



Technical Evolution Guide

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Defining and managing the IT projects in an integrated plan that coordinates the evolution of the HS IT assets according to the HS IT Strategic Plan and the HS Agency's Technical Architecture.

Introduction

This guide defines the key activities, artifacts, and roles that are necessary to create and maintain an [IT Evolution Plan](#) (IEP) for the HS Agency. The HS Agency's IT Evolution Plan guides the migration to the [Agency's Technical Architecture](#) (ATA), aligning individual IT [projects](#) with the [HS IT Strategic Plan](#). It divides the IT evolution into a series of IT [Plateaus](#). Each Plateau contains a collection of projects. Projects may implement new initiatives for the HS Agency, provide application upgrades for existing HS programs, or update the IT infrastructure — enabling the evolution of the HS IT.

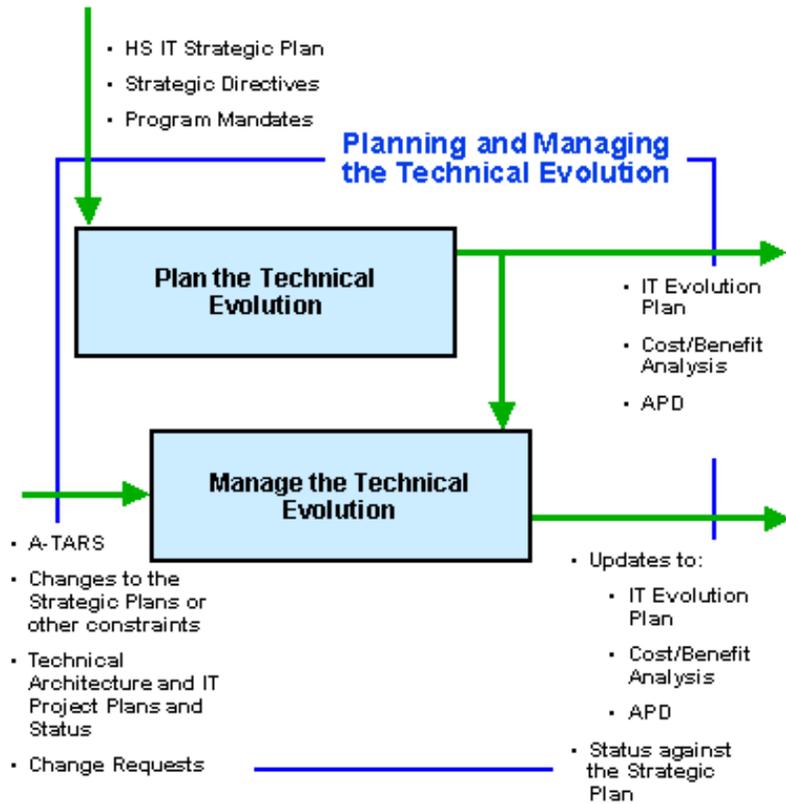
The activities in this guide rely on two major work products: the HS IT Strategic Plan and the [A-TARS](#) as defined in the [Strategic IT Planning and Management](#) and the [Develop and Maintain the Technical Architecture](#) IT Planning and Management Guides. Once the HS IT organization has completed its Strategic Plan, the organization will develop the plan to evolve to the Technical Architecture. The initial IT Evolution Plan is developed in parallel with the initial Technical Architecture.

See the [Organization of the IT Planning and Management Guides](#) for the relationship of the processes described in this guide with those of the other guides. To customize guidance, check information contained in the [Application of the IT Planning and Management Guides](#).

Processes

This guide defines the key activities, artifacts, and roles for the HS Agency technology planning and management processes. Two top-level processes contain sets of activities as shown in the Figure and described below.

- [Consolidated Resources](#)



The key activities are:

1. [Plan the Technical Evolution](#). These activities develop the initial IT Evolution Plan. They are performed when there has been a significant change to either the HS IT Strategic Plan or the HS IT Architecture.
2. [Manage the Technical Evolution](#). These activities iteratively manage the evolution according to the plan. As each Plateau (or increment) of the evolution is completed, the HS IT Evolution Plan is updated. Each update takes into consideration the results of the current Plateau and any adjustments that have been made to the HS IT Strategic Plan and the Technical Architecture. Changes may require updates to the plans (e.g., new mandates from State or Federal Agencies or changes in the State and Federal HS IT budgets).

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Develop the overarching plan to manage the IT evolution, keeping the IT planning consistent with the IT Strategic Plan, the Technical Architecture, and the HS Agencies Program needs.

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Overview

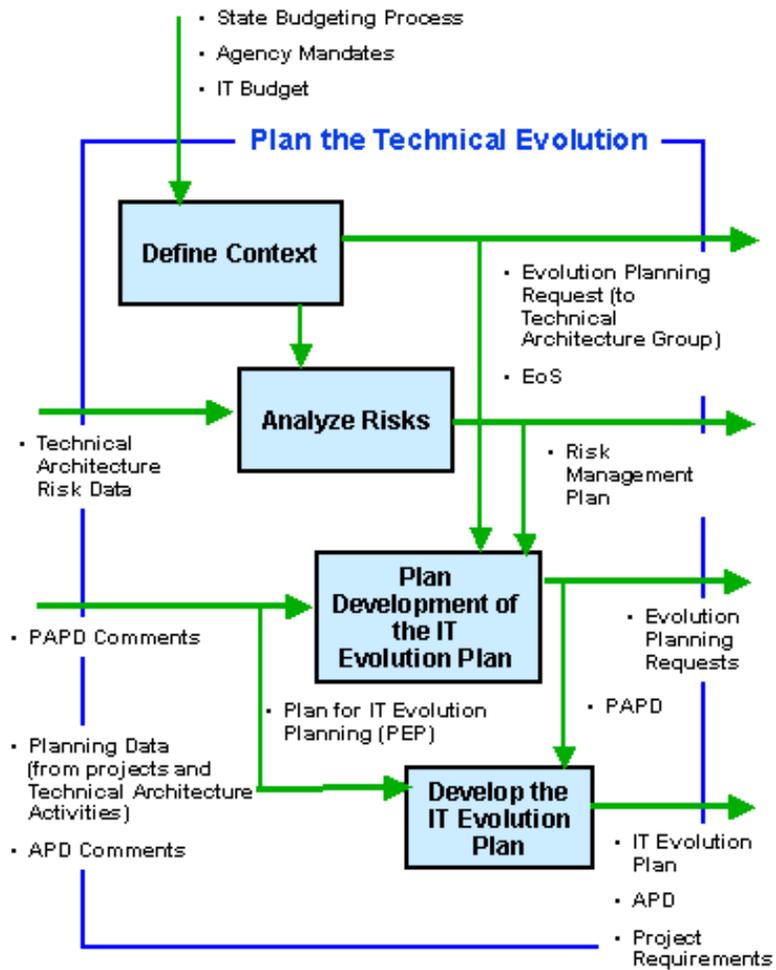
The initial planning of the IT evolution starts when the HS IT organization has completed the strategic planning process, described in the [Strategic IT Planning and Management Guide](#). This initial planning process is generally executed once, and the resultant plan is used and adjusted over time. This level of planning needs to be performed only if the IT Evolution takes a significantly new direction. This may happen if there is a major change in strategic direction (e.g., reversal on implementing client services via the Web) or a significant change in the architectural vision (e.g., adopting an emerging technology for the development and deployment of applications). These changes are communicated through major releases of the [HS IT Strategic Plan](#) and the [A-TARS](#).

The planning activities are based on the strategic direction and Technical Architecture information, as well as the specific needs of HS programs (e.g., HS Agency mandates) to develop the evolutionary path. The evolutionary path is described in a series of [Plateaus](#). The near-term Plateaus are described in detail. Plateaus defined further into the future should have less detail to address any uncertainty inherent in long-range planning.

The planning activities define work to be done for each Plateau, estimate the cost for each Plateau, and develop an overall schedule. A cost/benefit analysis is prepared and used to guide planning and implementation choices. When necessary, planning

information may be compiled and used to submit [APDs](#) to the appropriate sponsoring HS Agencies.

This activity is concluded when the stakeholders have committed to the IT Evolution Plan. Once the initial plan is developed, it is kept up to date as a part of the [Manage The Technical Evolution](#) activities.



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Activities

Developing the IT Evolution Plan involves the following key activities:

1. [Define Context](#). Set up the IT Evolution Management Team, identify stakeholders, prioritize evolution goals, identify alternative ways to achieve goals, and note significant constraints.
2. [Analyze Risks](#). Identify and analyze the risks to achieving the goals, developing a plan to manage the risks.
3. [Plan Development of the IT Evolution Plan](#). Plan the activities to create the IT Evolution Plan.
4. [Develop the IT Evolution Plan](#). Produce and commit to the initial version of the IT

Evolution Plan, detailing the near-term Plateaus and characterizing the long-term Plateaus.

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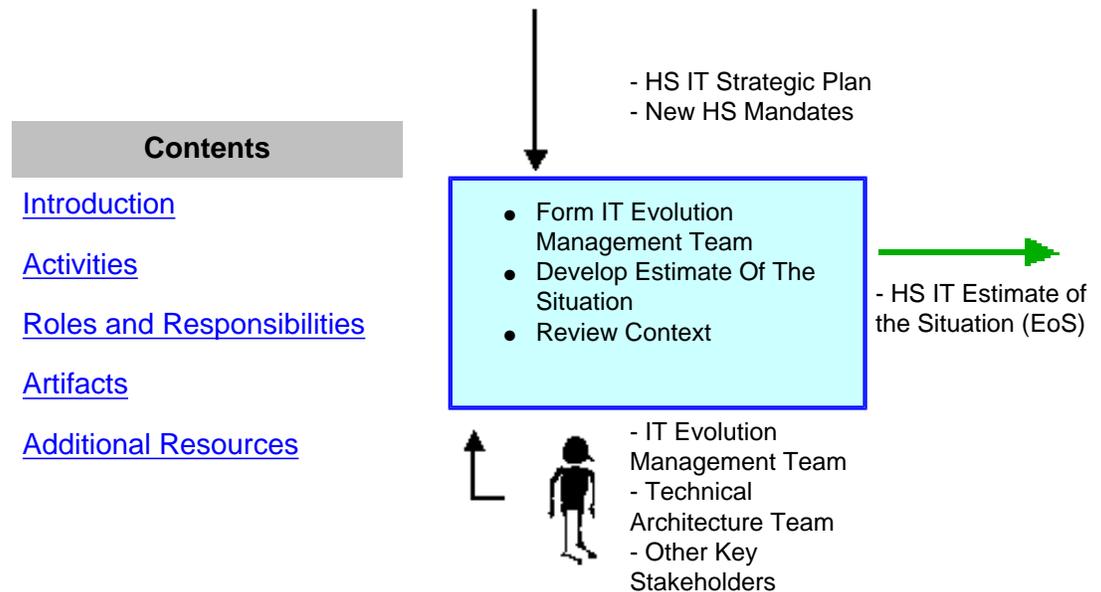


A.1. Define Context

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- [Define Context](#)
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Stakeholders identify and agree to the prioritized evolution goals, alternative ways to achieve them, and significant constraints.



Introduction

An IT [Evolution Management Team](#) is established. They have responsibility for the IT Evolution Planning and Management activities. Their first action is to collect and revalidate information developed as a part of the HS IT Strategic planning process. The evolution planning process builds on the stakeholders, goals, initiatives, and mandates identified in the HS IT strategic Plan. Constraints such as State or Agency standards, along with current and expected budgetary information, are identified and documented. This information is captured in the HS IS [EoS](#). Once the draft EoS is completed, it is reviewed and approved by the primary stakeholders, with changes to it managed and controlled. Any change to the EoS requires stakeholder participation.

TANF Example: At the initiation of the IT Evolution Plan for the TANF IT systems, it is important to have a clear understanding of the direct TANF IT activities, including new systems, significant modification to existing systems, and other applications' system modifications that have a direct impact on the TANF system. If other applications are being rolled out that have direct interface requirements or dependencies on the TANF system, it is important to incorporate the expectations of the interface systems into the overall IT Evolution Plan for TANF IT.

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Activities

Consolidated [guidelines](#) are available to perform the following key activities:

- 1. Form IT Evolution Management Team.** The IT Evolution Management Team is responsible for managing the IT evolution in accordance with the IT Evolution Plan. The Evolution Manager leads this team. Other roles on the team may include a Risk Analyst, an Estimation Analyst, and Planning Analyst. This team should include people with the following skills:
 - Planning and organizing IT projects
 - Estimating size, cost, and schedules for IT projects
 - Risk analysis and management
 - Communication
 - System integration
- 2. Develop Estimate of the Situation.** The EoS establishes a bridge between the HS IT Strategic Plan and the HS IT Evolution Plan. This document defines the goals of the evolution and the constraints that are imposed on any evolution. This document defines the following:
 - **Stakeholders.** Who has a vested interest in the success of the IT evolution? What are the expectations of the individual stakeholders? The stakeholders will be an extension of the stakeholder list developed during the IT strategic planning process.
 - **Goals.** What is to be accomplished during the IT evolution? This is a restatement of the prioritized goals and subgoals from the IT Strategic Plan. As the evolution progresses, these goals may be updated by the stakeholders when the strategic planning process has not yet been repeated.
 - **Alternatives.** What are the different ways to meet the goals? What possible development alternatives do we have? Alternatives include technical as well as acquisition decisions (e.g., make, buy, or transition from another State). The HS Agency Technical Architecture, as it develops, will help identify appropriate technical alternatives.
 - **Constraints.** What are the major limitations on IT evolution decisions, such as on selecting alternatives as well as the IT evolution effort overall? These constraints include current regulations that the HS Agency must follow, budgets, contracting relationships, and time-related issues. Some of these

constraints may flow from court rulings or State and Federal legislation and regulations.

- **Mission and History.** What is the mission of this IT organization? How did the organization get to this stage of the evolution? This may be a restatement of the mission statement from the IT Strategic Plan, with additional information about the history of the IT infrastructure, and previous decisions that have influenced the development of the current IT infrastructure and organization. This portion of the EoS will be updated after each [Plateau](#).
- **Assumptions and Inheritances.** What assumptions were made as the EoS was developed? What decisions have been made in the past that may influence choice in regard to the alternatives?
- **Where Are We Now?** What are the characteristics of the current IT infrastructure (the IT inventory and analysis created during the IT Strategic Planning activities may be useful).
- **What Is the Definition of Success?** How will the stakeholders know that they have successfully achieved their goals?
- **What Are the Drivers?** What State and Federal mandates or policies will significantly affect our solution?

3. **Review Context.** The EoS represents a shared understanding by the stakeholders of the current situation as well as where the IT evolution effort will go. The stakeholders formally review and approve the EoS. Revisions are made, as necessary, to obtain consensus. Changes to the EoS are managed and controlled with stakeholder participation.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [IT Evolution Management Team](#). These individuals establish the EoS and oversee the review meetings. They are considered to be one of the [stakeholders](#). The [IT Evolution Manager](#) leads this team. Other roles on the team may include a [Risk Analyst](#), an [Estimation Analyst](#), and a [Planning Analyst](#).
- [Technical Architecture Team](#). These individuals participate in establishing the EoS by providing the HS Agency-wide technical perspective.
- [Other Key Stakeholders](#). These individuals or groups participate in or have a vested interest in the establishment, approval, or oversight of the IT evolution. This may include [IT management](#), [IT Project Managers](#), HS Agency [program management](#), and the HS [Agency Decision Makers](#), amongst others.

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Artifacts

The following information is used or produced by these activities. Templates, examples,

and checklists are available through the [Additional Resources](#) section at the end of this page

- HS IT [Estimate of the Situation](#). This work product is the primary result of these activities. The appropriate stakeholders must reach consensus on its contents.
- [HS IT Strategic Plan](#). This is the foundation for all IT evolution planning activities. All information in the EoS must be consistent with the higher-level goals, initiatives, and mandates identified in the HS IT Strategic Plan.
- New HS [Mandates](#). Any new requirements that have been received from either State or Federal Agencies since the Strategic Plan was completed must be factored into the EoS.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW	Consolidated Guidance: Forming the IT Evolution Management Team Guidelines on forming the Evolution Management Team, describing their authorities, and defining Core and Extended Team member roles.	02-01-02
	MS Word Format HTML Format	
NEW	Template: Estimate of the Situation (EoS) Template for an Estimate of the Situation.	02-01-02
	MS Word Format HTML Format	
NEW	Sample: SACWIS Estimate of the Situation (EoS) An example of a SACWIS project's EoS.	02-01-02
	MS Word Format HTML Format	
NEW	Work Aid: Sample Estimate of the Situation (EoS) Questions Questions that could be used for gathering EoS information from stakeholders.	02-01-02
	MS Word Format HTML Format	

NEW

External Website: WinWin Negotiation Tool

From the University of Southern California, this distributed groupware negotiation tool is designed to assist an organization in reaching agreement on a set of goals. (The URL for this website is Included in the ***Planning and Management Resources*** document)

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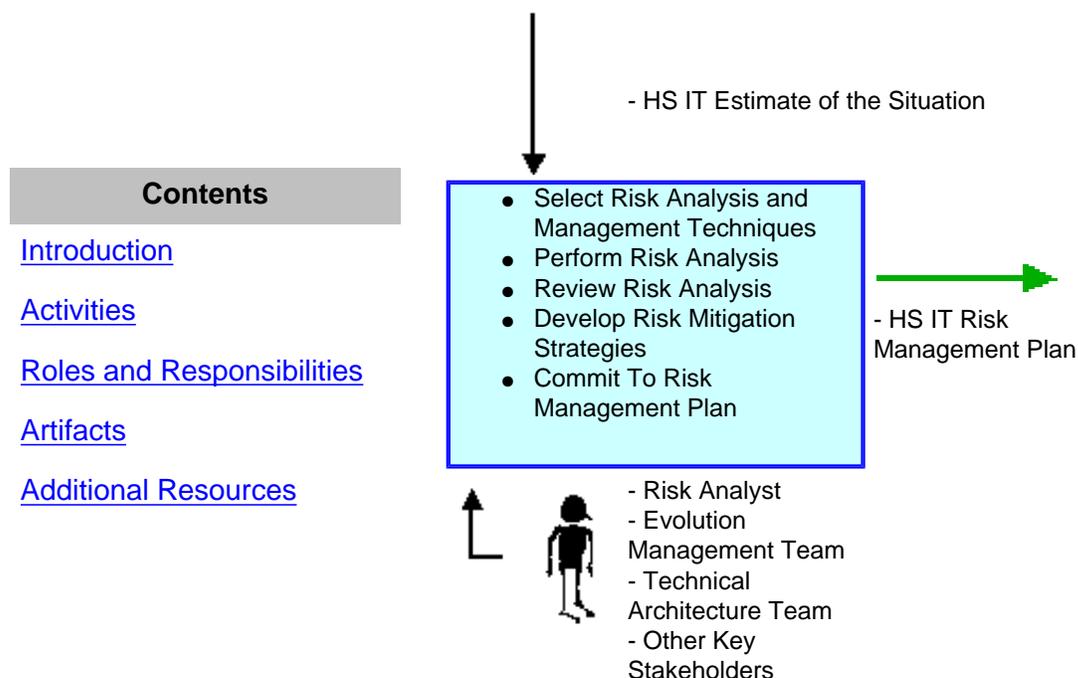


A.2. Analyze Risks

- [Plan the Technical Evolution](#)

- [Define Context](#)
- Analyze Risks
- [Plan Development](#)
- [Develop the IT Evolution Plan](#)

Identify and understand the risk in evolving the IT, creating a plan to manage that risk.



Introduction

Identifying and managing threats to the success of the IT evolution are integral parts of the IT evolution planning and management activities. These activities establish the risk analysis and management processes, perform a thorough risk analysis, and define strategies to mitigate and manage these threats. An [RMP](#) is produced, establishing measurements to indicate the level of risk and setting decreasing thresholds for acceptable risk over time. The plan defines actions to be taken to mitigate the risk. Stakeholders participate in and reach consensus on the risks and how they will be managed.

TANF Example:

A typical TANF example could be that the State has apportioned funding for part of a project but currently does not have sufficient funding to complete later stages or modules of the project. The IT Evolution Plan should deal with the inherent risks of a project that will not be completed and the uncertainty of the later stages. To mitigate the risks related to absence of funding, the IT Evolution Plan should include a modular project that could be used at various stages of its development and deployment.

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Activities

Consolidated [guidelines](#) are available to perform the following key activities:

1. **Select Risk Analysis and Management Techniques.** The approach to understanding and addressing a risk depends on the types of risks that an organization faces (e.g., cost, schedule, quality, or technical risks). This activity selects the appropriate techniques and how they will be used to qualify and manage the risks. At a minimum, establish the following:
 - Responsibilities of the Risk Analyst.
 - Method(s) for identifying of risks.
 - Method(s) for the measuring the probability, consequence, and priority of each risk.
 - Method(s) for grouping the risks.
 - Method(s) for measuring and tracking the amount of risk over time. Typically a risk referent, a measure against which to determine an amount of acceptable risk, is established for individual as well as overall risk. The risk tolerated at any point in time should decrease as the IT evolution proceeds, i.e., the closer to the end of a [plateau](#), the greater the chance of success, as determined by declining risk.
2. **Perform Risk Analysis.** Comprehensively characterize potential IT evolution risk items. Examine the goals in the EoS with respect to available alternatives, constraints, and organizational and evolution-related assets; identify what can go wrong. Examine unsatisfactory outcomes and their effect on the evolution goals. Group the identified risks into logical groups. Groupings for State HS Agency IT development include:
 - **Business Process Risks.** These are risks that the technology will cause a significant change in the business processes that are currently in place within the HS Agency, as well as change interactions with external users (e.g., citizen services delivered directly over the Web).
 - **Communication Risks.** These are risks that information will not be communicated to the appropriate stakeholder in time for that individual to perform a required task in either the development or use of the new technical solutions (e.g., training a user on a new user interface).
 - **Coordination Risks.** These are risks affecting the coordination of the

individual projects within one or more [plateaus](#). The consequences may be realized when the results of one IT [project](#) impact another project, such as acquiring a low quality product from a vendor. Coordination risks also can appear when automated systems must interface with other State or Federal systems not under control of the Evolution Management Team.

- **Financial Risks.** These are risks in the funding sources for individual projects or groups of projects. These risks can be due to uncertainties in either the Federal or State budgeting process.
- **Management Risks.** These are risks that the management practices may contribute to uncertainty in the project outcomes, (e.g., inability to accurately estimate, track, or staff projects in a timely manner).
- **Technical or Technology Risks.** These are risks that the technical product design or fabrication processes may not be adequate for the solution required (e.g., lack of a [scalable](#) design or adequate development tools. These risks could be inherited from organizations outside the HS Agency, such as inadequate quality of service from a State-wide network.
- **Other Risks.** These are risks that do not fit in any established categories. If there are a large number of risks in this category, then create new categories.

As risks are identified, analyze them independently to determine how likely they are to occur (probability) and the effect of a risk situation occurring (consequence). As you estimate the probability and consequences show any uncertainties in the estimates.

Because the HS Agency does not have unlimited resources, you should prioritize the risks to determine those that must be addressed first. You can use the total effect of the risk, its risk factor, to determine the priorities. The risk factor is based on the combined effect of the probability and consequence. ISO-risk contours or other techniques can be used to visualize the risks as a whole. The [Additional resources](#) section offers some suggested techniques.

Record the results of the analysis in the RMP.

3. **Review Risk Analysis.** Identification and analysis of risk is subjective and should have broad independent review and input. This review provides an opportunity for stakeholders to add their perspective by commenting on the results of the risk identification, analysis, and evaluation activities.

Perform the following when reviewing risk analysis:

- Provide a draft Risk Management Plan to the stakeholders for individual review, showing the risks but not any mitigation actions.
- Hold a stakeholder meeting to refine the risk list by incorporating additional risks and deleting risks based on the perspectives of the stakeholders. For example, the management team may have felt that a change to the business process would be a significant risk, but during this review, it was found that the users welcome the change.
- Elicit input from the stakeholders on the strategies to manage the identified risks, either separate risks or combined. Stakeholders should reach an understanding on the identified risks and high-priority risk items and begin to brainstorm on possible mitigation strategies and their potential impact.
- Update the draft RMP with the change rationale from the meeting minutes referenced.

4. **Develop Risk Mitigation Strategies.** For each group of risks, develop a risk mitigation strategy. This risk mitigation strategy documents the specific actions that will be taken to reduce high- and medium-priority risks within the risk group. Risk mitigation strategies may introduce new risks that may negatively affect other risks; investigate any new risks.

In general, consider the following when defining risk mitigation strategies:

- Can the strategy reduce risk to an acceptable level?
- Will the strategy affect another risk, possibly making it worse?
- What is the potential impact of new risks, if any, introduced by the strategy?
- Does the strategy support Plateau or evolution goals and success criteria?
- Are the tactics and means for implementing the strategy consistent with Plateau or evolution constraints?
- Is the strategy cost-effective?

Assign a responsible individual to each mitigation strategy, and predict the level of risk when the mitigation action is completed. Document the results of this activity in the draft RMP.

5. **Commit to Risk Management Plan.** Firm commitment is needed to pursue and deal with the threats to the IT Evolution Plan's success. This activity provides a mechanism for formally briefing all stakeholders on the contents of the RMP and soliciting their commitment. Make changes to the RMP based on this review. Place the RMP under change control to track any updates made as the IT evolution activities progress.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Risk Analyst](#). As a member of the Evolution Management Team, the Risk Analyst is responsible for facilitating the risk identification and documentation of risk items.
- [IT Evolution Management Team](#). The Evolution Team members participate by aiding the Risk Analyst in identifying, estimating, or defining strategies for the risks.
- [Technical Architecture Team](#). Members of this team provide insight into technical and technology-related (e.g., vendor-product) risks.
- [Other Key Stakeholders](#). These individuals or groups will be affected by the risks or have insight that can contribute to understanding and managing the risks. They may include [IT management](#), [IT Project Managers](#), HS [Program Management](#) and the HS [Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples, and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- HS IT [Estimate of the Situation](#). This is a major input to the Analyze Risks activities because it defines the context for the analysis and insight into feasible approaches to dealing with the risks (e.g., within constraints).
- HS IT [Risk Management Plan](#). This is the major product of this activity, documenting a consensus on the most important risks to address and a shared commitment from the stakeholders to address them.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW	Example: Risk Management Plan Example of a Risk Management Plan that defines a specific risk analysis and management process.	02-01-02
	MS Word Format HTML Format	
NEW	Work Aid: Risk Identification Questionnaire A set of questions that can be asked about an IT initiative that will aid in the development of a list of risks.	02-01-02
	MS Word Format HTML Format	
NEW	Work Aid: Risk Spreadsheet This spreadsheet is used with the Risk Management Plan. The purpose is to determine the probability, consequence, and risk exposure of the risks.	02-01-02
	MS Excel Format MS Word Format HTML Format	
NEW	External Website: Risk Radar This is a tool developed and supported by the Software Program Managers Network. This tool can be used to identify and analyze risks. (A URL that includes pointer to this Website is Included in the <i>Planning and Management Resources</i> document)	02-01-02
	HTML Format	

NEW

External Website: RiskTrak

This is a tool that is sold by Risk Services & Technology. This tool assists the team in identifying and analyzing risks. (A URL that includes pointer to this Website is Included in the **Planning and Management Resources** document)

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A.3. Plan Development of the IT Evolution Plan

Plan the activities to create the IT Evolution Plan.

Plan the Technical Evolution

- [Define Context](#)
- [Analyze Risks](#)
- Plan Development
- [Develop the IT Evolution Plan](#)

- Technical Architecture Work Plans and Direction
- HS IT Estimate of the Situation
- HS IT Risk Management Plan (RMP)
- A-TARS
- HS IT Strategic Plan

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- Establish the Plan for Evolution Planning
- Document and Submit PAPD(s)
- Commit to Plan

- Plan for Evolution Planning
- Planning Advanced
- Planning Document
- IT Evolution Plan



- Risk Analyst
- Evolution Management Team
- Technical Architecture Team
- Other Key Stakeholders

Introduction

Planning is an iterative process, in which the overall timeframe for the [IT](#) evolution (e.g., the strategic planning horizon) is separated into intermediate evolutionary [Plateaus](#). Achieving each plateau establishes an enterprise-wide operational capability based on the technology deployed at that time. Within each plateau, a network of small, narrowly focused IT projects are executed, providing engineering work products (e.g., analysis or design documentation, prototypes, user documentation) or technology solutions (e.g., deployed applications or infrastructure). Collectively, these projects achieve the plateau goals. The IT Evolution Plan is the item that defines this network of projects and is used to manage them, in essence an integrated IT master plan.

This activity creates a detailed plan to develop the IT Evolution Plan, and make sure that those individuals and organizations within the scope of the IT Evolution Plan contribute to its creation. This *plan for the plan* is called the [Plan for Evolution Planning](#), or [PEP](#). When the PEP is enacted, the IT Evolution Plan will be created.

The EoS and the RMP provide a major source of guidance to these planning activities.

Ongoing and new initiatives identified in the Strategic Plan are also factored into this planning process. This approach ensures that the individuals or groups that may be affected will participate in establishing the PEP.

An activity is included to develop and submit the PAPD, derived from the PEP contents. The PAPD is used to request matching funding from a Human Services Federal Agency to prepare the HS Agency Technical Architecture descriptions as well as generate the IT Evolution Plan itself.

TANF Example:

A typical TANF example could be that the IT Evolution Plan emphasizes and provides critical delimiters for establishing the plateaus of the project. In a new TANF benefits delivery application, for example, the focus of a plateau could be to complete a group of business functions that can be implemented and used by the user community. The ability to deliver parts of the application system then move on to the next part of the application significantly diminishes the risk associated with long-term development and the danger that nothing will be delivered.

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Activities

Consolidated [guidelines](#) are available to perform the following key activities:

- 1. Establish the Plan for Evolution Planning.** The anticipated scope of the IT Evolution Plan can be deduced from the IT Strategic Plan, the EoS, and the RMP. This scope can be used to select individuals to participate in establishing the PEP. This includes individuals that will have responsibility for the IT projects (Project Management Teams), members of the Technical Architecture Team, and representatives of the HS [programs](#), among others. In general, the Evolution Management Team does the following:
 - Develops the content and structure for the IT Evolution Plan. This defines what the activities in the PEP should produce.
 - Assigns responsibility to individuals (or teams) for producing portions of the IT Evolution Plan.
 - Defines and documents all activities, methods, practices, and tools that will be used in the development of the IT Evolution Plan. This includes estimation or scheduling methods, contracting processes, and other methods required to develop a complete IT Evolution Plan. Engineering activities to establish part of the Technical Architecture may be needed if one does not exist.
 - Selects and acquires necessary planning resources (e.g., tools).
 - Estimates effort, time, and resources required for each portion of the IT Evolution Plan and identifies resources provided.
 - Describes the network of activities needed to produce the IT Evolution Plan.

- Develops a ball-park estimate for the size and scope of the development, deployment, and operations activities to be accomplished over the timeframe to be covered by the IT Evolution Plan. This is defined in more detail for the early plateaus and in less detail for the following ones.
- Documents the planning data in the PEP.

In addition, consider the following:

- Include planning of ongoing support activities, such as configuration management, quality assurance, documentation, operations, or maintenance.
 - Consider Federal, State, and Agency policies, procedures, standards, and regulations when creating the PEP and resultant IT Evolution Plan contents and activities.
 - Adapt established Agency or organizational processes, as appropriate, because they may influence the planning process.
 - Use historical planning and engineering data for estimating purposes, when available, to make the plans realistic.
 - Use in-house methods, tools, training, and support, when available, rather than outsourcing the planning.
2. **Document and Submit PAPD(s).** This activity is performed when any of the programs that will be affected by the IT Evolution Plan are required to submit [PAPDs](#) to request Federal cost sharing of their IT planning activities.

Obtain the information necessary to develop a PAPD from the following planning documents:

- Statement of need (from the HS IT Strategic Plan).
 - Plan to develop the IT Evolution Plan (from the PEP).
 - Planning project budget and cost allocation (across the Federal programs that are impacted by the IT Evolution Plan scope).
 - Total Project Cost which is estimated from the portion of the IT Evolution Plan being considered. You can use a range of costs based on past experiences for similar programs in this and other States to indicate the expected range.
3. **Commit to Plan.** This provides an opportunity for stakeholders to review and comment on the PEP. Once consensus is achieved and the plan finalized, you can open, assign, and track work packages.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Planning Analyst](#). The Planning Analyst facilitates the creation of the PEP, coordinating the activities.
- [Evolution Management Team](#). These individuals implement the IT Evolution Plan and therefore support the Planning Analyst in generating the PEP. They most likely assume responsibility for many PEP activities.
- [Technical Architecture Team](#). These individuals provide insight into the Technical-

- Architecture related planning activities that must be done and included in the PEP.
- [Other Key Stakeholders](#). These individuals or groups provide additional insight into what should be addressed during the planning activities. They may include [IT management](#), [IT Project Managers](#), HS [Agency project management](#), and the [HS Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples, and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- [Plan for Evolution Planning](#). This is the major output of these activities.
- [Planning Advanced Planning Document](#). States that need to be reimbursed for the costs of planning for the implementation of a system, including acquisition of data processing equipment or services, generate PAPDs.
- [Technical Architecture Work Plans and Direction](#). The activities that the Technical Architecture Team must perform to develop the portion of the Technical Architecture in support of the planning activities are identified and coordinated with the PEP.
- [IT Evolution Plan](#). The format and content of the IT Evolution Plan are established so that individuals can be assigned to develop portions.
- HS IT [estimate of the Situation](#). This is used to establish the goals, constraints, and other planning requirements that the PEP should consider.
- HS IT [Risk Management Plan](#). This plan provides insight into the risk and mitigation activities that must be considered when defining the PEP.
- [A-TARS](#). The portions of the A-TARS that exist at the time the PEP is prepared are used to provide insight into the technology-related activities that will be required.
- [HS IT Strategic Plan](#). Provides insight into the expectations, initiatives, and constraints of the IT Evolution.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW

Outline: IT Evolution Plan

02-01-02

This is an annotated table of contents for a typical IT Evolution Plan.

[MS Word Format](#)

[HTML Format](#)

The Federal Perspective: Requirements for IT Planning

05-05-01

A brief overview of Federal requirements related to planning, and also developing, modifying, or replacing an information system.

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[A.4. Develop the IT Evolution Plan](#)

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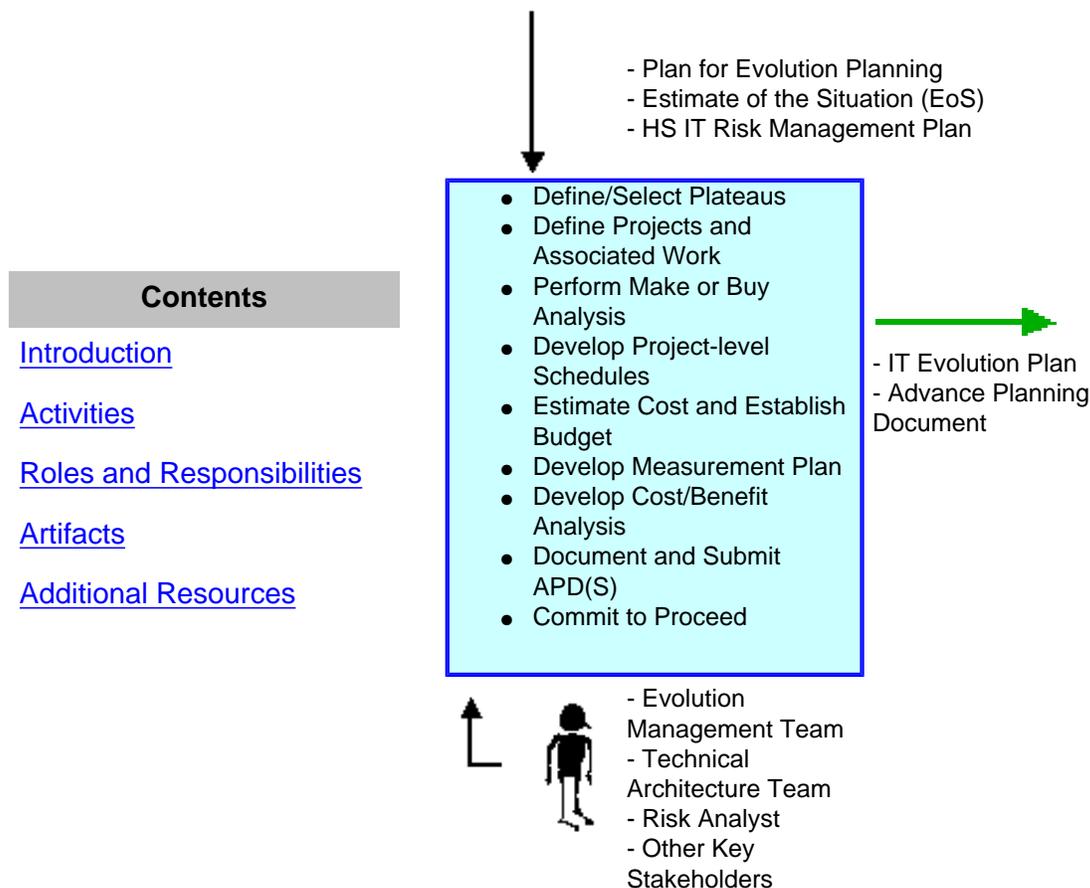


A.4. Develop the IT Evolution Plan

Plan the Technical Evolution

- [Define Context](#)
- [Analyze Risks](#)
- [Plan Development](#)
- Develop the IT Evolution Plan

Determine the evolutionary path through a series of plateaus, establish detailed plans for the near term and high-level plans for the future.



Introduction

The IT Evolution Plan is developed according to the plan created during the [Plan Development of the IT Evolution Plan](#) activities. The IT Evolution Plan serves as an IT *master plan*, coordinating all the IT [projects](#) and related activities. The IT Evolution Plan covers the entire systems development life cycle for all HS programs and IT infrastructure within its scope. This may including projects to [migrate](#) all or part of an existing [application](#) system, to build new functionality, to maintain applications for [HS programs](#), or to operate and retire existing application systems or parts. The IT projects are coordinated with the

development and evolution of the [Agency Technical Architecture](#).

These planning activities formulate a series of intermediate technical goals (or end states) that should be achieved for the HS Agency as a whole (i.e., the [enterprise](#) across HS programs). These end states characterize the technical capability of the HS Agency at any point in time. To achieve each end state, a [Plateau](#) is defined. The Plateau defines the projects and their dependencies necessary to achieve the end-state. As each Plateau is completed, the end state for the next Plateau will be reevaluated and adjusted, as necessary. The further into the future the Plateaus are defined, the less detail is provided due to uncertainty in the outcome of previous Plateaus and anticipated [changes](#) in the [external environment](#). To keep the plateaus manageable, they generally cover a 3- to 6-month period. The appropriate length for each organization implementing [this guide](#) will vary depending on how fast the external environment changes, the capability of each IT development organization (or provider) to deliver solutions, and the time it takes the organization to react to change. See the overall [customization guidance](#) for further information.

TANF Example:

A typical TANF example could be that the IT Evolution Plan would give consideration to other applications under development at the same timeframe of a TANF system. The interdependence of the other systems, like Child Support Enforcement enhancements, and the changes taking place in those systems could have a direct impact on the ability to complete and deliver work within the plateau.

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Activities

These activities are performed in an iterative manner to build the IT Evolution Plan. Consolidated [guidelines](#) are available to perform the following key activities:

1. **Define/Select Plateaus.** Establish the evolutionary path by defining the plateaus in terms of the outcome they will have across the HS Agency, or the end states. Clearly define the next one or two plateau end states and characterize those further out with less detail to account for any uncertainty in how (or when) they can be achieved. Consider the following for each plateau:
 - Goals and subgoals from the EoS
 - List of mandates from the EoS
 - Initiatives from the HS IT Strategic Plan
 - Technical requirements from the Agency Technical Architecture published in the [A-TARS](#) (or its planned releases)
 - Functional upgrade requests for existing IT application systems or

infrastructure

- Existing IT projects that are currently planned or underway
- Risk mitigation strategies
- Assumptions on how much change can be effected and endured over a specific timeframe.

For each Plateau, define the following:

- **Global changes that are not specific to any single HS program.** The value of these activities is shared across the HS programs. The requirements for these changes may be driven by the Agency Technical Architecture. Examples include upgrades to existing infrastructure, migration of applications, or consolidation of applications or application platforms. Activities to be performed may include providing common front-end interface systems or consolidating data stores. Budget for these global changes will be allocated across all affected HS programs.
- **Specific HS program changes or enhancements.** The value of these activities is primarily for a specific HS program area. Individual HS programs provide their program-specific requirements. This may include new, modified, or retired applications and associated maintenance actions.
- **Risk reduction activities.** Incorporate the risk mitigation strategies defined in the RMP into Plateau Plans. These activities generally reduce uncertainty or otherwise mitigate significant sources of risk. Address how they may affect the outcome of the plateau. Generally, it is best to address the greatest risks to the overall evolution in the near-term plateaus, in keeping with the risk management principle of dealing with potential threats to success early.
- **Essential coordination activities with external entities.** Groups or organizations external to the IT Evolution Plan's scope can have impact on the plan and assumptions it makes. Identify the need to coordinate with these groups so that resources can be allocated to handle intergroup coordination within and across plateaus. Coordination agreements may be necessary to ensure coordination (e.g, with State networking groups).

Individual stakeholders will participate in defining the plateaus and committing to the definition of the outcomes expected.

2. **Define Projects and Associated Work.** Multiple projects will most likely be needed to achieve the desired outcome for each Plateau. Determine the technical and management approach to achieving each plateau and define projects (e.g, build, buy, or outsource). Identify and describe the contribution of each project (its primary products).

Generally, an IT project is a small, focused set of activities that produces a tangible IT product or part. The product from one project will be used by other projects (e.g., a systems analysis product used to guide the application design, the design used to guide the application programming, or a set of applications integrated into a release). Project products include, but are not limited to the following:

- Applications or a part (including executable and source code with related documentation and data)
- Engineering data (such as requirement specifications, design documentation, test procedures, and results).
- Target system infrastructure (system software, platforms, or equipment)
- End-user documentation or manuals (user, operator, maintenance, installation)

- Training and support materials
- Risk reduction data (such as results of prototypes used to determine implementation decisions)

Projects may span multiple Plateaus depending on how much time is required to produce a product. In general, a project should not span more than two plateaus. The time needed may be a factor of the anticipated resources a project may have or its dependencies on outcomes of other projects. When a project is expected to take a considerable amount of time (e.g., more than 6 months), you can redefine or partition its product across projects.

For each project assign a Project Manager and development staff, although the staff may be shared across a set of projects. For example, a Project Manager familiar with applications for TANF may manage those enhancements or changes as a set. Assign individuals across projects, as needed, either on a task-by-task basis or to a project for its duration.

Document the results of the project and work definition activity in an appropriate level of the WBS (plateau, project, or lower level). Define project support categories, such as:

- Configuration Management (either as part of a project or across projects)
- Quality Assurance
- Verification/Validation
- Plateau and Project Management (including cross project coordination, in-process and formal reviews, and management or sponsor oversight activities)

3. **Perform Make or Buy Analysis.** As a project's products or activities are established, the means by which the product will be obtained is determined. Likely choices are: to develop it within the IT organization, purchase a [packaged solution](#) and adapt it, hire a contractor to develop a custom product, outsource the capability, or a combination of the choices. This activity identifies and focuses on business needs when evaluating make or buy alternatives. To ensure objectivity, individuals that are employees of the State should perform this activity, rather than outsourcing it to a vendor or contractor.

For each fundamental product or service of the WBS make a decision on how to obtain it. A product can be an integrated platform (e.g., a workstation or server), software (e.g., Web servers, application packages, [components](#)), equipment (network devices), or even services (e.g., Independent Verification and Validation).

Document the make or buy decision as part of either the Evolution Plan or a lower-level Project Plan, or make it a standalone document. Once the decision has been made, document the following for each WBS element:

- Define the responsible entity for each WBS element (internal to the HS Agency or an external entity such as another State Agency, a vendor, or contractor). If a product will be provided by an external provider:
 - Define the process used to select the provider.
 - Define the criteria to be applied in the selection process (e.g., cost, performance, quality, risk).
- Define how the purchasing relationship with the provider will be managed.
- Determine the acceptance criteria
- Collect and analyze status and engineering data from previous

purchasing/contracting efforts and use it as the basis of any make/buy decision

4. **Develop Project-Level Schedules.** Define dependencies between the projects, using the projects' products as a guide. Each project will have its own project charter, requirements, detailed task plan, budget, schedule, and measurement plan. As this network develops, you may need to adjust the definition of the plateaus and projects to keep them from becoming overly large and complex.

Include the following in a project-level schedule:

- All major evolution milestones (e.g., time period for when the plateau end-states should occur)
- Intermediate Plateau decision points (e.g., such as when a decision must be made on the outcome of a risk reduction project in order to adjust dependent projects)
- The projects and their product dependencies (e.g., integrating some off-the-shelf products into a target that the application builds upon)
- Project-independent tasks (e.g., level-of-effort tasks, such as plateau management)
- Expected time periods (e.g., optimistic, expected, and worst case)
- Dependencies with groups or activities beyond the scope or outside the control of the IT Evolution Plan (e.g., State IT group)

Detailed planning within the IT projects is done by the individual IT Project Managers during the Fabrication, Deployment, and Operations activities (see the [Technology Fabrication Projects](#), [Technology Deployment](#), and [Technical Operations](#) guides).

Detailed planning for the Technical Architecture is done by the Technical Architecture Team (see the [Develop and Maintain the Technical Architecture](#) guide). Incorporate those lower-level, detailed plans by reference into the IT Evolution Plan and coordinate them to meet the higher-level plan's constraints. Document the results of this activity in Gant and Network charts, as appropriate.

5. **Estimate Cost and Establish Budget.** Perform this activity for each of the projects/tasks defined for the Plateaus. Develop estimates of costs for the projects in labor units and dollars. Generally, this estimating includes the following:

- Estimate the size of each project's product, and any significant, intermediate work products.
- Estimate cost (in labor units and dollars) to produce each product (assuming the methods to be used to build the product, such as the engineering tools and methods).
- Estimate level-of-effort and duration of support tasks, such as CM, QA, and Plateau and project management.
- Identify and estimate costs for other categories, and such resources (tools, facilities), travel, coordination with external groups.

Use historical data to calibrate the size, effort, and cost estimates, when available. Document all planning assumptions (such as expected productivity rates). For plateaus that are anticipated to occur in the distant future (2 or more years), details on the approach may not be available. You may estimate these plateaus holistically and note any assumptions.

Once you have derived the estimates, you can establish the funding source and

budgets for the individual projects/tasks.

6. **Develop Measurement Plan.** Define measurements to determine whether the overall IT Evolution Plan is on track and is fulfilling the strategic direction from the HS IT Strategic Plan. You should define these measurements for the IT Evolution Plan as a whole, not just for a specific Plateau. The measurements may provide evidence to support the cost/benefit analysis. Each of the projects will report measurements specified in this measurement plan. These measures include:
- Risk
 - Financial
 - Product and process (defects, cost, schedule performance)

For each measure, define the following:

- Issues and selected measures
- Measurement specifications and definitions
- Data sources
- Measurement attributes and aggregation structures
- Frequency of data collection
- Methods of data delivery
- Lines of communication and interfaces
- Frequency of analysis and reporting

7. **Develop Cost/Benefit Analysis.** Perform a cost-benefit analysis of the HS IT Evolution Plan or part (plateau) to review the value of the evolution approach and identify those projects that return the greatest long-term value. You can use this analysis to provide information when Federal cost sharing will be a part of the funding for the activities (e.g., via an [APD](#)). You can compile the information generated as a part of the previous planning activities and format it for the Feasibility, Alternatives, and Cost/Benefit analysis parts of the PAPD process.

Document the following in the analysis:

- **Feasibility Study and Alternatives Analysis.** The Technical Architecture Team will evaluate the technical alternatives. Implementation choices can be derived from the Plateau approaches (buy, build, outsource).
 - **Cost/Benefits Analysis.** The only information not developed as a part of the previous planning activities is the cost of the status quo. You should derive these benefits from the strategic planning process.
8. **Document and Submit APD(s).** This activity is required when Federal regulations require a APD for the cost sharing of the development or deployment. This activity consolidates the information generated as a part of the previous planning activities into the necessary format. Submit the appropriate APDs to the sponsoring organizations for review.

Assemble the information needed in a APD as follows:

- Statement of need (from the Strategic Plan)
- Summary of requirements (from individual project plans)
- Summary of feasibility study (from architecture study)
- Summary of alternatives analysis (from architecture study and evaluation of other alternatives, such as make or buy analyses)

- Cost/benefit analysis (from the Cost/Benefit Analysis activity)
- Project Management plan (from all previous planning activities)
- Proposed budget (from estimate cost activity)
- Prospective cost allocation (allocation of projected costs over the appropriate HS programs)

9. **Commit to Proceed.** Explicit commitment from the key stakeholders is essential to ensure that they support the IT Evolution Plan and have consensus on the assumptions and risks. Brief all stakeholders on the contents of the [IT Evolution Plan](#) and give them an opportunity to comment. Involve the stakeholders in the planning as it progresses; this final check is done in the context of a complete plan. The review determines whether evolution-level goals, alternatives, and constraints are feasible; that stakeholders still agree on the goals; and that the success criteria are understood. Stakeholders will commit to the resources needed to develop the Plateau.

You can adjust the evolution planning documents (EoS, RMP, IT Evolution Plan) as the stakeholders reach agreement. If the stakeholders were involved throughout the planning process, these changes should be minor and not affect major planning decisions or assumptions. If they are significant, you may need to revisit all or part of the planning process. Note all changes to the planning documents (e.g., meeting minutes distributed to attendees) and change rationale and place them under CM.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Evolution Management Team](#). These individuals have primary responsibility for IT Evolution Plan and either perform or delegate the planning activities.
- [Technical Architecture Team](#). These individuals provide insight into the Technical Architecture-related issues during the planning, such as insight into the appropriate technologies to consider for each Plateau.
- [Risk Analyst](#). This individual is responsible for planning all risk-related activities that are included in the IT Evolution Plan. The Risk Analyst provides advice to help ensure that the resultant IT Evolution Plan is well balanced in order to meet evolution goals and reduce risk.
- Other [Key Stakeholders](#). These individuals or groups have a vested interest in the establishment, approval, or oversight of the evolutionary path as laid out in the IT Evolution Plan. They may include [IT management](#), [IT Project Managers](#), HS [agency program management](#), and the HS [Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples,

and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- [Plan for Evolution Planning](#). This plan is the basis for managing the planning activities described above.
- [IT Evolution Plan](#). This is the main output of these activities. All IT Project Plans are components of this IT Evolution Plan.
- [Project Charter](#). A charter is created for new or existing projects associated with the upcoming Plateau.
- HS IT [Estimate of the Situation](#). The EoS is the foundation for these planning activities. The IT Evolution Plan must conform to the understanding the EoS documents.
- HS IT [Risk Management Plan](#). The risk-related activities that are incorporated into the IT Evolution Plan must conform to the RMP. Other development activities also must be consistent with the risks in order to minimize the total risk.
- [Advanced Planning Document](#). An APD is generated from the planning process work products if FFP is needed.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW	Guidelines: Development of a Work Breakdown Structure (WBS)	02-01-02
	Lists the steps in the development of either an activity based WBS or a work-product-based WBS.	
	MS Word Format	
	HTML Format	
NEW	Sample: Software Estimation Procedure	02-01-02
	A sample procedure for the estimation of the labor and cost of new software.	
	MS Word Format	
	HTML Format	
NEW	Template: Outline of a Measurement Plan	02-01-02
	Outline for a measurement plan that could be used for either the IT Evolution Plan, a specific Plateau Plan, or a Project Plan.	
	MS Word Format	
	HTML Format	
NEW	Template: Project Charters	02-01-02
	Template for developing the charters for projects covered by the IT Evolution Plan.	

[MS Word Format](#)

[HTML Format](#)

NEW

Consolidated Guidance: Earned Value Methods

02-01-02

Overview of the techniques for computing earned value, with strengths and weaknesses of each method.

[MS Word Format](#)

[HTML Format](#)

NEW

Consolidated Links: Advance Planning Documents for State Systems

02-01-02

Links to information about the APD process consolidated in the *Planning and Management Resources* document.

[HTML Format](#)

NEW

Consolidated Links: Cost/Benefit Analysis of State Systems

02-01-02

Links to information about the Cost/Benefit analysis consolidated in the *Planning and Management Resources* document.

[HTML Format](#)

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[A.3. Plan Development of the IT Evolution Plan](#)

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[B. Planning and Managing the Technical Evolution](#)

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B. Planning and Managing the Technical Evolution

• [III. Technical Evolution](#)

- [Plan the Technical Evolution](#)
- Planning and Managing the Technical Evolution
 - [Coordinate Plateau Plan\(s\)](#)
 - [Monitor Plateau Development](#)
 - [Update IT Evolution Plan](#)
- [Resources](#)

Iteratively manage the evolution in accordance with the plan, adjusting to incorporate lessons learned and changes in strategic direction and architectural vision.

Contents

[Overview](#)

- [Figure 1. Manage the Technical Evolution Key Activities](#)

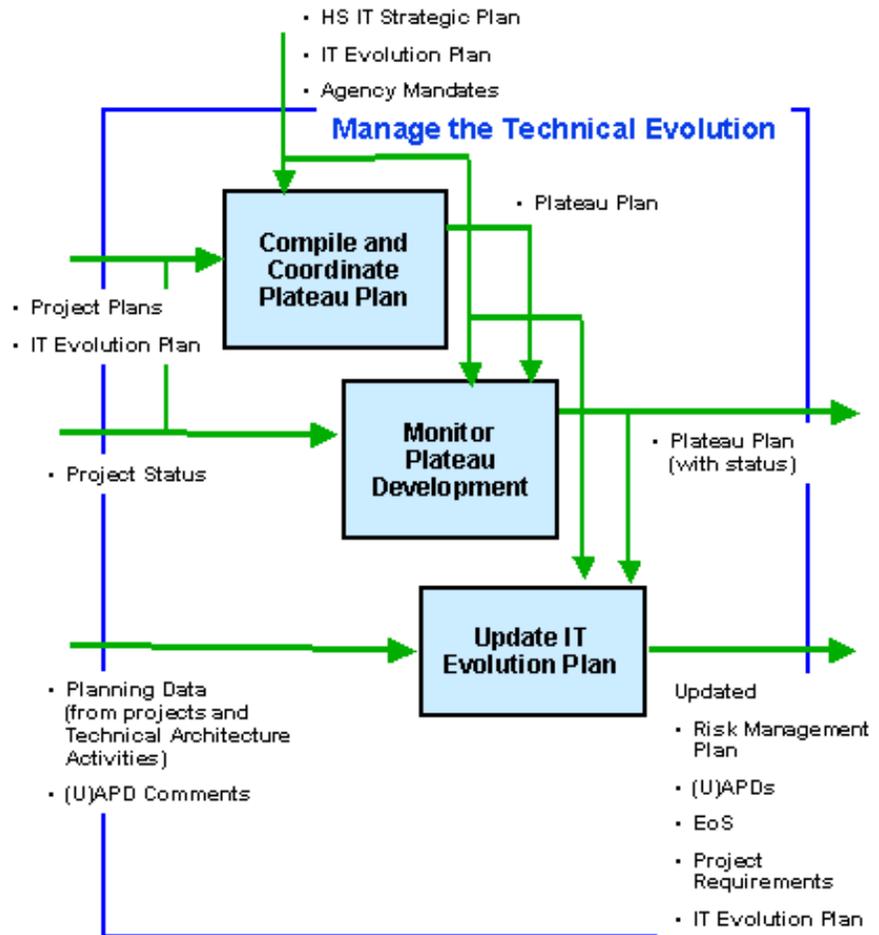
[Activities](#)

- [Compile and Coordinate Plateau Plan\(s\)](#)
- [Monitor Plateau Development](#)
- [Update IT Evolution Plan](#)

Overview

At this stage in the process, detailed plans are prepared for each of the [projects](#) included in the upcoming [plateau](#). Each project management team is responsible for development of their individual project plan, within the constraints imposed by the overarching IT Evolution Plan. The IT Evolution Management Team reviews the individual project plans to ensure that they are integrated and consistent with one another. Once the projects begin execution, they are both individually and collectively monitored against their individual and overall Plateau plans.

At the completion of a plateau, actual effort, cost, schedule, risk, and quality data are collected, analyzed, and used to refine estimates for future plateaus. Adjustments to the Strategic Plan and the Technical Architecture can be incorporated into the IT Evolution Plan at each new plateau. Generally, a plateau's plan, once set in motion, will not significantly change unless a major event has occurred in the external environment, such as a shift in strategic direction. Changes are generally incorporated into the planning for the next Plateau.



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Activities

Developing the IT Evolution Plan involves the following key activities:

1. [Compile and Coordinate Plateau Plan\(s\)](#). Compile a detailed, integrated plan for the development and deployment of the next Plateau. Initiate the projects.
2. [Monitor Plateau Development](#). Enact each project, monitor progress, and check the outcome against the success criteria for the project and the Plateau.
3. [Update IT Evolution Plan](#). Update the IT Evolution Plan to reflect the progress of each project and changes in the environment.

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[B.1. Compile and Coordinate Plateau Plan\(s\)](#)

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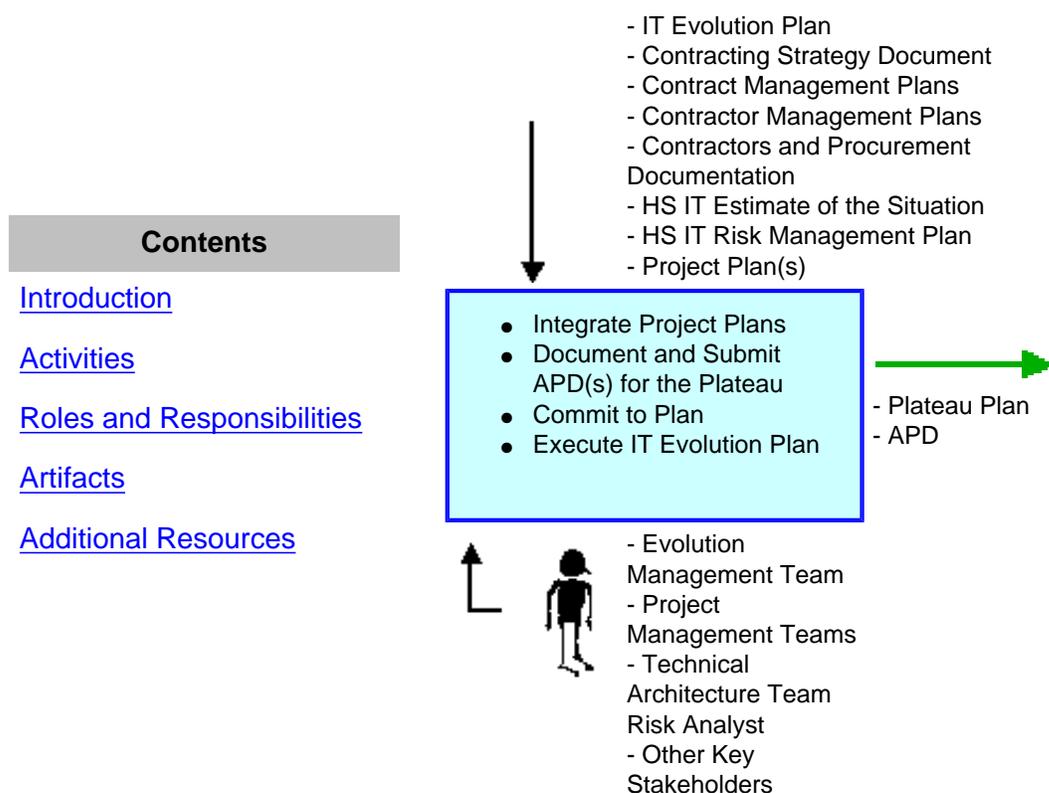
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B.1. Compile and Coordinate Plateau Plan(s)

• [Planning and Managing the Technical Evolution](#)

- Coordinate Plateau Plan(s)
- [Monitor Plateau Development](#)
- [Update IT Evolution Plan](#)

Coordinate the detailed project plans to establish an integrated plan for the current and next Plateau, as appropriate.



Introduction

The IT Evolution Plan created during the [Develop IT Evolution Plan](#) activities forms a framework in which to integrate the lower-level [projects](#). This activity compiles the detailed, lower-level project plans into a coherent and consistent set of activities. Resources are balanced across the projects, dependencies and schedules are adjusted to account for uncertainties and risks, and major decision points are refined. A commitment to the next plateau in the integrated IT Evolution Plan is established, and the plan is then executed.

TANF Example:

A typical TANF example could be that during the overall development of the project there are other smaller projects taking place, and these other projects must be completed in order for the TANF project to work. A more detailed example would be that a common front end is being developed for the Child Support Enforcement system and the TANF eligibility system. Even though the projects are separate, their completion and milestones could cause other projects to miss deadlines and fail. Therefore, it is important to consider all smaller or indirect projects because they roll up into an overall IT Evolution Plan for the HS IT Enterprise.

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Activities

These activities are performed in an iterative manner to coordinate and integrate the IT Evolution Plan. Consolidated [guidelines](#) are available to perform the following key activities:

1. **Integrate Project Plans.** The project's independently define their approach to meeting the requirements imposed on them in the higher-level plans. This includes overall functional requirements imposed by the HS programs (e.g., [TANF](#), migration or infrastructure changes (e.g, migrating to a shared data store), interproject dependencies, budget allocations, staff availability, and shared facilities, as noted in the IT Evolution Plan. You must review and coordinate those independent plans to ensure that they complement one another. When integrating the plans, consider the following special cases:

- **Risk Mitigation Projects**

Activities that are specific to mitigating risk may be collected in one or more projects and managed separately from the mainline development. The activities primarily focus on risks that a single project cannot address adequately. Because risk involves a degree of uncertainty, then decision points may need to be added to the overarching IT Evolution Plan to include review of the results of the risk mitigation activities before dependent projects can be initiated. The result expected from the mitigation activities may not be the result obtained, and replanning or adjustment of dependent projects may be necessary.

Risk mitigation activities may include prototyping, simulation, surveys, comparative evaluations, user meetings, and other appropriate techniques that operate on the factors contributing to the risks. Small risk-related activities, such as collecting information or simple analysis, can be part of a risk mitigation project or conducted as small activities within the context of the IT Evolution Management activities (e.g., special projects). The RMP will indicate the management approach, techniques used, and when and where risk-related progress should be reviewed and decisions made.

- **Acquisition Projects**

Projects that rely on external entities not under the direct control of the HS Agency IT organization may require additional coordination. The timetable for the IT Evolution plan must synchronize with outside entities, such as other State Agency planning cycles, vendor product upgrades, or contractor schedule variances. For projects that rely on contracted products or services, a solicitation period may be needed and factored into the overall plateau timeline. The solicitation and selection of contractors may require creating proposal packages, reviewing bids, and selecting contractors to satisfy the [WBS](#) elements allocated to the projects. The integrated plans must account for State procurement policies, practices, and selection criteria (e.g., a contracting strategy document). Project plans cannot be finalized until negotiations are complete and all parties agree to the contract terms. When agreements are finalized, a subcontractor management plan is developed. Use data from previous acquisitions in planning acquisition projects.

Some projects defined in the IT Evolution Plan will develop, deploy, or operate all or part of a product primarily with HS Agency resources (staff or outside labor). Consider the following when reviewing and coordinating the individual project plans:

- Base the project's practices on accepted State or HS Agency regulations and IT standards, policies, and procedures. Derive the key project processes from those identified in the IT Evolution Plan because the project estimates assumed those practices will be used.
 - Establish technical activities, methods, practices, or tools used to complete each task, as identified in the IT Evolution Plan and derived from the [A-TARS](#) guidelines and conventions.
 - Include sufficient interfacing events (e.g., interface control working groups, management reviews, and in-process reviews) to coordinate this project's activities with other projects and provide oversight.
 - Include ongoing support activities (e.g., CM, QA, and technical documentation) as needed.
 - The project plan is a comprehensive document that includes the following:
 - Project Goals and associated success criteria
 - The size and scope of the project, such as number and type of products (e.g., modules and documentation), activity dependencies or sequences, cost and schedule, resources, or expected defects. Base these estimates on available historical planning and engineering data.
 - A [WBS](#) for work packages for the key activities defined for the project. Packages include expected costs, durations, resources, and intermediate milestones for applicable activities.
2. **Document and Submit APD(s) for the Plateau.** As the IT Evolution Plan is coordinated, it may involve Federal cost sharing. If already submitted, you may need to define and process the APDs. See the APD activities in the [Develop the IT Evolution Plan](#) for further information.
 3. **Commit to Plan.** Provide an opportunity for all stakeholders to review and comment on the results of the planning and integration activities. Stakeholders reach consensus that the collective set of activities of the project's plan is appropriate to achieving the Plateau end-states. Incorporate stakeholder comments into updates for the IT Evolution Plan. As necessary, provide briefings to senior management on the plan, soliciting their involvement. These briefings may be a natural extension of any existing, periodic internal management reviews.

4. **Execute IT Evolution Plan.** Once the plan is approved, the Evolution Management Team will open and assign work packages and begin oversight of the executing projects in accordance with their documented plans.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Evolution Management Team](#). These individuals have primary responsibility for preparing and managing to the IT Evolution Plan and either perform or delegate the planning activities.
- [IT Project Management Team](#). These individuals, specifically the [IT Project Manager](#), have responsibility for one or more IT projects and participate with the Evolution Management Team by planning the individual projects and coordinating the plans across projects.
- [Technical Architecture Team](#). These individuals provide insight into the Technical-Architecture-related issues during the planning, such as the overarching technical guidelines and how the architecture elements may be implemented.
- [Risk Analyst](#). This individual is responsible for planning all risk-related activities that are included in the IT Evolution Plan. The Risk Analyst provides advice to help ensure that the resultant IT Evolution Plan is well balanced in order to meet evolution goals and reduce risk.
- [Other Key Stakeholders](#). These individuals or groups have a vested interest in the establishment, approval, or oversight of how the evolutionary path will be achieved. This may include IT management, [contractors](#), [support management](#), a [contract manager](#), [State procurement personnel](#), and the HS [Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples, and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- [IT Evolution Plan](#). This is the main output of these activities, providing complete plans for the upcoming Plateau ready to be put into execution.
- [Contracting Strategy Document](#). This is created to define which of the products will be built internally, by contractors, or purchased.
- [Contract Management Plans](#). This document describes the process that will be used to manage a specific contract.
- [Contractor Management Plans](#). This document describes the process that a specific contractor will use to manage their activities.

- [Contractor and Procurement Documentation](#). This is the collection of legal and binding documentation that has been agreed to for a specific contract.
- HS IT [Estimate of the Situation](#). The resultant IT Evolution Plan is checked to verify that it will meet EoS expectations.
- HS IT [Risk Management Plan](#). The IT Evolution Plan must implement the RMP.
- [Plateau Plan](#). This part of the IT Evolution Plan is detailed for the upcoming Plateau.
- [Project Plan\(s\)](#). Individual projects develop coordinated lower-level plans.
- [Advanced Planning Document](#). An APD is generated from the planning process work products if Federal Financial Participation (FFP) is needed.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW

Template: Contracting Scorecard

Describes background of the contracting scorecard approach and identifies a tailorable list of common factors applied to the contracting scorecard.

02-01-02

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B.2. Monitor Plateau Development

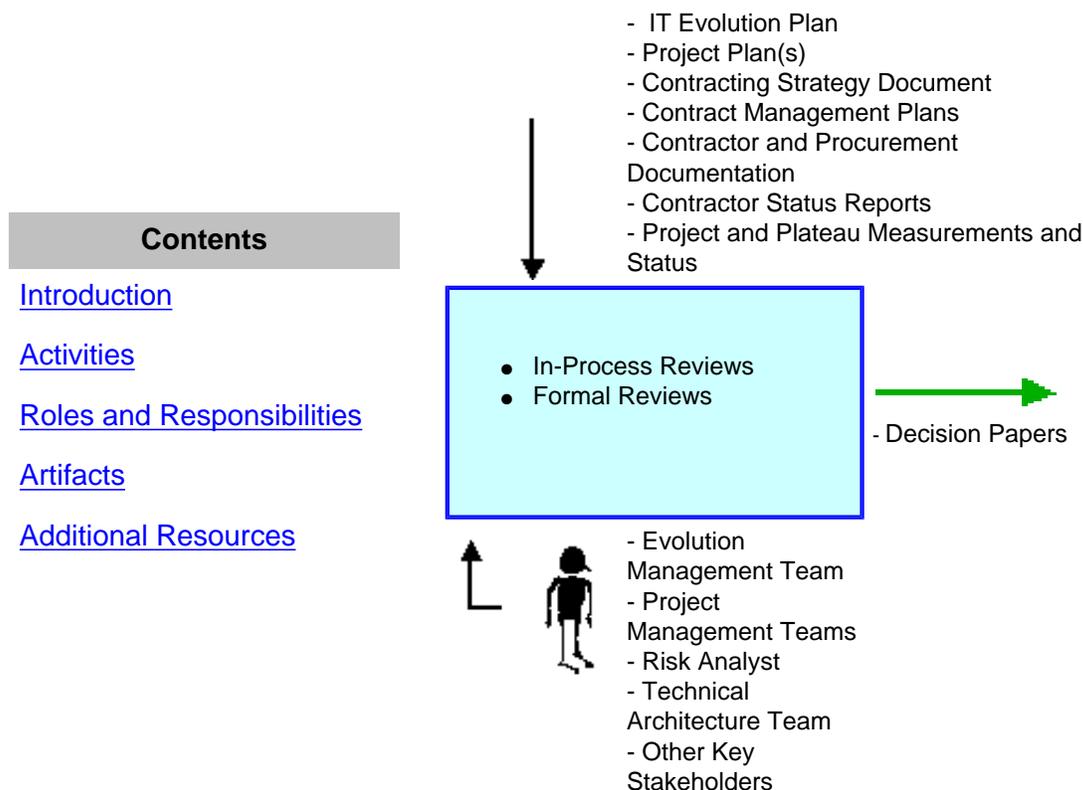
• [Planning and Managing the Technical Evolution](#)

- [Coordinate Plateau Plan\(s\)](#)

- Monitor Plateau Development

- [Update IT Evolution Plan](#)

Monitor execution at the project and Plateau level; collect measurement and lessons learned to aid refinement of the IT Evolution Plan.



Introduction

Monitoring of progress against the IT Evolution Plan is done at two levels. The IT Management Team focuses on accomplishing the goals of the [Plateaus](#) by managing interproject dependencies and communication. The Project Management Team focuses on achieving their individual [project](#) goals within their allotted resources and constraints.

When it appears that overall IT evolution objectives or constraints will be compromised, the IT Evolution Management Team assesses impact on the overall IT Evolution Plan. Individual projects may be replanned, or the entire IT Evolution Plan for the current or later Plateaus can be revised.

TANF Example:

A typical TANF example could be that the IT Evolution Plan needs to include monitoring the project and its progress within the plateau to determine that the critical TANF reporting requirements will be met. This includes ensuring that the systems are designed and developed to capture critical information. Consider Federal reporting for systems changes other than TANF if they are the result of significant changes in the TANF system. A more detailed example would be that TANF changes are being made in the system and as a result, changes will be required in the Child Support Enforcement IV-D application also. Monitoring should include the progress in both the development projects so that the dependencies will not become overwhelming risks to either project.

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Activities

These activities are performed within the Plateau or project context, as needed, to evaluate progress and forecast expected results. Consolidated [guidelines](#) are available to perform the following key activities:

1. **In-Process Reviews.** These interim reviews provide the IT Evolution Management Team periodic insight into individual project performance as well as the plateau as a whole. The appropriate frequency depends on the timeframe for a plateau and the need to react quickly to adjust the project goals, resources, or constraints (e.g., bi-monthly reporting periods). Accomplishments are tracked against the appropriate level of plan (project or plateau).

At the IT project level:

- The IT Project Management Team verifies (through a QA function) that the project participants are adhering to the project's defined process.
- The team collects activity progress status and analyzes it to produce measures that support project-level corrective actions. Typical measures are:
 - Product size (e.g., pages, SLOC, objects, methods, screens, and tables)
 - Product defect (total or average density)
 - Product change data (volatility, such as change requests)
 - Project schedule status (schedule variance)
 - Project cost status (cost variance)
 - Project risk status (high, medium, low or technical, cost, or schedule risk)
 - Project quality assurance status (number of noncompliances, defect variance, conformance to requirements)
- The team compares actual values of the measures against expected values (estimates) for the measurement timeframe (e.g., higher defect rates anticipated early in the project, less as the project continues).

- The team establishes trends for the measures and analyzes them as predictors of future performance.

At the Plateau level:

- The IT Management Team addresses project accomplishments and issues and how they may impact other projects. They may reallocate resources across projects, as needed, to meet Plateau goals.
- The team rolls up project-level measures and summarizes them to provide quick insight to project issues. The team evaluates the following types of accomplishments and issues to gauge their effect on dependent projects:
 - Overall cost performance data is summarized by rolling up work package status in cost accounts to the project level and for the plateau as a whole (some projects may be over budget, some under).
 - Overall schedule performance status data (number of dependencies met, based on a network chart that includes all projects in the plateau).
 - Quality of delivered products and expectations for future products, such as defect rates, or rework (this measure will be more important if the product of one project is the input to another project).
 - Interproject coordination issues, such as interfaces between projects or critical project paths (e.g., lack of timely delivery or lower than expected quality).
 - Project risk profile (increasing or decreasing).
- The team may decide to roll up plateau status and use it as a basis to provide some or all of the measurements specified in the [HS IT Strategic Plan](#).
- The team communicates lessons learned on one project to other projects, as appropriate. This can be achieved by having Project Management Team members attend one another's project reviews.

2. **Formal Reviews.** Formal reviews are intended to provide detailed insight into project progress on an event-driven basis. These reviews are tied to major accomplishments in the development or acquisition of a product, such as after requirements are defined, a product completes development testing, a risk mitigation prototype is evaluated, or a vendor delivers a product. These reviews provide information for management decision making in regard to the approaches taken (buy, build, outsource) as well as the products produced. Direction to the projects (or contractors) is provided. Generally the decisions that will be made include:

- Proceed as planned.
- Proceed after adjusting the product or project goals or constraints (e.g., change in scope, resources, or schedule).
- Terminate a project that is unlikely to satisfy its goals within current constraints.

Some typical reviews include:

- Contract Reviews

Contract reviews examine the supplier relationship, such as management structure, required skills and knowledge, team communication, demonstrated contractor performance, risks, and change rates. The Evolution Management Team makes commitments to proceed with, modify, or terminate the relationship. Decisions may

be made to reallocate resources, revise schedules, reassess risks, or revise supplier activities. These decisions are reflected in changes to the Contractor Plan. Renegotiation of contractor terms and conditions may occur as a result of these activities.

- Product Reviews

These reviews consider the technical merit of the developing product to ensure that specific product goals and success criteria are met. This may include a review of product quality records (e.g., verification activities, including peer reviews, test activities, demonstrations, or analysis). Verification and validation against the plateau goals may be performed.

- Product Acceptance

Formal acceptance of products is performed. Acceptance criteria is defined for each project's product, whether produced within the HS Agency IT Division or acquired from outside (e.g., via a contractor or vendor). Plans and procedures to accept the product are created and followed. Results of the acceptance testing are provided to the Evolution Management Team as a basis for their acceptance decision. The possibilities can be:

- Accept as is
- Conditionally accept with change
- Reject

- Transition Products to Use

The Evolution Management Team will make explicit decisions to authorize deployment and use of the IT products that are developed or acquired. Deployment is in accordance with plans created and executed as part of [Technology Deployment Projects](#). Operation and support is discussed in [Technical Operations](#).

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Evolution Management Team](#). These individuals have primary responsibility for oversight of the IT Evolution Plan, participating in the in-process or formal reviews and providing direction to the projects.
- [IT Project Management Team](#). These individuals, specifically the [IT Project Manager](#), have responsibility for monitoring their projects' progress and reporting this to the Evolution Management Team.
- [Risk Analyst](#). This individual is responsible for reassessing progress against the risks.

- [Technical Architecture Team](#). These individuals will provide insight into the Technical Architecture-related issues during reviews, such as adherence to the Technical Architecture or processing requests for waivers.
- [Other Key Stakeholders](#). These individuals or groups have a vested interest in the establishment, approval, or oversight of how the evolutionary path will be achieved. This may [IT management](#), [contractors](#), [support management](#), [a Contract Manager](#), [State procurement personnel](#), and the HS [Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples, and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- [IT Evolution Plan](#). This is the main control against which activity and project project progress is measured. The portion for the current and possibly next Plateau is of primary use (the [Plateau Plan](#)). It is adjusted, as needed.
- [IT Project Plan](#)(s). There is a project plan for each of the projects in the current Plateau. This plan defines the processes and methods that will be used in this project, as well as the schedules and estimated costs for the project.
- [Contracting Strategy Document](#). This is information is updated, as necessary.
- [Contract Management Plans](#). This is used to control the contractor relationships and is updated, as necessary.
- [Contractor and Procurement Documentation](#). This collection of legal and binding documentation is updated, as necessary.
- Contractor [Status Reports](#). Information provided by the contractor is reviewed and reported to the appropriate management level.
- HS IT [Estimate of the Situation](#). Progress at the Plateau level is validated against the EoS.
- HS IT [Risk Management Plan](#). Progress against risks is tracked to the RMP; the RMP is adjusted, as needed.
- Project and Plateau [Measurements](#) and [Status](#). Raw and compiled measures are collected, analyzed, and reported to the appropriate level (project, plateau, and HS Agency, as needed, for the HS IT Strategic Plan). This includes any discrepancies from plan and actions to remedy the discrepancies.
- [Decision Papers](#). Major decisions (such as from formal reviews) are formally recorded and used as a basis for adjusting or showing commitment to plans and progress.

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Additional Resources

Items that can be used to perform these and other activities are consolidated in the

[Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

NEW **Template: Outline of a Measurement Plan**
Outline for a measurement plan that could be used for either the IT Evolution Plan, a specific Plateau Plan, or a Project Plan. 02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW **Consolidated Guidance: Earned Value Methods**
Overview of the techniques for computing earned value, with strengths and weaknesses of each method. 02-01-02

[MS Word Format](#)

[HTML Format](#)

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[B.1. Compile and Coordinate Plateau Plan\(s\)](#)

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[B.3. Update IT Evolution Plan](#)

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[NHSITRC Site Search](#)

B.3. Update IT Evolution Plan

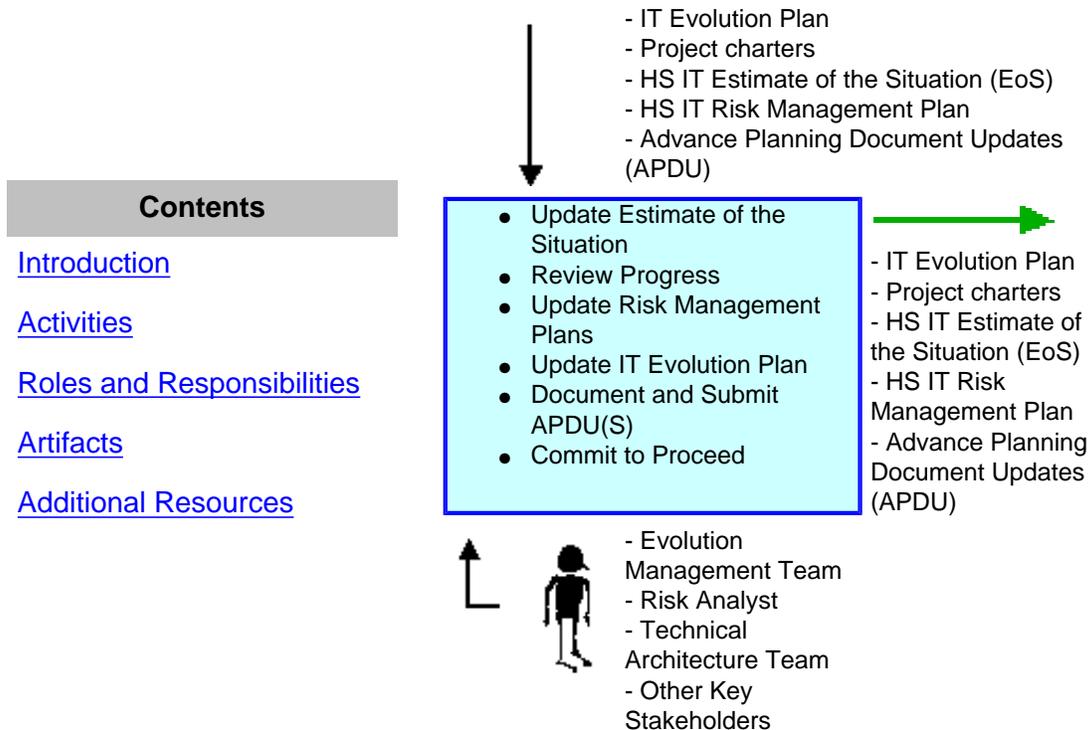
• [Planning and Managing the Technical Evolution](#)

- [Coordinate Plateau Plan\(s\)](#)

- [Monitor Plateau Development](#)

- Update IT Evolution Plan

As HS Agency IT capability evolves, a plateau at a time, apply lessons learned to an understanding of the changing world to update plans for the next plateau.



Introduction

The HS Agency technical capability evolves a [plateau](#) at a time, as choreographed by the IT Evolution Plan, under direction of the Evolution Management Team. As each plateau is achieved, the opportunity exists to reevaluate future direction and apply lessons learned from previous efforts. Because plateaus are relatively short in duration, the HS Agency frequently can reevaluate its position relative to the changing [internal and external environments](#) and adjust accordingly.

Stakeholders reevaluate their goals and priorities, and the IT Management Team evaluates change in the internal and external environments. Changes can be driven by new mandates received from State or Federal legislation, other Agencies, or Courts; updated budget projections or allocations; or updates to the A-TARS as technology

evolves. Changes from updates to the IT Strategic Plan also can be synchronized with the IT Evolution Plans in a controlled fashion by these activities.

Measurements, such as productivity data, that were collected and analyzed become an objective basis for lessons learned. Estimation processes are reevaluated and adjusted to accurately reflect actual performance of the IT organization and its partners.

TANF Example:

A typical TANF example could be that in the midst of system changes to the TANF system for "unhooking" Medicaid eligibility, the State decided to make a significant change in the CHIP program. Now the TANF system must provide for CHIP eligibility as part of the TANF eligibility. The IT Evolution Plan should have the ability to be modified and changed to continue to provide initial requirements but incorporate the new requirements in to the overall plan without completely negating the plan.

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Activities

These activities are performed within the Plateau or project context, as needed, to revise expectations and plans. Consolidated [guidelines](#) are available to perform the following key activities:

1. **Update Estimate of the Situation.** Once projects or activities are initiated for a plateau, they are not expected to require significant adjustment to account for changes in the outside environment. This provides some stability to the plans for the duration of the Plateau, which is generally short (3 to 6 months). As a Plateau reaches completion, management will reassess the environment and determine how to react to perceived change. This culminates in updates to the [EoS](#). The EoS renews commitments with previous or new stakeholders who have a vested interest in future plateaus. Stakeholders can determine to either stay the course or change, as needed. Change can come from adjustments to the HS IT Strategic Plan, decisions on the HS Agency Technical Architecture, external mandates or other factors.

Identify and analyze critical issues that may affect the evolutionary path, and hence the plateau definitions. These issues are the major drivers that influence future plateaus and establish the basis for goals and their measurement.

See the [Development of the EoS](#) description for the planning activities for further information on establishing the updated context.

2. **Review Progress.** The [Monitor Plateau Development](#) activities provide senior management insight into progress as it occurs. As a plateau completes, that

progress is evaluated in light of any changes in the EoS to determine whether they are still relevant. Appropriate commitment is made to the previous achievements, either to retain, build on, or abandon them. Lessons learned from previous activities are evaluated and used to improve the management, contracting, or engineering processes. Use measures whenever possible, to provide some objectivity. Assess estimating effectiveness (plan versus actual) and update the procedures or methods, as needed.

3. **Update Risk Management Plans.** Update the analysis of the risk situation to include Plateau achievements. New risks may have been introduced or additional information gained. Determine the current risk level and compare it to the previous expectations. Refine mitigation activities and incorporate them into an RMP update.

See the [Analyze Risks](#) description for the planning activities for further information on the Risk Management activities.

4. **Update IT Evolution Plan.** The planning here is similar to that for the [Develop IT Evolution Plan](#) activities. The status and lessons learned from the previous Plateau are folded into changes for the next and future plateaus. Retain a long-range planning horizon by extending the dates covered relative to the current plateau (e.g, 3+ years). In this way, the evolution plan continues to address the future; in a sense, it is never *done*. Strategic and other changes were incorporated via the updated EoS for the upcoming plateau(s).

To incorporate lessons learned back into the management and engineering practices, update the following:

- Retire older practices and establish new ones (e.g., move from client server to web).
- Use technology via the A-TARS.
- Create a schedule.
- Baseline costing algorithms in dollars and labor hours
- Use methods to appraisal remaining risks and effectiveness of risk mitigation techniques.
- Apply quality assurance and defect reduction techniques.
- Align organizational changes with the developing technology.

Some questions to promote changing the practices include:

- How do the lesson learned affect the upcoming evolution plan expectations, and should they be reset (cost, effort, schedule, quality)?
- How effective have previous practices been in reducing specific or overall risk, and how does this affect future risk reduction expectations?

5. **Document and Submit APDU(S).** If an [APD](#) was in effect for the previous plateaus and needs to be updated, then the [APDU](#)s are submitted. Capture the replanning information in the APDU update. Document the following information as provided by the [activities](#) above.

- References to approved APD(s)
- Project status report
- Revised IT Evolution Plan
- Revised budget
- Cost distribution changes

- o Actual costs and benefits

Submit APDU(s) for approval. If new APDs are required, they can be handled the same as the APD description in the [Develop IT Evolution Plan](#) activity.

6. **Commit to Proceed.** As in the [Compile and Coordinate Plateau Plans](#) activity, the stakeholders have the opportunity to agree with the next portion of the IT Evolution Plan. After commitment, the plan is executed.

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Roles and Responsibilities

The key roles and their responsibilities are as follows:

- [Evolution Management Team](#). These individuals have primary responsibility for these activities, delegating them to others, as needed.
- [Risk Analyst](#). This individual is responsible for updating the Risk Management Plan.
- [Technical Architecture Team](#). These individuals provide insight into the Technical-Architecture-related aspects for planning the next plateaus.
- [Other Key Stakeholders](#). These individuals or groups participate in or have a vested interest in the establishment, approval, or oversight of the IT evolution. This may include [IT management](#), [IT Project Managers](#), HS [Agency program management](#), [support managers](#), [contractors](#), [State procurement personnel](#), and the HS [Agency Decision Makers](#), among others.

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Artifacts

The following information is used or produced by these activities. Templates, examples, and checklists for identifying and documenting items are available through the [Additional Resources](#) section at the end of this page.

- [IT Evolution Plan](#). The previous version of the plan is updated, focusing on the portion for the upcoming and future Plateaus (the [Plateau Plans](#)).
- [Project Charters](#). A project charter is either created or modified for new or existing projects associated with the upcoming Plateau.
- HS IT [Estimate of the Situation](#). The Eos is updated to reflect current context.
- HS IT [Risk Management Plan](#). The RMP is updated to reflect current risks and mitigation activities.
- [Advance Planning Document Updates](#). APDs are either created or updated to reflect any changes to the Federal cost sharing agreements, as needed.

Additional Resources

Items that can be used to perform these and other activities are consolidated in the [Resources](#) portion of the IT Planning and Management Guides. Resources specific to this activity are cataloged below.

- NEW** **Guidelines: Development of a Work Breakdown Structure (WBS)** 02-01-02
Lists the steps in the development of either an Activities based WBS or an Work Product based WBS.
[MS Word Format](#)
[HTML Format](#)
- NEW** **Sample: Software Estimation Procedure** 02-01-02
A sample procedure for the estimation of the labor and cost of new software.
[MS Word Format](#)
[HTML Format](#)
- NEW** **Template: Outline of a Measurement Plan** 02-01-02
Outline for a measurement plan that could be used for either the IT Evolution Plan, a specific Plateau, or a Project Plan.
[MS Word Format](#)
[HTML Format](#)
- NEW** **Template: Project Charters** 02-01-02
Template for developing the charters for projects covered by the Evolution Plan.
[MS Word Format](#)
[HTML Format](#)
- NEW** **Consolidated Links: Planning and Management** 02-01-02
List of applicable Web resources for the planning and management guides.
[HTML Format](#)

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[B.2. Monitor Plateau Development](#)

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Resources: Planning and Managing Technical Evolution

• [III. Technical Evolution](#)

- [Plan the Technical Evolution](#)
- [Planning and Managing the Technical Evolution](#)
- Resources

This consolidated list of resources can be applied to perform [Planning and Managing the Technical Evolution](#) activities. The date reflects the last time the item was changed. **NEW** indicates an item added since the last release of the IT Planning and Management Guides.

- NEW** **Consolidated Guidance: Forming the IT Evolution Management Team** 02-01-02
 Guidelines on forming the Evolution Management Team, describing their authorities, and defining Core and Extended Team member roles.

[MS Word Format](#)
[HTML Format](#)
- NEW** **Template: Estimate of the Situation (EoS)** 02-01-02
 Template for an Estimate of the Situation.

[MS Word Format](#)
[HTML Format](#)
- NEW** **Sample: SACWIS Estimate of the Situation (EoS)** 02-01-02
 An example of a SACWIS project's EoS.

[MS Word Format](#)
[HTML Format](#)
- NEW** **Work Aid: Sample Estimate of the Situation (EoS) Questions** 02-01-02
 Questions that could be used for gathering EoS information from stakeholders.

[MS Word Format](#)
[HTML Format](#)
- NEW** **External Website: WinWin Negotiation Tool** 02-01-02
 From the University of Southern California, this distributed groupware negotiation tool is designed to assist an organization in reaching agreement on a set of goals.

[HTML Format](#)
- NEW** **Example: Risk Management Plan** 02-01-02
 Example of a Risk Management Plan that defines a specific risk analysis and management process.

[MS Word Format](#)

[HTML Format](#)

- NEW** **Work Aid: Risk Identification Questionnaire** 02-01-02
A set of questions that can be asked about an IT initiative that will aid in the development of a list of risks.

[MS Word Format](#)

[HTML Format](#)

- NEW** **Work Aid: Risk Spreadsheet** 02-01-02
This spreadsheet is used with the Risk Management Plan. The purpose is to determine the probability, consequence, and risk exposure of the initiatives risks.

[MS Excel Format](#)

[MS Word Format](#)

[HTML Format](#)

- NEW** **External Website: Risk Radar** 02-01-02
This is a tool developed and supported by the Software Program Managers Network. This tool can be used to identify and analyze risks. (The URL for this website is included in the **Planning and Management Resources** document)

[HTML Format](#)

- NEW** **External Website: RiskTrak** 02-01-02
This is a tool that is sold by Risk Services & Technology. This tool assists the team in identifying and analyzing risks. (The URL for this website is included in the **Planning and Management Resources** document)

[HTML Format](#)

- NEW** **Source Material: Risk Management Resources** 02-01-02
Dr. Robert Charette and Dr. Barry Boehm are authors of two classic books on the subject of Risk Management. (The information for these books is included in the **Planning and Management Resources** document)

[HTML Format](#)

- NEW** **Outline: IT Evolution Plan** 02-01-02
This is an annotated table of contents for a typical IT Evolution Plan.

[MS Word Format](#)

[HTML Format](#)

- NEW** **Consolidated Links: Planning and Management** 02-01-02
List of applicable Web resources for the planning and management guides.

[HTML Format](#)

The Federal Perspective: Requirements for IT Planning

A brief overview of Federal requirements related to planning, and also developing, modifying, or replacing an information system.

05-05-01

[MS Word Format](#)

[HTML Format](#)

NEW Guidelines: Development of a Work Breakdown Structure (WBS)

Lists the steps in the development of either an activity-based WBS or a work product-based WBS.

02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW Sample: Software Estimation Procedure

A sample procedure for the estimation of the labor and cost of new software.

02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW Template: Outline of a Measurement Plan

Outline for a measurement plan that could be used for either the IT Evolution Plan, a specific Plateau Plan, or a Project Plan.

02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW Template: Project Charters

Template for developing the charters for projects covered by the IT Evolution Plan.

02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW Consolidated Guidance: Earned Value Methods

Overview of the techniques for computing earned value, with strengths and weaknesses of each method.

02-01-02

[MS Word Format](#)

[HTML Format](#)

NEW Planning Advance Planning Documents for State Systems

(The URL for this website is included in the **Planning and Management Resources** document)

02-01-02

[HTML Format](#)

NEW External Website: Cost/Benefit Analysis of State Systems

(The URL for this website is Included in the **Planning and Management Resources** document)

02-01-02

[HTML Format](#)

NEW

Template: Contracting Scorecard

Describes background of the contracting scorecard approach and identifies a tailorable list of common factors applied to the contracting scorecard.

02-01-02

[MS Word Format](#)

[HTML Format](#)

Have Something to Contribute?

We are always looking for a "few good things"... If you have something that you were looking for, or would like to contribute for others to leverage, please contact the IT Planning and Management guide team at statesystems@acf.hhs.gov

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