Software Solutions Symposium 2017 March 20–23, 2017

Toward Successfully Navigating Large-Scale IT Modernization Efforts

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This material is based upon work funded and supported by the Department of Defense under Contract No. FA8721-05-C-0003 with Carnegie Mellon University for the operation of the Software Engineering Institute, a federally funded research and development center.

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DM-0004436

Outline

- Why modernization matters to government
- Key characteristics
- Challenges
- Improvement strategy
- Monitoring progress
- Closing thoughts
- Q&A

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Why Modernization Matters to Government

- All large-scale IT organizations have a common challenge... continuous modernization of IT infrastructure to enable business success
- Unlike hardware, we must evolve software because the environment in which it lives is continuously evolving
- Deficiencies in IT modernization strategy (technical and nontechnical aspects) can result in
 - unsecure and/or unreliable systems
 - inefficient execution of business processes
 - increasing cost and complexity

Key Characteristics

- Case study example from a large-scale organization
- The organization is decentralized; we are working with one of the mission-critical sectors in the organization
- There are many systems supporting business operations within the sector
- Most of the systems are Oracle-based applications
- The organization wants to move toward digitization, cloud, and improved user experience

Customer Challenges

- Difficult to retire legacy applications
- High development costs due to repeatedly implementing data connections
- No shared data access, resulting in data integrity issues (e.g., copying)
- Difficulty innovating with new UI, mobile, cloud, etc.
- Hard to support new regulations or capabilities
- Not able to keep pace with increasing need to share data

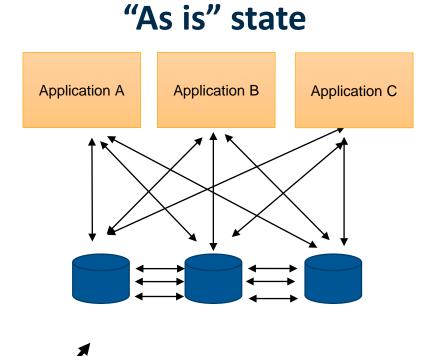
Many IT organizations struggle with the same types of challenges



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Current State

Coupling anti-pattern drives higher maintenance cost due to



- increased analysis time/effort to reason about change
- time/effort spent on unanticipated consequences of change
- limited opportunity for reuse (developers reinvent the wheel)

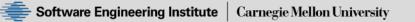
Connections are a mix of direct database link, file transfer protocol, web service, and others

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Example Business Goals

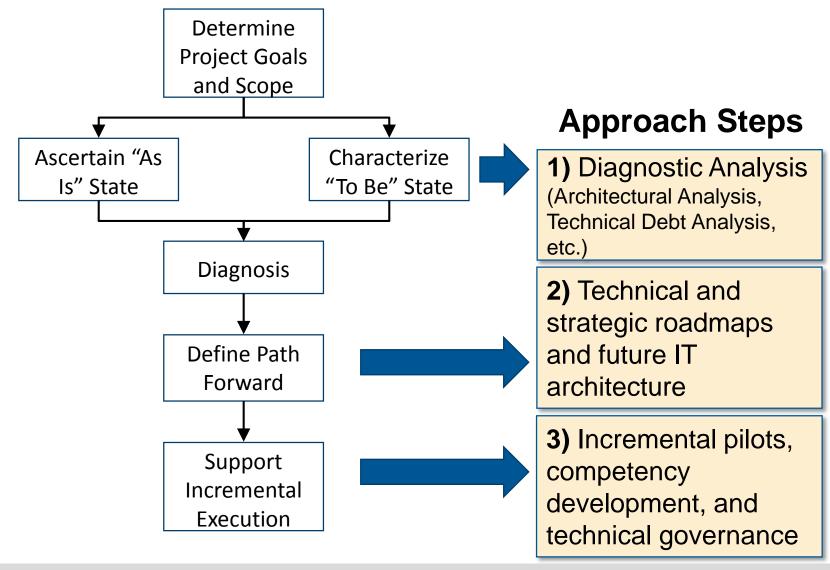
Below are example enterprise business goals which can be impeded or enabled by technical decisions

#	Related Goals/Objectives
1	Advance ongoing business process optimization efforts.
2	Enhance and improve business operations and organization.
3	Integrate processes with ongoing business initiatives.
4	Build a toolbox to drive compliance and quality.
5	Enhance the way the organization does business by ensuring efficient processes and quality systems .
6	Strengthen relationships with partners.
7	Develop infrastructure to enable tracking of the budget by program.
8	Optimize IT systems and improve data integration.



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Overview of Infrastructure Modernization Approach

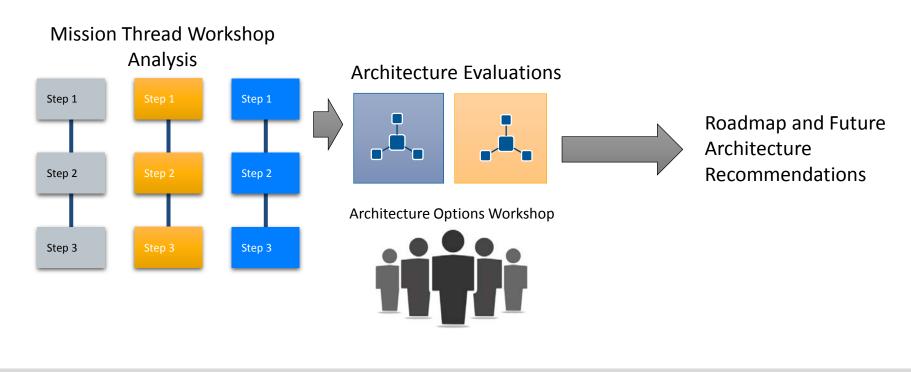


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Architecture Approaches

The breadth and complexity of large-scale IT organizational environments require connecting several architecture analysis approaches and running multiple instances in parallel

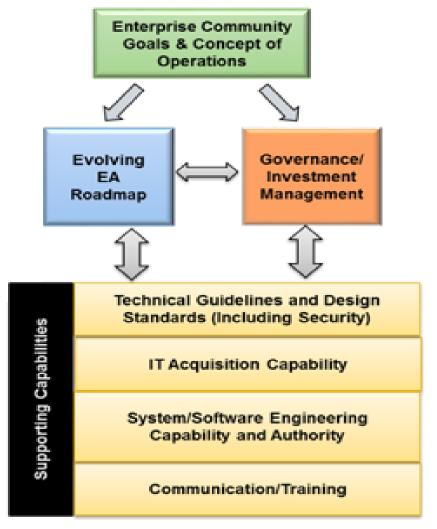


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Challenges Landscape

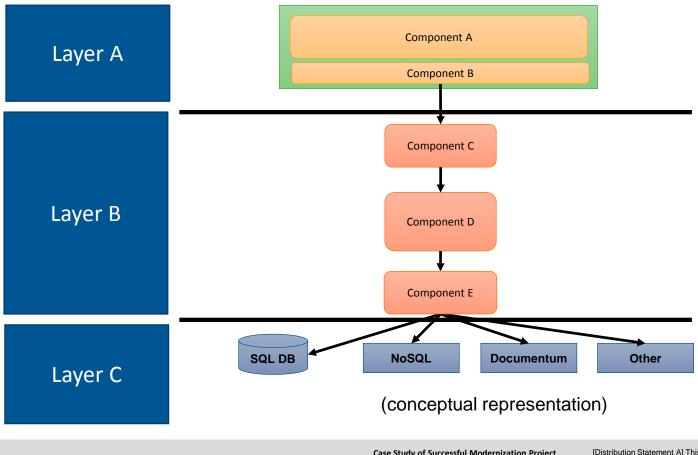
Large-scale IT organizations must concurrently deal with technical and nontechnical challenges



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Future Architecture Vision

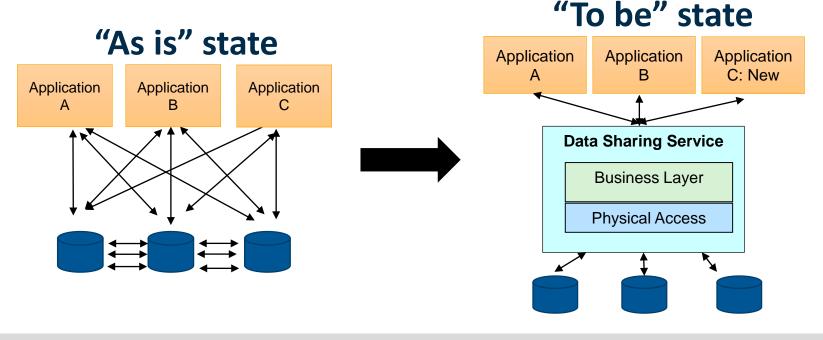
Using these methods, we developed an initial future architecture vision

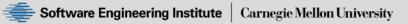


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Benefits

- Reduces costly point-to-point connections
- Separates physical databases, enabling retirement of legacy applications
- Supports incremental migration (can use both old and new approaches)





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Roadmaps

We develop two types of roadmaps:

- 1. The **technical roadmap** focuses on future IT architecture design
- 2. The strategic roadmap focuses on non-technical aspects

Technical roadmaps cover aspects such as

- hardware and infrastructure procurement
- developing software components
- test environment setup and execution

Strategic roadmaps cover aspects such as

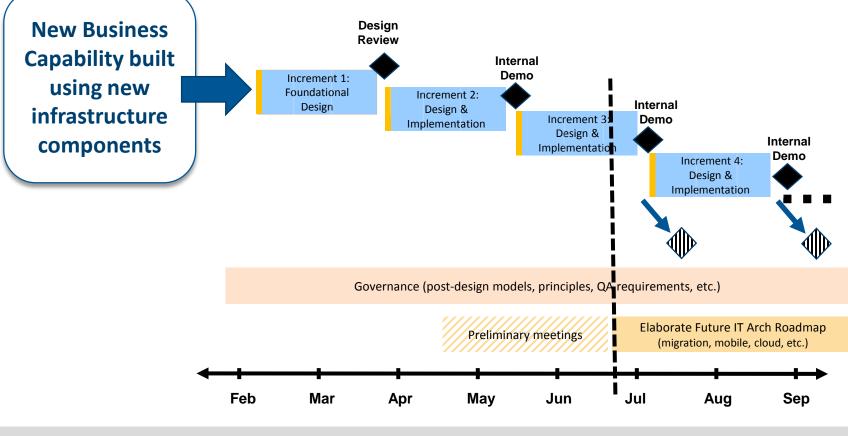
- funding plan for infrastructure components
- acquisition strategy for common components
- technical governance



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Incremental Execution

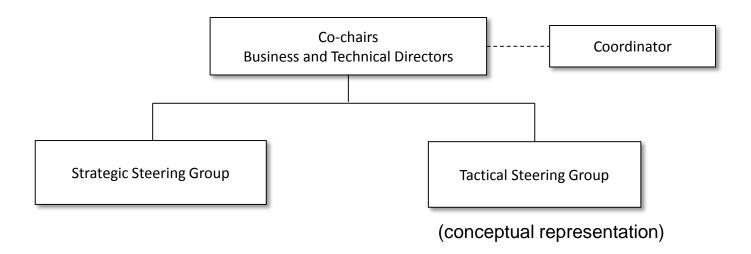
- Pilot with incremental architecture practices (blue boxes)
- Governance and future IT architecture work (red/orange)



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Monitoring Progress and Risk

- Technical and strategic roadmaps are used to monitor and evaluate progress
 - Significant progress against planned tasks
- Technical steering groups are in place to identify, mitigate, and manage roadmap risks
 - Also responsible for developing technical standards, approving technology stack and integration approaches, etc.





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Closing Thoughts

- We observe the same modernization issues and patterns across large-scale organizations
- Big-bang strategies for modernization are high cost and high risk
- We presented a multi-pronged approach for incremental modernization improvement
- The approach applied in this example, and in other organizations of similar size and scope, allows for delivering business value <u>while</u> modernizing infrastructure

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