Agenda

• Meeting Purpose and Intended Outcomes
• The Interoperability Problem: Current State (15 min)
• The Future of Interoperability at Harvard (20 min)
• General Discussion (15 min)
Meeting Purpose and Intended Outcomes

Purpose

• Explain current issues with interoperability and interfaces at Harvard
• Discuss future-state vision for operability

Intended Outcomes

• Establish a shared understanding of our current interoperability problems
• Progress further toward agreement on a future-state interoperability solution
• Reach an understanding of financial accounting
## Business Needs & Benefits

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<tr>
<th>Stakeholder</th>
<th>Experience Today</th>
<th>Imagine …</th>
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</table>
| **Service Users:** Faculty, Students, Staff | • Time-consuming, repetitive entry of biographical and other data for each application/service  
• Inability to answer simple business questions (“how many of X does Harvard have?”)  
• Difficult and time-consuming to access data not already provided via existing flows to user’s organization | • Users do not have to re-enter data — apps get necessary info from a real-time service  
• Faculty, students, and staff can ask questions on an ad-hoc basis and get reliable answers  
• Faculty, students, and staff have flexible, timely access to data across the University |
| **IT Systems and Policy Decision-Makers** | • Data Warehouse information is disseminated for each independent need, leading to delay and difficulty in providing large sets of data  
• No facility for cross-University data (“what do we mean by ‘address’ or ‘student’?”) | • Decision-makers have business intelligence based on data automatically based  
• A common understanding of what our data means across the University |
| **Systems and Software Engineering** | • Each integration is custom-coded, increasing technical risk  
• So much time is spent on basic integration that tasks with greater user-perceived benefit are delayed | • Schools and departments have a set of reusable integration tools  
• More efficient access to information frees up time to develop more user-valued services |
| **Operations** | • Multiple ad-hoc streams are time-consuming and brittle, creating create complexity for each system  
• Difficult to identify faults and restore service due to multiple file transfer servers/flows with hard-to-understand interdependencies | • A centralized interoperation service available across Harvard, operated by a focused team  
• No longer necessary to deploy, configure, and operate point-to-point integration services |

Cost-efficient, flexible access to consistent information across the University that is easy for users and less complex for engineering and operational staff.
The Interoperability Problem: Current State

Please see the handout for a look at the current state of interoperability at Harvard.
The Interoperability Problem: Future-State Vision

Please see the handout for a summary of our future-state vision for interoperability.

THE INTEROPERABILITY PROBLEM: FUTURE-STATE VISION

Establishing a series of interoperability services will provide Harvard University with a standard means of distributing data that will improve all development activities, simplify operations, and ensure that the right information is available securely based on need. The future of interoperability at Harvard will be:

“Simplifying the interoperability of our applications is the only way we will be able to move forward in an agile manner, the only way to decrease our technical debt, and the only way to move incrementally into the future as we change our programs and infrastructure.” – Jim Waldo, Harvard University CTO

Learn more about Harvard’s enterprise architecture effort at http://enterprisearchitecture.harvard.edu
Thank you!
Appendices
# The Enterprise Architecture Vision

<table>
<thead>
<tr>
<th><strong>Strategic Objectives</strong></th>
<th><strong>Guiding Principles</strong></th>
<th><strong>Key Performance Indicators</strong></th>
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<tbody>
<tr>
<td>• Deliver an enterprise architecture framework that drives technology and development standards across Harvard</td>
<td>• Ensure that EA provides active direction and delivers value to the organization</td>
<td>• Decrease in project delivery timeframes to production</td>
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<td>• Provide common approaches for integration across enterprise applications, processes, and data</td>
<td>• Counter complexity with common solutions</td>
<td>• Increase in the number of integrated applications using programmatic interfaces</td>
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<td>• Align and rationalize technology decisions and investments</td>
<td>• Enable sharing of data across organizations</td>
<td>• Increase in the number of funded projects that conform to an EA checklist</td>
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<td>• Identify redundant or conflicting processes and data across organizations</td>
<td>• Preference for open-source, COTS, and programmatic interfaces — both in what we obtain and what is produced</td>
<td>• Decrease in ad-hoc data sharing</td>
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<td>• Encourage, define, and ultimately provide best-practice solutions</td>
<td>• Increase in automated data exchange</td>
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<td>• Evolve framework and solutions with advances in technology</td>
<td>• Increase in the number of known authoritative data sources</td>
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<td>• Decrease in the number of copies of data</td>
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Provide a technology framework and a set of standards to enable acquisition, development, and deployment of IT services that maximize interoperation, minimize duplication, and simplify the IT environment across all of Harvard.
EA Program Approach