RECOGNITION OF CONTRIBUTION:

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Business Solution Implementations (system implementations that meet a business need) play a significant role in an organization’s ability to grow and adapt to a changing world. Well managed Business Solution Implementations create an opportunity for the organization to ensure value-delivery from IT related projects, control costs and mitigate risks. Successfully being able to deploy new business solutions creates value for organizations by delivering systems that meet business needs, works as intended and provides the organization with the competitive advantage needed to prosper in today’s business environment.

Business Solution Implementations focus on meeting needs of the business and ensuring the sustainability of the solution that is placed into operation. Two very important areas critical to the success of the solution are the Business Solution Governance Structure and the Decision Making Framework. These critical areas identify and support the business requirements for the new system, ensuring everything is working as intended, delivering desired results on time and on budget, and maintaining the solution after the system is “live.” CPAs have the competencies to help assess and manage these key elements for an organization.

Most organizations today are inundated with technology solutions, the volume of which is increasing at an alarming rate. It is vital therefore, to determine what the business needs are and what would be the best strategy for the organization’s growth in its usage of business solutions. Governance of an organization’s business solutions portfolios should be performed by a team of senior-level representatives from each line of business or department to ensure a holistic view of the organization’s needs is represented. These governance team members must have knowledge of the relevant contributing business systems and processes, and the requirements of their respective stakeholders.
CPAs can play a key role in enabling Business Solutions Governance, in ensuring that it is aligned with an organization’s overall corporate governance processes. Business Solutions Governance principles include:

- Integrity
- Transparency
- Auditability
- Accountability
- Stewardship
- Checks-and-Balances
- Standardization
- Change Management

CPAs already are familiar with applying many of the principles above to the financial data and processes that they work with on a regular basis. Becoming involved in a Business Solution Implementation provides the opportunity to apply these principles into other parts of the organization. The CPA’s role in Business Solution Governance goes beyond the financial data to assist the organization with ensuring the quality and managing the performance of the business solution implementation itself.

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Well-managed Business Solution Implementations address the following functional areas:

- Project governance
- Project management
- Requirements analysis and scope definition
- Installation and configuration
- Customization and integration
- Data migration/conversion
- Testing
- Training
- Communication
- Reporting
- Documentation
- Operations and maintenance

CPAs possess many of the base competencies for helping and managing many of the above functional areas. With some additional training and knowledge development in the IT area, CPAs can play a key role in ensuring the quality and managing the performance of the above functional areas.

This document provides an overview to help CPAs understand the leading practices for ensuring the value of Business Solution Implementations, and the critical role that CPAs can play to help ensure these initiatives are a success.

Why do Business Solution Implementations projects fail? At first, your thoughts of this question may be, “is this relevant to me?”, or “when has that question not been asked”? But, this question still is being asked, and it still is an important topic. To prove the point, just do a quick Google search of the question, and you will get more than six million hits.

This overview of Business Solutions Implementations will discuss and highlight the “Information Technology Competency Model — Section I and II” and provide CPAs guidance on the basics of Business Solution Implementations project utilizing the System Development Life Cycle (SDLC). The SDLC will be described to assist CPAs in understanding these critical stages in Business Solution Implementations. We also will describe testing/quality control elements to assist the CPA in the common terms to aid in the communication throughout the project, and finally, how training and transition is essential for a successful implementation.
Business Solution Implementation is the process of bringing stakeholders and technicians together to build a business solution from idea conception to an operational deliverable. This broad and deep term covers many aspects of selecting, designing, configuring and deploying a Business Solution system or application. The term could also apply to designing the hardware infrastructure, communication connectivity or the design/coding of a custom business application.

How Does a Business Solution Implementation Compare to a System Implementation?

A Business Solution Implementation emphasizes the needs and requires the ownership of the business units and sponsors whereas System Implementation is the deployment of a system without business unit ownership or definition of business needs (an example would be an application upgrade). Business Solution Implementations have a business designed purpose and follow a structured approach to the implementation by way of the System Development Life Cycle. In a Business Solution Implementation, a CPA can help the organization define the business need, assist with how the system is to be designed and ensure the business owners and IT owners properly test the system before deployment and document all the steps and decisions made in the implementation. See table “CPA Competencies for Business Solution Implementations” below.

A Business Case for CPA Involvement in Business Solution Implementations: What Role Do CPAs Play in a Business Solution Implementation Project?

In Business Solution Implementation, CPAs can add value in various ways. Since being a CPA has multiple and diverse career paths, the CPA may be part of senior executive leadership, a director or manager within the organization or have a consulting or auditing relationship with an organization. CPAs are uniquely qualified to assist an organization in a Business Solution Implementation by increasing focus on project risk assessments, improving project risk mitigation strategies, communications, and maintaining or improving the internal control environment (i.e., financial, operational and compliance controls).
A CPA’s role in a Business Solution Implementation can be as diverse as the career itself. Examples of opportunities for CPAs are as follows:

- Developing the Business Case for the need of a new Business Solution
- Determining and demonstrating how the Business Solution aligns with strategic goals
- Advising and guiding the Business Solution Implementation risks and mitigation plans
- Ensuring data quality and auditability of the project
- Enabling reporting for performance management
- Defining outcomes and accountability

The diverse opportunities in a Business Solution Implementation present risks and rewards to CPAs. Moving from the comfort zone of financial statements and footnotes will require the CPA to have a better understanding of operations but will provide clients and employers with value-added skills for the Business Solution Implementation. The CPA’s skills of discipline, structure and communication are essentials for a successful Business Solution implementation.
CPA Competencies for Business Solution Implementations

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<thead>
<tr>
<th>Competency Area</th>
<th>Basic Involvement</th>
<th>Intermediate Involvement</th>
<th>Advanced Involvement</th>
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<tbody>
<tr>
<td><strong>Section I — IT Governance</strong></td>
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<tr>
<td>Strategic Alignment (e.g., Business Solution Implementation Governance)</td>
<td>CPA communicates information relevant to the IT Governance process to IT decision-makers</td>
<td>CPA analyzes information and makes recommendations to IT Governance body.</td>
<td>CPA makes key decisions for IT in alignment with overall organizational goals.</td>
</tr>
<tr>
<td>Value Delivery</td>
<td>CPA understands key business drivers for IT initiatives.</td>
<td>CPA ensures that throughout the delivery process, IT initiatives focus on the business value of all initiatives.</td>
<td>CPA structures IT initiatives to focus on high-value activities, and develops measurements to track business value delivery.</td>
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<tr>
<td>Risk Management</td>
<td>CPA understands risks inherent to information systems and the organizational risk appetite.</td>
<td>CPA monitors risk related to IT initiatives by understanding the organizational risk appetite.</td>
<td>CPA develops a comprehensive plan to identify and manage risks inherent to information systems.</td>
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<thead>
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<tr>
<td><strong>Section II — IT Governance</strong></td>
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<tr>
<td>System Development Life Cycle</td>
<td>CPA understands Systems Development Life Cycle (SDLC) concept.</td>
<td>CPA comprehends managing the life of an application/system using the SDLC model.</td>
<td>CPA monitors the progress and maintenance of an application/system using the SDLC model.</td>
</tr>
<tr>
<td>Requirements Analysis</td>
<td>CPA understands the need for a detailed requirements analysis (transaction identification, audit trails, controls, account/data models, queries and reports, etc.).</td>
<td>CPA performs detailed requirements analysis.</td>
<td>CPA reviews system requirements to ensure that they have sufficient detail to complete a comprehensive design analysis.</td>
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<tr>
<td>Solution Selection</td>
<td>CPA researches/identifies potential solutions/solution providers. They coordinate the use and summarization of evaluation-related materials (score cards, check-lists, etc.).</td>
<td>CPA develops evaluation-related tools, and supervises the evaluation of potential solutions based on identified requirements.</td>
<td>CPA manages the selection process to conclusion, including reviewing selection criteria, providing guidance to the selection process, including obtaining management support, contract completion, and price negotiations.</td>
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<tr>
<td>Business Case Management</td>
<td>CPA understands the need to develop a business case to support decision to implement an application/system.</td>
<td>CPA develops detailed business case to prove value of proposed solution.</td>
<td>CPA reviews business case and makes decision to proceed with implementation of application/system.</td>
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The table below was adapted from the AICPA’s Information Technology Competency Model — (Section I). Section II outlines how CPAs’ skills can be utilized in Business Solution Implementations.
## CPA Competencies for Business Solution Implementations

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</thead>
<tbody>
<tr>
<td><strong>System Design</strong></td>
<td>CPA understands the major components of a system design, including hardware, software architecture, interfaces, and data for a system to satisfy requirements.</td>
<td>CPA architects some portion of a system design and understands how various parts of system architecture integrate to form a complete solution.</td>
<td>CPA reviews complete system architectures to ensure they meet key business requirements and comply with established system standards and policies.</td>
</tr>
<tr>
<td><strong>System Deployment/Development</strong></td>
<td>CPA participates in system deployment/development process.</td>
<td>CPA leads a portion of the system deployment/development process by developing an expertise in one or many aspects of the process.</td>
<td>CPA manages an entire system deployment/development process by developing a deep technical expertise.</td>
</tr>
<tr>
<td><strong>Quality Control</strong></td>
<td>CPA understands application processes, executes application test scripts and documents results.</td>
<td>CPA creates test scripts, assigns personnel, schedules testing, monitors performance and evaluates test results for management approval.</td>
<td>CPA creates testing approach and criteria, approves test results and authorizes moving application/system into production.</td>
</tr>
<tr>
<td><strong>Solution Implementation</strong></td>
<td>CPA understands the process used to implement an application/system, and executes specific implementation tasks.</td>
<td>CPA participates in the development of the implementation project plan and supervises specific implementation tasks.</td>
<td>CPA develops detailed project plan and manages all aspects of an implementation through completion using project planning tools, highlighting key milestones and identifying all resources required.</td>
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<tr>
<td><strong>Training &amp; Transition</strong></td>
<td>CPA assists with the development of new process documents and training curriculum to ensure new system is implemented effectively.</td>
<td>CPA develops training curriculum and directs the development of new system and process documentation.</td>
<td>CPA defines training and systems documentation standards and evaluates the overall implementation success.</td>
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A Business Solution Implementation project consists of the following primary functions:

- **Solution Governance** — The strategic oversight of the project. A strong governance framework provides the project team with clear guidance on how project decisions are to be made and how each project task should be executed.

- **System Deployment/Development** — This encompasses the first few steps in the Systems Development Life Cycle (SDLC). During the early stages of the SDLC, most of the project planning and specification gathering is complete. This stage concludes with the project build where the detailed project specifications are transformed into an operational IT deliverable.

- **Testing & Quality Control** — The stage in the SDLC where the project is tested by its stakeholders. The completion of this stage signifies that the solution is meeting the functional needs of its users.

- **Training & Transition** — The process of teaching the product stakeholders how to operate the product, while transitioning the ownership of the deliverable from the project team to the end-user.

- **Business Solution Implementation (Go-Live) Process** — Another key step of the SDLC, the Business Solutions Implementation is the process of putting the solution into use (Go-Live). The system is fully operational at the conclusion of this stage.

- **Solution Monitoring** — This is the phase that makes the solution sustainable. The outcome of a good monitoring program is that the new business solution is entrenched in the organization’s key business processes.

In the changing business technology environment, ownership of IT projects are a collaborative partnership lead by the Business Owners (hence Business Solution Implementations). The business owns the project and directs the IT Department on delivery. The above functions should all be led by business owners and CPAs. A CPA can provide expertise, methodology and rigor around how the Business Solution Implementation project is structured.
WHAT IS BUSINESS SOLUTION GOVERNANCE?

The Business Solution Project Oversight (or Governance) is paramount to the successful execution of the Business Solution design set forth by the sponsoring business leaders (Sponsors). After implementation, the Sponsors will need to live with the Business Solution. Therefore, all steps of the implementation process must be transparent to Sponsors and Governance, to ensure Sponsors drive key project decisions and all implementation options. Every effort should be made to anticipate the related risks of each interdependent step and contingency plans should be created for risky steps and critical milestones. Governance should develop a project charter for each Business Solution to define the business objectives and strategic goal alignment, as well as, ensure that outcomes are clear, achievable and measureable. Governance should communicate the risks accepted, assumptions made and escalation path of decision-making.

Governance is critical providing strategic oversight and holding the project team accountable for deliverables, timing and costs. Identifying project champions and business owners, who help endorse adoption of the project is crucial to the overall success of the Business Solution Implementation. For all key deliverables, understanding why is key. Who is responsible? Who will take action? Who needs to be consulted for approved versions? Which stakeholders need to be kept abreast of the project?
The Business Solution Governance should define up front:

- **Decision Mechanisms:** Determining how decisions will be made, communicated and implemented, as well as how issues will be surfaced for decision-making is important for Governance to define. Defining who will make the day-to-day tactical decisions, when and how frequently Sponsors will be engaged to opine on options, as well as how Sponsors will approve scope changes and related funding.

- **Expectations Management:** Defining how expectations will be managed, communicated and made visible is significant for Governance to outline. Managing perceptions and expectations over the course of the implementation requires vigilant and timely communication of cost, time and completion estimates, as well as, the risks and benefits of the Business Solution Implementation.

- **Success Factors:** Outlining key success factors by Governance will create tangible measures for Governance. Those key success factors should be communicated continuously to and by the Sponsors and Governance and celebrated as they are achieved to ensure the benefits of the Business Solution Implementation are recognized along the way.

Business Solution Implementations that do not define Governance clearly or that do not define decision-making protocols, manage expectations and define key success factors can result in major missteps in their Business Solution Implementations.
WHAT IS THE SYSTEM DEVELOPMENT LIFE CYCLE?

CPAs can help figure out what the system will need to accomplish and formally define requirements in measurable, testable terms of data, performance, security and on-going maintenance necessities.

The System Development Life Cycle (SDLC) is a methodology for designing, selecting, implementing business solutions and maintaining virtually any kind of business solution information system. There are various SDLC models such as the “waterfall” which is a sequence of stages in which the output of each stage becomes the input for the next. The objective is to fulfill stakeholder/user needs by implementing a quality system/application in a cost effective way. CPAs often are asked to support the SDLC solutions, and they will do so by being asked to support designing or selecting a system, performing end-user testing, or training others how to utilize the system.

An SDLC generally is described as a seven-stage process:

- **1 Initiation/Feasibility/Planning:** This process starts with recognition that there is an unfilled business need or opportunity, understanding of the economic feasibility of creating a solution, and determining how the solution will impact stakeholders/users and existing processes.

- **2 Requirements Analysis and Definition:** This stage addresses each business need identified in the initiation stage, determining what the system will need to accomplish and formally defining requirements in measurable, testable data, and performance terms. (i.e., What is the information telling us? Where is the obvious need? What are the security and on-going maintenance necessities?)

- **3 System Design:** This stage establishes how the system will be sourced, structured and interfaced with users/stakeholders, the physical characteristics are documented, including the infrastructure (hardware), operating environment, user accessibility, data inputs, information outputs and whether the system will be in-part or completely built internally, acquired or outsourced.

- **4 Build/Development:** This stage transforms the design’s detailed specifications into hardware, communications and executable software by acquiring software and/or writing code; setting up, customizing or integrating sourced applications; and acquiring and assembling physical infrastructure.
5 Testing/Quality Control: This stage tests as the system is being built. The system components are critiqued by stakeholder/users on how effectively the solution meets the requirements analysis definition. Feedback is obtained to improve usability, performance and functionality.

6 Acceptance/Installation and Implementation: This stage starts after testing has brought about stakeholder/user acceptance, determining appropriate approach to roll out the solution in a production environment, make it operational in accordance with the defined requirements and provide appropriate end user training.

7 Operations and maintenance: This stage starts once the system is operational; it is systematically monitored for ongoing performance. In addition, the system is evaluated to confirm it is meeting ever-changing stakeholder/user requirements and technological advancements in order to continuously improve the information system’s efficiency and effectiveness.

CPAs managing application/system life cycles will move back and forth between the SDLC stages as a project progresses or as stakeholder/user needs evolve during a business solution’s life cycle. However, it is important to note that questioning the earlier stages of a project such as the Requirements Analysis/Definition or System Design once the project is in the later stages of build or test can be costly.

In the SDLC requirements analysis/definition stage, a thorough understanding of business processes and business needs analysis reduces the risk of choosing business solution systems that do not meet the needs of the organization. Each business need identified in the preceding initiation stage should be addressed. CPAs can help figure out what the system will need to accomplish and formally define requirements in measurable, testable terms of data, performance, security and on-going maintenance necessities. The key deliverable is a summary of stakeholder/user requirements that explains the system’s required functions. The requirement analysis/definition is based on the processes that stakeholder/users execute in day-to-day activity. Through interviews, physical observation and tools such as flowcharting, each requirement should be clearly defined and objectives, improvements and/or expected capabilities described in detail. All future SDLC stages will refer back to the requirements analysis to assess how well the project is progressing in meeting its primary objective of “filling a business need or opportunity.”

The core strengths of the SDLC is the structured framework and methodical manner in which business needs are identified through requirements and business solutions designed, tested and maintained. Defining a system up-front and fully utilizing stakeholder/user input in the requirements, design, testing and evaluation stages are critical to ensure success. There are many incidents of failed solution implementations. A failure can occur when the business solution does not meet business requirements; the solution is not designed with user/stakeholders input, nor is the solution built/tested appropriately for performance as it was designed.

The operations and maintenance stage of the SDLC is dedicated to keeping the application or system functional to provide valuable information to the stakeholder/user. Periodic updates to stakeholder/user requirements provide feedback to be used in system reviews for enhancements or software updates. Business process reviews may reveal opportunities to initiate an improvement or re-engineering effort. The SDLC facilitates continuous process improvement, leading to greater efficiencies and increased competitive advantage, which lowers the organizational financial, operational and strategic risks. Once established, managing systems using the SDLC model provides flexibility and cross-functional insight, keeping finance and technology aligned with strategic business goals.
WHAT IS INVOLVED IN TESTING/QUALITY CONTROL?

During the SDLC Testing/Quality Control stage and as the Business Solution is being built, stakeholder/users critique components on how effective the Business Solution meets the business needs identified in the requirements analysis/definition and feedback is obtained to improve performance and functionality.

Testing involves putting the proposed Business Solution system or application in an operational environment and having stakeholders/users perform processes executed in day-to-day activity.

Below are the technical phases that make up the Quality Control Process and suggestions on how a CPA can be utilized:

▶ **1 Unit Testing:** During this stage, the developer tests each of the individual components in the development server before the Business Solution is promoted to the production environment. CPAs can be used in this phase to confirm the initial test results meet the business specification. Adding additional resources (such as internal audit) at this phase can help reduce the cost of implementation through early issue detection.

▶ **2 Iterative User Testing:** This phase is comprised of a series of sessions with key users to test the functionality of the Business Solution. The Business Solution also is introduced to the organization during this phase. CPAs should be used as advocates, selling the new useful business features of the application. This will help reduce issues during user acceptance testing. They also can assist with creating an impactful communication plan. This will ensure that the future users of the system will be energized about the change to come.
3 Integration Testing: Once all components (including data feeds) are built, have passed system testing, and have been promoted to the staging environment, all functionality will be retested with the relevant data, security and workflow in place. This is another time that CPAs can use their business process expertise to review and approve test results. They also can help identify security and workflow issues.

4 Performance testing: After integrated testing has been successfully completed, the system will be stress-tested by simulating normal, heavy and extremely heavy user conditions to measure the response time and make adjustments as necessary. CPAs can assist by defining what normal, heavy and extreme conditions look like in their business setting. They can also help communicate the impact that poor performance can have on various business processes. This input can help the system developers prioritize issues, thus cutting implementation time and cost.

5 User acceptance testing (UAT): During UAT key users are given representative tasks that closely simulate their regular interactions with the Business Solution and sign-off that the system works as intended. CPA/CITPs are the ideal candidates for being the acceptance testers. They also can be used to help review or write the user test scripts, as well as serve as a project manager when testing a large group of users.

Quality control to ensure that each of the testing phases is adequately documented should be conducted during and after the completion of each SDLC stage to catch and resolve requirements and performance exceptions in a timely manner. CPAs can implement quality control approach including inspection, review and testing criteria, approve test results, and authorize moving application/system into production.
WHAT IS INVOLVED IN TRAINING & TRANSITION?

Training and Transition is the part of the process that ensures that your project is sustainable. Training helps to ensure that people know how to use the Business Solution when it is implemented. While an effective transition guarantees that there is a process in place to sustain the technology. A CPA/CITP may be involved with developing the process documents, creating the training curriculum and ensuring the continued usefulness of the system and its reports. Keys to an effective training and transition program are:

► **1 An integrated training and communication plan**: Effective training should be integrated into the overall communication plan for the project. This integration ensures that your project will be marketed to your audience. The marketing message will help educate the end-user on how the new Business Solution will help make their life easier. If training is produced in a silo and rolled out incorrectly, such as a set of “print screens,” it can overwhelm the user and make it seem that a change is being forced upon them.

► **2 Knowing your audience**: Understanding your audience is important for a good training and transition process. First you need to know who needs to be trained and how to train them. Many projects fail due to the wrong person attending a training session that does not address the attendees’ needs. A focused training session can help build advocates for your Business Solution and make your implementation successful.

► **3 Understanding the basics of adult learning styles**: Knowing the basics of how to effectively train adult learners can help make your transition process easier. Adult learners like to do experiential training. A session that is focused on telling a classroom of people what to do is not the best use of your time. Instead of stringing “print screens” together in a PowerPoint presentation, a business case that highlights the Business Solution capabilities may be the most effective way to get your point across.
4 Understanding how to lead change: Change management also is crucial to the transitioning of a Business Solution project. Most projects fail because of a lack of understanding of the change management process. Once the project team has implemented the systems solution, everyone assumes the project is a success. Sometimes the team does not realize that they are only halfway to their goal. A CPA who understands change management can be extremely effective in communicating the project’s status in the change management process when the technical work is completed. This will help to set expectations and to ensure the project team is communicating effectively.

5 Understand the benefits change equation:
Understanding your organization’s support for a new Business Solution is crucial to the success of your project. The simple formula below will help know if your organization is ready to pursue a Business Solution Implementation:

- **a. Benefits > Cost = Business Solution project support**
- **b. Cost > Benefits = Business Solution project resistance**

Always make sure that the benefits of your project outweigh the cost.
Implementing the business solution (go-live) is the final stage for migration of the application to the user’s environment. When the application is “live,” it generally is called “production” or the “production environment.” Go-live takes place after governance, build/development, testing of an application, training, and user acceptance testing are all in place and completed.

The final step is the actual migration of the application into “production” and making that application available to the end users. The Governance will make a “Go/No-Go” decision to put the Business Solution into production. Once the application is moved into “production,” the old or legacy system usually is eliminated and all user access is terminated.
Solution Monitoring is the ongoing process of monitoring and supporting the deliverable. It is where the training and transition phase meets project governance. The outcome of a good monitoring program is that the new business solution is entrenched in the organization’s key business processes.

Solution Monitoring starts with a strong tone at the top regarding the use of the business solution. Establishing this tone must start with engaging the business owners in the Solution Monitoring process. Since these business owners are living with the Business Solution, they should be strong advocates for the solution’s sustainability. These business owners must be active users of the solution and should help lead the organization’s adoption of the solution. In a well-transition project, the project’s governance structure will be the foundation of the Solutions Monitoring process. The original project sponsors may be replaced with fresh leadership from the organization, but the mission still is to lead and monitor the solution. The Governance should define how the solution will be monitored and how determinations will be made regarding future enhancements and decision making. The Governance will continue to make decision regarding the solution, setting management expectations about the solution, and monitoring the adoption of the solution. They also will monitor the solution and determine if it is fulfilling its stated purpose. The Governance team also must review usage of the tool and react when the new solution is not being used. Solution Monitoring will ensure that the Business Solution is used as intended and continues to provide the business owners with the system that meets their needs.

A CPA can help in the Solutions Monitoring process in many ways beyond the finances. First, by being an early adaptor of the solution, a CPA can help inform Governance about usage or possible future enhancements. A CPA with risk management and operations knowledge is adequately prepared to be a member of the Governance team. A CPA with strong process knowledge and problem solving skills can serve as the business expert.
WHAT AICPA RESOURCES ARE AVAILABLE TO GUIDE A BUSINESS SOLUTION IMPLEMENTATION INITIATIVE?

AICPA IMTA Section members have the following additional resources available:

- Business Intelligence Value Proposition Tool Kit available at the AICPA Web Link. This tool is an Excel type workbook with various data input for evaluation. [aicpa.org](http://aicpa.org)

- Business intelligence (BI) refers to the coordinated deployment of technologies, applications and business processes to support the collection, integration, analysis, and presentation of business information. The purpose of business intelligence is to help managers and others responsible for business strategy better understand their organization’s operations, make wiser, more informed business decisions, and manage operational performance. [aicpa.org](http://aicpa.org)

- IT Governance — The Role of Internal Audit Archived Webinar, Scott Kenny, CPA, CISA, and Cheryl Strackeljahn, Dec. 9, 2010. [aicpa.org](http://aicpa.org)


- Closing the Privacy GAPP—Best Practices to Protect Your Data Archived Webinar, Don Sheehy, CPA, and Nancy Cohen, CPA/ CITP, March 23, 2011. [aicpa.org](http://aicpa.org)

- For more information about AICPA or AICPA Information Management and Technology Assurance (IMTA) Section membership, please contact: the AICPA IMTA Division at IMTAINfo@aicpa.org.
Other References & Sources
The Department of Justice Systems Development Life Cycle Guide
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Scarpedia — What should be the focus of a QC at different stages of various SDLC models
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AICPA IMTA Section Member Access — Business Intelligence IT Primer for the CPA
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APPENDIX A: GLOSSARY OF TERMS

Acceptance/Installation and Implementation Sixth stage of the System Development Life Cycle. This stage starts after testing has brought about stakeholder/user acceptance, determining appropriate approach to install the solution in a production environment, make it operational in accordance with the defined requirements and provide appropriate end user training.

Build/Development Fourth stage of the System Development Life Cycle. This stage transforms the design’s detailed specifications into hardware, communications and executable software by acquiring software and/or writing code; setting up, customizing, or integrating sourced applications; and acquiring and assembling physical infrastructure.

Business Solution Implementation Business Solution Implementation is the process of bringing stakeholders and technicians together to build a business solution from idea conception to an operational deliverable.

Business Owner/Business Area Owner The Business Owner is the department or business unit that owns the operational area for which the Business Solution is being deployed.

Business Unit A department of the business.

Champion Champions endorse and help obtain adoption of the project.

Governance See Solution Governance on the next page.

Initiation/Feasibility/Planning First stage of the System Development Life Cycle. This process starts with recognition that there is an unfilled business need or opportunity, understanding of the economic feasibility of creating a solution, and determining the impact the solution will have on stakeholders/users and existing processes.

Integration Testing Third stage of the Quality Control Process. Once all components (including data feeds) are built, have passed system testing, and have been promoted to the production environment, all functionality will be retested with the relevant data, security and workflow in place.

Iterative User Testing Second stage of the Quality Control Process. This phase is comprised of a series of sessions with key users to test the functionality of the Business Solution. The Business solution also is introduced to the organization during this phase.
Operations and maintenance Seventh stage of the System Development Life Cycle. This stage starts once the system is operational; it is systematically monitored for ongoing performance. In addition, the system is evaluated to confirm it is meeting ever-changing stakeholder/user requirements and technological advancements in order to continuously improve the information system's efficiency and effectiveness.

Performance testing Fourth stage of the Quality Control Process. After Integrated Testing has been successfully completed, the system will be stress-tested by simulating normal, heavy and extremely heavy user conditions to measure the response time and make adjustments as necessary.

Requirements Analysis and Definition Second stage of the System Development Life Cycle. This stage addresses each business need identified in the initiation stage, determining what the system will need to accomplish and formally defining requirements in measurable, testable data, and performance (i.e., What is the information telling us? Where is the obvious need? What are the security and on-going maintenance necessities?)

Sponsors Sponsors are executive-level leaders within the organization who sponsor the need for the business solution implementation.

Solution Governance Solution Governance is the strategic oversight of the project.

Solution Implementation Solutions Implementation is when the solution is put into use. The system is fully operational at the conclusion of this stage.

Solution Monitoring Solution Monitoring is the phase that makes the solution sustainable. The outcome of a good monitoring program is that the new business solution is entrenched in the organization’s key business processes.


System Design Third stage of the System Development Life Cycle. This stage establishes how the system will be sourced, structured and interfaced with users/stakeholders, the physical characteristics are documented including the infrastructure (hardware), operating environment, user accessibility, data inputs and information outputs, and whether the system will be in-part or completely built internally, acquired or outsourced.
System Development Life Cycle (SDLC)  The System Development Life Cycle (SDLC) is a methodology for designing, selecting, implementing business solutions and maintaining virtually any kind of business solution information system. There are various SDLC models such as “waterfall” which is a sequence of stages in which the output of each stage becomes the input for the next. The objective is to fulfill stakeholder/user needs by implementing a quality system/application in a cost effective way.

System Implementations  System Implementations is the technical deployment of a system.

Testing/Quality Control  Fifth stage of the System Development Life Cycle. This stage tests as the system is being built. The system components are critiqued by stakeholder/users on how effectively the solution meets the business needs identified in the requirements analysis and performs as defined in the Design Phase. Feedback is obtained to improve usability, performance and functionality.

Training & Transition  Training & Transition is the process of teaching the product stakeholders how to operate the product. While transitioning the ownership of the deliverable from the project team to the end-user.

Unit Testing  First stage of the Quality Control Process. During this stage the developer tests each of the individual components of the development server before the Business Solution is promoted to the production environment.

User acceptance testing (UAT)  Fifth stage of the Quality Control Process. During UAT key users are given representative tasks that closely simulate their regular interactions with the Business Solution and sign-off that the system works as intended.