

Process Step 5: Author the Modernization Blueprint

Step Description and Purpose

The *Author the Modernization Blueprint* step is the culmination of the process for creating a segment architecture blueprint. The step begins with the identification and categorization of findings and the definition of associated transition options that address segment performance improvement opportunities and implementation of the performance, business, data, and conceptual solution architectures developed in process steps 2, 3 and 4. Transition options are a set of one or more alternatives for transitioning from the as-is to the target state. Transition options are analyzed for cost, benefit and risk in order to develop implementation recommendations. These implementation recommendations consist of validated transition options related to the findings and, ultimately, segment performance improvement opportunities. Taking into consideration logical and discretionary dependencies between the implementation recommendations, these recommendations are prioritized to develop a sequencing plan that provides the basis for developing the modernization blueprint. Figure 1 provides an overview of the development and sequencing of implementation recommendations.

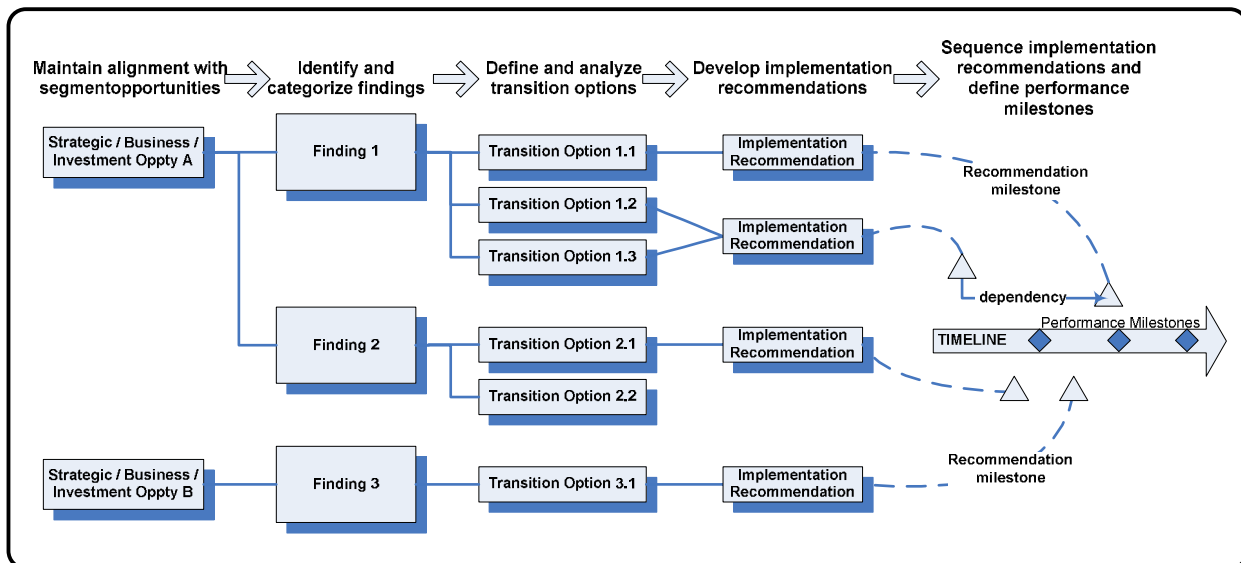


Figure 1: Overview of development and sequencing of implementation recommendations

During this process step, the draft modernization blueprint and sequencing plan are developed and undergo a structured review process with the core team. The review process also helps obtain buy-in that will carry forward into the implementation of the segment architecture. As reviewer feedback is received, comments and change requests provide the basis for finalizing the modernization blueprint and sequencing plan.

The segment architecture blueprint is finalized and formally presented for approval to the executive sponsor, business owner, and core team. Once the segment architecture blueprint and sequencing plan are approved, the executive sponsor, business owner, and core team are prepared to move forward with gaining any additional approvals of the broader business community and capital planning governance teams (such as the Investment Review Board) as necessary. An approved blueprint is ready for overall integration into enterprise transition planning, as well as to move forward into the

implementation processes associated with investment management, solution architecture development, and system lifecycle management.

Note that suggested analytical techniques are included for activities within the methodology to better define what is core for a complete segment architecture in the form of descriptive (not prescriptive) guidance on how to accomplish the analysis. The suggested analytical techniques provide guidance as to what outputs are core for defining a complete segment architecture.

Step Outcome

The outcome of this step is a series of validated implementation recommendations described in a detailed, actionable segment architecture blueprint supported by holistic analysis of segment business, data, technology, and service components. The executive sponsor, business owner, and core team have reviewed and approved the blueprint and sequencing plan for target architecture implementation.

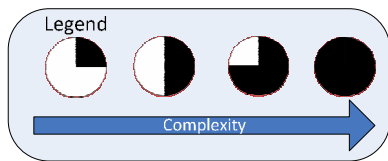
Suggested Analytical Techniques

Suggested analytical techniques are provided corresponding to each activity in this process step. Certain FSAM outputs are classified as ‘core’ to identify the architectural information necessary to specify a complete segment architecture. For each FSAM output, the table includes examples of analytical techniques associated with the output(s). These analytical techniques provide descriptive (not prescriptive) guidance on how to perform the analysis and capture the architectural information for each output. Agencies may employ other templates or artifacts that provide the equivalent level of information and analysis.

Step At-a-Glance

Step 5 At-a-Glance	Process Step 5 Activities			
	Perform cost / value / risk analysis to develop implementation recommendations	Develop draft blueprint and sequencing plan	Review and finalize the blueprint and sequencing plan	Brief core team and obtain approval
Who Participates in this Activity?	Core team Segment architect	Core team Segment architect	Executive sponsor Core team Business owner(s) Segment architect	Executive sponsor Core team Business owner(s) Segment architect
What are the Inputs to this Activity?	Process step 1 outputs Process step 2 outputs Process step 3 outputs Process step 4 outputs	Analysis of cost, value and risk for transition options Proposed implementation recommendations	Strategic systems migration / sequencing overview Recommendation implementation sequencing plan Segment architecture blueprint document (incl. sequencing plan) Segment mappings Transition plan milestones	Final strategic systems migration / sequencing overview Final strategic systems migration / sequencing performance milestones Final recommendation implementation sequencing plan Final segment architecture blueprint document (incl. sequencing plan) Document review log Feedback tracking and action report

Step 5 At-a-Glance	Process Step 5 Activities			
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What are the Outputs from this Activity?	Analysis of cost, value and risk for transition options Proposed implementation recommendations	Strategic systems migration / sequencing overview Recommendation implementation sequencing plan Recommendation implementation sequencing performance milestones Segment architecture blueprint document (incl. sequencing plan) Segment mappings Transition plan milestones	migration / sequencing overview Final strategic systems migration / sequencing performance milestones Final recommendation implementation sequencing plan Final segment architecture blueprint document (incl. sequencing plan) Document review log Feedback tracking and action report	Blueprint executive summary presentation Approved segment architecture blueprint document (incl. sequencing plan) Record of decision (ROD)
Which Stakeholders / Customers will use the Outputs from this Activity?	Senior agency leadership Business owners Strategic planning team Chief Information Officer Budget and capital planning officials Program managers Information Assurance team members	Senior agency leadership Business owners Chief Information Officer	Senior agency leadership Business owners Strategic planning team Chief Information Officer Budget and capital planning officials Program managers IT infrastructure managers Information Assurance team members	Senior agency leadership Business owners Strategic planning team Chief Information Officer Budget and capital planning officials Program managers IT infrastructure managers Information Assurance team members Project managers Software architects and developers
What are the Associated FEA Profiles?	Security Geospatial Records Management		Security Geospatial Records Management	
What is the Relative Complexity of this Activity?				



Activity Details:

Activity 5.1: Perform cost / value / risk analysis to develop implementation recommendations

Activity Description:

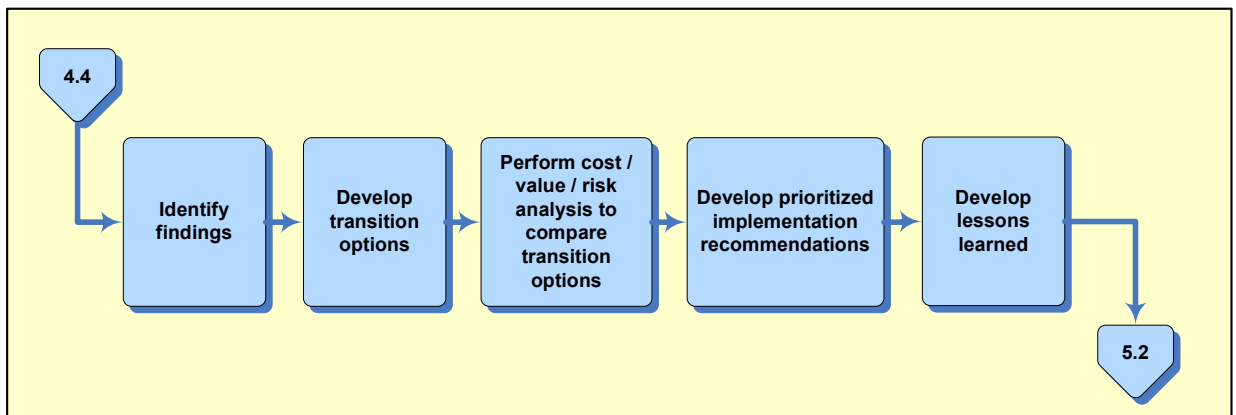
This activity includes guidance for architects to produce findings and transition options that business owners can use to develop a prioritized strategy to drive business improvements. These business improvement activities ultimately will take the form of a formal business case

submission(s) and may include specific project or activities to conduct business process re-engineering, systems integration, establishment of formal partnerships, policy development or other transformational approaches.

Findings can represent almost any issue, from outdated technologies, to poor business process fit, to redundancies, etc. Findings are developed using the relevant artifacts from process steps 2, 3 and 4 and should be categorized according to the associated business products and services. Transition options are then developed for each of the findings. Transition options are a set of one or more alternatives for transitioning from the as-is to the target state. The transition options may be categorized further according to the service components, business processes or capability areas that are impacted.

For each set of transition options, analysis is performed to determine the associated cost, benefit and risk. This requires a balance between the depth of analysis (e.g., high-level cost breakdown), available data (e.g., risk analysis assumptions), and the type of recommendations under consideration (strategic vs. tactical). The results of this analysis are a key input to finalizing the sequencing for implementation of the transition options.

The implementation recommendations are reviewed with key stakeholders and other governance teams as needed to achieve consensus. This review should also include a validation that the segment architecture as developed in process steps 2, 3, and 4 provides the necessary context and level of detail to inform downstream solution-level implementation activities. Any changes to the implementation recommendations resulting from these reviews must also be reviewed and approved by the core team.



Activity 5.1: Define and categorize findings and transition options

Activity Inputs:

- Process step 1 outputs
- Process step 2 outputs
- Process step 3 outputs
- Process step 4 outputs

Tasks:

5.1.1 Identify findings

Findings are developed by reviewing the results of process steps 1 through 4. Specifically, the strategic improvement opportunities from process step 1, the business and information opportunities from process step 3, and the conceptual solution architecture from process step 4.

The findings are aligned with and categorized according to the segment strategic, business, and investment improvement opportunities. This alignment will be extended to the subsequent transition options and implementation recommendations to be defined later in this process step.

Note: This step should focus on synthesizing and summarizing information generated during prior steps and not on the detailed analysis. If detailed analysis is required, then it may be necessary to repeat some of the prior analysis steps.

5.1.2 Develop transition options

Transition options may be modular (i.e., stand-alone), in that they may be implemented independent of other transition options. Transition options may also share dependencies with each other. Such dependencies are likely to be identified as a consequence of the overall architectural analysis performed in process steps 2, 3, and 4. In practice, it is a good idea to attempt to consolidate and de-couple transition options as much as possible in order to reduce the complexity of subsequent cost / value / risk analysis.

As with the alignment of findings in the previous task, transition options are also aligned with and categorized according to the segment strategic, business, and investment improvement opportunities. This provides line-of-sight of the recommendations and presents the transition option in a more actionable context for business owners to evaluate and prioritize.

Note: Throughout this activity, transition options that share dependencies with each other should be grouped into a higher-level transition option. This may especially be the case where there are dependencies between transition options that are derived based on different findings. In such cases, the opportunity to generalize the findings to encompass both sets of transition options may need to be considered.

Transition options are grouped and summarized as a set derived from the findings. Typically, this will take form such as the following:

- Strategic, business, or investment opportunity
 - Finding 1
 - Transition Option 1.1
 - Transition Option 1.2
 - Finding 2
 - Transition Option 2.1

- Etc.

5.1.3 Perform cost / value / risk analysis to compare transition options

For each transition option, a value estimate is derived for each strategic focus area. This may require additional input from key stakeholders. An aggregate cost estimate is prepared that includes the appropriate level of detail. Some more significant and strategic transition options may require more detailed lifecycle cost estimates based upon the requirements for funding review and approval. Cost may also include decommissioning costs associated with transition options that eliminate a service or that result in system retirement. This should rely on cost estimates developed in step 4 that are reviewed, finalized, and rolled-up to the associated transition options.

Risk analysis is performed for each transition option that includes the identification of the top risks in terms of overall impact. This involves assessing the likelihood of the occurrence of the risk, along with assessing the impact on both the cost and value of the transition option. Risks are then rolled up to obtain an overall likelihood and cost / value impact.

Cost, value and risk estimates for each transition option should be analyzed using a quantitative approach such as the value measuring methodology (VMM). Results of the analysis should be used to inform the prioritization (selection and sequencing) of transition options to formulate a set of implementation recommendations in the subsequent task.

5.1.4 Develop prioritized implementation recommendations

Results of the cost / value / risk analysis are reviewed with the key stakeholders to gain buy-in to the proposed implementation recommendations. This review should include the value-to-cost comparison, together with the updated draft of the implementation recommendation overview and the draft system migration diagram. This is a critical step to ensure buy-in to the implementation recommendation proposals that are to be formalized in the segment blueprint and sequencing plan in the subsequent activity.

The architect should review the results of the cost / value / risk analysis with the core team members to select and sequence the transition options. The finalized list of prioritized transition options comprises a set of implementation recommendations that are used to develop a proposal for the high-level recommendation implementation plan.

The set of prioritized transition options is organized and presented using a high-level recommendation implementation overview visual that includes a summary of each implementation recommendation and the proposed high-level recommendation implementation activities.

Rough order of magnitude cost estimates developed in prior steps are refined to account for the actual sequencing of implementation recommendations.

5.1.5 Develop lessons learned

Lessons learned are captured in collaboration with the core team for the segment architecture development to provide historical information that can be used to inform

and guide future segment architecture initiatives and identify ways to improve on the overall segment architecture development methodology.

Communications Considerations:

Consult with the business architecture and data architecture teams to identify issues relative to business processes and data. Transition options need to be shared across the organization to determine if there are any external dependencies or existing efforts. Certain sensitive transition options may need to be vetted with key business experts (e.g., general counsel, HR, etc.) before such transition options can be formalized.

It may be necessary to consult with key stakeholders when performing value analysis. Cost and risk analysis may also require additional input from business experts.

Where external dependencies are known to exist, the implementation recommendations need to be shared across organization(s). The executive sponsor and core team should be informed of any proposed changes to the implementation recommendations. This is especially critical when consensus is difficult and external dependencies exist that cannot be managed entirely within the scope of authority of the core team (e.g., inter-agency initiative).

Activity Outputs:

- Analysis of cost, value and risk for transition options
- Proposed implementation recommendations

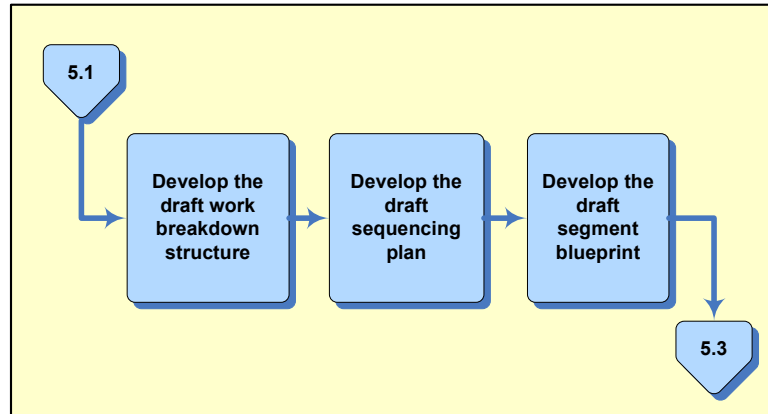
Suggested Analytical Techniques:

Output	Core	FEA Layers					Suggested Analytical Technique	Examples/Templates	Contributing Agency/Team
		P	B	D	S	T			
Analysis of cost, value and risk for transition options	No						Value measuring methodology cost to value matrix	Link to value measuring methodology cost to value matrix (MS Excel Format)	General Services Administration (GSA)
Proposed implementation recommendations	No						Recommendation implementation overview	Link to recommendation implementation overview (MS Word Format)	Federal Segment Architecture Working Group (FSAWG)
Key to FEA Layers		P = Performance B = Business D = Data S = Service T = Technology							

Activity 5.2: Develop draft blueprint and sequencing plan

Activity Description:

The validated implementation recommendations provide the basis for producing the detailed blueprint document and sequencing plan. The draft blueprint document summarizes the results of the business analysis and strategy and provides an overview of the target data, services, and technology environment along with the results of analysis of the findings, transition options, and associated implementation recommendations.



Activity 5.2: Develop draft blueprint and sequencing plan

Activity Inputs:

- Updated analysis of cost, value and risk for transition options
- Finalized implementation recommendations

Tasks:

5.2.1 Develop the draft work breakdown structure

Using the updated implementation recommendations, a draft sequencing work breakdown structure (WBS) is developed. For each implementation recommendation, a top-down representation of the deliverables that are required for implementation is developed and described in the WBS. The WBS should incorporate deliverables associated with all aspects of the transformation, including technology, process, system, data, etc., along with any associated workforce development, communication and change management activities.

5.2.2 Develop the draft sequencing plan

Based on the completed WBS, both a high-level recommendation implementation sequencing plan and a strategic systems migration / sequencing overview are developed to summarize the sequencing plan for the segment. The recommendation implementation sequencing plan contains information regarding the timing and dependencies between those items identified in the WBS, including the technology, process, system, data, associated workforce development, communication, and change management activities. These items constitute the blueprint recommendations that are outlined in the draft implementation sequencing plan analytical technique identified below. The strategic systems migration / sequencing overview is focused on the actual sequencing and transition of systems and services to achieve the target state.

Note that the strategic systems migration / sequencing overview is essentially a single consolidated diagram containing the individual transition recommendation sequencing diagrams developed in process step 4 that correspond with the selected implementation recommendations. A corresponding consolidated table of strategic systems migration / sequencing performance milestones is also developed.

Once the high-level sequencing is developed, a more detailed draft sequencing plan is developed in the form of a project schedule that includes all tasks associated with the overall transition of business processes, systems and services to achieve the target state. This sequencing plan details the sequenced tasks necessary to develop the elements of the WBS. Internal and external dependencies are also included as either milestones or predecessor tasks.

5.2.3 Develop the draft segment blueprint

A draft segment blueprint is developed that describes findings, recommendations, and the overall segment transition plan. This document should be generated according to the outline provided below. A separate executive summary document may also be created. The blueprint document also contains descriptions of some of the key analysis performed in process steps 2, 3 and 4.

Communications Considerations:

It may be necessary to consult with the business architecture and data architecture teams to identify business processes and data elements of the WBS. The WBS form may also need to be shared across the organization whenever external dependencies are known to exist for specific recommendations.

Activity Outputs:

- Strategic systems migration / sequencing overview
- Strategic systems migration / sequencing performance milestones
- Recommendation implementation sequencing plan
- Segment architecture blueprint document (incl. sequencing plan)
- Segment mappings
- Transition plan milestones

Suggested Analytical Techniques:

Output	Core	FEA Layers					Suggested Analytical Technique	Examples/Templates	Contributing Agency/Team
		P	B	D	S	T			
Strategic systems migration / sequencing overview	Yes				X	X	Recommendation sequencing diagram	Link to recommendation sequencing diagram (MS Word Format)	Department of the Interior (DOI)
Recommendation implementation sequencing plan	No						Implementation sequencing plan	Link to implementation sequencing plan (MS Project Format)	Federal Segment Architecture Working Group (FSAWG)

Output	Core	FEA Layers					Suggested Analytical Technique	Examples/Templates	Contributing Agency/Team
		P	B	D	S	T			
Segment architecture blueprint document (incl. sequencing plan)	Yes	X	X	X	X	X	Modernization blueprint	Link to modernization blueprint (MS Word Format)	Federal Segment Architecture Working Group (FSAWG)
Segment mappings	Yes	X	X	X	X	X	Segment mappings	Link to segment mappings (MS Excel Format)	Federal Segment Architecture Working Group (FSAWG)
Transition plan milestones	Yes	X	X	X	X	X	Segment transition plan milestones	Link to segment transition plan milestones (MS Excel Format)	Federal Segment Architecture Working Group (FSAWG)
Key to FEA Layers		P = Performance B = Business D = Data S = Service T = Technology							

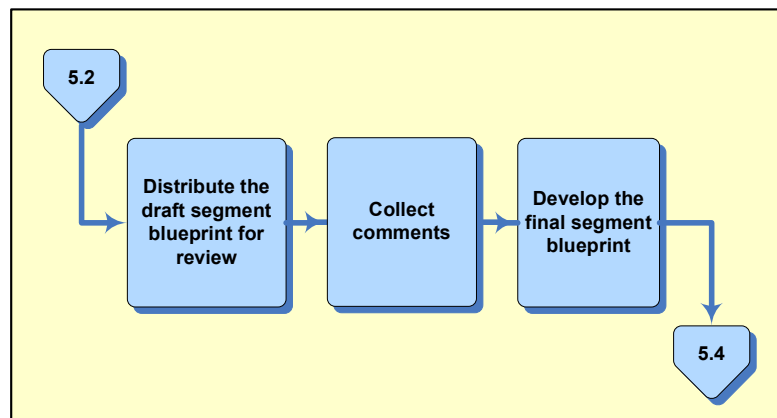
Segment Blueprint Sample Outline
<p>Executive Overview: This brief (1-2 pages) overview describes the motivation behind the segment blueprint. It is focused on providing clear, concise answers to key questions, such as:</p> <ul style="list-style-type: none"> ▪ Where are we today? (Baseline) ▪ Why do we need to modernize? (Target Performance Improvement Opportunities) ▪ What is our vision for modernization? (Target Architecture) ▪ How should we execute modernization? (Candidate Solutions / Projects) ▪ When should we modernize and what are the relationships to other initiatives? (Sequencing Plan / Implementation Plan) ▪ Who needs to participate for this initiative to be successful? (Resource Plan) <p>Overview of Business Performance Opportunities: Provides a discussion of the scope, strategic intent, drivers and opportunities for improvement within the segment. This section further elaborates upon the following key questions:</p> <ul style="list-style-type: none"> ▪ Where are we today? (Baseline) ▪ Why do we need to modernize? (Target Performance Improvement Opportunities) <p>Recommendations for Segment Modernization: Describes the existing architecture issues from a variety of perspectives that address the target performance opportunities. The Findings and Recommendations (F&R) are described in the context of the specific business products and services where improvements are recommended due to strategic drivers such as eliminating redundancies, filling voids or other general industry trends. All findings are associated to specific recommendations on how to proceed. Expected performance improvements associated with the recommendations are also identified. This section further elaborates upon the following key questions:</p> <ul style="list-style-type: none"> ▪ How should we execute modernization? (Candidate Solutions / Projects) <p>Target Business / Data and Technology Environment: This should include a brief description of the business functions and services that are provided and the strategic objectives that are to be achieved by the transformation. It also describes target state for the technology environment required to support the segment modernization recommendations and the strategic systems migration plan, along with the target conceptual data model and environment. This section further elaborates upon the following key questions:</p> <ul style="list-style-type: none"> ▪ What is our vision for modernization? (Target Architecture) ▪ Have we achieved the required level of security and privacy protection for the segment? (Target Architecture) <p>Sequencing Plan: Describes the as-is state, target state, and the integrated steps required to transition from the as-is to the target environment based on the identified recommendations. Within the sequencing plan, performance improvements are also associated with segment transition milestones. The sequencing plan will also inform the downstream prioritization and development of business cases or investment proposals, initiation of projects, and development of policies and procedures. This section further elaborates upon the following key questions:</p> <ul style="list-style-type: none"> ▪ When should we modernize and what are the relationships to other initiatives? (Sequencing Plan / Implementation Plan) ▪ Who needs to participate for this initiative to be successful? (Resource Plan) <p>Additional Appendices: (as needed) that provide artifacts or additional reference information that provide more detailed architectural information and analysis (e.g. supporting artifacts, repository reports, data standards, etc.).</p>

Activity 5.3: Review and finalize the blueprint and sequencing plan

Activity Description:

The draft segment architecture blueprint is distributed to the core team for review. Throughout the review process, feedback is recorded and consolidated, and resulting actions

are tracked. Once the review is completed, the final segment architecture blueprint document is prepared for submission to the appropriate governance teams.



Activity 5.3: Review and finalize the blueprint and sequencing plan

Activity Inputs:

- Strategic systems migration / sequencing overview
- Strategic systems migration / sequencing performance milestones
- Recommendation implementation sequencing plan
- Segment architecture blueprint document (incl. sequencing plan)

Tasks:

5.3.1 Distribute the draft segment blueprint for review

The draft segment blueprint is distributed for review to the core team, business owner(s) and executive sponsor. Accompanying this distribution is a cover letter that describes the highlights of the blueprint. A separate executive summary document may also be provided for review. During the review process, a document review form may be used to collect review comments and change requests.

5.3.2 Collect comments

During the review process, all feedback is recorded, dispensed and consolidated. Follow-up actions are documented and tracked through to completion.

5.3.3 Develop the final segment blueprint

As feedback actions are documented and closed, comments and changes are also incorporated into the draft segment blueprint document. This may also result in updates to other work products such as the sequencing WBS and project plan.

Communications Considerations:

It may be necessary to conduct face-to-face meetings with individual core team members, business owner(s) and the executive sponsor to review the blueprint findings, implementation recommendations and sequencing plan.

Activity Outputs:

- Document review log
- Feedback tracking and action report

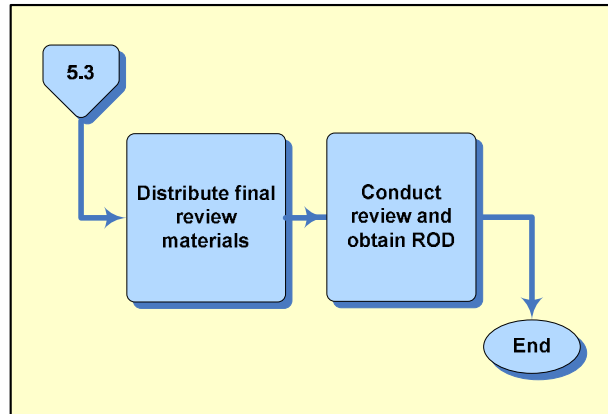
Suggested Analytical Techniques:

Output	Core	FEA Layers					Suggested Analytical Technique	Examples/Templates	Contributing Agency/Team
		P	B	D	S	T			
Document review log	No						Document review form	Link to document review form (MS Word Format)	Federal Segment Architecture Working Group (FSAWG)
Feedback tracking and action report	No						Feedback tracking and action report	Link to feedback tracking and action report (MS Excel Format)	Federal Segment Architecture Working Group (FSAWG)
Key to FEA Layers		P = Performance B = Business D = Data S = Service T = Technology							

Activity 5.4: Brief core team and obtain approval

Activity Description:

In this activity, a formal presentation of the segment blueprint is made to the core team, business owner(s), and the executive sponsor, after which the decision to approve the segment blueprint is recorded either as a separate signed document or in the form of published meeting minutes. Any issues that arise during the final review are addressed and closed as needed. The formal presentation may also be accompanied by an executive overview document describing the need for the transformation and a summary of the analysis of findings, transition options and implementation recommendations. Once this activity is complete, the executive sponsor, business owner(s) and core team can move forward with gaining approvals from the broader business community and capital planning governance teams such as the Investment Review Board (IRB).



Activity 5.4: Brief core team and obtain approval

Activity Inputs:

- Strategic systems migration / sequencing overview
- Recommendation implementation sequencing plan
- Segment architecture blueprint document (incl. sequencing plan)
- Document review log
- Feedback tracking and action report

Tasks:

5.4.1 Distribute final review materials

The finalized segment blueprint is distributed for review to the core team, business owner(s) and executive sponsor. Accompanying this distribution is a cover letter that describes the highlights of the blueprint. A separate executive summary document may also be provided for review.

5.4.2 Conduct review and obtain approval

A formal review meeting is scheduled and conducted to obtain formal approval of the blueprint by the core team, business owner(s) and executive sponsor and a record of decision is created to document the decision.

Communications Considerations:

Once approved, the executive sponsor should be prepared to present the blueprint to other governance teams for additional approval as may be required.

Activity Outputs:

- Blueprint executive summary presentation
- Approved segment architecture blueprint document (incl. sequencing plan)
- Record of decision (ROD)

Suggested Analytical Techniques:

None

Step References

[*Value Measuring Methodology: Highlights*](#), Federal Chief Information Officer (CIO) Council Best Practices Committee, October, 2002.

[*Value Measuring Methodology: How to Guide*](#), Federal Chief Information Officer (CIO) Council Best Practices Committee, October, 2002.