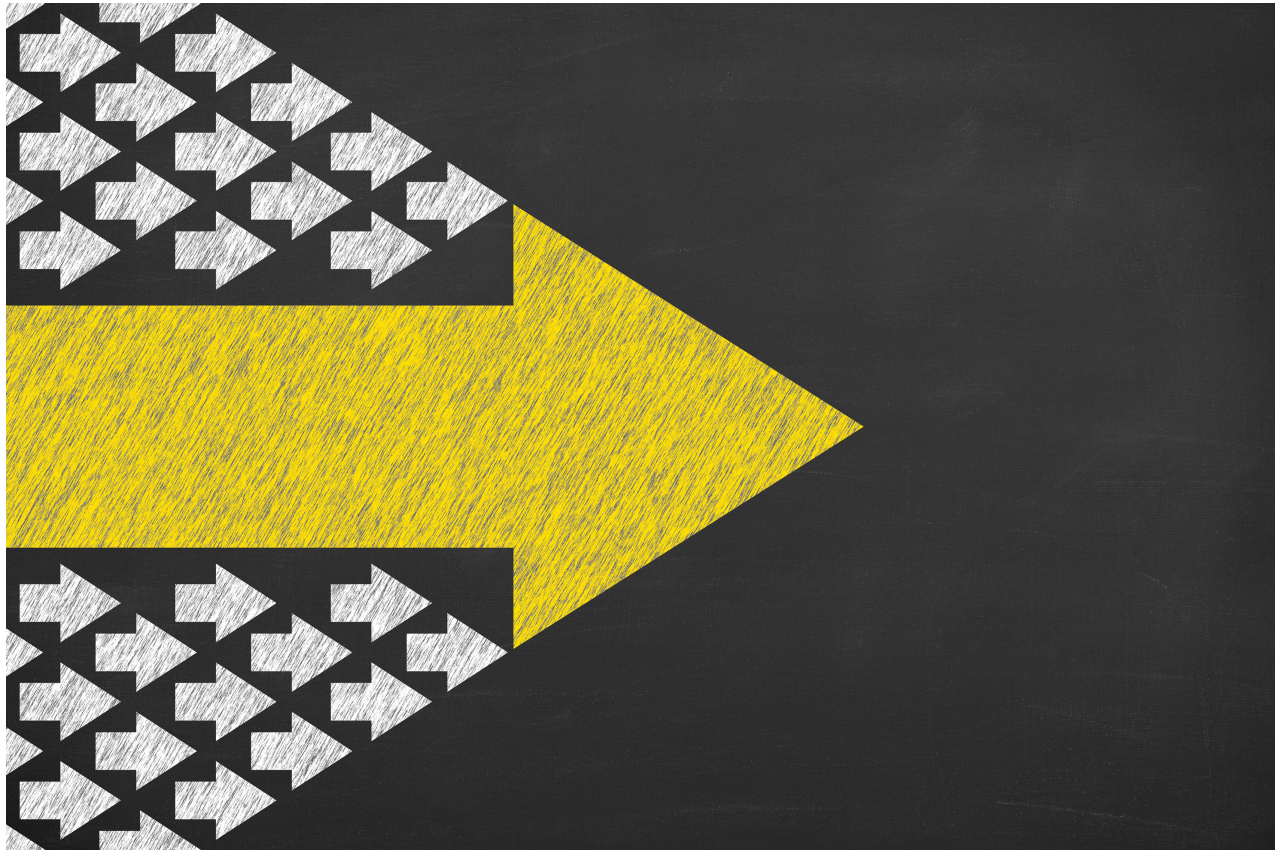
- Buy-in - Others agree there is a need
- Your manager is supportive
- You have time & energy to invest
- You have committed executive sponsorship
  - Financial & Non-Financial
- Ownership is defined
- You have identified a business need/gap, and your solution addresses this
- Your initiative is aligned with strategic goals and priorities
- You have the “right people” involved

Building a Research Analytics - Team Members

- Typical roles on a data team
  - Data Architect, Data Engineer, Data Analyst, Data Scientist, Business Analyst, Project Manager, Team Lead
- Will vary based on size
  - Roles wearing multiple hats for smaller teams
  - The larger the team, the more focused a role becomes in a specific area

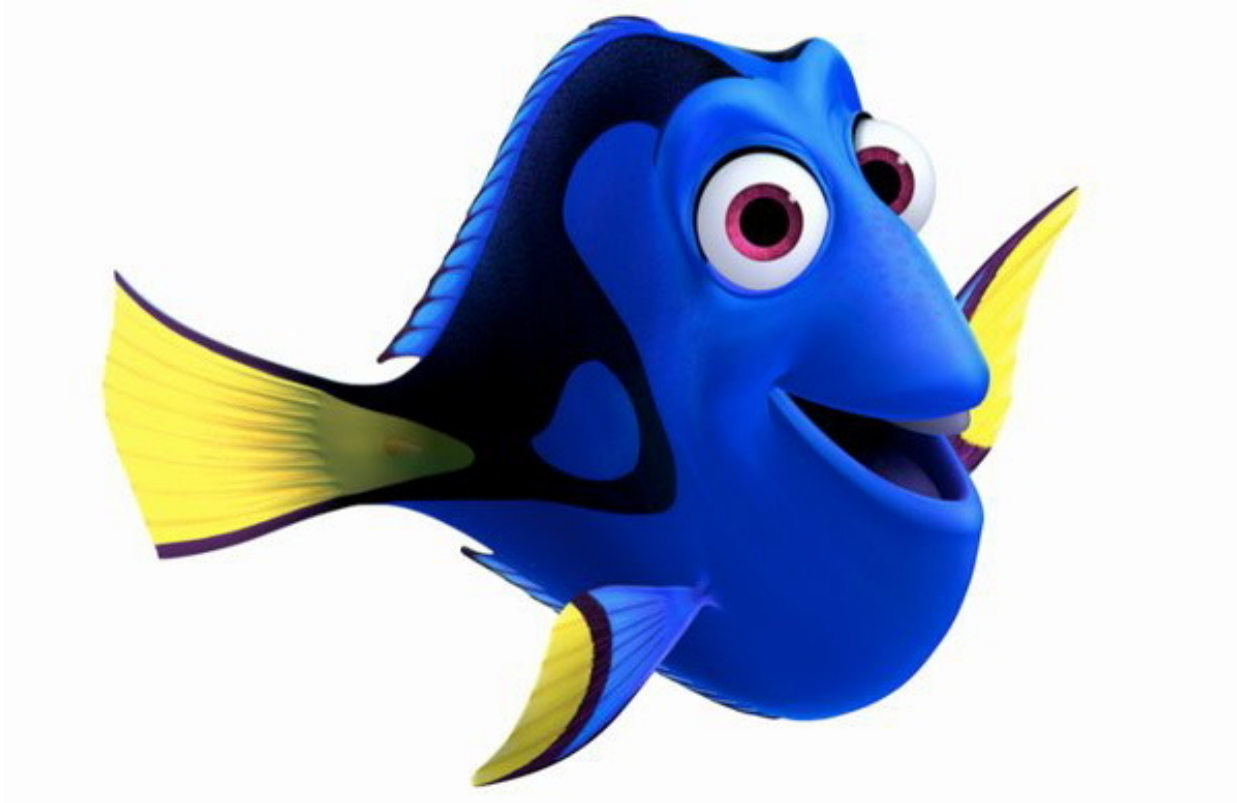
Strategies to move your initiative Forward and work cross-functionally

- Shared Frameworks
- Shuttle diplomacy
  - Speak to each group before getting them in the same room
- Build Community & Coalitions
- Start small - Proof of concepts / Pilots



Things to keep in mind

- This is a marathon, not a sprint
- You can't do it alone – leverage your partners
- Set your own milestones – progress is not linear and can be painfully slow
- Changing culture is a long-game



"Just keep swimming"

Thank you!

Questions?

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Other Data Communities

- Campus Research Computing Consortium (CaRCC)
- Research Data Access and Preservation Association (RDAP)
- Research Data Alliance
- US Research Software Engineer Association