SciDataCon - Denver, CO - September 13, 2016

Agile Data Curation as a Diversity of Practices Grounded in Shared Values and Principles - Session Introduction

- **Agile Data Curation as a Diversity of Practices Grounded in Shared Values and Principles** - Karl Benedict, Joshua Young, W. Christopher Lenhardt
- **Agile based data curation to handle manuscript related data – ORNL DAAC case study** - Suresh Kumar Santhana Vannan, Tammy Beaty, Daine Wright, Yaxing Wei, Alison Boyer
- **The Data Management Resource Center: An Agile Data Curation approach to expanding data availability and paving the way for others.** - Joshua Young, Larissa Gordon, Doug Dirks, Jeff Weber
- **Dynamic creation of Data Management Policy Rules** - Heike Görzig, Benjamin Gernhardt, Felix Engel, Matthias L. Hemmje
- **Agile Data Management in Practice at a State Geological Survey** - Denise J Hills

Karl Benedict, Joshua Young, W. Christopher Lenhardt

Agile Data Curation as a Diversity of Practices Grounded in Shared Values and Principles

Overview

- What's the problem?
- Parallels with Software Development
- Conceptual Mapping
  - Values
  - Principles
  - Technical Debt
- Next Steps
- Contact Information

What's the Problem?

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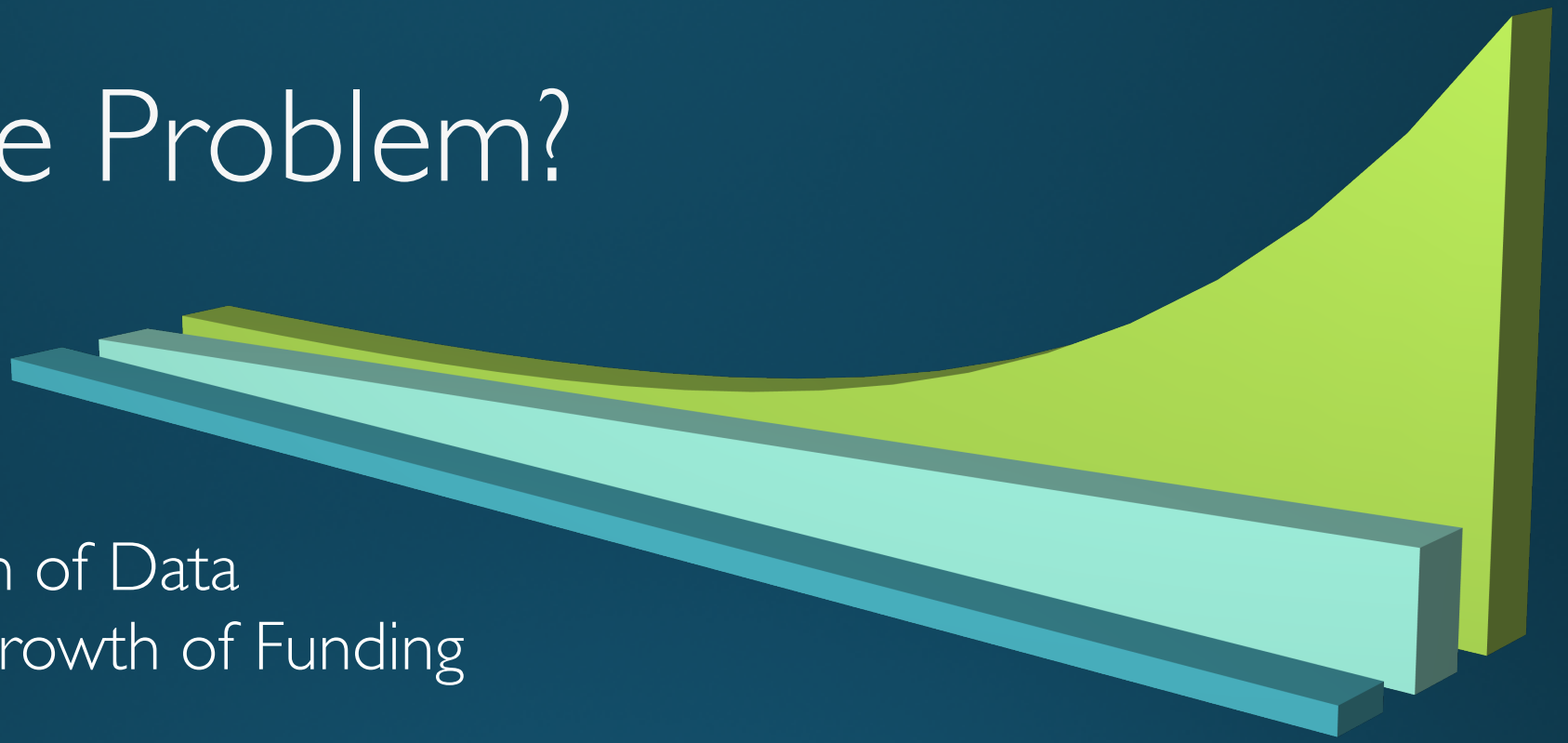

Exponential Growth of Data
Non-exponential Growth of Funding

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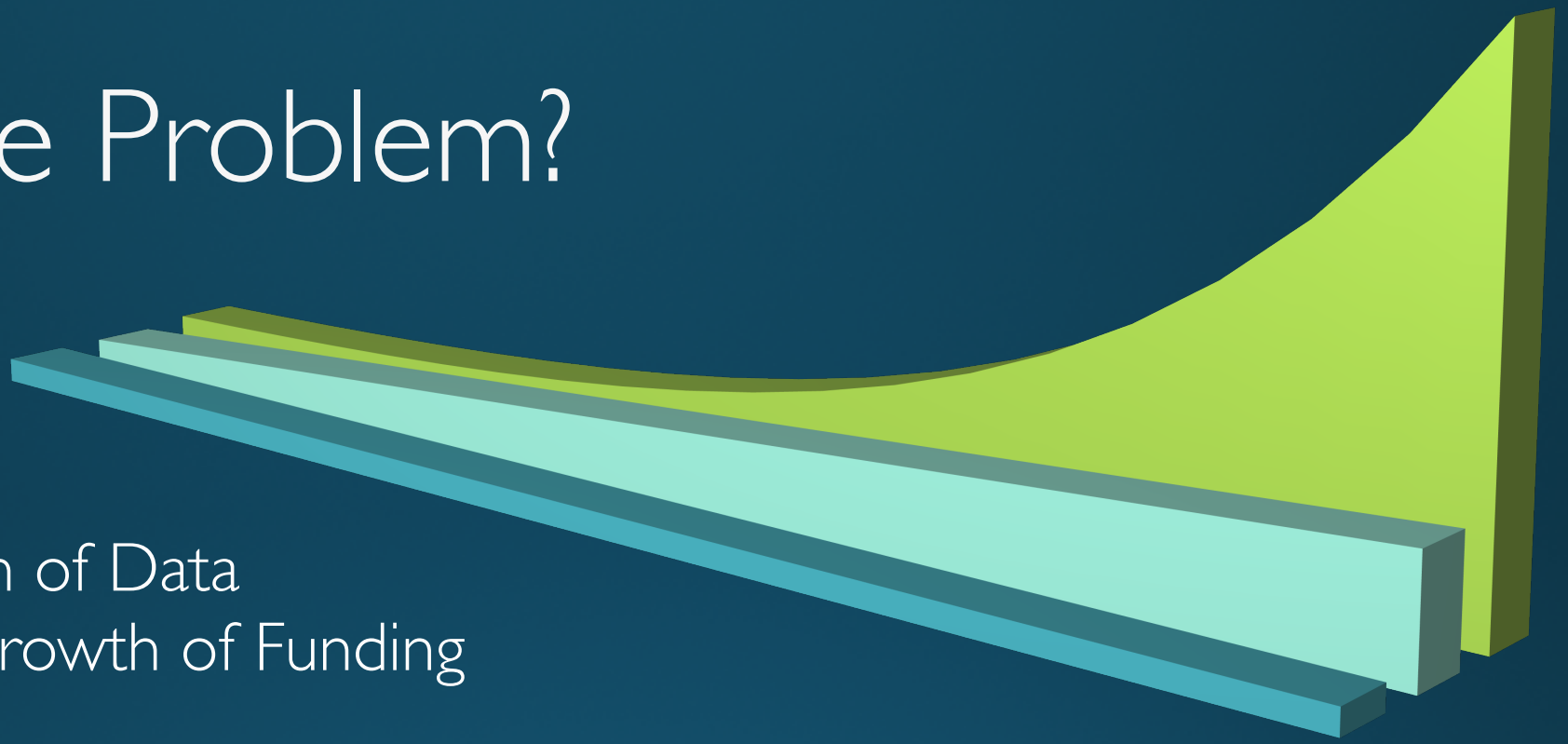

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Increased Demand For:

- Documentation
- Sharing
- Preservation

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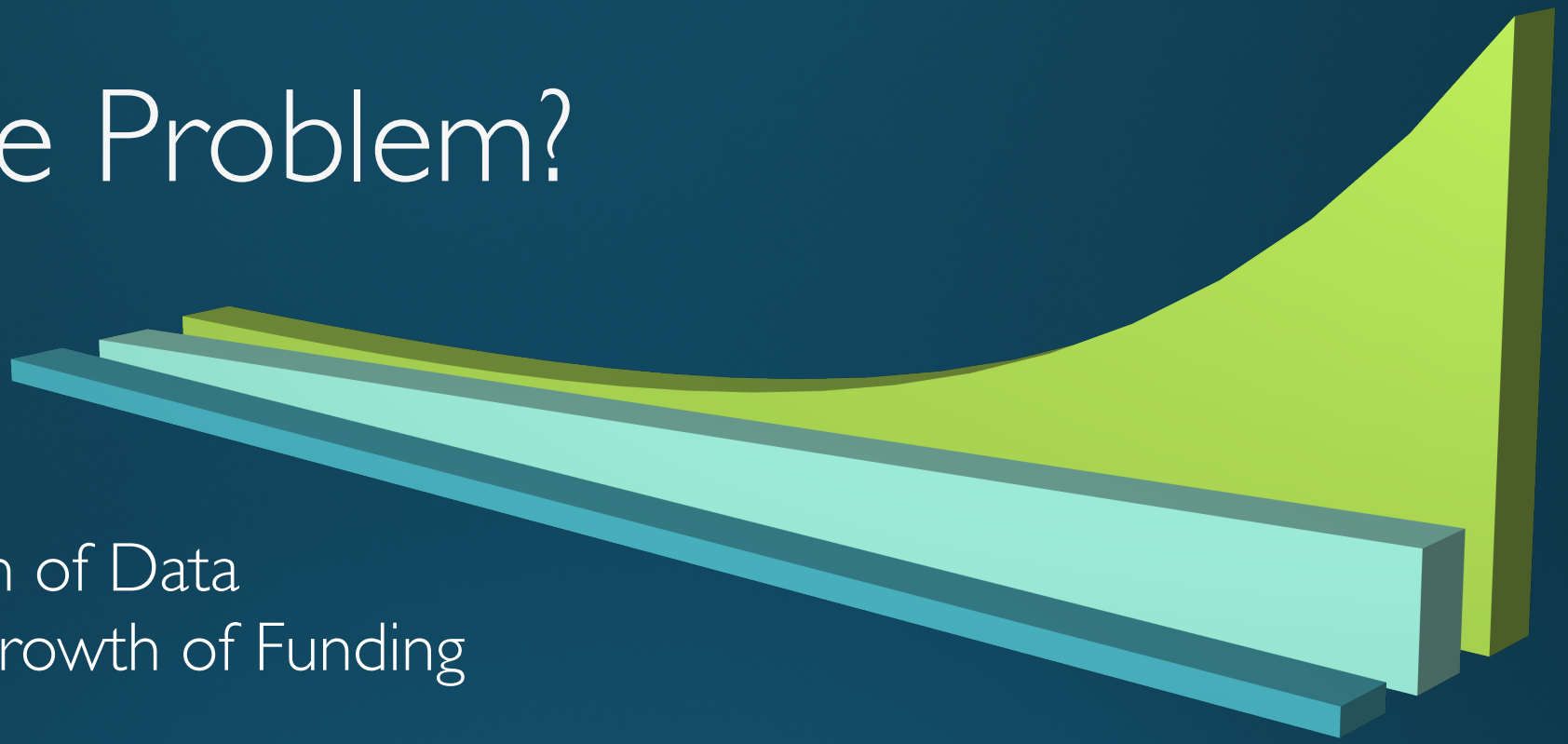

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- Structure
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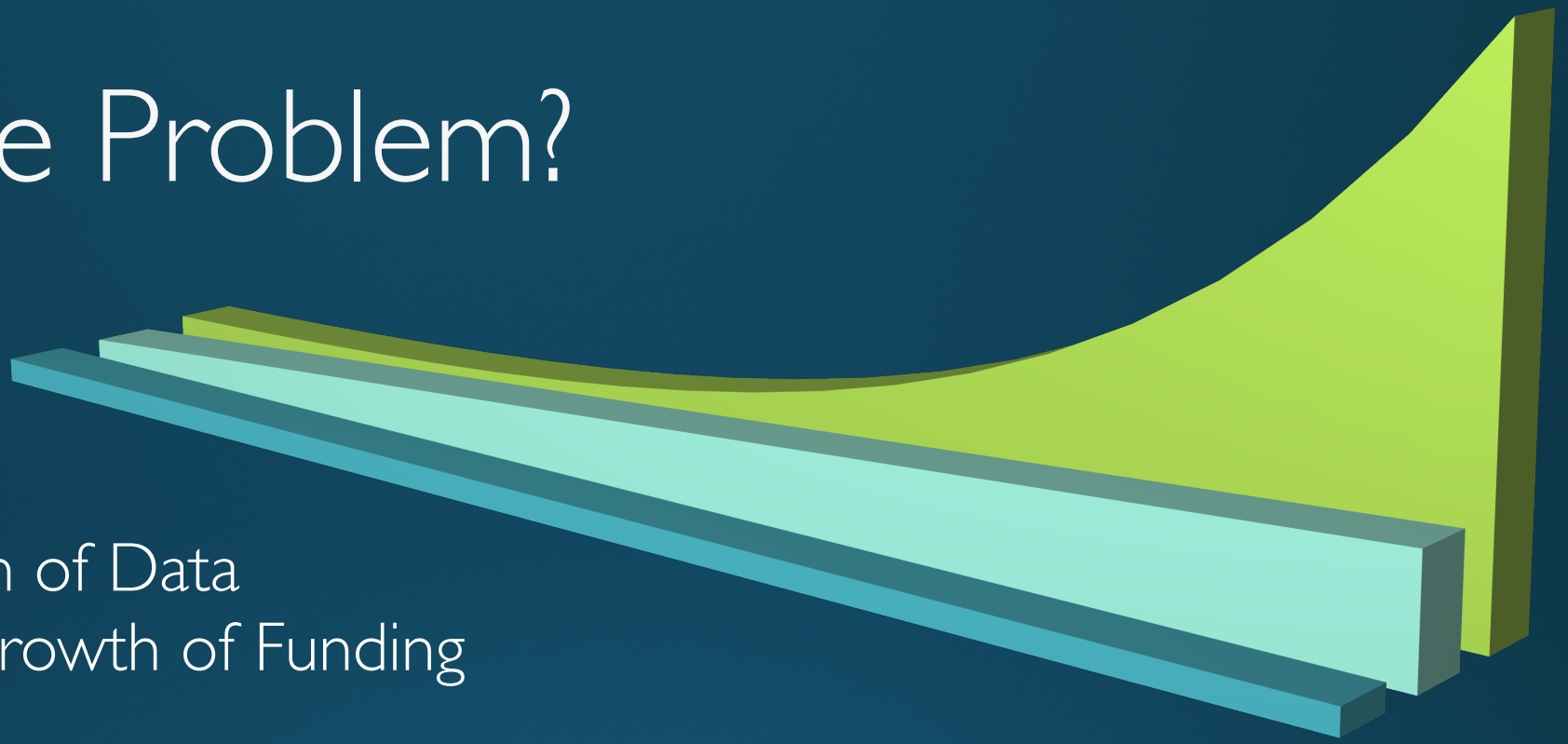

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Curation
- Selection
- Preservation
- Maintenance
- Collection
- Archiving

Parallels with Software Development

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Long development & release cycles
Tightly coordinated development teams
Detailed written specifications
Dedicated documentation development
Targeted at clearly defined target users
High code reuse

Software
Development

Continuous Development
Small-scale shared development
Continuous change in functional objective
Irregular/unstructured documentation
Developers are the users
Minimally structured and low reuse

Long development & release cycles
Division of labor around data lifecycle
Detailed written specifications
Dedicated documentation development
Targeted at clearly defined target users
High degree of discovery & reuse

Data
Curation

Focus on in-project continuous management
Individual-scale data management structure
Objective aligned with immediate analysis needs
Unstructured documentation
Managers are users
Local (research team) reuse

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Conceptual Mapping

Agile Software Values

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Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

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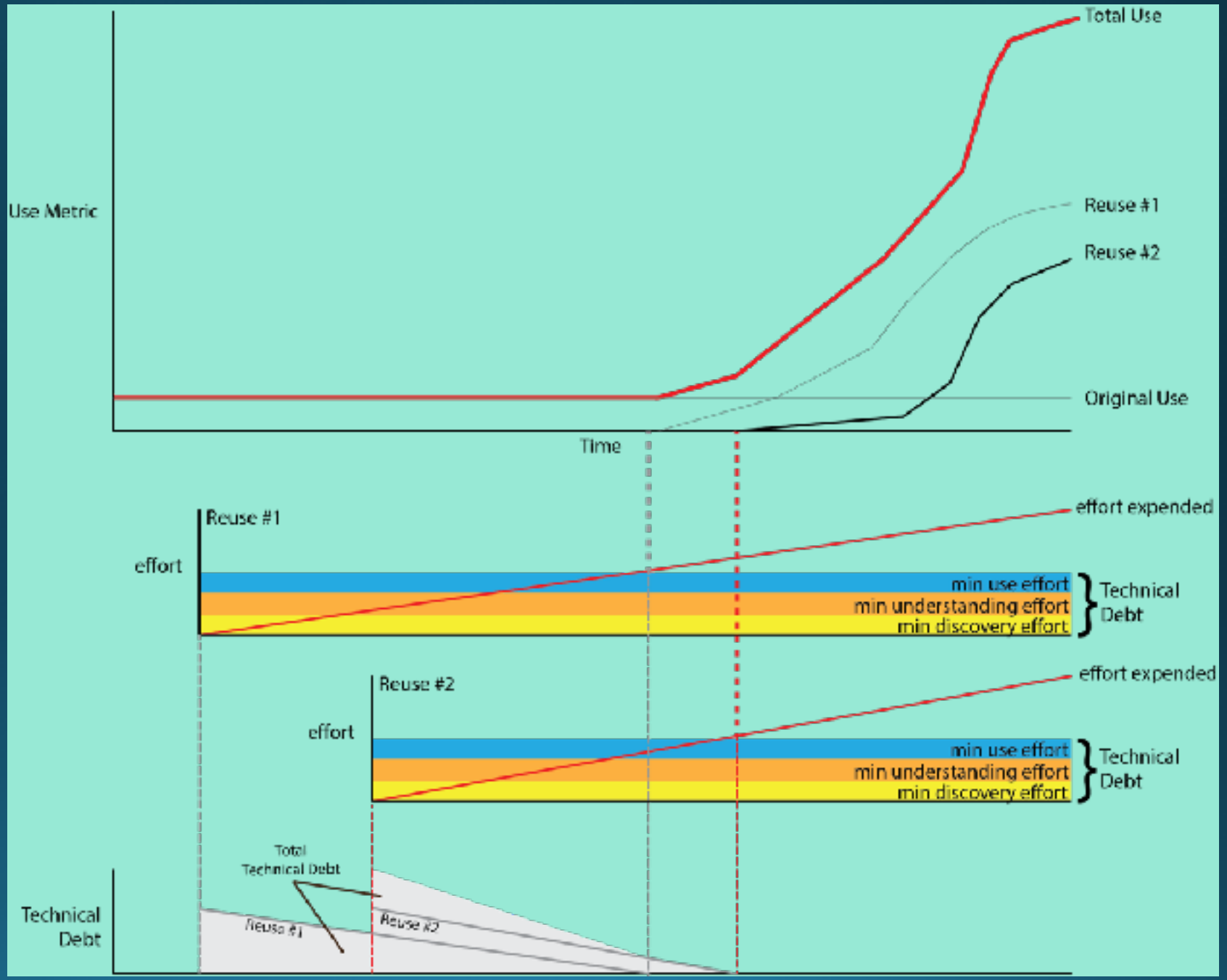
incremental delivery of value to users

Technical Debt



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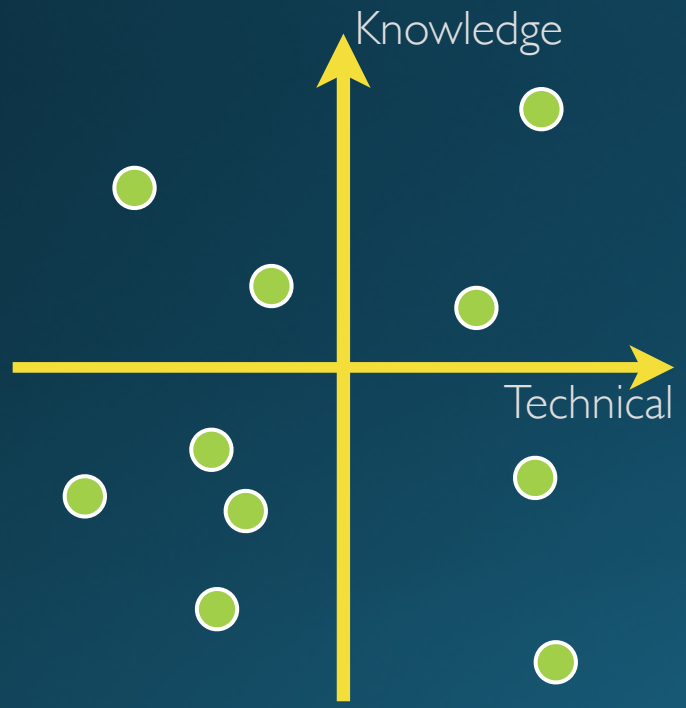

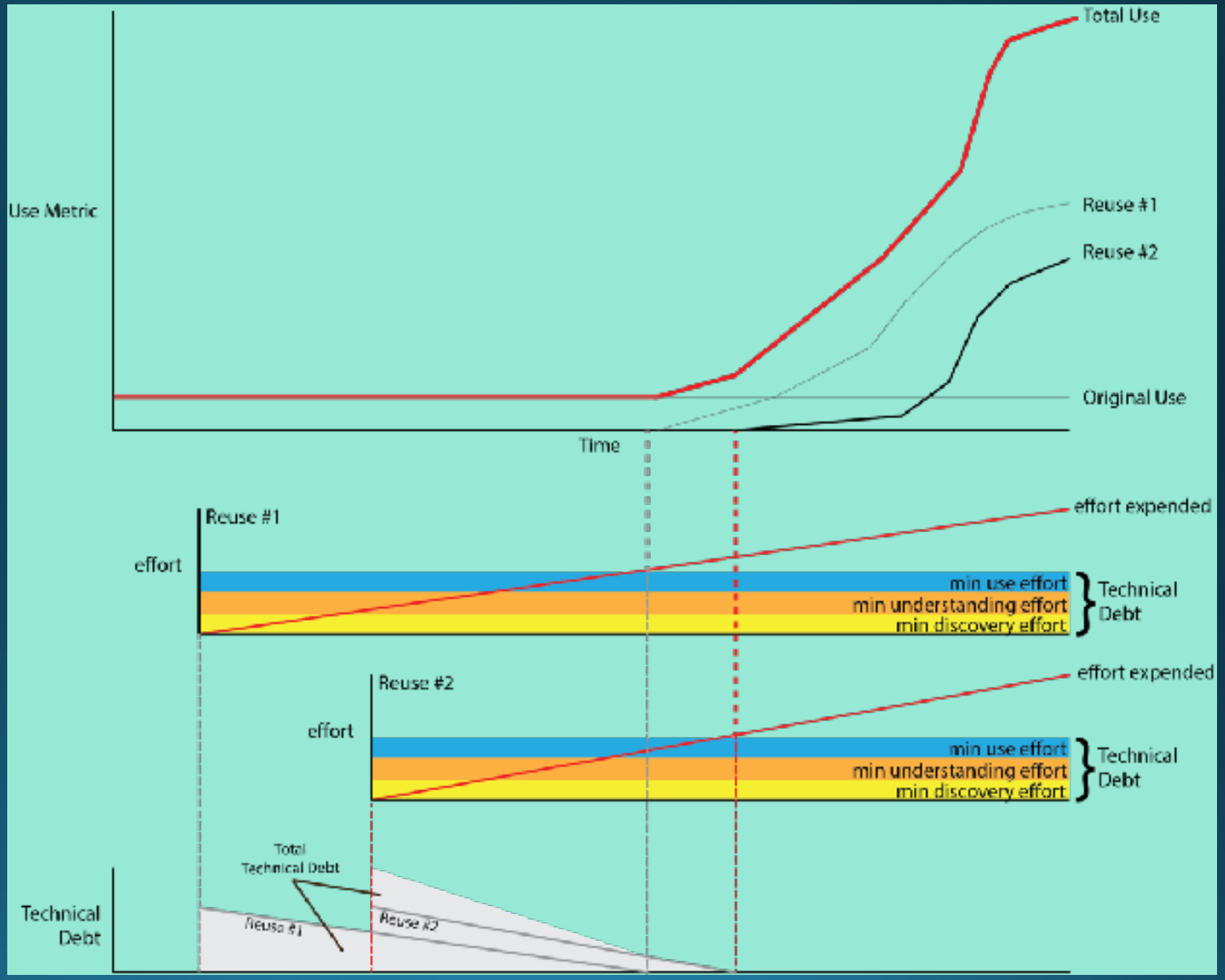

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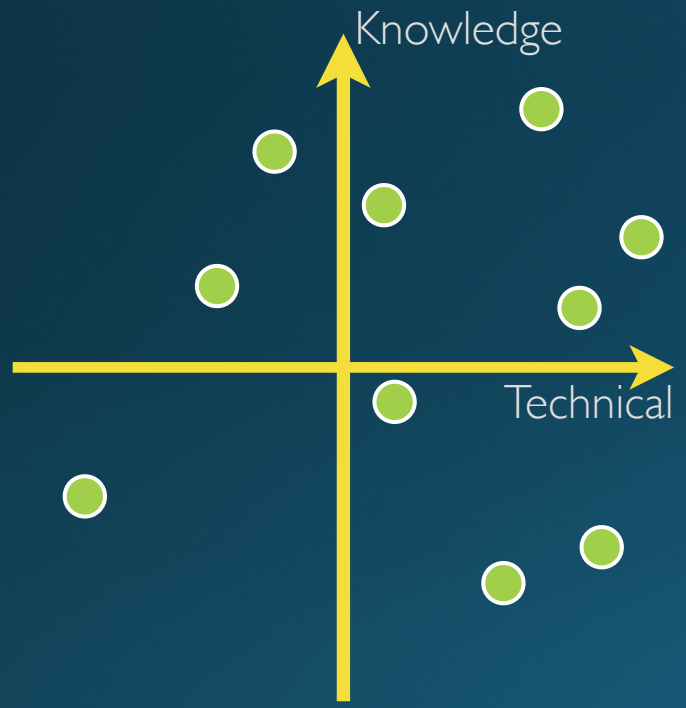

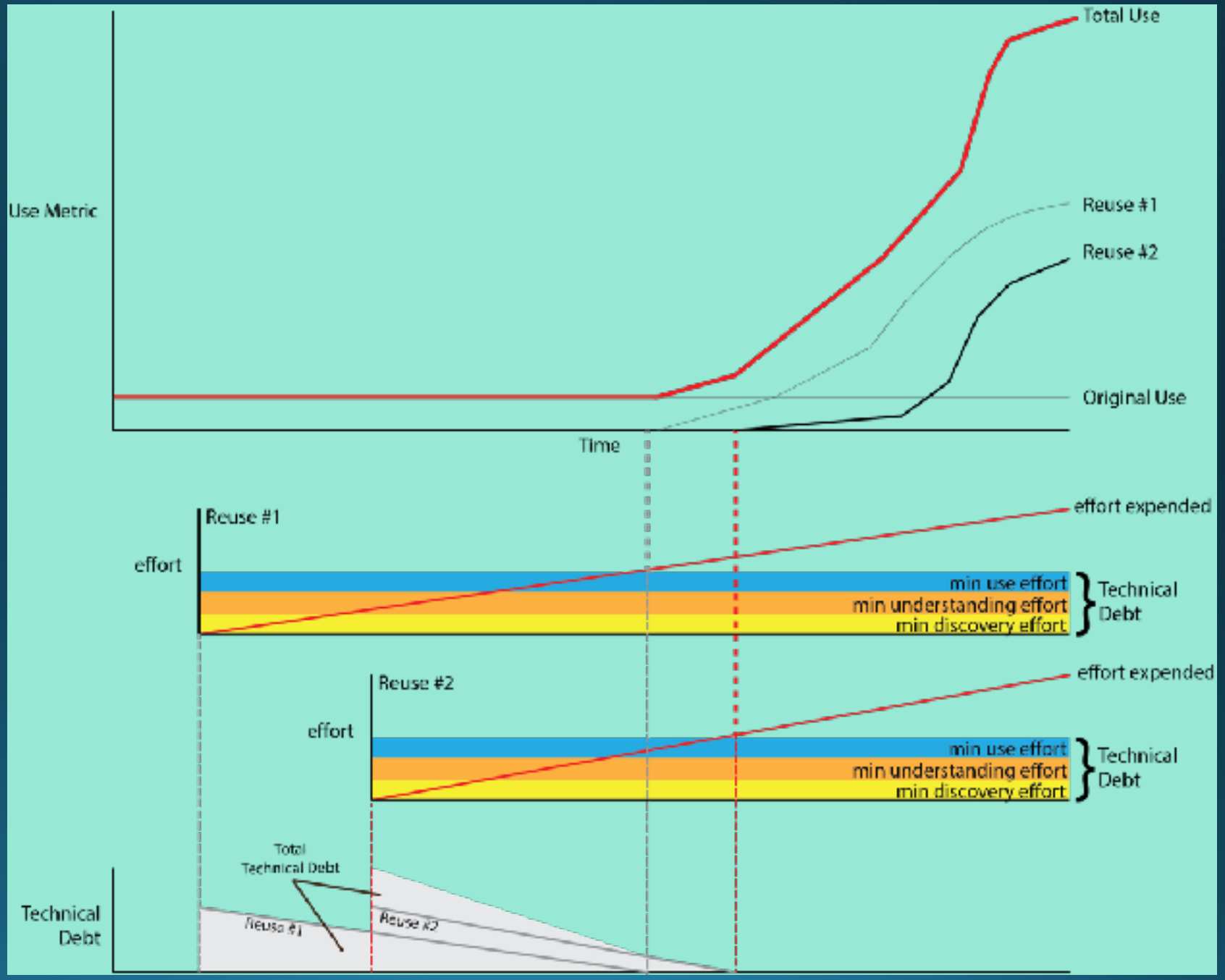

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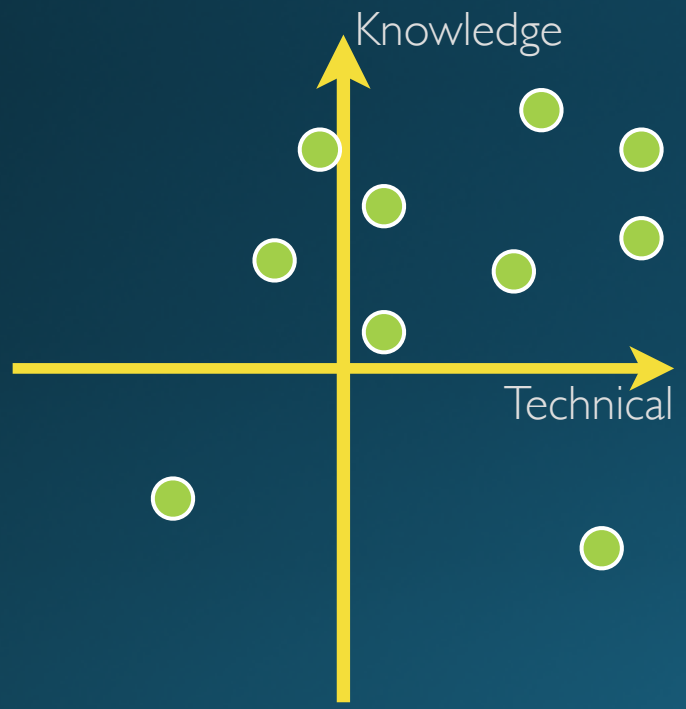

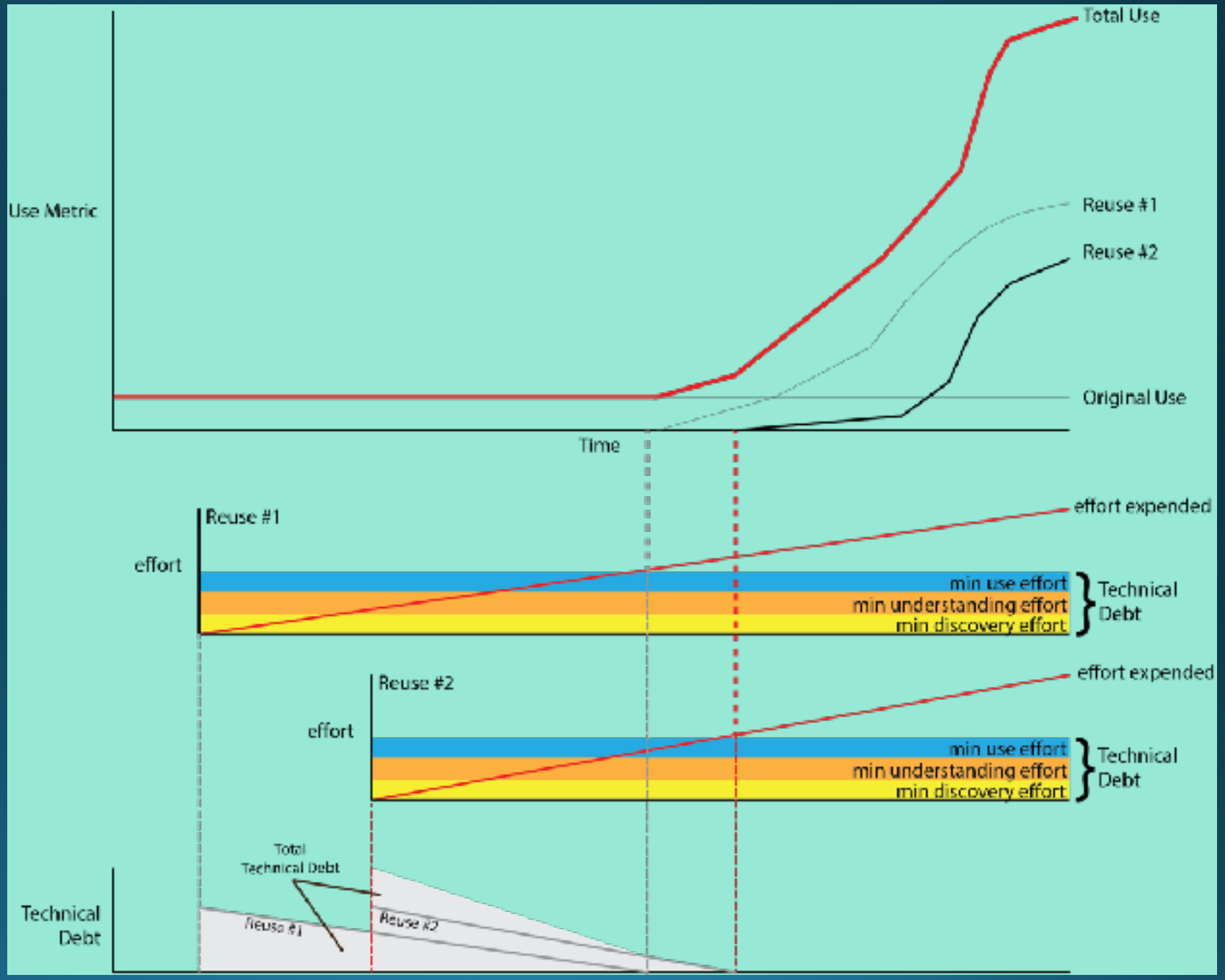

Next Steps

- Begin community conversation and development of *shared* agile data curation *values and principles*
- Derive a set of explicit and implicit values and principles from the literature (e.g. FORCE11 FAIR Data Principles)
- Develop capacity to capture structured information about *exemplars of agile data curation* value and principles to contribute to …
- The development of *data curation design patterns* informed by practice and generalized for reuse in developing new data management and curation processes, and assessing existing ones

Contact Us …

- Karl Benedict – kbene@unm.edu
- Chris Lenhardt - clenhardt@renci.org
- Joshua Young - jwyoung@ucar.edu

- Open Science Framework Coordination Site: https://osf.io/d2bac/

https://docs.google.com/forms/d/17IWFYcp63Vr74WaFL5dO3V3LgmQdPJ-qamQi3rGGxZQ/edit

Draft Case Study Capture Form

https://www.surveymonkey.com/r/agile-values-principles

Draft Values & Principles Survey

Principles

- Maximize the *impact* of research data through accelerated capacity for *discovery, access and use* of valuable data
- *Expect unanticipated needs* for and uses of research data (and documentation) and develop flexible systems to support new uses and users without significant modifications
- Facilitate *automated interaction* with data and metadata assets through well documented public web services that enable disintermediated use and reuse of research data
- *Data creators and data curators should work closely* throughout planning, research and preservation activities to ensure the most efficient and streamlined process

Principles

- *Identify key individuals* in a data curation project that have the requisite knowledge and motivation to do the job and get out of their way
- Identify the most *effective method(s) for maintaining close communication* and use them
- ***Delivery, access, use and citation*** of research data are the primary measures of success
- *Design* principles that enable steady delivery of incremental improvements to research data discovery, access and use should be consistent *with a sustainable level of effort and funding from sponsors, data creators and curators, and users*

Principles

- Continuous attention to *technical excellence* and good design enhances agility
- *Start with the basics* and only make systems more complex as needed, while maintaining a low bar to entry
- Continuously work to develop and evolve a *community of data providers, curators and users* that all participate in the ongoing evolution of the research data systems that they interact with