Embracing Data Stewardship in the Commonwealth

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Today's Agenda

- Current State and Drivers for Change
- The Commonwealth's Enterprise Information Architecture (EIA)
- Data Stewards Survey Results
- Role of the Data Steward
- Structure for a Data Stewardship Body
- Next Steps for Data Stewards

- Presentations by the Panel Members
- Open Panel Discussion

The "State" of the Commonwealth's Data Efforts

Assessing the Current State

- Survey instrument implemented in August 2012 to capture information on the "current state" of Commonwealth's data efforts.

- Modeled on Gartner's ITScore methodology – maturity assessment for Enterprise Architecture

- Measured agency activity in the areas of:
  - Data Governance
  - Data Standards
  - Data Asset Management
  - Data Sharing

Agency Findings – August 2012

- 84% actively exchange data with other entities
  - Exchanges helped maximize value of data assets
  - Data sharing critical for achieving business objectives
  - Integrated shared data into their performance measurement systems
- 80% implemented data standards
  - Internal standards (63%)
  - Commonwealth standards (20%) or External standards (11%)
- 60% had internal data governance but only limited engagement in Commonwealth-wide governance
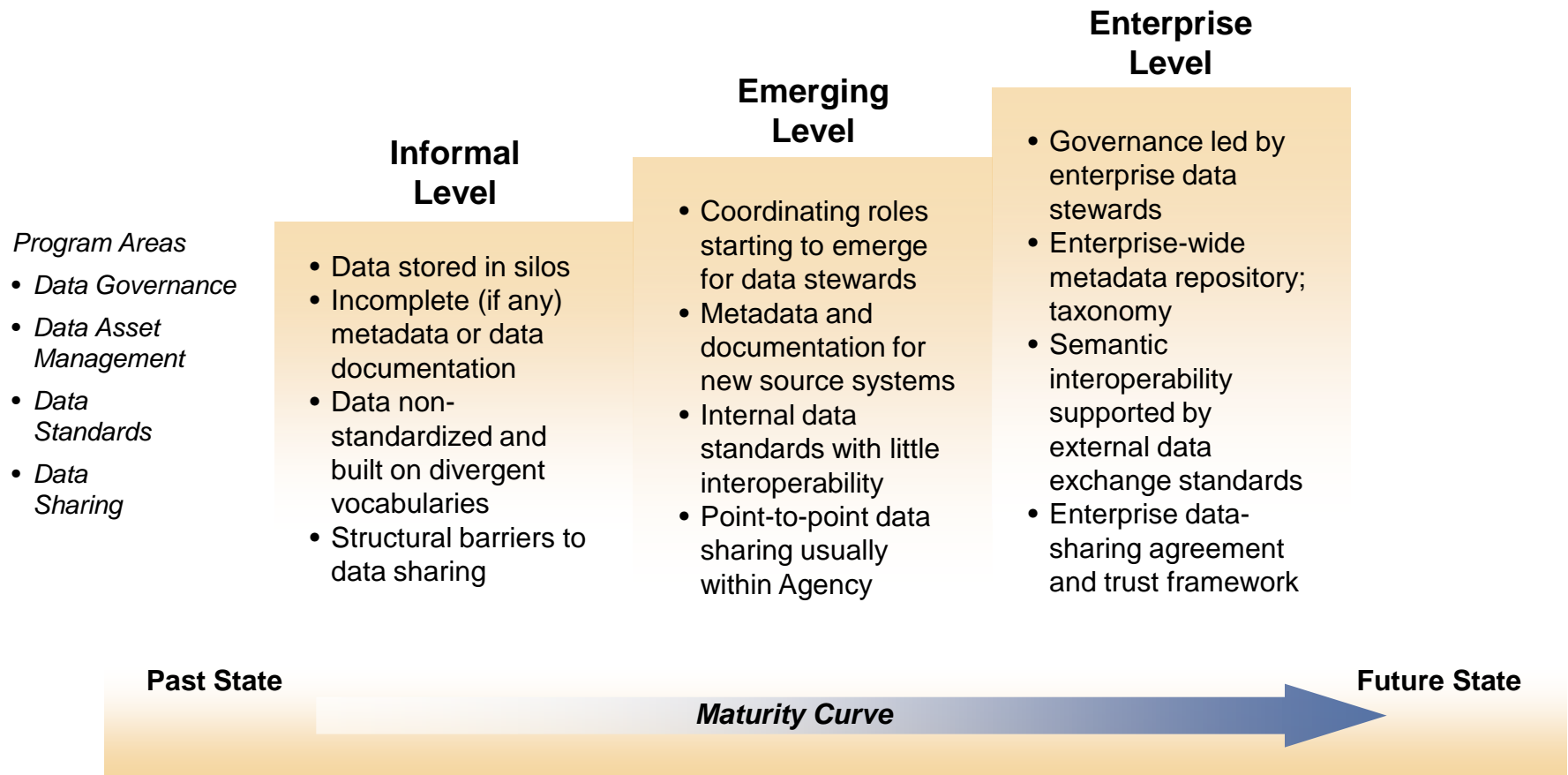- 56% maintained metadata for their information assets

From the Enterprise View

- Enterprise data currently maintained in agency
- Informal, mostly agency level governance of enterprise data
- "Tower of Babel" condition with data definitions and specifications
- No inventory or registry of enterprise data assets
- Data sharing via non-scalable point-to-point agreements

Maturity Model

Program Areas

- *Data Governance*
- *Data Asset Management*
- *Data Standards*
- *Data Sharing*

Informal Level

- Data stored in silos
- Incomplete (if any) metadata or data documentation
- Data non-standardized and built on divergent vocabularies
- Structural barriers to data sharing

Emerging Level

- Coordinating roles starting to emerge for data stewards
- Metadata and documentation for new source systems
- Internal data standards with little interoperability
- Point-to-point data sharing usually within Agency

Enterprise Level

- Governance led by enterprise data stewards
- Enterprise-wide metadata repository; taxonomy
- Semantic interoperability supported by external data exchange standards
- Enterprise data-sharing agreement and trust framework

Past State → *Maturity Curve* → **Future State**

Graphic Source: AMR Research, 2006

Statutory Requirements

Focus on Data Standardization

- 2008 Appropriations Act ("the Act"), Chapter 879
  - Item 63. Va. Enterprise App. Program (VEAP)
  - Item 460. Va. Dept. of Transportation (VDOT)
- Data Standards for Seven Business Areas
  - Vendor Tables
  - Receiving Information
  - Invoice Information
  - Purchase Information (including Commodity Codes)
  - Agency ID Information
  - Chart of Accounts
  - State Employee ID Information

APA Audit History

- Auditor of Public Accounts Report, *Enterprise Data Standards Progress Report* (Oct. 2009)
  - Defined "data standards" in two dimensions pursuant to the *Act* and the *Code of Virginia*
    - Data Standards – Common definitions, formats
    - Data Architecture – Strategy, stewardship, models
  - Found no data standards had been adopted for the six COV Agencies tasked under the Act: General Services, Treasury, Human Resource Management, Planning & Budget, Accounts and Transportation

Item 427 Requirements

- Item 427 of the 2012 & 2013 Appropriation Acts set requirements for data standardization

- Budget language closely related to the findings from the Auditor of Public Accounts (APA) audit

- Item 427 requirements went beyond the original statutory requirements to standardized data in the seven core "business of government" domains

- New requirements included standardization of all "citizen-centric" data

Adopted Commonwealth Standards

- 135 Total Commonwealth Enterprise Architecture Data Standards adopted to date:
  - 127 adopted health IT standards (HITSAC)
  - 4 data standards adopted in the seven business areas required under the 2008/2010 Appropriation Acts (Procurement Vendor, Employee ID, Chart of Accounts and Agency ID)
  - NIEM Core Person Data Exchange Standard adopted as part of VITA's Item 427 compliance strategy
  - 2 data standards adopted based on business-driven requirements (Check Printing, Unclaimed Property)
  - 1 data-exchange standard adopted to support interoperability in the Enterprise Data Management (EDM) solution (EDM Person Standard)
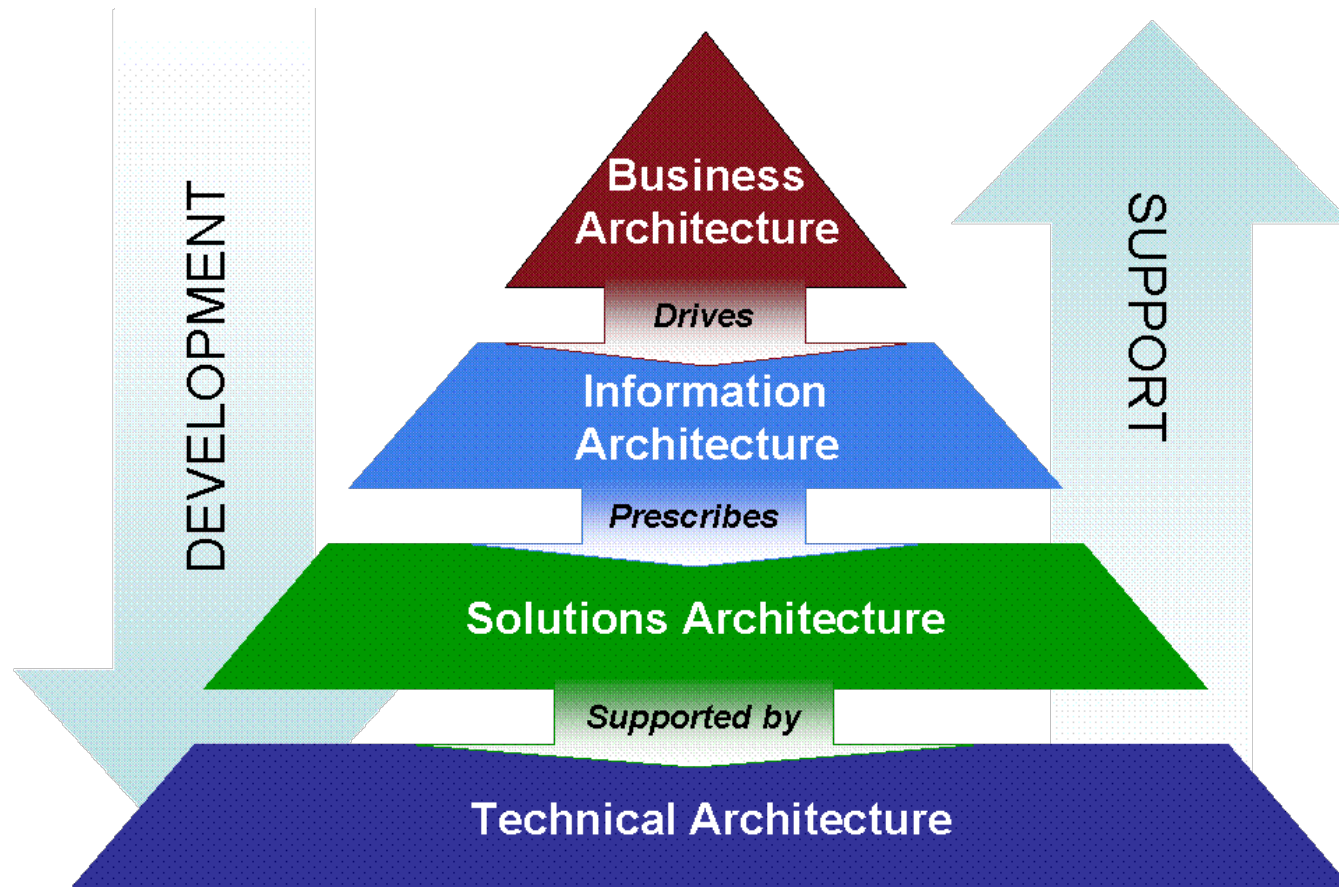
NIEM Person Standard – Purpose

- To adopt as a Commonwealth Data Standard the NIEM Core Person data elements as a data exchange standard

- To foster semantic interoperability among Commonwealth Agency data systems based on adopted Federal standards/specifications and industry best practices

- To meet the statutory requirements under Item 427 of the 2012 & 2013 Appropriation Acts, requiring standardization of "all citizen-centric" data

Creating the Enterprise Information Architecture (EIA) Strategy
"One Commonwealth . . . Well Informed"

Enterprise Architecture Framework

Business Architecture

Drives

Information Architecture

Prescribes

Solutions Architecture

Supported by

Technical Architecture

DEVELOPMENT

SUPPORT

Virginia's EIA Strategy

- Adopted by Secretary of Technology on August 14, 2013
  (http://www.vita.virginia.gov/oversight/dm/default.aspx?id=10340)

- A strategic plan to support interoperability and enterprise information sharing across Commonwealth agencies and their partners

- Developed over an 8 month period by 120+ data stewards, business leads and technical staff representing 30+ Commonwealth agencies

EIA Vision & Mission

Vision:

The Commonwealth of Virginia will achieve the highest level of excellence in its enterprise approach to managing, securing, sharing, and using its information assets.

Mission:

The Commonwealth of Virginia's EIA approach promotes availability of consistent, secure, high quality, timely and accessible information to enable quality service to citizens of the Commonwealth.

EIA Goals

Goal 1: Data Governance. Forge a disciplined approach to data governance across the Commonwealth with formal roles for data stewards and other stakeholders.

Goal 2: Data Standards. Promote the use of standardized data and shared data definitions as a means of supporting business-driven information exchange across agency systems, government domains, and levels of governance.

EIA Goals

Goal 3: Data Asset Management. Manage information as an enterprise asset, with an emphasis on quality, security, efficiency, accessibility, reduced redundancy, and a higher return on investment.

Goal 4: Data Sharing. Leverage the sharing of information based on business need and in compliance with governing laws, statutes, and regulations to increase government performance, improve service to citizens and more effectively achieve business outcomes.

We have an EIA Strategy . . . Now what?

Taking the First Steps

EIA Strategy Goal 1: Data Governance. Forge a disciplined approach to data governance across the Commonwealth with formal roles for data stewards and other stakeholders.

- Establish clearly defined enterprise-level roles for data stewards and other EIA stakeholders across Commonwealth agencies.

- Provide training, technical assistance, and other resources to enhance the EIA knowledge, skills, and abilities for Commonwealth data stewards, particularly those in small agencies.

- Support agency-level implementation planning and data governance activities.

Data Stewards Survey Results

- VITA administered a survey to EIA stakeholders seeking feedback on priorities and constraints
- Who Responded? 38 Respondents Comprised of:
  - **Agency Chief Information Officer (CIO)/IT Director**
  - **Project/Program Manager**
  - Technical Staff
  - Agency IT Resource (AITR)
  - Information Security Officer (ISO)
  - Data Steward
  - Database Administrator
  - Procurement Staff
  - Business Analyst
  - Other: (Software Architect, Policy Analyst and Program Evaluation, Data Integration Architect, Program Director, Enterprise IT Architect)

Data Stewards Survey Results

How much time could you dedicate to serving as a Commonwealth Data Steward?

- 0-2 hours per month
- **3-5 hours per month**
- 5+ hours per month
- Not sure at this time

What constraints do you anticipate facing within your organization for serving as a Commonwealth Data Steward?

- **Competing agency priorities**
- **Limited staff resources for core business areas**
- Lack of agency understanding of data governance
- Data stewardship not viewed as part of job responsibilities
- All of the above
- None of the above

Data Stewards Survey Results

In what areas do you believe you could make the most substantial contribution as a Commonwealth Data Steward?

- **Data Management Policies and Processes**
- **Enterprise Governance and Engagement**
- Technical/Solutions Architecture Alignment
- Business Alignment

Which of the four adopted Commonwealth Enterprise Information Architecture (EIA) goals do you consider the highest priority for your agency?

- **Data Sharing**
- **Data Governance**
- Data Asset Management
- Data Standards

Data Stewards Survey Results

Which category of data management solutions would benefit your agency the most?

- **Master Data Management Solutions**
- **Business Intelligence/Reporting**
- Metadata Repository/Registry
- Data Quality Tools

What training opportunities would interest you the most?

- **Master Data Management**
- **Business Intelligence/Business Analytics**
- Electronic Authentication and Identity Management
- Services Oriented Architecture (SOA)
- National Information Exchange Model (NIEM)
- Data Modeling/Data Management
- Cloud-hosted Data Architecture

What Role does the Data Steward Play?

Data Standards Adoption & Compliance

Metadata Management & Solutions

Data Architecture

Data Asset Inventory Management

Data Governance Responsibilities

Stakeholder Engagement

Data Quality Management

Data Sharing Agreements
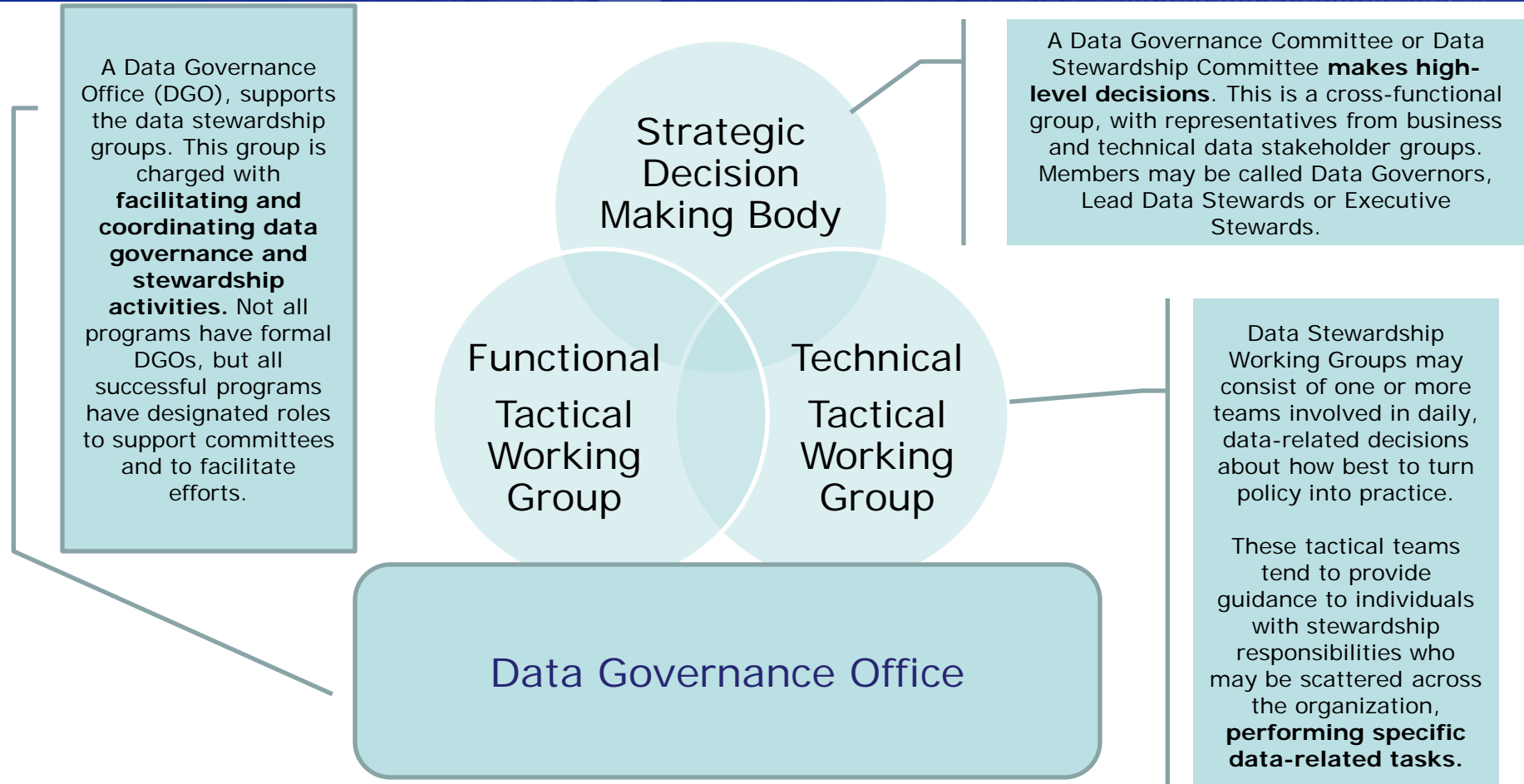
Uniquely requires a mix of business, technical and policy skill sets:

- Data Management Processes/Procedures
- Data Policies
- Technical Solutions
- Technical Architecture
- Business Requirements Gathering & Analysis

Data Stewards- Structure Considerations

A Data Governance Office (DGO), supports the data stewardship groups. This group is charged with **facilitating and coordinating data governance and stewardship activities.** Not all programs have formal DGOs, but all successful programs have designated roles to support committees and to facilitate efforts.

Strategic Decision Making Body

A Data Governance Committee or Data Stewardship Committee **makes high-level decisions**. This is a cross-functional group, with representatives from business and technical data stakeholder groups. Members may be called Data Governors, Lead Data Stewards or Executive Stewards.

Functional Tactical Working Group

Technical Tactical Working Group

Data Stewardship Working Groups may consist of one or more teams involved in daily, data-related decisions about how best to turn policy into practice.

These tactical teams tend to provide guidance to individuals with stewardship responsibilities who may be scattered across the organization, **performing specific data-related tasks.**

Data Governance Office

"Laundry List" of Potential Work Items

- Enterprise Data Sharing Agreement(s)
- Enterprise Data Asset/Metadata Collection
- Metadata Repository Tool Selection
- Data Standards (Chapter 879 of the 2008 Appropriation Act)
- Data Quality Standards
- Data Quality Tool Selection
- Business Intelligence Solutions

- SOA standards
- Reference Data Standards
- Data Steward Role Specifications
- Data Steward Training Plan
- NIEM Users Group
- Incorporate EIA into Agency ITSP
- EIA Scorecard 2014
- Data Modeling Standards
- Cloud Data Architecture Standards

Next Steps

- What should we be called?
- Schedule next quarterly meeting – May/June
- Send survey to solicit input on working group participation and prioritization of taskings
- Form working groups and assign initial tasking
- Circulate first cut of charter for review and refinement