



Solution Life Cycle Deployment and Maintenance Plan

This document outlines the deployment strategy for the Solution Life Cycle (SLC) including deployment objectives, deployment audiences and the deployment approach. Process guides for the SLC and associated processes have been developed; these deployment efforts focus on educating impacted audiences about these processes and the resources available to them.

Overview

Student Financial Assistance (SFA) has made considerable investment in the development of the SLC. This process framework is intended to guide a solution acquisition from identification of business need to the transitioning of solution to a support state.

In establishing a solution life cycle, SFA is better equipped to accomplish the following objectives:

- Streamlined, predictable, repeatable, measurable processes that help SFA meet their performance objectives
- Evidence of continued compliance to corrective actions resulting from the Office of Inspector General (IG) audit reports
- Evidence of compliance with the Clinger Cohen Act of 1996
- Evidence that, through the utilization of SLC processes, solution acquisition projects:
 - Deliver higher quality work products and solutions
 - Possess a common understanding of employee roles among all team members

Solution Life Cycle deployment follows a three-pronged approach

- SFA's life cycle has evolved from the IPT process to today's acquisition-focused SLC.
- Past deployment efforts piloted Solution Acquisition Planning and Requirements Development and Management Key Process Areas.
- A three-pronged deployment approach of marketing, communication and coaching is recommended to successfully deploy the SLC to all audiences:
 1. SLC briefing sessions to increase awareness of the SLC among leadership.
 2. SLC overview sessions to raise awareness of the SLC among ALL impacted audiences.
 3. SLC coaching sessions provide performance support on how and when to use the SLC and where to find resources/tools.

- Decrease acquisition and maintenance costs

Evolution of the SLC

SFA's process framework has "evergreened" from Integrated Project Teams (IPT) to the current SLC, focusing on the acquisition of solutions. SFA's initial lifecycle development efforts created IPT processes aimed at guiding development teams through system development efforts. This included processes for rapid development, packaged software and web-based development efforts. The IPT process evolved into a System Development Life Cycle (SDLC) that comprised five distinct phases:

- Vision
- Definition
- Construction
- Deployment
- Support

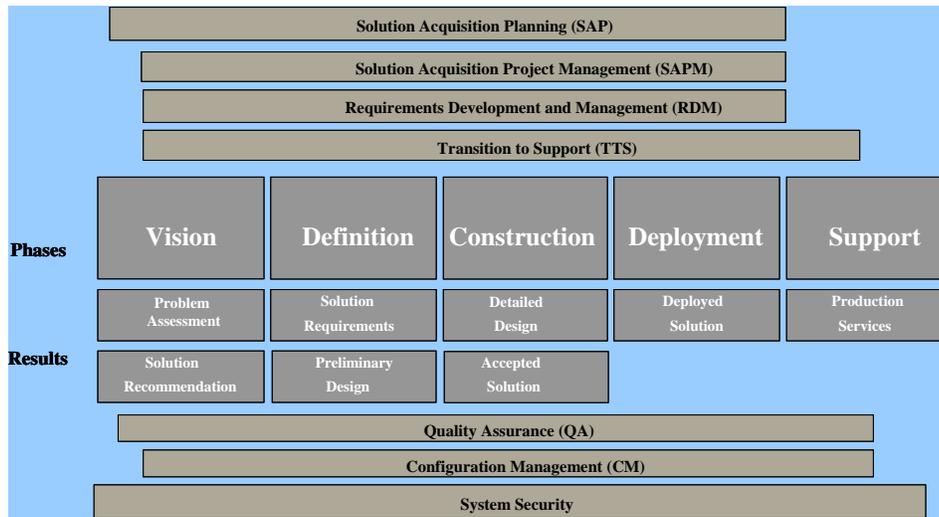


Figure 1.1 The SLC has evolved over time from the IPT process to the current SLC for acquisitions.

After initial deployment and implementation of the SDLC, SFA's focus turned to the Software Engineering Institute's (SEI) Capability Maturity Model (CMM). The question at hand was, "Does SFA perform system development activities or acquisition activities?" After reviewing two of the CMM models, Software Acquisition Capability Maturity Model (SA-CMM) and Software Capability Maturity Model (SW-CMM), it became apparent that SFA was an acquisition organization and that SFA's lifecycle should primarily focus on the acquisition of solutions. SFA renamed the SDLC to the Solution Life Cycle (SLC) and took Key Process Areas (KPA) from the SA-CMM and the SW-CMM and merged the most applicable practices from each, to form the SFA SLC. This tailored framework is expected to provide maximum benefit to SFA and address SFA's specific business needs.

As illustrated in Figure 1.1, the SLC contains the following KPAs that align with different phases of the SLC:

SA-CMM

- Solution Acquisition Planning (SAP)
- Solution Acquisition Project Management (SAPM)
- Requirements Development and Management (RDM)
- Transition to Support (TTS)

SW-CMM

- Quality Assurance (QA)
- Configuration Management (CM)

In addition to the CMM KPA's, SFA has developed a specific set of processes needed to support the improved delivery of secure systems in the production environment. These processes are defined in the Security Process Guide and are designed to improve the delivery of systems that meet government security compliance needs across SFA. The other KPAs provide processes, tools and artifacts supporting the SFA acquisition process. An SLC process guide was developed as well as core process guides providing relevant details and information for the seven KPAs. The guides provide instruction to help SFA execute



consistent, repeatable processes and continually improve acquisition planning and project management activities. "Evergreening", continuous evaluation, improvement and refinement of existing processes, has helped SFA evolve its lifecycle from the IPT to today's SLC.

Previous deployment efforts

Prior to detailing out the current deployment plan, it is essential to review and build upon the previous deployment effort. Initial SLC deployment activities, that occurred in the Fall, 2001, focused specifically on the SAP and RDM KPAs. These "pilots" tested the deployment approach as well as determined areas of enhancement to provide a user-friendly and effective deployment environment.

The first activity in the "pilot" deployment of Solution Acquisition Planning (SAP) was the creation and conduct of a high level, 90 minute overview of the SAP KPA and how the job aids, tools and processes it defined are integrated into the SLC. The content addressed:

- A brief description of the SLC
- SFA's Solution Acquisition Capability Maturity Model
- How SAP was integrated into the SLC framework
- What SAP means to SFA
- How SAP will be applied
- An introduction to the job aids, processes and tools associated with SAP

The intended audience was select members of eCommerce Application Development (eCAD), the Decision Support Group (DSG), and SFA Project Managers for FY02. Attendee selection was based upon the relevance of the material to them at the current time. Of the approximately 21 SFA resources responding to attend the session,

13 participated with members of eCAD and the Schools Channel comprising the majority of the audience.

The session was very well received. Satisfaction survey results conveyed that the session addressed the appropriate information and that participants gained an increased understanding of the SLC, SAP and the tools associated with this process. Most were optimistic that the enhancements provided through SAP would help to provide information that will allow for better solution acquisition planning.

Following the overview session, a more detailed, goal based scenario session was held with the expectation of providing participants with more extensive knowledge of the SAP tools. This session offered participants the opportunity to complete portions of the enhanced tools in a safe, risk-free environment via "real life" scenarios.

Participants for this session targeted members of the SFA organization actively involved in acquiring a new solution. Participation in this session was low (25 people invited, 12 responded to attend, 4 people attended). Having so few participants in the session minimized the deployment team's ability to gather feedback and suggestions regarding the session conduct and content. The improvement suggestions made will be incorporated into future deployment efforts including less paper intensive, shorter sessions and focus on how processes integrated into bigger picture.



SLC Deployment and Maintenance Plan

Building upon the successes and process improvements identified during the previous SLC deployment effort, the SLC deployment activities outlined on the following pages are aimed at better enabling the adoption of the processes and tools associated with the SLC. The deployment effort assists in transitioning the established processes and related work products from their current, developed stage to an implemented, adopted discipline across SFA solution acquisition projects. In order to achieve this objective, processes, tools and performance support will be provided to assist in creating and maintaining solution acquisitions work products required for the SFA enterprise.

The SLC deployment and maintenance plan outlines the following information regarding the SLC deployment effort:

- Deployment objectives
- Audiences (SFA, Modernization Partner and Operating Partners)
- Deployment approach including marketing, communication and coaching/training activities
- Recommended approach for coaching/training
- Timeframe for deployment activities
- Deployment roles and responsibilities for the SLC Deployment team and SFA University team

SLC Deployment Objectives

The primary objective of the SLC deployment effort is to increase awareness and use of the SLC across solution acquisition projects.

Additional deployment objectives include:

- Raise awareness, understanding, and commitment to the SLC
- Build common understanding of the process and artifacts within the SLC
- Create demand and excitement for the SLC and its future benefits
- Manage expectations (i.e., what is the SLC, what will it do for me)
- Transition the established processes and related work products from their current, developed stage to an implemented, adopted discipline across SFA solution acquisition projects

SLC Deployment Audience

The audience for SLC deployment spans across SFA, the Modernization Partner and Operating Partners. Each audience is impacted differently by the implementation of the SLC. These differences are taken into consideration when determining the appropriate approach for deploying the SLC to each group. SLC deployment is focused on in-scope solution acquisition projects. Listed below are specific roles as related to the SLC:

- CIO eCommerce Application Development (eCAD)
- CIO IT Management
- CIO IT Services
- CM Lead
- Decision Support Group
- Executive Sponsor
- Executive Steering Committee
- Integrated Product Team (IPT)
- Investment Review Board (IRB)
- Information Technology Representative (ITR)
- Project Manager
- Quality Assurance (QA) Lead



- Requirements Development and Management (RDM) Lead
- Subject Matter Experts
- System Manager
- System Security Officer
- Transition to Support (TTS) Lead

These roles are typically filled by:

- SFA CIO members
- SFA Business Unit ITRs
- SFA Project Managers
- Modernization Partner Task Order Managers
- Modernization Partner IPT team members

Other impacted audiences include:

- Acquisitions and Contract Performance
- Modernization Partner Leadership
- Modernization Partner Program Management Office
- CSC Leads (VDC Leadership)
- Operating Partners

SLC Deployment Approach

A 3-pronged approach is recommended to successfully deploy the SLC:

- SLC briefing sessions
- SLC overview sessions
- SLC coaching

This approach enables the achievement of the differing levels of awareness, understanding and buy-in to the SLC. For example, those not directly impacted by SLC activities only need to obtain an awareness of the SLC, what it is and where to find additional information if necessary. Others may need a high-level understanding of this framework while others, who use the SLC on a daily basis such as project managers, require a more in-depth understanding. A combination of marketing, communication and coaching activities are deployment enablers. As illustrated in Figure 1.2, SLC briefing sessions, SLC overview sessions and SLC coaching will help SFA successfully deploy the SLC across all targeted audiences. Commitment to the SLC will not truly occur until people have real-life experience using the SLC.

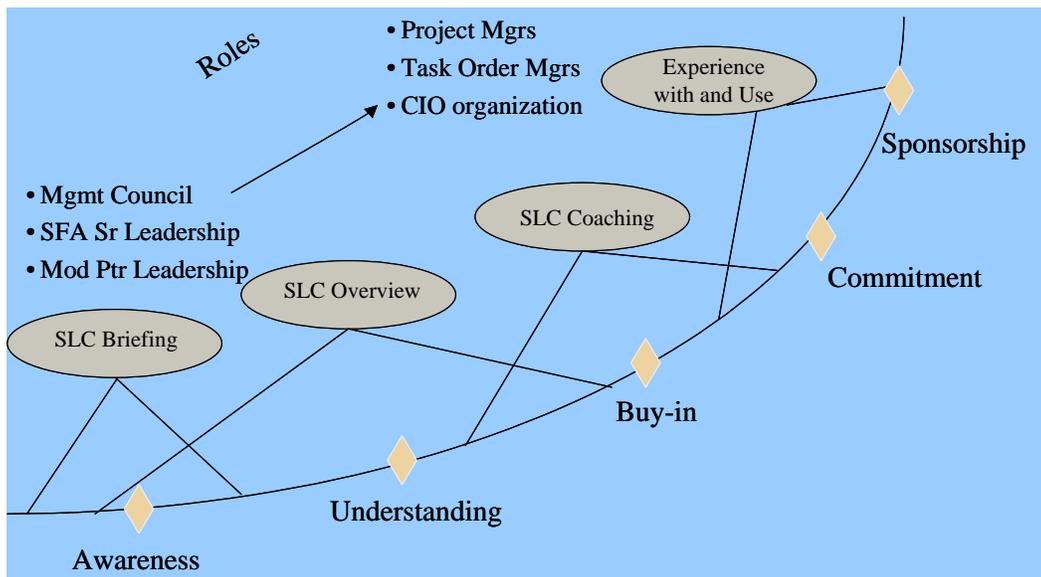


Figure 1.2 Deployment approach differs based on the audience's required level of commitment to the SLC.



SLC Briefing Sessions

SLC briefing sessions are aimed at gaining awareness among SFA senior leadership, within the CIO organization and across Modernization Partner leadership and task order managers. The SLC briefing session consists of a 15-minute communication presentation. For the majority of the audience, this is the first time they will hear about the SLC. These sessions are designed to be brief and provide a high-level introduction to the following SLC areas:

- The evolution of the SLC
- The five phases of the SLC
- Primary SLC users
- Benefits of using the SLC
- Next steps for deployment

The audience for these communication presentations includes:

- Management Council
- SFA Senior Leadership
- CIO Leadership
- CIO organization
- Modernization Partner Leadership
- Modernization Partner Task Order Managers

SLC briefing sessions are planned for January and February 2002 and will take place at the SFA Senior Leadership meeting, CIO leadership meeting, CIO "brown bags", Modernization Partner leadership meeting and other appropriate venues.

SLC Overview Sessions

The SLC overview sessions are aimed at gaining awareness and providing a more detailed understanding of the SLC among *ALL* audiences. These 90-minute sessions are a more detailed version of the SLC briefing session and provide details on:

- The evolution of the SLC
- The five phases of the SLC
- Key processes integrated in the five phases
- Critical entry, exit criteria and objectives
- Critical SLC artifacts and when they should be used
- Benefits of using the SLC
- Primary SLC users
- Next steps for deployment including information on SLC coaches

The SLC overview session should be utilized as an opportunity to market the SLC to all audiences and generate enthusiasm for the continued deployment and use of the SLC. Other marketing efforts will follow the SLC overview sessions, including posters, SLC information on SFANet and articles in SFA InStep. The aim is to sustain the momentum for the SLC between the overview sessions and the coaching/training sessions. The SLC Deployment team will work with SFA University and Communications office to perform these marketing activities.

SLC overview sessions are planned for February and March 2002 and will be coordinated with and announced by SFA University. CIO members on the SLC Deployment team will deliver these sessions.



SLC Coaching

The objective of SLC coaching is to provide audiences that use the SLC on a daily basis with hands-on experience and support when using the SLC. SLC coaching is intended to be a project-based approach but can be provided on an individual basis also. By the end of SLC coaching, participants should be able to:

- Articulate the five phases of the SLC and core processes/activities involved
- Describe the process for acquiring a solution
- Explain his/her role within the SLC and integration points with other roles
- Create artifacts and identify entry and exit criteria required by the SLC based on his/her role on the project
- Describe the difference between a system development life cycle and the SLC
- Understand how to tailor the SLC to best support their acquisition effort
- Identify how to get resources/tools for additional support on the use of the SLC

The audience for coaching sessions includes:

- Project Managers
- COTRs
- CIO organization
- Acquisitions and Contract Performance organization
- Modernization Partner Task Order Managers
- Others as identified by Project Managers and Task Order Managers

SLC Coaching Curriculum

The SLC coaching curriculum is split into two modules as depicted in Figure 1.3:

- **Vision/Definition:** Provides details and hands-on experience using the processes and creating artifacts for the Vision and Definition phases.
- **Construction/Deployment/Support:** Provides details and hands-on experience using the processes and creating artifacts for the Construction, Deployment and Support phases.

SLC Coaching Curriculum and Delivery Approach		
Module	Objective	Delivery Approach
Vision/Definition	Gain an understanding of what processes and artifacts are used during the Vision and Definition Phases including hands-on exercises developing: <ul style="list-style-type: none"> • A solution acquisition plan and estimates • A statement of objectives • High and low level requirements review and approval • A configuration management plan • A transition to support plan/approach • A quality assurance plan 	SLC expert led coaching prior to business case submittal and self-study
Construction/Deployment/Support	Gain an understanding of what processes and artifacts are used during the Construction, Deployment and Support Phases including hands-on exercises developing: <ul style="list-style-type: none"> • The contents of a detailed design document • System test plans • Production readiness review preparation and conduct • System security plans • Production readiness review • Requirements traceability matrix 	SLC expert led coaching no later than signoff on requirements and self-study

Figure 1.3 The SLC coaching curriculum is delivered in two modules.



Participant feedback from the previous deployment effort suggests that deployment by phase is a more effective approach than by key process area. Specific feedback pointed to the need for a better understanding of the big picture and integration of key processes into the SLC. Taking this into consideration along with other factors including point of need learning (at what point is the individual in the life cycle) led to the selection of deployment by phase. Key points where SFA coaching should take place have been identified:

- **Vision/Definition:** it is recommended that project team members receiving coaching prior to the development of a business case.
- **Construction/Deployment/Support:** it is recommended that project team members receive coaching no later than sign off on requirements.

The SLC Overview will be provided as a refresher at the beginning of each of these coaching sessions.

It is also likely that individuals or project teams may require coaching specific to a core process. Process owners need to be identified who will be the point of contact if coaching on a key process is required.

SLC Coaching Delivery Approach

The recommended approach for delivery is a combination of expert led coaching sessions and self-study learning. Three key principles drove the selection of this delivery approach:

- Self-paced (and the ability to review prior modules for more development)
- Point of need learning based on where someone is in the acquisition lifecycle
- Consistent delivery (minimize the variation in delivery across audiences)

Several other criteria were identified and addressed during the selection of the appropriate delivery method including:

- Size of audience
- Geographic dispersion
- The need to simulate tasks
- The level of maintenance/updates to materials

Given these criteria/principles, the following delivery strategies were examined:

- **Expert-led (instructor-led):** a form of instructor-led training for a small audience and a specialized topic.
- **Video:** delivered primarily through a video that is viewed by the user.
- **Computer based training (CBT):** interactive and delivered on a personal computer with the possible combination of sound, graphics, text and video.
- **Self study:** self-paced learning delivered through materials that can be accessed electronically or by paper

Taking the three key delivery principles into consideration, best practices in training suggested the appropriate format for SLC coaching was Computer-Based Training (CBT). This format provides the most consistent delivery method, allows for self-paced training and creates materials that can be accessed at point-of-need. However, since the SLC audience is small and not geographically dispersed, it was determined that the costs associated with the development of CBT were not warranted. Given the other delivery options examined and cost considerations, we concluded that the recommended approach for delivery is a combination of expert led coaching sessions and self-study



learning. Self-study materials provide the same benefit as CBT, but at a lower cost.

Specifically, it is recommended that a SLC coach be provided to guide project teams through the two SLC modules. Having an SLC coach along with self-study materials provides individuals the flexibility to access and learn the SLC when they need it. Self-study materials are accessible at any point and provide users with upfront information on the SLC as well as case study activities to gain hands-on experience developing SLC artifacts. Coaches are available throughout the lifecycle.

SLC Coaches

A critical component to the success of this deployment effort is the identification and development of SLC coaches. Every acquisition effort should be assigned an SLC coach. Initially, coaches will be identified from within the eCommerce Application Development (eCAD) organization within the CIO. Eventually, it would be ideal to have an SLC coach within each Channel. During the design phase, skill and knowledge requirements for SLC coaches will be identified. Next, potential candidates for SLC coaches will be identified and selected.

Parallel to the development of the two self-study modules is the identification and selection of vendor provided "process coaching" training. Individuals selected as SLC coaches will attend vendor-provided "process coach" training sessions prior to the piloting of SLC materials.

The pilot of SLC self-study and coaching materials is aimed at building upon the coaching skills learned at the training and using these skills specifically with the content of the SLC. This is a safe environment where the SLC coaches can practice coaching with the SLC content and

can test the self-study materials at the same time. Following this session, the SLC self-study materials will be revised and the SLC coaches will begin preparing to coach solution acquisition teams.

To reiterate, critical to the success of these deployment efforts, is the identification and development of effective SLC coaches.

SLC Deployment Effectiveness Measurement

Deployment effectiveness is monitored and tracked through course modules. The following areas are tracked to measure penetration by role:

- Number of participants coached for each module
- Total number of participants to complete both modules

Comprehension is measured through written exercises including:

- Identification of the five SLC phases
- Identification of the SLC KPAs
- Identification and understanding of the roles within the SLC
- Identify what phase work products are completed based on project requirements
- Ability to identify where templates and job aids can be found

Lastly, institutionalization can be measured at process reviews through demonstration of supporting artifacts and work products.

Process improvement and results can be observed in post-implementation reviews conducted by the DSG through the documentation of evidence on the usage of the SLC and identification of process improvements.

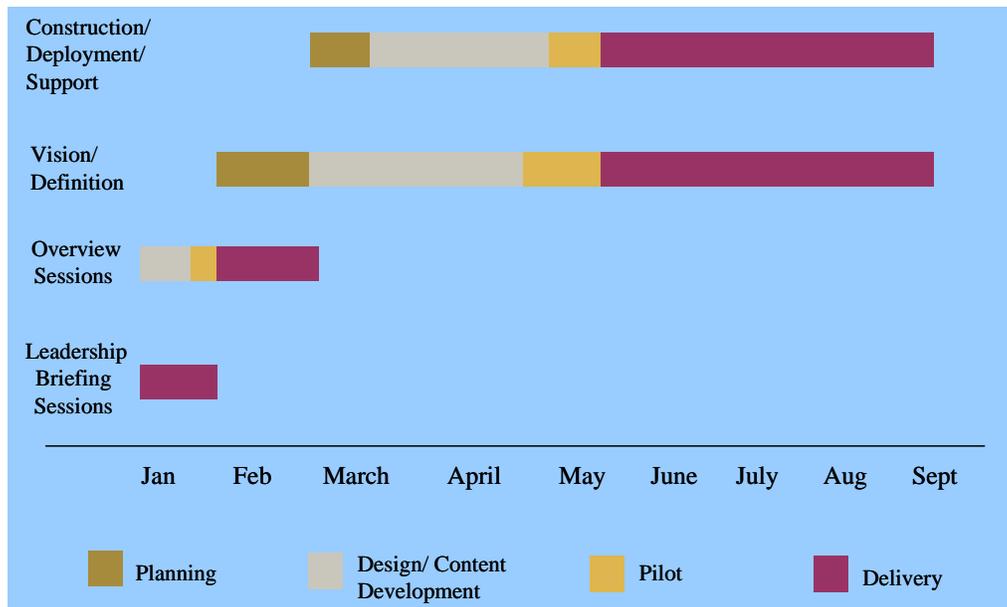


Figure 1.4 SLC deployment is a 9-month effort.

SLC Deployment Timeframe

The SLC deployment effort involves a nine-month work effort. As discussed earlier, SLC leadership briefing sessions and SLC overview sessions precede more detailed coaching sessions. The briefing and overview sessions take place in January through March 2002. Design, development and delivery of SLC coaching begins in February 2002 and runs until September 2002. The deployment team combines the skills of resources from SFA University and the SLC Deployment and Maintenance Team. Figure 1.4 illustrates the SLC deployment timeline.

Planning/design for the two SLC self-study modules is scheduled to be complete by the end of March 2002. Activities include the validation of the target audience and in scope solution acquisition projects, review and validation of design for each self-study module and identification of requirements to be an SLC coach.

Development is planned to be complete, including final reviews, by June 15, 2002.

Development activities include the development of all self-study materials, course evaluations, written exercises and identification of SLC coaches.

SLC coaching and delivery of self-study modules takes place between June 15, 2002 and September 30, 2002. Delivery activities include a pilot, scheduling coaching sessions, preparing and providing coaches to support acquisition project teams and evaluating and improving self-study materials. It is recommended that the self-study materials be piloted prior to training delivery, possibly with a small group within the CIO organization. Additionally, delivery includes the assessment of deployment efforts including a post implementation review and recommendations for future deployment efforts

A detailed workplan, outlining the SLC coaching design, development and delivery activities can be found in Appendix A - SLC Deployment Workplan.



Deployment Roles and Responsibilities

Initial discussions have occurred between the SLC Deployment team and SFA University to determine the details of the collaborative working relationship to deploy the SLC.

Figure 1.5 depicts the proposed roles for SLC deployment that are still under discussion at the current time. This collaborative relationship leverages the capabilities of SFA University to market and announce the SLC overview sessions and self-study courses and to consult to the SLC Deployment team regarding the development of the self-study materials. SFA University will also provide the CareerZone Tech Series as a venue for delivering the SLC Overview and support efforts to move the self-study materials and overview materials to on-line. Lastly, SFA University has offered to identify training opportunities for SLC coaches to gain skills on process coaching and internal consulting. All of these efforts are focused on the initial deployment of the SLC. A long-term view also takes into consideration

sustaining the SLC as the process discipline within SFA. Discussions have explored ways that SFA University can help the CIO maintain the SLC materials on a long-term basis.

The SLC Deployment team supplies content knowledge to develop the self-study materials, to identify the SLC audience and their needs and to provide coaching on the SLC.

Future meetings are planned to detail out the specific roles and responsibilities and identify the specific resources within SFA University to provide support to the SLC Deployment team.



Figure 1.5 SFA University and the Solution Life Cycle team have partnered to deploy the SLC.



Summary

The nine-month SLC deployment effort includes communication, marketing and training activities all aimed at successfully deploying the SLC across all targeted audiences. A collaborative work team of SLC Deployment team and SFA University resources will combine their collective skills in effectively deploying the SLC.

Communication and marketing activities are the initial steps to be taken in deployment of the SLC, raising awareness among all audience groups and generate interest for future SLC learning events. These activities are concise and are meant to provide a “taste” for the SLC.

Coaching/education activities follow the communication events, focusing on providing up front information followed by performance support for the use of the SLC. Process guides have been created for the SLC and the training is aimed at reinforcing the content in those guides and providing experience in using the SLC processes. A hybrid approach of expert-led coaching and self-study learning has been recommended to accommodate the specific needs of the SLC audience. Self-study provides performance support materials that are easily accessible and flexible. Additionally, SLC coaches are available to support individuals or teams using the self-study materials.

The three-pronged deployment approach of briefing sessions, overview sessions and coaching is flexible and ensures that the SLC is effectively deployed to all audiences.