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## THE OPTIMAL REFERENCE GUIDE

# **Why 70% of Government IT Projects Fail**

Quality Project Management for Education Agencies

*Extraordinary insight™* into today's education information topics

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With a foreword by Glynn D. Ligon, ESP Solutions Group, Inc.





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**"A new report notes that success in 68 percent of technology projects is improbable."**

Krigsman, Michael, 2009. ZDNET.

**"State computer projects fail seventy percent of the time."**

The Associated Press, March 27, 2007.

**"With less than thirty percent of our projects successful, those of us who are software professionals have little to be proud of."**

Humphrey, Watts S., 2005. The Software Engineering Institute.

**"A full 66 percent of large-scale projects fail to achieve their stated business objectives, are delivered late, or are substantially over budget."**

Gartner, 2007.

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## Foreword

By Glynn D. Ligon, Ph.D., President and CEO, ESP Solutions Group

Business experts just don't know enough about how an education agency operates. So how could we expect business-oriented professionals to be the best project managers for a large-scale state education agency project? That education agencies are different from other businesses is a fact. The special blend of public politics, divergent stakeholder groups, and technical challenges makes education agencies unique. Successful project management within such an organization can be elusive—but far from unachievable. In fact, this reference guide is going to show how quality project management can be achieved within an education agency.

One first must get away from the conventional wisdom that says we can have only two of the three components of project success: on time delivery, affordable cost, or quality. The right project management methodology will deliver all three for an education agency. In fact, that is exactly what an agency should expect.

The attribute that makes project management by ESP Solutions Group (ESP) most successful for an education agency is our teamwork and constant communications. We have built an exceptional group of experts with the full range of experiences required for large-scale state-level implementations. Their Extraordinary Insight™ is incorporated into our own project management methodology—Quality Project Management (QPM)™ for Education Agencies.

The conventional wisdom is that large-scale technology projects fail for one or more of the following reasons:

1. Insufficient high-level support
2. Inadequate funding
3. Incapable commercial software products

### **This is incorrect!**

In fact, these are typically not reasons for failure at all. Our analysis of high-profile, failed education information system projects concluded that two factors often combine for failure.

1. Lack of buy-in from stakeholders, especially those burdened with providing the data.
2. Lack of interoperability of the project's components, old and new, that make up the total solution.

**Buy-In** When there is insufficient buy-in by the data providers (e.g., schools and districts), it likely occurs because they are unwilling to change their processes to provide data in a new way. In *The Change Function* (Coburn, Pip, 2006), two variables work with each other to allow change to occur. The pain of staying with the current process must be greater than the costs for changing to the new process. This dynamic explains how buy-in from data providers impacts large-scale projects. For example, the schools evaluate the costs and benefits to

them. They decide whether or not the new system will ease their current burden to such a great extent that the extra burden to switch over is bearable.

In *The Tipping Point* (Gladwell, Malcolm, 2000), an innovation suddenly catches on and success is rapid from a point in time. For an education agency, that dynamic describes perfectly the buy-in point that must be achieved—if the project is voluntary. Because large-scale systems are often mandatory, waiting around for the tipping point can be disastrous. There is no tipping point in a mandatory system adoption. Consider the dynamic described in the classic *Crossing the Chasm* (Moore, Geoffrey A., 1999). Innovators and early adopters buy in and make an innovation successful. However, a large-scale, mandatory innovation can't afford to write off the laggards. The buy-in has to be compelling for everyone within a prescribed timeframe. QPM specializes in achieving that buy-in before the fuse burns down.

In *If Only We Knew What We Know*, C. Jackson Grayson, Jr., the creator of the Malcolm Baldrige National Quality Award, emphasizes the importance of the tacit, unwritten knowledge that people have of how systems really work. That's what ESP's project managers and the experts that back them up bring to an education agency. Agencies don't have the time or the inclination to write down all of the processes that must be respected to achieve widespread buy-in—or even internal buy-in. Our project managers are trained to use QPM to discover the tacit knowledge and leverage it for success—rather than being blindsided by its reality in the midst of implementation.

**Interoperability** Up front, a huge risk is insufficient interoperability among the components of the solution. Each component may work fine independently, but within the ecosystem of the overall solution, they fail to work together seamlessly. In *The World is Flat* (Friedman, Thomas L., 2005), information systems operate seamlessly across the globe. Instead of being flat, the world of education vendors still looks like a Rubik's cube. Products are different colors, and as an education agency moves them around to make them all match up, the result is often that they become even more mismatched. The solution to an education agency's Rubik's cube of software applications is not to move them around on the surface but to connect them internally within the cube so we can change the color of each square to match whatever color we need a side to be. That's interoperability. Don't expect different vendors' products to ever change colors to comply with your needs. Instead insist that they share their contents efficiently with all other applications in your cube.

I rather enjoy criticizing business approaches to education agency solutions, but I also find the advice from business books to be right on for education. That's actually how effective project management has to work. Know the best practices from the professional project management organizations, but also distinguish the nature of education agencies. This paper does that. Read on to see how ESP's Quality Project Management for Education Agencies methodology has evolved into the best practice approach for making large-scale technology projects in education succeed.



## Selecting the Right Vendor to Manage Your Project

Even with a solid project management methodology in place, the vendor and education agency are each independently responsible for a project's success. Though they work together in partnership, coordination, and collaboration, it is the education agency that is ultimately responsible for the overall success of each project. That's why it is important for education agencies to weigh heavily who they work with on projects.

The following list of guidelines is based on years of experience working on a variety of state and local education agency projects. They represent the qualities of the most successful projects, project managers, and education agency organizations.

### 1. Project Management Leadership

Besides having a deep understanding of agency processes and internal project management methodology, education agency project managers must also have knowledge of available agency resources, current projects, and personnel, etc. Both the education agency and the vendor should appoint knowledgeable and experienced project managers who are eager to collaborate and willing to share in the ownership of the project. The project managers should be involved from the very beginning of the project and remain throughout to ensure continuity. Finally the project manager should have the respect of the education agency and access to their superiors.

*Good project management leadership and effective communications and procedures help to prevent hypercritical behavior by project stakeholders and agency staff who are not involved with the project on a day-to-day basis and therefore do not know the specifics of the project.*



*The project managers should be involved from the very beginning of the project and remain throughout to ensure continuity.*

### 2. Ownership of Success & Risk Factors

Project management is a team sport. The education agency's project manager should plan and focus on collaboration across the project organization, and not assume that the vendor's project manager will do everything it takes to achieve project success. Teamwork and partnership across both the education agency and vendor organizations are essential to any successful project. Coordination is essential in order to ensure that risk factors are identified and mitigated throughout the project lifecycle and that the project is fully implemented at its completion.

*There are activities that the vendor will be unable to undertake, e.g., state protocols and procedures may inhibit permissions or access to certain facilities.*



*Teamwork and partnership across both the education agency and vendor organizations are essential to any successful project.*

### 3. Scope Control

The education agency and vendor should mutually agree to abide by the project's statement of work so as to meet the contracted project scope, expectations, and timeline. If any changes to project scope do



*If any changes to project scope do occur, they must be managed with consistency, agreed upon by all involved parties, and have change orders processed and signed-off on.*

occur, they must be managed with consistency, agreed upon by all involved parties, and have change orders processed and signed-off on. This helps to ensure that the project is completed appropriately, on time, and within budget.

*“Scope creep” occurs when the agency discovers additional items they would like to add to the project’s scope, or other changes they desire to be made after the beginning of the project. Scope creep results in the inefficient use of project resources and time.*



*The education agency should identify and provide access to the key internal stakeholder that has decision-making capability.*

#### 4. Decision Makers

The education agency should identify and provide access to the key internal stakeholder that has decision-making capability. This person should make decisions in a timely manner. If there are multiple persons who must be included in the decision-making process, the education agency should have a timeline and procedures for sign-off to ensure that decisions get made quickly and conveyed to their partners/vendors.

*Failure to make decisions in a timely manner can result in delays and the inefficient use of project resources and time.*

#### 5. Cross-Level Involvement

The education agency and vendor project managers should emphasize inclusiveness, access, and involvement in the project’s chain of communications throughout the project organization and lifecycle. Regular briefings of agency leaders should be scheduled. All persons within the organization (and those outside the organization, if applicable) who will be affected by the project should be informed of the scope of the project.

*Agency leaders need not receive lengthy detailed reports, but they should be provided with regular project updates. Similarly, the rest of the agency should receive regular, tailored updates.*

The education agency and vendor project managers should plan for and execute several consistent types of communications prescribed by the project’s communications plan. This includes but is not limited to a consistently executed meeting, documentation, and project status notification schedule. Regular status meetings and executive briefings should be scheduled, including both face-to-face and virtual meetings.

*Face-to-face meetings are particularly useful if there are problems or areas of dissent. Negotiations are facilitated by the ability to observe a person’s body language.*

The education agency and vendor project managers must carefully manage a project governance structure and plan for the collaboration of multiple moving parts. This includes policy steering groups, user groups (early adopters), and agency coordination group activities.

*Virtual communications can be used to efficiently update stakeholders as well as to gather information from them.*



*All persons within the organization (and those outside the organization, if applicable) who will be affected by the project should be informed of the scope of the project.*



*From top to bottom, the education agency should emphasize ownership and buy-in of the project.*

## 6. Consensus Stakeholder Buy-In

From top to bottom, the education agency should emphasize ownership and buy-in of the project. This means that by including all project stakeholders in the requirements gathering process they feel their needs are being heard and met. When managing stakeholder buy-in the following groups must be considered: agency policy makers, agency administration, state government, local education agencies, professional organizations, and vendors. For more information on obtaining buy-in within your organization, download the ESP Optimal Reference Guide, ***Marketing Your Field of Dreams, the Process of Obtaining and Sustaining Buy-In***. Available at <http://www.espsolutionsgroup.com/library/>.

*Failure to build buy-in can result in stakeholders sabotaging the project or, at a minimum, slowing it down considerably.*

## 7. Trust & Openness

The education agency and vendor relationship must be built on honesty and trust. Both parties should trust each other to be honest, even blunt. This will ensure that all stakeholders get the best possible information about the project and that there is shared ownership of the decisions made throughout the project lifecycle.

*The development of open and honest communication between the agency project manager and the vendor project manager will help to avoid misunderstandings and withheld information.*

All parties should remember that the project is “business, not personal.” Personality differences should not get in the way of sound, informed, professional decisions.

*Decisions made should be in the best interest of the agency and project, and not the people working on the project. An environment of respect and commitment to project success should prevail above all else.*



*Both parties should trust each other to be honest, even blunt.*

## Project Governance

Large-scale technology implementations require a high degree of coordination and relationship building. In any project that reaches from an education agency out to the public, there are a variety of multi-layered stakeholders that need to be accounted for, heard, and understood.

Coordination and collaboration across the following groups is essential.

- The leadership of the various divisions within the education agency
- Regional education agencies/intermediate education units
- Local education agencies and the state education agency
- IT personnel at the state, regional, and local levels
- Administrative personnel at the state, regional, and local levels
- Classroom personnel
- The public (including parents and students)
- Governor’s office

- The Legislature
- Technology vendors
- Stakeholder advisory groups

Because of the large number of stakeholders, conscientious stakeholder management is required in education technology system implementations. The ability to work with diverging groups and gain top-to-bottom stakeholder buy-in is an ongoing challenge. It is essential to project success to maintain executive stakeholder presence during the good times, as well as the not-so-good times. To this end tailored updates, tracking, and communications are planned and executed for each type of stakeholder. Multiple organizational contacts/roles need to be understood and navigated.

The governance process should include the following prescribed steps:

1. Create an advisory group consisting of representative stakeholders that meets regularly with the project management team to review plans and processes and provide feedback and recommendations,
2. Maintain a secure, project-specific website where all project documents and resources are made available and kept up-to-date,
3. Establish and conduct a phased pilot with selected early adopters, and
4. Evaluate project progress to make implementation modifications as needed.

### **Project Risk**

Because ESP's experience and focus is primarily based on education technology project management, we have experienced and thus understand the risks to these large-scale initiatives. Not only do we anticipate project risk, we know how to mitigate risk. By utilizing risk management processes such as risk analysis matrices, ESP's QPM team has successfully planned and implemented multiple large-scale longitudinal data collection and reporting systems. Inherent in QPM is a high level of continuity and consistency. Our methodology and QPM staff provides the most effective risk mitigation strategy and the highest level of project management stability personalized to the specific needs of our education agency partners. We are not just part of a nameless, faceless, monolithic entity running through the motions.

### **Issue Management**

Having 'been there,' we also anticipate and understand the common issues that arise from time to time in an education agency environment and how to deal with them early. ESP methodically confronts, tracks, and resolves all project issues via status meetings, documentation, and issue tracking software. For system implementations ESP consistently utilizes an effective web-based issue tracking tool.

### **Education Agency Uniqueness**

No two education agency partners are alike. Education agencies see themselves as being different from all other organizations; including other education agencies. Their systems and processes differ. Some are adamant about starting



*An education agency has to adhere to federal and state policy, laws, and regulations, in contrast with the traditional business shareholder model that the national large-scale system integrators practice.*

from scratch when implementing new systems. Others prefer to enhance what is already in place, thus building out by incorporating legacy systems. The selected work plan and project management methodology must be cognizant of all of this and still be able to flexibly accommodate an education agency's specific needs.

In contrast with the traditional business shareholder model that the national large-scale systems integrators practice for large-scale technology implementations, an education agency also has to adhere to federal and state policy, laws, and regulations. Additionally an education agency has to answer to the public, Legislature, state board of education, media, and the Governor's office. It becomes the vendor project manager's responsibility and operational procedure to manage, track, and understand the ramifications of this morass.

Projects can differ based on a wide range of potential project contexts, including state-specific funding schedules, governance practices, laws, culture, organizations, and management. Often there is a hierarchy of decision-makers that slows down the decision-making process thus putting the schedule for implementation in jeopardy. These dynamics inherent in education agency technology implementations require an understanding of how to navigate differing requirements, challenges, styles, and personalities across projects.

In addition to the political and bureaucratic hurdles, there are variations in the processes used in education agencies related to data collection and reporting. Some of the areas where ESP has analyzed and re-engineered data collection and reporting processes include:

- Student information
- Staff data/human resources
- Finance
- Student assessment
- Curriculum and instruction
- Instructional technology

### **Unfunded Mandates and Local Control**

When an initiative is implemented statewide, local users do not always feel the need nor see a reason to meet the requirements of what is often perceived as an unfunded mandate. For example why should 'District A' expend its budgeted resources on a statewide project that it doesn't feel ownership for, doesn't recognize the benefits of, and doesn't feel responsible for its success? Without a continuous process of district communications and ownership training this concern will not improve. Most states follow a local control model for education, so unless there is a funded mandate coming from the legislature, the consequences for a district not participating and making the project a success are less clear. Thus tailored, constant, and competent stakeholder and communications management is required. It is in these instances where a collaborative process across SEA, LEA, and vendors based on mutual agreement and respect becomes necessary and most effective.

In order to meet project expectations, an education agency and its vendor must offer a variety of methods for remedying unique situations such as those where unfunded mandates and local control come into play. As previously mentioned the use of representative advisory groups is extremely effective for gaining stakeholder feedback and developing partnerships. The advisory groups not only allow for key stakeholder buy-in, but provide for a built-in pilot/user acceptance/early adopter group, as well as a valuable resource when it comes to organizing peer focus groups and system ownership training. Therefore if 'District A' participates in focus groups, trainings, and conferences with 'Districts B' and 'C,' the groups become better able to share in their understanding of the project and its benefits, and ultimately share in its successes. When a shared process occurs where peers are able to work together it creates feelings of trust and ownership.

## ESP's Quality Project Management (QPM) for Education Agencies



*ESP's QPM processes are grounded in a wealth of resources and are not just rooted in a business perspective.*

Over time, ESP Solutions Group has refined the principles and best practice processes exemplified by the Quality Project Management (QPM) methodology for Education Agencies. Our processes are grounded in a wealth of resources from the National Center for Education Statistics (NCES) and other national standards groups (e.g., State Automation Site Visits, Decision Support System Best Practice Project, and PBDMI state documentation visits), and the publications from the National Forum on Education Statistics. ESP has used the standards and benchmarks from CMM (CMMI), COBIT, the Project Management Institute (PMI), ISO9000, Six Sigma, PIIE (APQC's Process Improvement and Innovation in Education), USED's best practices studies, and the framework found in our Optimal Reference Guide, **Management of an Education Information System** to formulate QPM. ESP's extensive work assisting states in the development and deployment of EdTech information systems has shaped our set of empirical "best practices" for information technology in education environments. Our methodology for managing projects always focuses on an education agency's mission and goals. As such, in our projects there are three standard directives:

1. Improve the educational experiences of students to produce higher academic achievement.
2. Improve the efficiency of education agencies to support the efforts of schools.
3. Improve the quality and availability of data to support decision making (data-driven decision making, aka D3M).

Additionally, partnerships between the education agency and their technology integrator have become crucial to the success of education technology projects. Partnerships can take on many different shapes. There are the partnerships that last as long as the project, and once the project is complete, the contracted project manager/integrator ends the relationship. Then there are the lasting partner relationships that continue to grow over time. ESP Solutions Group (ESP) prides itself on having developed the latter with our education agency partners. We do not see an education agency as just another client. Education agencies have come to rely on ESP for best practice in education data, EdTech project integration, and project management. Over time it is this domain-specific expertise that has helped ESP become an expert advisor and trusted partner to education agencies.

### QPM Overview

The QPM methodology ensures that ESP's projects are always managed for success within the precise context of schools, districts, and state-level constraints.

QPM is a flexible, yet disciplined project management methodology tailored towards education agency system implementations. It is **not** a rigid, non-

specific, generalist project management methodology as is most commonly found in other technology integrator tool kits.

- ESP and QPM are solely focused on the education agency, their data, and technology.
- ESP uses dynamic teaming to better plan and manage changing project landscapes and requirements. QPM inherently plans for and moves resources in and out of a project with fluidity based on the changing needs and demands of each unique project.
  - The ESP project director is an added project oversight resource unique to QPM that is not commonly found in other project management methodologies. The project director is the individual accountable for the overall success and direction of the project. The project director is responsible for clarifying the project scope and confirming the overall quality of deliverables. Think of this individual as the team's coach. This person gives guidance to the QPM project manager and overall project team, conveys project expectations, approves drafts, and schedules, and works closely with the education agency project management team to ensure satisfaction. ESP has added this additional level of resource accountability to all of our projects to ensure that each QPM project is executed as planned.
- ESP recognizes what works specific to the different local and state education agencies across the U.S., their culture, histories, etc.
  - ESP personnel have advised all 52 state-level education agencies as well as the U.S. Department of Education on the practice of P20W school data management.
- ESP provides overall project support, not just technical support.
  - ESP is a respected and trusted advisor to education agencies when it comes to understanding and navigating national trends, best practice, emerging technology, and policy. We understand the unique political landscape both internal and external to education agencies. QPM provides a full gamut of overall project partnership and support, as opposed to the commonly encountered contractor technical support. When we engage with an education agency on a project, we take a stake in that project and its eventual success.
- ESP incorporates project management team involvement much earlier in the proposal/project engagement process than is found elsewhere to better understand and prepare for the unique demands of each project.
  - Upon project engagement, QPM provides a handpicked project manager chosen as the best match for the education agency, rather than the project manager that happens to be available for assignment.



*The ESP Project Director role is an oversight resource that has been added to QPM, but is not commonly found in traditional project management methodologies.*



*Successful project management must understand the unique political landscape both internal and external to education agencies.*



- Due to the uniqueness of and specific details found in each education technology project, QPM prescribes early project management team analysis of project requirements.

## QPM Principles

- *ESP's Quality Project Management methodology for Education Agencies leverages the deep knowledge of ESP in the P20W space and maximizes it with our adherence to standardized project management processes.* This means that ESP's QPM methodology, developed by our Big 5-trained and PMI-certified staff, is specifically designed to respond to the particular needs and intricacies of an education agency project. Using ESP's QPM methodology will efficiently and successfully bring your project to completion.
- *Our methodology is heuristic; not algorithmic.* Methodology should be considered a set of values that can be flexibly adapted to the context of a project; not just robotically followed. Methodology should be of appropriate rigor tailored to the nature of each project, and should conform, where appropriate, to existing education agency partner processes.
- *Our approach to project management depends on dynamic teaming.* Like any high-performance team, ESP's project team resources specialize in specific roles to generate a whole that is more than the sum of the parts.
- *ESP Solutions Group distinguishes itself through utilizing the QPM methodology lifecycle to bring success to projects within the education domain.*



*Methodology should be considered a set of values that can be flexibly adapted to the context, not robotically followed.*

## QPM Best Practice Characteristics

Education agency data and technology managers want to work with a project management integrator who they can trust, who understands them and their needs, and who is on their side. Inherent in QPM is the knowledge that projects and project managers must be attentive to the needs of stakeholder-driven organizations, in contrast to businesses, which are shareholder-driven. This means that the industry-standard project management methodologies fall short in delivering the results required of education agencies. With our projects we do not accept the traditional project management axiom "You can only have any two of the following three components of project success: quality, timeliness, or affordability." Our QPM principles and processes are designed and planned to deliver all three.

ESP is committed to managing the activities of education agency technology initiatives using the best practices and national standards that have been validated in our successful state and local education agency implementations. Based on past success, ESP has found that education agencies rely upon the integration guidance, insight into data management, processes for achieving data quality, and adherence to data standards that QPM provides. Additionally,



*Industry-standard project management methodologies fall short in delivering the results required of education agencies.*

education agencies seek experienced partners for implementing large-scale, multi-faceted projects to enhance their own internal project management expertise and methodologies. As mentioned previously, a significant reference for ESP Solutions Group in the creation of QPM was our Optimal Reference Guide, ***Management of an Education Information System - A Best Practices Paper***. Available at <http://www.espsolutionsgroup.com/library/>.

The QPM methodology incorporates and emphasizes the differences of education agencies among all types of organizations, as well as the uniqueness of each agency among other education agencies. The characteristics of QPM that exemplify our approach:

1. **Risk Management** – Document and mitigate project risk by utilizing QPM’s proven risk management methodology that identifies risk factors up front and continues to track them throughout the project lifecycle. See “From Risk to Reward – A Guide to Risk Management for Education Agencies.” Available at <http://www.espsolutionsgroup.com/library/>.
2. **Running Start** – Use proven project planning techniques, QPM and policy document templates, and management processes to mitigate the typical slow start-up of major projects.
3. **Multi-Level Project Governance** – Rely upon oversight and advice from key stakeholder groups. Continual and effective communications within and across the following groups is a key success factor.
  - a. User community: School and district staff who must buy into the systemic changes and provide quality data.
  - b. Internal education agency project management team: Education agency staff who manage the IT, program offices, and internal operations.
    - i. Technical team: Education agency technical team supporting the project
    - ii. Program officers and staff
    - iii. Longitudinal grant management team
  - c. Policy Advisors: Community, business, legislative, higher education, P20W, and education agency policy leaders.
4. **Interoperability Standard Maintenance** – Ensure interoperability of all components of the proposed information solution to manage redundancy, conflicts, and burden on schools and other staff. The dual focus on interoperability is as follows:
  - a. Product interoperability: All products or applications that become part of the solution will comply with interoperability standards established to control IT infrastructure, data standards, directory functions, and user interface.
  - b. Vendor and education agency interoperability: All providers of components, either vendors or internal education agency



*Continual and effective communications within and across stakeholder groups is a key success factor of QPM.*

programs, must be coordinated to ensure the interoperability of their processes and communications.

5. **Internal and External Project Management** – Coordinate the project management activities with the education agency project managers and those contracted through external vendors. Ensure coordination and partnership with a mutually agreed upon, consolidated project management plan.
6. **Policy and Technical Project Management** – Align both the education agency technical and policy components of project management to ensure that implementation is smooth. Team the education agency staff with vendor architects and technical experts to combine expertise.
7. **Project Planning, Monitoring, and Communications** – Use professional project management tools to document and monitor the project's plan. Adhere to a disciplined program of both regularly scheduled and ad-hoc internal and external project status/technical status meetings. Project planning, monitoring, and communications processes are strictly followed as part of the project's management infrastructure. Change management best practice is also closely followed.

*If QPM were to be evaluated using the 80/20 rule, it would likely be discovered that for a project management methodology to be successful it should be based on approximately 80% communications.*

8. **Solution Sustainability** – Ensure that the chosen solution is going to be effective in the long-term by aligning the issues and needs of the stakeholders with the features and functions of the applications, products, and processes implemented.
9. **Dynamic Teaming** – Response to changing project contexts and needs via our strategy of moving key staff into and around management responsibilities to meet the demands of the project. This allows for implementation to progress while maintaining oversight and continuity. This also provides ESP's breadth of expertise that spans both the political and technical landscape to the education agency.

The three principle roles in every QPM project are:

- Project Executive: Executive of the company. Accountable for organization-wide success.
- Project Director: Owner of the project management plan, oversight, and the critical path. Accountable for project direction, planning, and overall success.
- Project Manager: Responsible for daily management of project deliverables. Accountable for managing the project to its plan, communicating all project developments, and reporting project progress.

Dependent on the type of project, our teams may also include:

- Technical Architect: Responsible for technology design
- Education Data Specialist: Ensures data integrity
- Application Engineers: Responsible for systems delivery
- Quality Assurance Expert: Ensures products have gone through quality assurance tests
- Deployment Specialist: Manages systems deployment
- Project Coordinator: Provides project support as needed (operation, documentation, and training)

By using this process of flowing resources in and out of a project with flexibility and fluidity, and by following a well-defined project plan we are able to methodically pull in our team of subject matter experts based on the specific needs of the project.

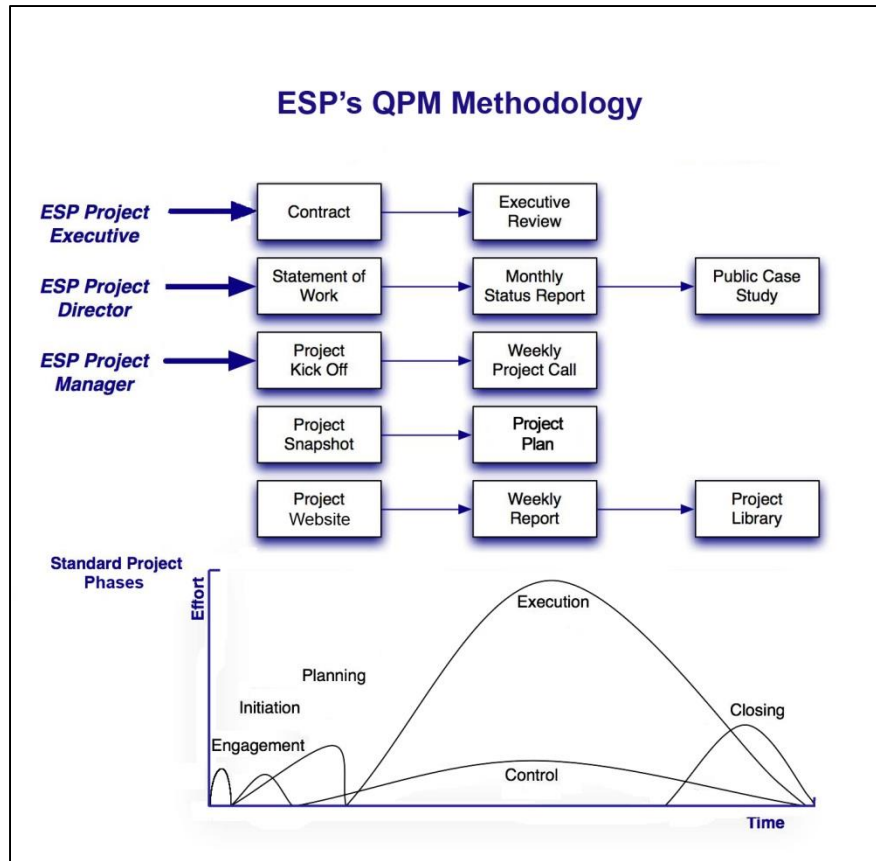
- 10. Education Agency Acceptance** – Ensure the quality and functionality of each deliverable in the project management plan by following a collaborative, prescribed process for quality assurance and education agency acceptance. Follow rigorous user acceptance testing before signing-off on the implementation of each project component.

The following figures provide examples as to what resources are pulled in and when, what their responsibilities are, and how intense their involvement is in each phase throughout the project lifecycle. The figures illustrate QPM resource involvement and the strategy of moving in key staff and management responsibilities to match the demands of the project as implementation progresses.



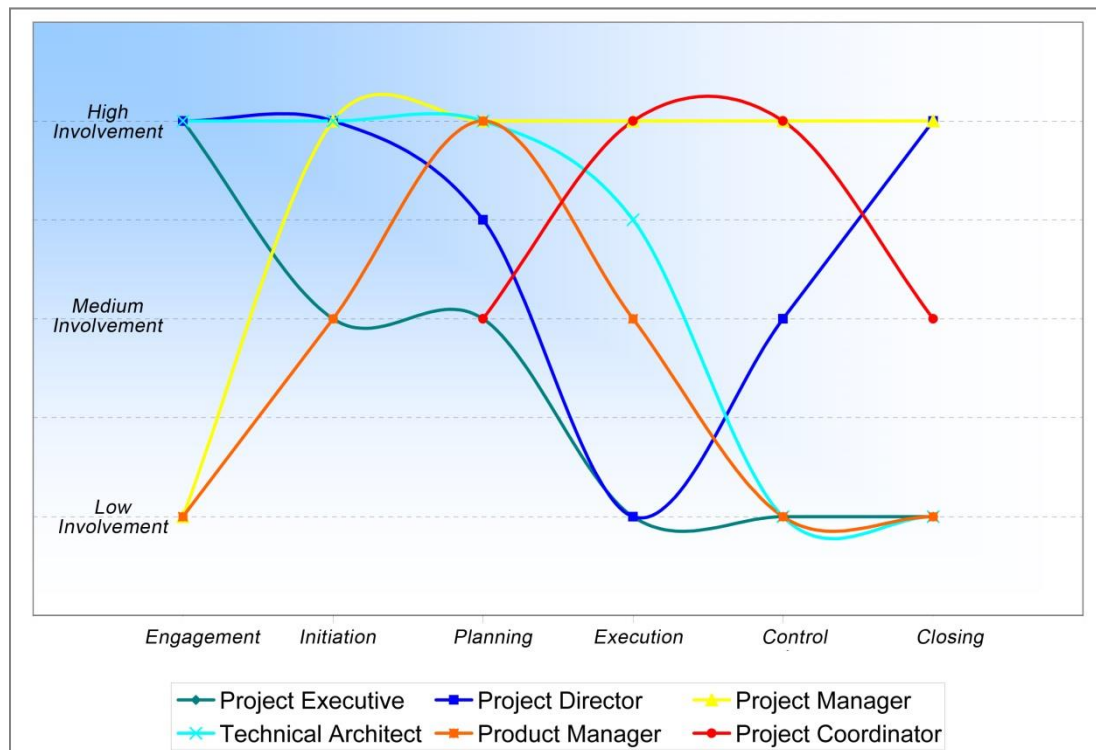
*QPM follows a collaborative process to ensure the quality, functionality, and education agency acceptance of each deliverable in the project management plan.*

**Figure 1** illustrates levels of effort over time. The figure also speaks to the roles of the ESP project executive, project director, and project manager, over the course of the project lifecycle (from left to right), and the activities in which they are involved.



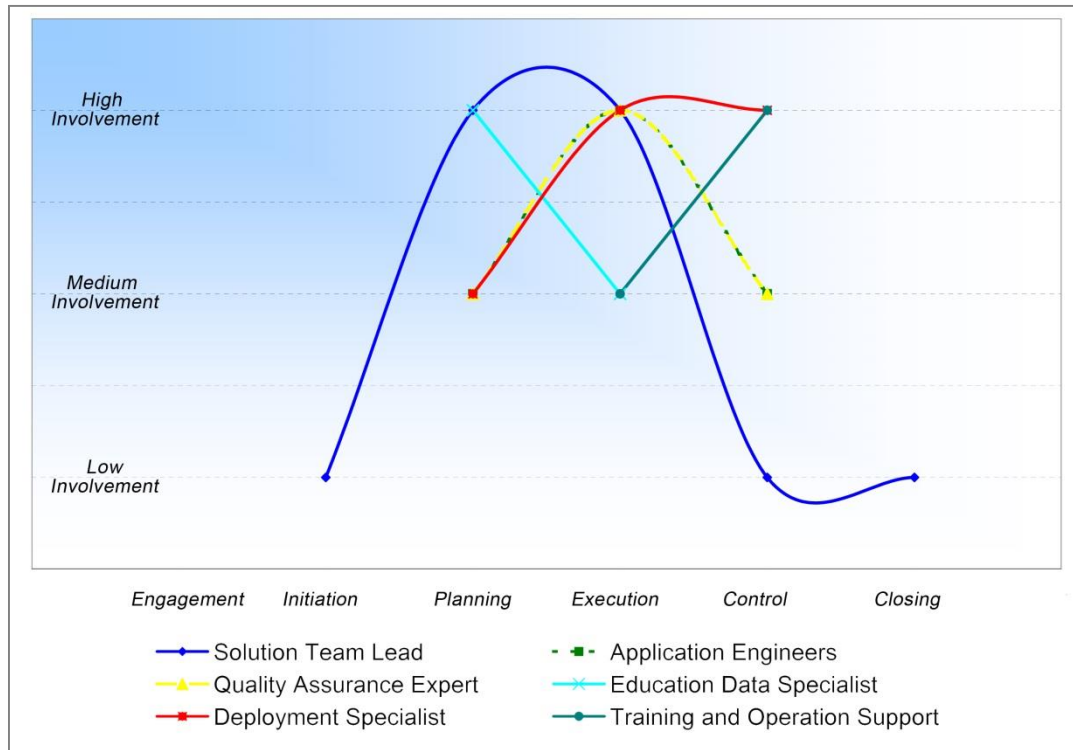
**Figure 1: ESP's QPM Methodology – Roles and Project Lifecycle**

**Figure 2** illustrates the resources and roles that are instrumental to each of the **QPM project management processes**, mapped to the levels of involvement during the various phases of the QPM project lifecycle.



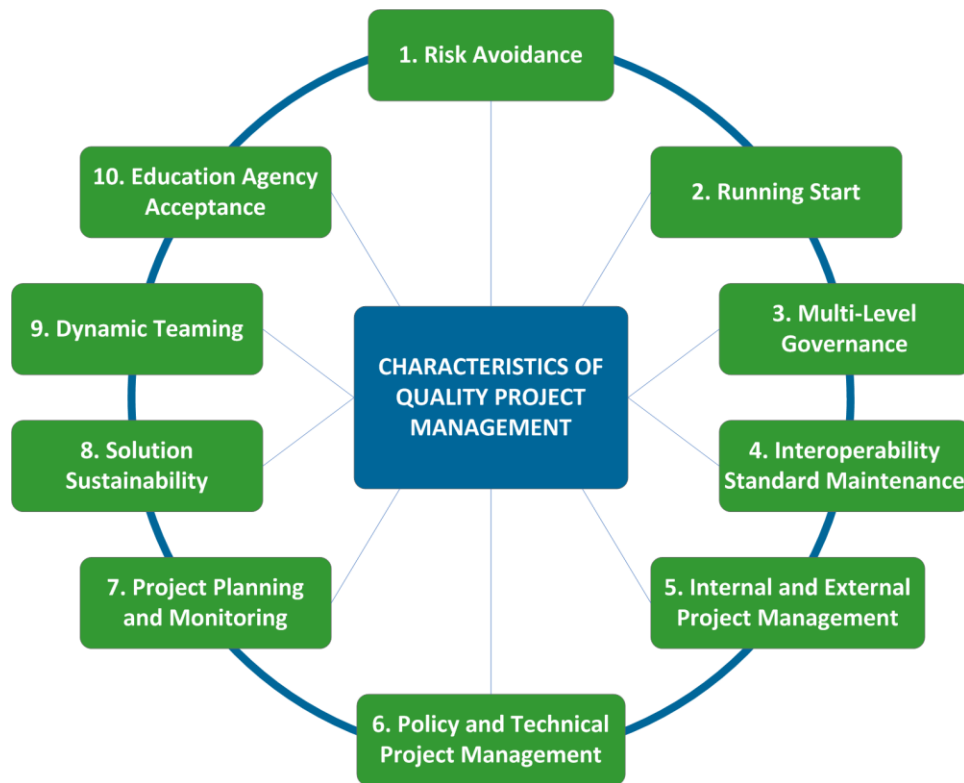
**Figure 2: QPM Role to Stage Mapping for Project Management Processes**

**Figure 3** illustrates the roles that are instrumental to successful **project execution**, mapped to levels of involvement during the phases of the QPM project lifecycle.



**Figure 3: QPM Role to Stage Mapping for Successful Project Execution**

**Figure 4** illustrates the best practice characteristics of QPM that are detailed on pages 11 and 12.



**Figure 4: Characteristics of Quality Project Management**





*Each unique education agency project requires its own set of customized QPM tools.*

## QPM Tools

The management tools that each project team uses are varied and may differ with each unique project. However, in order to be consistent across projects, and to increase team efficiency, the following are “required” QPM tools.

1. **Statement of Work** - The statement of work (SOW), also known by some as a project charter, is the narrative description of project objectives, success criteria, deliverables, schedule, team organization, payment milestones, and risk mitigation factors. The statement of work is typically attached to the general contract language to form the foundation of both the project management plan and agreed upon project work. The Project Planning phase of QPM is unable to commence until this document has been approved and signed off on by the education agency’s management team.
2. **Project Plan** – The project plan or work breakdown structure is built using Microsoft Project for schedule, dependency, and resource tracking purposes. As a supplement to the work breakdown structure for presentation purposes the project plan may also be created using Microsoft Excel for generating “snapshot” type Gantt charts. The project plan details the scheduling of activities and tasks, the assignment of resources, and their related dependencies. All QPM project plans have five top-level strands corresponding to the components of the QPM project cycle:
  - Initiation
  - Planning and Design
  - Control
  - Execution
  - Closing

The project plan is to be reviewed and updated on an ad-hoc and/or weekly basis by the core project team and is presented to the executive team as part of a monthly project review. All updates to the project plan are regularly disseminated to the project team via both email and posting on the project website. The Project Execution phase of QPM is unable to commence until the project plan/work breakdown structure has been approved and signed-off on by the education agency management team.

3. **Weekly Meeting and Project Status Report** – A key component to the management of communications within QPM projects are both the regularly scheduled and ad-hoc team status meetings and the status reports that come out of these meetings. ESP’s project teams hold both internal and external weekly status meetings in order to stay on top of all of our engagements at all times. In general, meeting notes are generated to act as a project’s weekly status report. The weekly report documents recent achievements, current project issues and risks, recent decisions that affect the project, action items, and upcoming milestones. Notes are published in PDF format, distributed to the

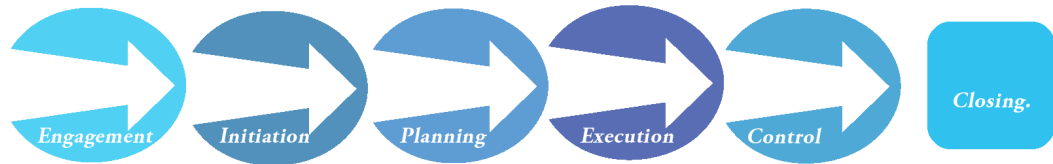
project team, and posted to the project website within 24 hours of each meeting.

4. **Monthly Executive Review and Change Management Process** – On a monthly basis the core project team presents a status update to the education agency management and project executive team. The purpose of the executive review is to provide a high-level update and to formalize any agreed upon changes to the project plan. Any changes to project scope and schedule are also managed through the monthly executive review meeting process. Agreed upon changes in project scope or schedule that are significant, or in any way affect project cost, require a contract change and thus the execution of an agency approved and signed *QPM Change Order Form*.
5. **ESP Project Website and Web-based Issue Tracking** – Information, documentation, and resources pertaining to the project are all managed and communicated through the project website. All education agency facing project documents are posted and kept up-to-date on this site, as well as critical information regarding meetings, contacts, and general project status. This site is key to the communication required for the management of our projects. Education agency approved project documents are distributed and stored in PDF format.

Web-based issue tracking software is used across the various project components to track and resolve issues and to assist in documenting requirements.

## QPM Lifecycle

The QPM lifecycle encompasses and defines the prescribed stages through which an education agency project must pass in order to be successfully completed. QPM is based on traditional project management methodologies such as PMI, yet includes the key lifecycle addition of the Project Engagement phase. The QPM phases are as follows:



## QPM Differentiator

In order to better understand and prepare for the unique demands of each education agency project that we manage, ESP introduces project management team involvement much earlier in the project lifecycle than is commonly found in other project management methodologies.



*ESP introduces project management team involvement much earlier in the project lifecycle than is found in traditional project management methodologies.*

The High Level QPM Phase Sequence diagram in Figure 5 below details the QPM phases, and the required inputs and outputs of each phase. In order for the lifecycle to progress as prescribed by QPM, the output from each previous phase must be approved, signed off on, and accepted by the education agency partner in order to move forward with the next project phase. Figure 5 details the standard set of artifacts that are utilized in a sample QPM project.

1. The signed contract is the output of the Project Engagement phase and it becomes the agreed upon point/input for commencing the project initiation phase.
2. The agency approved and signed statement of work and preliminary project scope that is the output of the Project Initiation phase becomes the agreed upon artifact for commencing the Project Planning phase.
3. The agency approved and signed-off on project management plan that is the output of the Project Planning phase becomes the agreed upon artifact for commencing the Project Execution phase.
4. The agreed upon and/or signed-off on project deliverables that are the output of the Project Execution phase become the input for commencing and maintaining the Project Control phase. The tracking and documentation of project status, project deliverables, corrected actions, and change requests are integral to the Project Control phase. Like project execution, the project control process commences upon the signing of the project management plan and continues through the successful completion and acceptance of the final project deliverables.

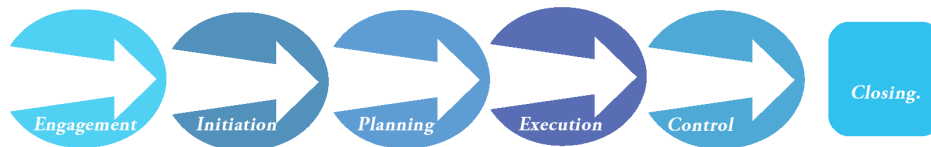


*The tracking and documentation of project status, project deliverables, corrected actions, and change requests are integral to the project control phase.*

5. The outputs of the Project Control phase are project management plan updates and the aforementioned project control documentation; including weekly status reports and monthly executive reviews.
6. Finally, it is the project management plan updates, the project control documentation, and the agency accepted project deliverables that are the inputs to the Project Closing phase. The outputs of the closing phase are the project acceptance document that signifies agency approval of the project and its deliverables, the optional public case study, and the project management plan binder containing all relevant project control documents leading up to the successful completion of the project engagement.

### QPM Phases

Following are the core phases of the QPM methodology lifecycle that are managed consistently throughout every ESP project.



#### 1. Project Engagement

The Project Engagement phase encompasses either the RFP response process or the response to an initial engagement request from an education agency partner through the execution of a signed contract.

- a. Work with all projected ESP project team members (including project director, project manager, systems architect, and systems engineers) and potential sub-contract partners to respond to an RFP or education agency request. This process includes the creation of the preliminary Statement of Work which will be included in the RFP response.
- b. Included in the statement of work are the following:
  - Project justification
  - Project goals and objectives
  - Project deliverables with success criteria
  - Project work plan/summary including deliverable timeframes and payment milestones
  - Constraints/assumptions, risks, and mitigation strategies
  - Project organization chart (with contact information)



*QPM is based on traditional project management methodologies such as PMI with the key addition of the project engagement phase.*

#### QPM Differentiator

The project engagement phase is significant for QPM. ESP chose to add this phase to our project management methodology because of the running start that an early analysis of the project requirements affords the project team.

The framework of the QPM Statement of Work is consistent with that of PMI. Each section is written with our past experience of the required timing and staggering of activities, grasp of requirements, and the

precise timeframes that it takes to successfully complete deliverables in the education agency environment. The QPM Statement of Work exemplifies ESP's deep understanding of the education agency procurement and contract processes that dictate how education agency projects are managed, and the unique risks and constraints inherent in an education agency technology integration.

Also unique to QPM is the method in which we work within the education agency procurement framework and thus help make the procurement process flow as smoothly as possible. ESP proposal and contractual documents are written precisely to respond to the specific needs of an education agency.

## 2. Project Initiation

The Project Initiation phase occurs upon the signing of the project contract and continues through the execution of the signed statement of work.

- a. The project initiation kick-off meeting occurs.
  - o The people involved in the project kick-off are:
    1. ESP project manager
    2. Education agency project manager
    3. All team members stated in the statement of work
    4. All education agency project team members
  - o Present and review statement of work to gain agreement and sign-off on project scope.
  - o Review and obtain agreement on ESP's QPM Project Methodology.
  - o Determine team members' roles and specify access to the ESP project website.
- b. Sign-off on the statement of work concludes the Project Initiation phase.

### QPM Differentiator

The initiation phase is extremely important in any project management methodology for gaining an essential, initial agreement on project scope and the management methodology processes that will be used throughout the life of the project. During project initiation ESP brings experience as to what components and agreements education agency technology projects require at this point, which stakeholders should be involved, as well as the ability to steer the conversation regarding scope and requirements in order to achieve the greatest amount of early success.

## 3. Project Planning

The initial Project Planning phase occurs after education agency sign-off on the statement of work, and ends approximately 30 days after the sign-off occurred (in conjunction with the mutual agreement and sign-off on the project management plan that will be used to execute the project). **Note:** In order to plan accordingly for all project components, QPM assumes that the act of project planning will continue throughout the life of the project.



*ESP has successfully delivered numerous projects within the education domain and therefore brings both domain and practical experience to bear when estimating the required timeframes and understanding the reality of successful project implementation within an education environment.*

- a. Create the Project Management Plan.
  - Work Breakdown Structure – Includes tasks, resources, dependencies, and durations necessary to complete the deliverables on time as agreed to in the statement of work.
  - Communication Plan – Includes the project information distribution process, meeting schedule, training, rollout, and support plans, as well as the stakeholder analysis methodology.
  - Scope Management Plan – Includes the Change Control process and Change Management templates.
  - Risk Management Plan
  - Quality Management Plan
  - Staffing Plan – Includes education agency partner resource requirements.
  - Project Control Documentation
  - Procurement Plan – Details what resources including infrastructure, if any, that will need to be procured for project implementation.
  - Hand-off Plan – Includes user acceptance and knowledge transfer processes. QPM requires user acceptance sign-off throughout the life of the project. No milestone is considered complete until it is accepted by the education agency.
- b. Set-up the ESP project website.
- c. Conduct the Project Execution kick-off meeting
  - All project team members are included.
  - Sign-off is secured on the Project Management Plan from both education agency and partner stakeholders.
  - QPM and the ESP project website are reviewed.

#### **QPM Differentiator**

The project planning phase is the backbone of any successful project. The project management plan that is developed during this phase can only be as good as the experience and knowledge of the project team. ESP has successfully delivered numerous projects within the education domain and therefore brings both domain and practical experience to bear when estimating the required timeframes and understanding the reality of successful project execution within the education environment.

ESP has developed and refined the QPM templates so that they can be used for all project planning engagements, thereby reducing the time that it takes to develop project-specific documentation, and thus support each project with a proven methodology.

#### **4. Project Execution**

The Project Execution phase commences after the project execution kick-off meeting, and upon sign-off on the project management plan. This phase continues through the user acceptance of all project deliverables. Note that



*ESP's deep understanding and experience in large-scale education agency system implementations decreases the overall risk in the project execution phase.*

QPM assumes the act of project execution will continue from this point through the successful completion and acceptance of the project deliverables.

- a. The project is executed based on the project plan. QPM manages the project to the project plan and adjusts the plan accordingly as needed.
- b. The gathering and documenting of requirements that began upon engagement is finalized.
- c. Iterative review of project management plan and risk analysis occurs throughout the project lifecycle.
- d. The project control steps, detailed below occur throughout the project lifecycle.

#### **QPM Differentiator**

Based on the knowledge gained and documented in the previous phases of QPM above, the project execution phase also relies on the ability and experience of the project team and their adherence to the methodology. ESP's deep understanding and experience in large-scale education agency system implementations decreases the overall risk in this phase.

### **5. Project Control**

The project control phase occurs in conjunction with sign-off on the project management plan and the commencement of the Project Execution phase. Note that QPM assumes the act of project control is an ongoing process that will continue from this point through the end of the project.

- a. ESP project managers and directors meet weekly on internal calls to review and discuss relevant project accomplishment, issue, and risk detail for all projects.
- b. During each project's weekly project status meeting, project progress, issues, risk, accomplishments, and upcoming events are discussed.
  - If a payment milestone has been reached, a verbal and/or written agreement is obtained and the project manager initiates invoicing.
  - Issues are tracked, reviewed, and resolved via the use of issue tracking software.
- c. Prior to each weekly project status meeting an agenda is provided to the project team. After each weekly project status meeting, the weekly status report is emailed to the project team, as well as posted on the project website. The weekly status report documents the project details discussed during the status meeting.
- d. Each month, or in some cases every other month, the ESP project director conducts an executive review meeting. This meeting includes the participation of the project executives, and the most senior education agency partner representatives/sponsors to provide updates on the status of the project, to capture education agency satisfaction, formalize any changes made to the project management plan, discuss surface issues, and to determine if the contracted scope of work needs to be amended.
  - Slides are developed with key statistics and milestones documented. After the executive review, the project



*Maintaining a process of managed communications and well thought out training leads to greater project buy-in, a deeper understanding of the project by all project members, and a decrease in surprises during roll-out.*

executive, the project director, and the education agency partner agree on a current grade/overall satisfaction for the project.

#### **QPM Differentiator**

The QPM Methodology provides a unique system for controlling projects specific to an education agency's environment and needs. Based on standardized project management methodologies, QPM project control is transformed and thus augmented by ESP's past experience, an understanding of education agency stakeholders and political landscapes, and how regular communications need to be effectively managed throughout the project lifecycle.

Focused training tailored to the various education agency stakeholders occurs during this phase of the project. Maintaining a process of managed communications and well thought out training leads to greater project buy-in, a deeper understanding of the project by all project members, and a decrease in surprises during roll-out.

### **6. Project Closing**

The Project Closing phase occurs towards the end of the project upon acceptance of project deliverables and continues through the acceptance of all final project documents.

- a. The sign-off of the project user acceptance document occurs upon successful completion of the final milestone. This sign-off initiates final invoicing. **Note:** QPM requires user acceptance sign-off throughout the life of the project. No milestone is considered complete until it is accepted and signed-off on by the education agency partner. This process requires education agency partner approval of all documentation and user acceptance testing of all technology implementations.
- b. A project close-out meeting occurs.
  - All project team members are involved.
  - Lessons learned are reviewed.
  - Project achievements are summarized.
- c. 30 days after the project close-out meeting, if desired, a public case study is published at the education agency's discretion for use by multiple audiences.

#### **QPM Differentiator**

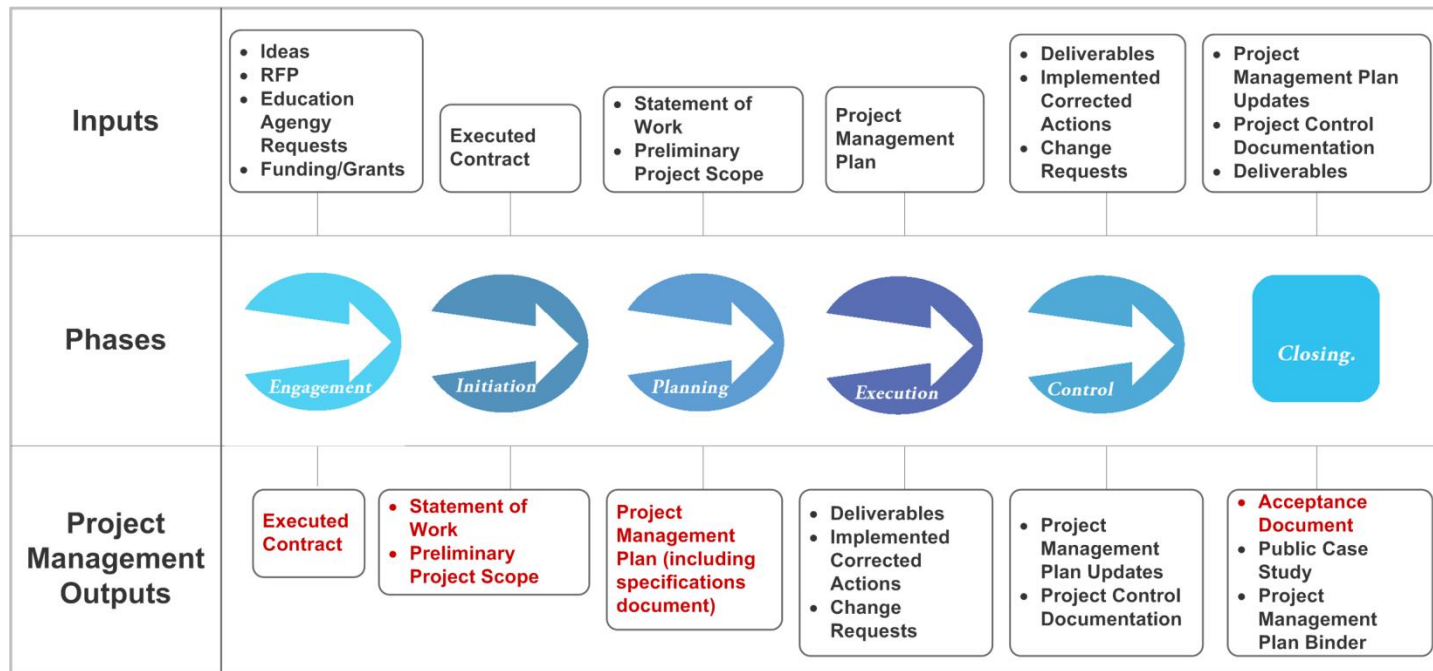
The closing phase and project user acceptance is crucial in making sure that no stone was left unturned during the project lifecycle. Lessons learned are documented so that the project organization can benefit from the successes and lessons discovered during the project. The delivery of the project binder and the knowledge transfer to the education agency partner leaves a solid foundation for the support of the project after its closing.



*Project user acceptance is crucial in making sure that no stone was left unturned during the project lifecycle.*



**High Level QPM Phase Sequence Diagram**



Red text = Education Agency sign-off

**Figure 5: High Level QPM Phase Sequence Diagram**



## Internal ESP Project Coordination

Internal meetings occur throughout the project lifecycle to ensure that the ESP project management is aligned and that the QPM methodology is always current and closely followed.

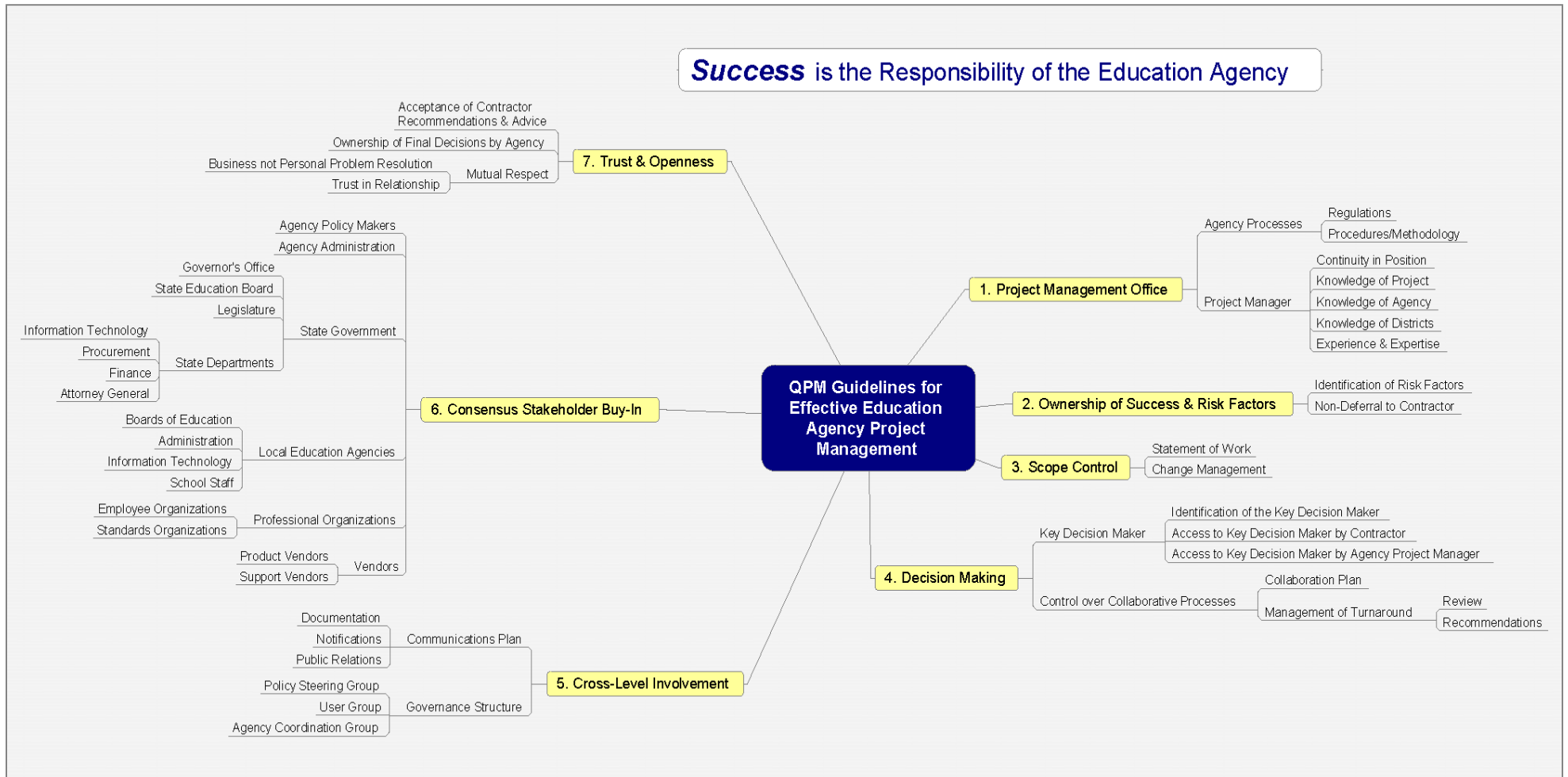
- a. Weekly QPM Project Team Meeting
  - This meeting occurs every week to ensure that the QPM team is aligned on cross-project processes and priorities.
- b. Weekly Project Meeting with the ESP Engineering Team
  - These meetings occur every week, and in many cases multiple times each week, to ensure that both the QPM and engineering teams are aligned on schedule, requirements analysis and tracking processes, and project-specific priorities. This includes agreement on the development, quality assurance and control, and documentation processes.
- c. Bi-Monthly Project Management Team Meeting
  - This meeting occurs every other week and facilitates the project managers working together to resolve any project-specific issues, discuss changes or updates needed to the QPM methodology, and allows the project managers to work closely as a team.
- d. ESP QPM Control and Evolution
  - The methodology will undergo review and evolution based on lessons learned and project management team input over time.

## Conclusion

Based on ESP's years of extensive experience and work assisting education agencies in the development and deployment of EdTech information systems, we came to realize that education agencies require a customized project management methodology for their technology implementations.

Simply put, traditional business practices are not nearly oriented enough towards the needs of an education agency, and are not specific enough to manage and implement an education agency technology project successfully. Therefore it is necessary that an education agency select their project management partners carefully. When choosing a partner, the education agency must look for a technology integrator's understanding of the unique needs of an education agency, and the ability to implement unique management processes geared towards project governance, communications and stakeholder management, risk management, quality management, and user acceptance.

ESP Solutions Group personnel have advised all 52 state-level education agencies as well as the U.S. Department of Education on the practice of P20W school data management. We have shaped our set of empirical "best practices" for information technology solely towards the education agency environment.



**Figure 6: QPM Guidelines for Effective Education Agency Project Management**



## Glossary of Key Terms

**Action Items** – new “tasks” identified and assigned during project calls.

**Advisory Group** – a key stakeholder group that provides the project with essential policy and process guidance. Often this group provides assistance in the pilot phase of a project as an early adopter of the project deliverables.

**Agenda** – items to be discussed in a meeting.

**Announcement** – notification of a meeting.

**Architecture** – a high-level technical framework in response to documented requirements.

**Change Order/Request** – the QPM change management document that details any changes to the scope and cost of the project.

**Change Management** – the QPM process for managing project change and controlling the transition to a desired future state.

**Communication Plan** – a document that describes: the communication needs and expectations of the project; how and in what format information will be communicated to whom; when and where each communication will be made; and who is responsible for providing each communication.

**Coordinates** - call time, call in number and access code; logistics, etc.

**Deliverables** – any verifiable result that is produced to complete the project as detailed in the Statement of Work.

**EdTech** – shorthand for Education Technology.

**Escalation** - the process by which a project manager knows with whom he/she needs to escalate an issue, and under what conditions, should they encounter an exception or issue that is not covered by QPM method and practice.

**Executive Review** – monthly meetings designed to update executive stakeholders and formalize changes to the project plan and project scope if necessary.

**Full Production** – the production environment open to a full user community.

**Hand-off Plan** – the knowledge transfer document that details tasks needed for post-project support.

**In Production** – software in its target environment.

**Integration Testing** –production built in target environment approximation.

**Issue** – an event of certainty which requires assignment and resolution.

**Issue Tracking Software** – A web-based tool utilized for issue tracking and issue resolution, as well as for requirements gathering, requirements analysis, tracking, and development.

**Kick Off(s)** – meeting(s) designed to bring the project team into alignment and initiate project phases.

**Lessons Learned** – the intent behind the QPM Public Case Study. ESP includes a debriefing/feedback mechanism and process that allows project managers to collect information relative to "lessons learned" and "best practices." This process improves the methodology and practice over time. Method and practice is more a constantly evolving process, than a static set of boundaries.

**Pilot** – production environment open to an initial constrained user community.

**Project Control Documentation** – the documents that enable the project team to control and understand the project. These documents include all schedule, scope, quality, communications, and risk related detail specific to each QPM project.

**Project Management Plan** – a set of documents used to communicate the scope, action plan, and control of the project.

**Project Methodology** – a consistent and heuristic documented strategy for planning and managing projects successfully.

**Protocols** – things that humans do that can be documented and repeated.

**Prototype** – pre-production delivery for design and testing.

**QPM Public Case Study** – agreed upon description of project history and lessons learned.

**Quality Management** - method for ensuring that all the activities necessary to design, develop and implement a product or service are effective and efficient with respect to the system and its performance. Quality management can be considered to have three main components: quality control, quality assurance and quality improvement.

**Requirements** – documented needs, wants, and expectations of the education agency partner.

**Risk** – an uncertain event or condition which may occur during the course of a project.

**Risk Analysis Matrix** – The document that describes prioritized project risks and delineates mitigation strategy and/or solutions to documented risks. This document is reviewed regularly and risks/issues are to be escalated and resolved as needed.

**Scope Creep** - the incremental expansion of the scope of a project by introducing additional requirements that were not included in the initial planning of the project.

**Scope Management** – method for managing the efficient completion of the totality of work needed to complete a project by avoiding scope creep.

**Specifications** – sufficient documentation to direct developers based on the requirements (dynamic).



**Staged Launch** – a phased rollout of a system.

**Stakeholder** – the individuals that are likely to be affected by the activities and outcomes of a project.

**Statement of Work** – a narrative description of detailed products, services, or results to be supplied by a project with defined timeline, payment milestones, and budget expectations.

**Survey** – tool used to gather required project data.

**Tasks** – core WBS items reported on during the weekly call.

**Task Levels:**

**Program** – a group of projects with common goals.

**Project** – a set of activities that produce specific result(s).

**Strands** – a logical breakout of the project into like areas.

**Activities** – a breakout within strands measured in month units.

**Task** – the basic building block of ESP project planning, measured in week units and tracked on weekly calls.

**Sub-Task/Step** – the most detailed WBS units, measured in days or hours.

**Training** – face-to-face or web delivered instruction.

**User Acceptance Document** – the document that is signed by the customer indicating acceptance of the successful completion of the project deliverables.

**Weekly Project Status Meetings** – the core organizing and communications tool in a project; where tasks are updated, issues are addressed, and action items are assigned.

**Weekly Status Report** - documents the project details discussed during the project status meeting. The details include recent accomplishments, issues, risks, decisions, and upcoming events/action items.

**WBS Dictionary** – the description of all tasks to be completed in a project.

**Work Breakdown Structure (WBS)** – the hierarchical documentation of a project plan which includes the Activities, Tasks, Resources, and Durations necessary to complete the deliverables as agreed upon the Statement of Work.



### About ESP Solutions Group

ESP Solutions Group provides its clients with how ESP. *Extraordinary Insight™* into P20W education data systems and psychometrics. Our team is comprised of industry experts who pioneered the concept of “data-driven decision making” and now help optimize the management of our clients’ state and local education agencies’ information systems.

ESP personnel have advised school districts, all state education agencies, and the U.S. Department of Education on the practice of P20W data management. We are regarded as leading experts in understanding the data and technology implications of NCLB, SIF, *EDFacts*, CEDS, state reporting, metadata standards, data governance, data visualizations, and emerging issues.

Dozens of education agencies have hired ESP to design and build their longitudinal data systems, state and federal reporting systems, metadata dictionaries, evaluation/assessment programs, and data management/analysis and visualization systems.

To learn how ESP can give your agency *Extraordinary Insight* into your P20W education data, contact us at (512) 879-5300 or [info@espsg.com](mailto:info@espsg.com).

This document is part of *The Optimal Reference Guide Series*, designed to help decision makers analyze, manage, and share data in the 21st Century.

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