Agenda

• Update on Gartner Consulting Engagement (Eduardo Molina)
• Data Quality Scorecard Update (Kasturi Sen)
• Identity Data Reconciliation and Mapping Rules Update (Lec Maj)
• IAM Program Update (Lec Maj)
• Master Data Management Project Kick-off (Adrian Kulpa)
UPDATE ON GARTNER CONSULTING ENGAGEMENT
Project Overview

• Assess current state of data governance at NYU

• Proposed Charter for Data Governance

• Proposed Target State for NYU Data Governance
Assess current state of data governance

- **Vision** – Describes what Data Governance looks like, why is needed, and how it supports the business vision
- **Strategy** – Articulates how the Data Governance vision will be realized
- **Metrics** – Captures how the progress and business contributions of Data Governance are measured
- **Data Governance** – Establishes the decision rights framework and assigns roles and responsibilities
- **Organization & Roles** – Forms the groups and organizational structures to support Data Governance
- **Process** – Sets up the processes to support Data Governance
- **Technology** – Provides the technology capabilities to meet the Data Governance needs
- **Information Domains** – Depict the specific requirements and needs that have to be accommodated
Assess current state of data governance

**Gartner Maturity Model**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aware</strong></td>
<td>Reactive</td>
<td>Proactive</td>
<td>Managed</td>
<td>Optimizing</td>
</tr>
<tr>
<td>No vision, but yes, we have a problem.</td>
<td>No vision. Firefighting is the answer. Isolated bottom-up initiatives.</td>
<td>Ok, let’s do something (at the silo level). Silo-oriented solutions.</td>
<td>A unifying vision and strategy emerges with high level sponsorship. Enterprise Business Analytics Program.</td>
<td>Analytics are the way we do things around here. Managing data as an asset. Continuous learning and improvement.</td>
</tr>
</tbody>
</table>

**Evaluation Approach:**
- Gartner analyzed its observations and categorized each against the Seven Building Blocks for Data Governance.
- Gartner next applied its Data Governance maturity model to assess NYU’s current maturity in each building block, using the categorized observations & evidence.
- Gartner assessed the cumulative effect of all maturity designations as well as the “shape” of the maturity curve to determine overall maturity level and the health of the current approach.
Assess current state of data governance

...where a vision has been in place for several years, but key decisions about the future scope and strategy are currently unclear.

This has resulted in an At-Risk Data Governance maturity posture. While NYU’s current investments provide a Data Governance foundation, there is an opportunity for NYU to strengthen that foundation by aligning currently silo’ed Data Governance activities within a cohesive vision, strategy and competency that focuses on achieving deliberate, strategic outcomes for the university.

Some investments in organization and roles, governance, and technology have been made to provide the foundation for a Data Governance program....
Assess current state of data governance

NYU staff consistently express a need for strong data governance to support the institution’s mission, mitigate risks, and enable reporting and analysis. NYU has been engaged in Data Governance efforts since at least 2014, and while there are bright spots, they do not come together to form a cohesive Data Governance capability.

Overall current state maturity is Early Level 2, Reactive. Health of current Data Governance efforts can be characterized as At-Risk due to lack of a coordinated institution-wide program plan and approach to Data Governance.

Institution-wide Data Governance at NYU is hampered by communications, coordination and consistency challenges. The current approach to sponsorship of Data Governance is not having the desired impact.
# Report and Recommendations

## Vision

“New York University’s data is treated as an enterprise-wide asset and is readily available to support evidence-based decision-making and informed action.”

## Goals

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Improve data quality to enhance trust in NYU data</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Support easy and secure access to University data assets</td>
<td></td>
</tr>
<tr>
<td><strong>3.</strong> Reduce risk through regulatory, policy and procedural compliance</td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong> Establish a data governance program to improve NYU’s ability to create, preserve, and disseminate knowledge</td>
<td></td>
</tr>
</tbody>
</table>
Report and Recommendations

Target State Operating Model
Overview

Executive
Vision, Priorities, Escalation

Governance

IR

IT

Stewardship
Access decisions
Quality improvement and standards

Data Usage and Support

Data Management & Architecture

Identity and Access Management

Policy development & coordination
Stewardship
Monitoring
Communications
Definitions and Standards
Access policies
Rules, regulations
Quality standards and rules

Tools
Architecture
Objective quality
Lineage and lifecycle management
Metadata management
Access request and certification process
System integration and API requests
Role-based Access Control

NYU Institutional Research And Data Integrity

Gartner
Next Steps

• Develop Gartner “near-term” priorities into a project plan
• Constitute the Executive Steering Committee
• Recruit for positions in Office of Data Governance
• Enhance outreach and communication efforts
• Keep moving ahead
DATA QUALITY SCORECARD UPDATE
Data Quality Management Framework
Data Quality Management Framework

The figure below documents the core data quality process. The core processes include quality definition, assessment, analysis, clean-up and monitoring and maintenance.

The feedback loop at the top indicates DQ phases as a continuous cycle. Improving data quality is not a one-time event but rather an iterative process - over time the quality of data gradually improves along with the user’s level of confidence in the data.
Data Quality Lifecycle

Data Quality Management Methodology

1. Define
   - Build Team
   - Build Common Definitions
   - Build DQ Rules and Standards
   - Augment DQ Architecture and Analytical Capability

2. Assess
   - Identify Source Systems
   - Map Data Elements to Source Systems
   - Identify Initial Issues
   - Profile Data Elements
   - Build DQ Dashboards/Reports
   - Develop a List of DQ Issues

3. RemEDIATE
   - Perform Root Cause Analysis and Build Reports
   - Develop Remediation Options
   - Develop Estimates and Business Case
   - Prioritize Remediation Option
   - Cleanse and Correct Data
   - Initiate Remediation Project
   - Rationalize Remediation Portfolio

4. Monitor
   - Build & Set up Periodic DQ Scorecards
   - Assess DQ Scorecard Results
   - Provide Feedback and Decide Action on Scorecard Results

Data Stewards

Data Users

We are here now
### Sample Data Quality Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completeness</td>
<td>Is the required data present? Sample Rule: Check for blank value</td>
</tr>
<tr>
<td>Conformity</td>
<td>Is the data adhering to the business rules? Sample Rule: Check US zip code based on published list</td>
</tr>
<tr>
<td>Consistency</td>
<td>Is data the same across enterprise systems? Sample Rule: Check Birthdate across systems</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>Is unique identifier represented once and only once? Sample Rule: Check for duplicate University ID</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Is data correct based on business rules? Sample Rule: Check for special characters in names</td>
</tr>
</tbody>
</table>
Next Steps

• Validate the rules and assessment results with data stewards
• Establish ongoing remediation process with the office of Data Governance and data stewards
• Conduct feedback sessions to improve the Data Quality Score Card report design
• Connect data quality management work to reporting projects and Master Data Management project
Demo:

https://tableau-qa.nyu.edu/#/site/NYUIT/views/DataQualityIdentity/DQIdentityDashboard?iid=1
Appendix
# Data Quality Rules

<table>
<thead>
<tr>
<th>Asset Name</th>
<th>Asset Definitions</th>
<th>Common Rule</th>
<th>SIS DQ Rules</th>
<th>UDAR DQ Rules</th>
<th>Affiliate/ Registry DQ Rules</th>
<th>HR DQ Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Line 1 (Home)</td>
<td>The first line of the individual's home address</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign) 3. There should be one active home address</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign)</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign) 3. There should be one active home address (Type = H) 4. Should not contain the word ‘update’ 5. Should not contain unprintable characters 6. Should not begin with lowercase letter</td>
<td>Data does not exist in this system 1. Should not be blank 2. No special characters 9 other than , ,#</td>
<td></td>
</tr>
<tr>
<td>Address Line 1 (Mailing)</td>
<td>The first line of the individual's mailing address.</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign)</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign)</td>
<td>1. Should not be blank 2. No special characters (except comma, dash, number sign) 3. There should be one active preferred address (any Type) 4. Should not contain the word ‘update’ 5. Should not contain unprintable characters 6. Should not begin with lowercase letter</td>
<td>Data does not exist in this system 1. DDB should not be blank 2. Should be in valid date format (MM/DD/YYYY) 3. DDB should not be blank (Official) The given name is not identified. 4. Should not begin with lowercase letter</td>
<td></td>
</tr>
<tr>
<td>Dob (Date of Birth)</td>
<td>Birth date is the date on which the person was born.</td>
<td>1) DOB should not be blank 2) Should be in valid date format (MM/DD/YYYY)</td>
<td>1) DOB should not be blank 2) Should be in valid date format (MM/DD/YYYY)</td>
<td>1) DOB should not be blank 2) Should be in valid date format (MM/DD/YYYY) 3. Custom Rule: Age is not less than 12 Years 4. Age not greater than 99</td>
<td>Data does not exist in this system 1. DDB should not be blank 2. Should not be blank (other than apostrophes) and number. 3. Should be greater than two characters. 4. First letter should be capitalized 5. Should not contain special characters (other than apostrophes) and number. 6. Should not be less than two characters. 7. First letter should be capitalized</td>
<td></td>
</tr>
<tr>
<td>First Name (Official)</td>
<td>The given name for an individual that can be verified on legal or official documentation.</td>
<td>1. Format is alpha. 2. Should not be blank 3. Should contain special characters (other than apostrophes) and number. 4. Should not be less than two characters. 5. First letter should be capitalized</td>
<td>1. Format is alpha. 2. Should not be blank 3. Should contain special characters (other than apostrophes) and number. 4. Should not be less than two characters. 5. First letter should be capitalized</td>
<td>Data does not exist in this system 1. Format is alpha. 2. Should not be Empty 3. Should not contain special characters (other than apostrophes) and number. 4. Should not be less than two characters. 5. First letter should be capitalized 6. Should not contain special characters (other than apostrophes) and number. 7. Should not be less than two characters. 8. First letter should be capitalized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Name (Preferred)</td>
<td>The given name by which an individual prefers to be identified.</td>
<td>1. Format is alpha. 2. Should not be blank 3. Should contain special characters (other than apostrophes/quotes and periods) or numbers. 4. Should not be less than two characters. 5. First letter should be capitalized</td>
<td>1. Format is alpha. 2. Should not be blank 3. Should contain special characters (other than apostrophes/quotes and periods) or numbers. 4. Should not be less than two characters. 5. First letter should be capitalized</td>
<td>Data does not exist in this system 1. Format is alpha. 2. Should not be Empty 3. Should not contain special characters (other than apostrophes/quotes and periods) or numbers. 4. Should not be less than two characters. 5. First letter should be capitalized 6. Should not contain special characters (other than apostrophes/quotes and periods) or numbers. 7. Should not be less than two characters. 8. First letter should be capitalized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Identity</td>
<td>Gender Identity is the gender with which a person identifies (i.e., whether one uses man, woman, or more individualized terminology to describe oneself.)</td>
<td>1. Should not be blank. 2. Must match the valid values</td>
<td>1. Value must match with one of the following: M = Male Identified W = Woman Identified N = Gender not conforming</td>
<td>Data does not exist in this system (yet).</td>
<td>Data does not exist in this system 1. Should not be blank. 2. Must match the valid values (M,F)</td>
<td></td>
</tr>
</tbody>
</table>
IDENTITY DATA RECONCILIATION AND MAPPING RULES UPDATE
Identity Data Reconciliation and Mapping Rules Update

October 2018 Update
Proposed High-Level Architecture

Multidimensional Identity View
Joiners → Movers → Leavers

Manage Identity
- Accounts
- Persons
- Organizations
- Roles
- Groups
- Reporting
- Privileges
- MFA
- Entitlement Catalog
- Identity Proofing

Reflect & Join

Authoritative Systems
- HR
- Students
- Alumni
- Medicine
- Affiliates

Social and Federated Guests

Authenticated

Associate
Provide
Federate

Systems & Services
- Box
- Google Apps
- NYU Home
- NYU Classes
- Public Safety
- Research Computing
- Federated Partners
Data Domains

- Identity
  - Sub Domains
    - Affiliation
    - Bio/Demo
    - Contact
    - Email
    - Identifier
- Role/Entitlement
- Public Safety
- Other...

Identity Data

- 75 Fields
- Based on data requests
- And current systems
- Fields mapped across authoritative systems

Mapping Rules

- Existing rules documented
- Rules mapped across authoritative systems

Reconciliation

- Registry system field logic (28 fields)
- Field reconciliation proposed & feedback received from data stewards
- New NetID search match logic reviewed
### Data Asset Name
- Student
- Employee
- Alumni
- Affiliate
- Registry Computed Values

### Business Rule for Populating Data Asset within Registry

#### HR EMPID
- N
- Y
- N
- N
- N
- N
- N
- N

#### Last Name (Official)
- Y
- Y
- N
- Y
- Y

- *"Last Name (Official)" is the last name as provided by the person to the system of record representing the official name for first, middle, and last names. This is not verified. It is sourced as follows:*
  - NYU Workday - Last Name (from HR2090 integration)
  - Alumni System - Last_Name (from UDID BSR.ENTITY)
  - Affiliate System - Last_Name (from onboarding form)
  - Staff and Faculty - Last Name (from interface file)
  - Student / Applicant / Admitted Student / Summer Housing - Last Name (from PS_NAMES)

#### Last Name (Preferred)
- Y
- Y
- Y
- N
- Y

- *"Last Name (Preferred)" is the last name by which the person prefers to be identified.*

#### Legal Sex
- Y
- N
- N
- Y
- Y

- *"Legal Sex" is not currently used for matching of multiple records for the same person.*
  - There are discussions to use this for matching in the new Registry system.

#### Location
- Y
- Y
- N
- N
- Y

- Currently derived as follows from each source system:
  - Workday - uses SupOrg, WorkerType, Work Location
  - SSIS - uses AcadGroup, Study Agreement
  - Affiliate - uses Site code

### Rules of Precedence for Populating Data Assets within Registry

#### Proposals for Future Rules

#### Pre-Registry Data Quality Alert Needed?

#### Data Stewards Questions and Comments
Fields used
- First Name (Official)
- Middle Name (Official)
- Last Name (Official)
- Email (External)
- Legal Sex
- Data of Birth (DoB)
- Postal Code (Home)
- Phone (Mobile)

Eliminate use/storage of SSNs

Proposed search match order

Analysis of 2.2 million records from SIS for completeness and uniqueness
<table>
<thead>
<tr>
<th>Data Domain</th>
<th>Sub Domain</th>
<th>Data Asset Name</th>
<th>Data Asset Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>Affiliation</td>
<td>Affiliation (Primary)</td>
<td>An individual's primary basic affiliation at NYU. A person may have only one primary affiliation.</td>
</tr>
<tr>
<td>Identity</td>
<td>Affiliation</td>
<td>Affiliation Ranking</td>
<td>Rank order of affiliations (e.g. employee outranks student which outranks affiliate).</td>
</tr>
<tr>
<td>Identity</td>
<td>Affiliati</td>
<td>N N N N Y</td>
<td>People may have multiple 'Affiliations' and 'Affiliation Subtypes' with NYU over time. The 'Affiliation Number' is the ranking of the affiliation assigned to each record of a person. This ranking is determined by the relevance of the 'Affiliation Subtype' of each record in relationship to the other records for a given person. For example - a person would have 3 records if they were a Student, Student Worker and Alumini. These 3 records would be assigned an Affiliation Number or ranking of 1, 2 and 3 - based on the current relevance of each of those 3 relationships. The Student record would be ranked 1, the Student Worker record would be ranked 2, and the Alumini record would be ranked 3.</td>
</tr>
<tr>
<td>Identity</td>
<td>Affiliati</td>
<td>N N N N Y</td>
<td>&quot;Affiliation Subtype&quot; is a lower level grouping of the &quot;Affiliation&quot; for the purpose of grouping electronic and physical access privileges.</td>
</tr>
<tr>
<td>Identity</td>
<td>Contact</td>
<td>N N N N Y</td>
<td>&quot;Begin Date&quot; is the start of the person's relationship with NYU. The purpose of calculating this date is to assign privileges in a timely manner (early enough so there are no delays for the person, but not too early). It is determined as follows when data is sourced from:</td>
</tr>
</tbody>
</table>

**Business Rule for Populating Data Asset within Registry:**

- **Rules of Precedence for Populating Data Assets within Registry:**
- **Proposals for Future Rules:**
- **Pre-Registry Data Quality Alert Needed?:**
- **Data Stewards Questions and Comments:**

Fine-tune the processes for assigning the appropriate affiliation and its subtypes for the individual's role at NYU. This ensures that the system remains accurate and up-to-date with the individual's current position.
IDENTITY ACCESS MANAGEMENT (IAM) PROGRAM UPDATE
Identity Access Management Program Update and Governance

September 2018 Update
Background

The Identity project will move the core Identity system of the University onto a firm foundation and allow for greater control of access to University systems through birthright and role definitions.

The project will enable migration away from our existing legacy Registry technology to modern supported systems, provide for greater self service, refocus staff to new areas of campus identity interest including social identities with proper governance.

The Identity project aims to improve the technological management of identity and access while meeting compliance and audit requirements.

Work Accomplished (FY18)

- **Existing System (Registry DB and Web server)**
  - Stabilized environment
  - Security review conducted and remediation work commenced
  - Requirements documentation

- **New System (Sailpoint)**
  - Current Prod Sailpoint (On-Prem) upgraded v7.1p4
  - Open Forums and Stakeholder meetings initiated
  - Sailpoint Development setup in cloud
  - Architecture draft document delivered
  - Authoritative Systems of Record connected
  - Source connector development commenced
  - Design and Analysis commenced
  - **First Sailpoint certification of UDW completed**, UDW and others in the pipeline
    - Hyperion, Access to SSN Information, FAME, SIS, ImageNow
Proposed High-Level Architecture

Multidimensional Identity View
Joiners → Movers → Leavers

Manage Identity
- Accounts
- Persons
- Organizations
- Roles
- Groups
- MFA
- Entitlement Catalog
- Identity Proofing
- Privileges

Reflect & Join

Authoritative Systems
- HR
- Students
- Alumni
- Medicine
- Affiliates
- Social and Federated Guests

Systems & Services
- Box
- Google Apps
- NYU Home
- NYU Classes
- Public Safety
- Research Computing
- Federated Partners

Authenticate
Authorize
Provide
Federate
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2019</td>
<td>SailPoint Consumes Authoritative Systems of Records Registry security work complete</td>
<td>Development of source system connectors and logic. 21 of 22 security items complete except for primary keys scheduled for June.</td>
</tr>
<tr>
<td>May 2019</td>
<td>Production Identity Marching and Generation</td>
<td>Sailpoint assumes control of creation/management of identities from source systems and the Registry will become an IIQ &quot;target&quot; system (continues to provision to its downstream system).</td>
</tr>
<tr>
<td>May 2019</td>
<td>Affiliate Management and Start Page Functionality Migration</td>
<td>Migrate functionality over to Sailpoint and a new Start Page web application</td>
</tr>
<tr>
<td>Jun 2019</td>
<td>Registry security cleanup complete</td>
<td>Final cleanup of primary keys in Registry, deletion and replacement of restricted data</td>
</tr>
<tr>
<td>Aug 2019</td>
<td>Decommission Sailpoint (On-Prem), Existing Start Page</td>
<td>Cut over existing IIQ 7.1p4 workflows (HPC), certifications and functionality over to AWS instances.</td>
</tr>
</tbody>
</table>
### Governance Alignment

<table>
<thead>
<tr>
<th>IAM Steering</th>
<th>Vision / Mission</th>
<th>Architecture based Principles/Beliefs</th>
</tr>
</thead>
</table>
|              | Guide key decisions based on risk / value evaluation. Provide insight into university business practices & strategy. | • Business Continuity  
• Compliance  
• IT Responsibility |
| Data Stewards | Guide data requests, identity and role data governance, provide insight into policies. | • Data Security  
• Common Vocabulary and Data Definitions  
• Data is Accessible |
| Application Owners | Collaborate on technical roadmap, architecture, and solution that meets university needs. | • Interoperability  
• Technology Independence  
• Ease of Use |
| Community Forum | Provide forum for community members for their voice to be heard and ideas acknowledged. | • Communication  
• Inclusiveness  
• Transparency |
Certifications using Sailpoint IIQ
Overview

FY17
- Project planning
- Existing Registry system review
- Identity vendor analysis

FY18
- Registry system stabilization
- Registry security analysis
- Registry integration and stakeholder analysis
- Existing process documentation
- SailPoint installation
- User access certification (UDW, FAME POC)

FY19
- Gathering Public Safety requirements
- Connecting Authoritative Systems of Record for NetID matching & creation
- Migrate Start Page & Affiliate System
- Phase 1: go live May 2019
- Remove SSN in Registry system
- Enable Data access via APIs
- Begin migration of SternID to NetID

FY20
- Phase 2: Migration of downstream systems and integrations one-by-one
- Decommission of Registry System
- Improve Privileged Access Management
- Role Management strategy and implementation
Challenges

- Compliance & Governance
  - Diversity request to change initials on netID
  - Identity data archival and destruction policies
  - Federated and social identity authentication policies

- University Business Practices
  - HR Onboarding Process past NYU employees

- Data
  - Data obfuscation across NYU development systems
  - Adopting Data Classification Policy

- Security
  - NYU Data & System Security Measures Policy
Open Forums
IT News Channels
IT Annual Report
Individual Stakeholder Meetings
CIO Council
Campuses & Global Sites Coordinators
Various Presentations

Open Forums
- Program Introduction (Mar 2018)
- Requirements Gathering
  - Registry Migration
  - Role Management
  - Access Control
- Initial SailPoint Demo (Oct 25, 2018)
- Start Page Functionality & Design, Including Accessibility (Dec 2018)
- Affiliate Management Functionality & Design (Jan 2019)
- Future:
  - Data Model
  - Certifications
  - Go Live Plan (May 27 2019)
Authoritative Systems of Records Integrations

- **School of Medicine (PIMS & Oracle IM)**
  - Mulesoft API over TLS 1.2, SailPoint API over TLS 1.2, File exchange over SSH

- **Students/Housing (SIS / PeopleSoft)**
  - JDBC over TCPS, SailPoint API over TLS 1.2

- **Alumni (Advance)**
  - JDBC over TCPS

- **Employees (HR / PeopleSync)**
  - SailPoint Workday Connector, TLS 1.2, cipher suites with the addition of SSLv3

- **Affiliates (Affiliate Management System)**
  - SailPoint, out of the box UI
Fields used

- First Name (Official)
- Middle Name (Official)
- Last Name (Official)
- Email (External)
- Legal Sex
- Data of Birth (DoB)
- Postal Code (Home)
- Phone (Mobile)

Eliminate use/storage of SSNs

Proposed search match order

Analysis of 2.2 million records from SIS for completeness and uniqueness
IAM Program Workstreams

IAM Program Vision & Strategy
- Improves University identity security & compliance
- Enables standard business practices
- Ability to address University identity data needs with appropriate governance in place

Role Management
- Ensuring that the right people gain access to the right materials and records at the right time.
- Transparency of access and roles through certifications

Access Control
- Ease of access to university resources via SSO
- Governed federation for Langone, research collaboration, and online education
- Ensure business continuity
IAM made decisions based on client requests, undocumented business rules were developed in legacy code, only data requests were vetted in limited fashion by data stewards via email. Changes are ad-hoc without version control, clients must await core team availability, and requirements shared via email or conversations. Lack of compliance with policies lead to increased risk and security vulnerabilities.
<table>
<thead>
<tr>
<th>Role</th>
<th>Vision / Mission</th>
<th>Architecture based Principles/Beliefs</th>
</tr>
</thead>
</table>
| IAM Steering                  | Guide key decisions based on risk / value evaluation. Provide insight into university business practices & strategy. | • Business Continuity  
• Compliance  
• IT Responsibility |
| Data Stewards                 | Guide data requests, identity and role data governance, provide insight into policies. | • Data Security  
• Common Vocabulary and Data Definitions  
• Data is Accessible |
| Application Owners            | Collaborate on technical roadmap, architecture, and solution that meets university needs. | • Interoperability  
• Technology Independence  
• Ease of Use |
| Community Forum               | Provide forum for community members for their voice to be heard and ideas acknowledged. | • Communication  
• Inclusiveness  
• Transparency |
Governance in Action

- **Security** compliance with NYU policies and business needs as urgent off-boarding
- **Federation** and expedient data exchange allowing for distance education onboarding needs
- **Consistent** role management practices
- Clear understanding of access privileges through **Certifications**
- **Governed** access to Identity Data
- **Agile** development and patching practices
- Limited customizations and exceptions to rules augmented through gap applications
Provide governance framework for NYU based on industry standards and University best practices to support ever growing business needs, access security considerations, and compliance requirements.

- Clear understanding of business rules
- Ability to provide insight into user access
- Clear understanding of costs in supporting University needs
- Global Security and Compliance
- Repeatable processes and tools
- Certified team members growing in their careers at NYU
Certifications
NYU has an ad hoc certification process.

- Thousands of unmanaged accounts exist on our systems
- Business and Application owners would benefit from structured access reviews
- Many human touch points
- Lack of follow-up/automation
Certifications using Sailpoint IIQ
Benefits of Certification

- Reduces the cost & risk
- Creates transparency
- Improve security and compliance
- Business Reporting
**IIQ Certification Dashboard**

**Identity Certification [8/13/18 9:00:00 AM EDT] - UDW**

- **Owner**: Andrew Maliszewski
- **Create Date**: 8/13/18 9:00:00 AM EDT
- **Exclusions**: 0

**Decision Statistics**

<table>
<thead>
<tr>
<th>Roles</th>
<th>Additional Entitlements</th>
<th>Policy Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no data for this chart.</td>
<td><img src="chart.png" alt="Pie chart" /></td>
<td>There is no data for this chart.</td>
</tr>
</tbody>
</table>

**Access Reviews**

<table>
<thead>
<tr>
<th>Percent Complete</th>
<th>Phase</th>
<th>Certifiers</th>
<th>Due</th>
<th>Sign Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% (1 of 1)</td>
<td>Revocation</td>
<td>John R Poynter</td>
<td>9/3/18 9:01 AM</td>
<td>8/13/2018 10:42:24 am</td>
</tr>
<tr>
<td>0% (0 of 1)</td>
<td>Active</td>
<td>Anthony Eugene Bonano</td>
<td>9/3/18 9:01 AM</td>
<td></td>
</tr>
</tbody>
</table>
Future Plans

- More application certifications - e.g. Hyperion
- More fine grained certifications
- Direct connections
  - Automated Remediation
  - Continuous Certifications
- Utilize more features

*Sailpoint, 2010*
MASTER DATA MANAGEMENT (MDM) PROJECT KICK-OFF
Master Data Management
Agenda:

- Challenges
- Institutional Benefits from Implementing MDM
- Future State MDM Conceptual Architecture
- MDM Strategy
- MDM Roadmap
- Critical Success Factors
Challenges Driving the Need for MDM

1. No 360 degree view of a person at NYU

2. Difficult to create a digital experience

3. Challenging to create and implement University Wide programs

4. Analytical initiatives, such as fundraising, are sub-optimized

5. Clarity of master data ownership is lacking

6. System development efforts are more challenging

7. Inefficient use of space and confusion
Benefits of an MDM Program

- Improved Student Experience & Satisfaction
- Key Enabler of a Digital Experience
- More Efficient Space Utilization
- Consistent Data for Application Development
- More Effective Fundraising & Outreach
- Better Data Protection & Compliance
- Improved & Faster Analytics & Reporting
- Improved Student Experience & Satisfaction
MDM - Creating a Golden Source of Data Across the University

Today – Silos of Data & No 360 Degree View

An MDM System Integrates Data Silos….

...Creating a Golden Source of Quality Data - 360 Degree View

...Which Adds Value to Several Key Initiatives

New Digital Applications
Analytics & Reporting
Identity Project

NYU Master Data Management System

Prospects
Affiliates & Contractors
Students
Faculty & Staff
Alumni

Cleanse
De-Duplicate
Match
Integrate
Enrich
Protect
Govern
Phase 1 - Build MDM Foundation
Establish the technical, planning, organizational & skill, business process & governance foundation needed to support a successful MDM implementation

Phase 2 - Implement People & Reference Data Hub
Add the People / identity & Reference Data Hub to Support the Identity Project & University Programs

Phase 3 - Implement Space & Location Hub
Add Space Data to Support Space Optimization Initiatives and identify additional MDM domains

Phase 4 - Enable Advanced Analytics
to support major business use cases such as fund raising, space optimization, etc.

Phase 5 - Enable Digital Application Development
Use the MDM Hub to Support Future Digital Application Development & Mobile Strategies

2018-2019
2018-2019
2019-2020
2019-2020
2019-2021
<table>
<thead>
<tr>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
<th>M10</th>
<th>M11</th>
<th>M12</th>
<th>FY20 Q1-2</th>
<th>FY20 Q3-4</th>
<th>FY21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Establish MDM Foundation**

- Business Value Alignment
- Build Organization
- Train Staff
- Onboard Resources
- Conduct POC
- Finalize Architecture and Tool Direction
- Detailed Requirements
- MDM Data Governance
- Environment Design
- Development Environment
- Detailed Project Planning & Change Management
- Project Reporting & Budgeting

**People / Identity & Reference MDM Hub**

- Data Profiling
- Data Modeling
- Design, Configure & Build
- Integration Development
- Operationalize People Data Governance
- Create Hierarchies
- Testing, Production Environment
- Business Processes
- Testing

**Space / Location MDM Hub**

- Space Data Needs Assessment
- Data Profiling
- Data Modeling
- Integration Development
- Operationalize Space Data Governance
- Create Hierarchies

**Advanced Analytics**

- Integrate Analytics
- Space / People Analytics
- Fundraising Analytics
- Student Experience Analytics
Critical Success Factors for the MDM Program

- **Organize and train the team for success** - Organize MDM team, close skills gaps and augment implementation experience

- **Identification of cost effective MDM system** to fit University unique requirements - Make vs. Buy

- **Hosting** - Leveraging cloud vs. on premises decisioning

- **Data Governance** - Implement stronger, mature operational Data Governance and processes

- **Change Management** - Generating & maintaining institutional buy in and support
WRAP-UP
Next Meetings

• Thursday, January 10, 2019: 10:00 – 11:30am

• Wednesday, April 3, 2019: 2:00 – 3:30pm

• Tuesday, July 16, 2019: 10:00 – 11:30am
Thank You!