



Internal Audit Report

System Development Life Cycle (SDLC) Review

February 2012

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Executive Summary

Audit Scope:

Teleflex has a defined System Development Life Cycle (SDLC) policy (GIT012) in place for the deployment of applications across the organization. In conjunction with the SDLC process, Teleflex has created a project management organization (ePMO) consisting of 3 FTE reporting to the Director of Business Relationship Management and ePMO. The ePMO follows a set of project guidelines and templates focused on delivering technology solutions. The ePMO guidelines and templates are also leveraged by IT resources outside of the ePMO organization in managing projects where a designated Project Manager from the ePMO is not assigned.

Teleflex Internal Audit (IA) has reviewed the SDLC and ePMO methodologies and templates in comparison to industry standards including Agile, Waterfall and Project Management Body of Knowledge (PMBOK) frameworks. In addition, IA has reviewed a sample of projects for compliance to the defined methodologies and consistency.

IA has identified areas for refinement and consolidation relative to the SDLC policy and ePMO methodology. Teleflex IT should leverage the upcoming SAP and EDMS projects to incorporate the proposed recommendations. These changes support IT's goal of improving customer satisfaction and further promote integration among IT and the business users.

Objective:

The objective of the review was to identify opportunities to enhance and refine the current Teleflex SDLC and ePMO programs. The assessment included the design and operating of effectiveness of processes and controls to facilitate and promote the following:

- Technology needs are identified, developed, delivered and supported to effectively meet the needs of the organization
- Resources are available to deliver IT projects timely and with quality
- Projects resources are controlled effectively

Audit Status:

- Closed - no pending Issues
- Local management follow-up required
- Teleflex Corp. follow-up required

Executive Summary

Observation # 1

Recommendation

Based on Internal Audit’s review of 5 IT projects, collaboration amongst IT and the business organization can be improved to ensure the projects’ overall success. Examples include the following:

- Project risk identification and management
- Mock and actual cutover
- Decisions regarding data conversion
- Training
- Change management

Projects should be viewed as business projects with IT being an enabler. There should be greater involvement and ownership by the business in planning, decision making, managing risk and overall project ownership. For example, there should be a clear mechanism for both the business and IT to identify project risks. This should not be the sole responsibility of IT. The risk management process should be comprehensive including project risks that have an impact on the business not just IT. The business and IT should jointly assess the identified risks and develop the appropriate mitigation plan or disposition.

Management Commitment

Responsibility

Completion

We agree with the recommendation and will address through the following action:

- We will include a risk registry for all IT projects that have been approved through our portfolio process. We will maintain the risk log through the full-cycle of the project, and be inclusive of business risks associated with the efforts. We are currently in the process of updating our portfolio process, and will revise accordingly to include the appropriate business involvement.
- We will leverage the SAP Global Rollout to further educate and promote collaboration amongst IT and the business relative to risk identification and internal controls.

Jeff Day, Director – BRM and ePMO

April 27, 2012

Executive Summary

Observation # 2

Recommendation

Many aspects of a standard System Development Life Cycle (SDLC) are not defined in the SDLC policy (GIT012) and are comingled as templates in the ePMO methodology. The SDLC should include a continuous, repeatable process for ensuring systems meet the needs of the business.

The following items are not specifically addressed in either the SDLC policy or ePMO process:

- Processes for continuous IT and business collaboration identifying the need for automated solutions
- Implementation plan to address cutover, validation, training, knowledge transfer and stabilization
- Process for sustaining and maintaining the application including transition to IT operations for support and a strategy for managing patches and upgrades
- Process for decommissioning/replacing systems

Review and update the SDLC policy to further refine the methodology covering the full life cycle of an application from identification of the need for a technology solution through to decommissioning the application leveraging industry standards such as Agile and Waterfall. The revised methodology should be the enterprise solution and should include specific deliverables for each phase including responsibilities for preparation and approval.

Section 3 of the Accounting Policies, Procedures and Controls Manual regarding the Delegated Authority Matrix should be updated as it relates to non-direct spend associated with IT. The policy should require consultation with the IT organization for non-direct spend associated with IT.

Management Commitment

Responsibility

Completion

We agree with the recommendation and will address through the following action:

- Revise policy GIT 012 (SDLC) to cover full lifecycle of systems (from inception to decommission), and to add phases, responsibilities and deliverables.
- IT will work with Corporate Accounting to review the Accounting Policies, Procedures and Controls Manual and update accordingly for appropriate IT review.

Tim Duffy VP IT, Jeff Day Dir ePMO / BRM

Pat Hutchison, Corporate Controller

August 1, 2012

June 30, 2012

Executive Summary

Observation # 3

Recommendation

Current tools and processes do not provide clear visibility to IT needs and resource capacity/planning.

- The current IT Project Portfolio tool does not include project hour estimates and actuals nor a clear link to specific project interdependencies to effectively manage the 42 active projects (as of 1/3/2012).
- Projects are prioritized based on information made available to the ePMO group but there is minimal input from business leadership.
- It is challenging to see how IT resources are spending time between projects and routine IT activities to ensure resources are effectively utilized and not over tasked.

An advisory board should be established made up of IT and business leadership to actively review the IT project portfolio and prioritize accordingly to align IT activities with the business strategy/needs.

Align the IT organization with the business organization to ensure IT is focused on the current technology needs of the business.

IT activities (project and routine) should be tracked and planned by hour and/or FTE per day to have better visibility as to resource requirements and capacity across IT and the project portfolio.

Management Commitment

Responsibility

Completion

We agree with the recommendation and will address through the following action:

- Both an SAP and EDMS/PLM Steering Committee have been established for providing governance and oversight to business strategy/needs, priorities, investments and risks. We have communicated IT's approach to managing daily support and future projects during the April 2012 Steering Committee Meetings.
- All other projects will be covered under the portfolio management process and governance (that is currently under revision, and targeted for completion on April 27th).
- IT has made adjustments to best align to strategic business priorities, and will continue to do so as the business evolves. IT will proactively engage the business in understanding their needs and collaborate on prioritizing resources.
- IT is implementing a new process for resource demand planning to cover daily changes/support and project activities.

Brian Lurie, SVP IT

Jeff Day, Director ePMO/BRM

Brian Lurie, SVP IT

Jeff Day, Director ePMO/BRM

Complete

April 27, 2012

Ongoing

April 27, 2012

Executive Summary

Observation # 4

Recommendation

ePMO templates should be updated and consolidated to be more user-friendly and focused on planning and controlling project activities aligned with a revised Teleflex SDLC. This will be help to ensure quality IT solutions are delivered timely.

Pre-project deliverables (Concept Document, Business Case and Project Complexity) should be part of the SDLC policy and can potentially be merged but should cover: concept, alternatives, feasibility, risks, costs, correlation to High 5 objectives, benefit realization and complexity/prioritization.

The Project Charter should include approved high-level roles/responsibilities, measurable success criteria, high-level requirements, high-level risks and milestones.

The Service Acceptance Plan is focused solely on test plans and results. The Acceptance Plan is linked to the Transition Document. These templates should be merged and utilized throughout the project encompassing all deliverables including: system configuration documentation, standard work instructions, training, system maintenance procedures and quality.

Benefit realization and success criteria should be clearly defined including measurements and responsibility. Project success should not be measured solely by on time and under budget.

Management Commitment

We agree with the recommendation and will address through the following action:

- Pre-project deliverables will be included in SDLC policy revision targeted for August 1, 2012
- Acceptance plans will be incorporated for all deliverables requiring business approval (and not just limited to testing and test results). We will make these changes immediately.
- Critical Success Factors will be defined for projects, and Key Performance Indicators will be defined and jointly owned amongst IT and the business for major initiatives.

We do not agree with including recommended items in the Project Charter, rather reference them to other project documentation developed during the Initiation and Planning Phase - per PMBOK standards (e.g. Project Impact / Risk Document, Requirements Document, Scope Document, etc.) the items can be included in the Project Charter or equivalent deliverables.

Responsibility

Tim Duffy VP IT, Jeff Day, Dir. ePMO/BRM

Project Managers

Project Managers / Business Sponsors / Business Owners

Completion

August 1, 2012

Immediately

Ongoing

Executive Summary

Observation # 5

Recommendation

ePMO framework does not include standards and templates for planning and controlling the following project areas:

- Human resources
- Costs
- Quality
- Procurement
- Lessons learned (planning)

Develop and implement project standards addressing planning and controlling human resources, costs, quality and procurement for all resources assigned to the project. The standards and templates should include coverage of relevant Accounting policy (ex. approval for cost overage), HR policy (ex. onboarding), regulatory requirements and defined responsibilities.

In addition, the planning phase should include a formal process for reviewing lessons learned from prior projects and developing a plan to avoid repeat occurrences. Examples of recurring challenges include training and organizational change management.

A consultation memo should be included in the project documentation capturing discussions with the Corporate Controller and/or Finance regarding treatment of expenditures subject to capitalization and the process for tracking and reporting.

Management Commitment

Responsibility

Completion

We agree with the recommendation and will address through the following action:

- The ePMO methodology and templates will be revised to incorporate planning and controlling items as defined in recommendation above.
- Review of lessons learned will be incorporated into planning phase where applicable (e.g like-kind implementations, extensions, etc.)
- A memo will be included in the project file that summarizes the treatment of expenditures, and process for planning / tracking / reporting of budget.

Jeff Day, Dir. ePMO/BRM

April 27, 2012

Executive Summary

Observation # 6

Recommendation

Project documentation standards and controlling processes are not consistently applied.

Create a mandated document repository and archive requirement for all IT projects. For example, require all project documentation to be archived in a shared location or document management system with project closeout to take place within 45 days of go-live.

Items identified on the risk register should have a more robust, specific link to the action taken to mitigate/eliminate the risk. Examples include specific testing to address an error, business decisions including enhancements and master data, etc. In addition, the risk register should capture all risks facing the project and be owned jointly by IT and the project sponsor. Many of the items appearing as issues in the Lessons Learned from the projects selected for testing were identified during the project but were not captured on the risk register.

Management Commitment

Responsibility

Completion

We agree with the recommendation and will address through the following action:

- Our current repositories for project documentation & archive include InfoStrength, TeamSpace, Secure File Shares, and Sharepoint. IT is evaluating an Enterprise Standard, however implementation is pending prioritization and funding.
- IT will review the Risk and Action registries to ensure we are addressing recommendations noted above (for specificity, linkages to action, business involvement).

Greg Omland, Dir Customer Facing Systems

Project Managers, Business Owners

TBD

Immediately

Executive Summary

Observation # 7

Recommendation

Criteria for assigning a Project Manager to an IT project is not clearly defined.

Guidelines should be clearly defined including project duration, scope and complexity to determine when a dedicated Project Manager from the ePMO organization should be assigned to manage project activities.

Management Commitment

Responsibility

Completion

- We are currently in the process of updating our ePMO methodology and will include criteria to assist in determining the need for a dedicated Project Manager from the ePMO.

Jeff Day, Dir. ePMO/BRM

April 27, 2012

System Development Life Cycle Overview

System Development Life Cycle (SDLC) is the process an IT organization utilizes to deliver quality systems to its customers. There are multiple methodologies with Agile and Waterfall being the most commonly used. Common activities among the various methodologies include the following:

- Identification of the need for an automated solution
- Develop a solution concept
- Develop project plan and resource requirements
- Define business requirements
- Design and build/configure the solution
- Testing (ex. full integration and user acceptance)
- Create implementation plan (ex. training, knowledge transfer and stabilization)
- Develop sustainability/maintenance plan (ex. IT operations and upgrades)
- Decommissioning

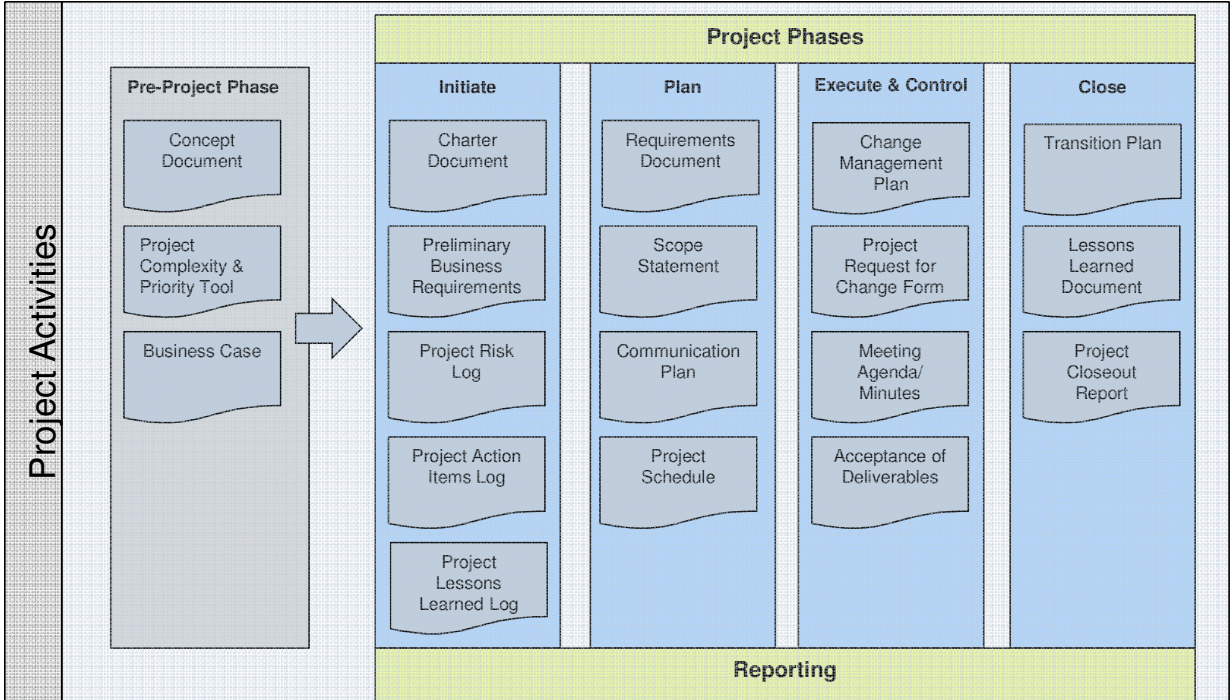
The Teleflex SDLC methodology is defined by the Global Policy GIT012. The current policy is focused on end-user involvement and includes requirements for the following IT and Business integration points:

- Business Requirements
- System design
- Testing
- System Acceptance

ePMO Framework Overview

The ePMO project framework has been established for use across Teleflex IT globally and is based on industry standards as well as the Project Management Book of Knowledge (PMBOK) and Prince 2 project management principles. The framework documents a minimum set of deliverables recommended for all projects within the IT organization. Exhibit A outlines the templates/deliverables recommended for each phase of a project.

Exhibit A



IA has performed a review of the ePMO framework design and organizational structure comparing the processes and templates against industry standards and the PMBOK Project Management Process Groups. IA has also selected 5 projects to test for consistency and quality in utilizing the ePMO framework to manage IT projects.