

Introduction to Project Management



REACH - Achieving meaningful use of your EHR

Welcome to the Data Analytic Toolkit PowerPoint presentation – an introduction to project management. In this presentation, we will take a brief look at project management to understand the process and some common tools and techniques. The objectives of this unit are to understand the purpose of projects and project management, describe the five phases of project management, apply a few common project management tools, and identify some best practices to increase project success.

Meaningful Use and Project Management

- “Meaningful Use” of electronic health records is a massive undertaking
 - EHR selection
 - EHR implementation
 - EHR utilization
 - EHR optimization
- Project management



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Complying with the EHR Incentive Program and its meaningful use requirements is a massive undertaking. Adopting and using electronic health records requires multiple projects that cross the areas of selecting, implementing, and utilizing technology, as well as optimizing the use of technology. In order to complete the tasks and sub-tasks associated with the various projects related to achieving meaningful use, organizations need to guide their projects successfully by using project management tools, resources, and best practices. This presentation will present an introduction to project management for meaningful use.

What is a Project?

- "...a **temporary** endeavor undertaken to create a **unique** product, service, or result." (PMI, 2013)
- "...a complex, **non-routine**, one-time effort limited by **time, budget, resources**, and **performance specifications** designed to meet customer needs

(Gray & Larson, 2008)



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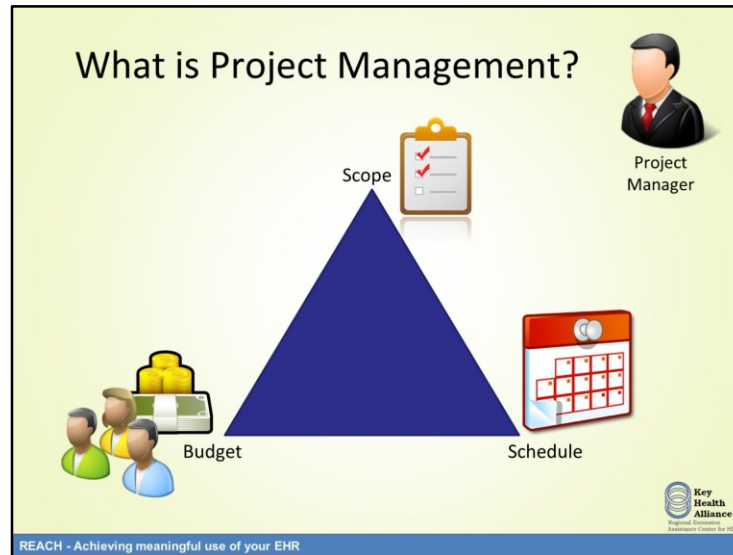
Here are two definitions of the term project. The first definition states that a project is a temporary endeavor undertaken to create a unique product, service, or result. The second definition describes a project as a complex, non-routine, one-time effort limited by time, budget, resources, and performance specifications designed to meet customer needs. While the two definitions differ slightly they each point out some important attributes of a project.

The first definition emphasizes the temporary nature of projects. This means that once the project has been delivered, the project is complete and the team disbanded. The project and project team are not

structured as part of an ongoing effort but rather created to achieve specific results, and then the need for the project effort no longer exists.

The second definition notes the goals of the project in terms of time (or schedule), budget and resources, and specifications (or scope). These goals provide the focus and direction for the project team.

Please note that both definitions emphasize the unique nature of projects. This means that each project will deliver a new product, process, or result and each project will encounter new challenges. Due to the unique nature, projects cannot follow a standardized set of rigid processes. As a result, project teams must possess the ability to adapt to changing environments and solve new problems as they efficiently work toward the project goals.

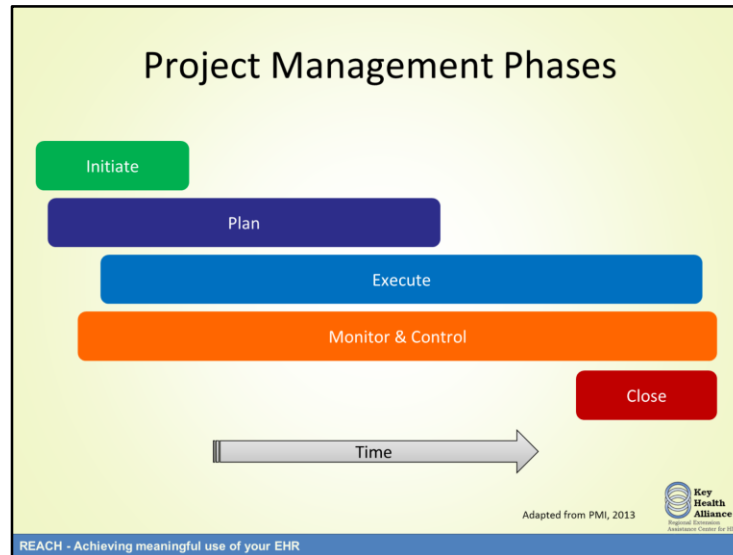


This slide best summarizes project management from the perspective of a project manager. The project manager is the individual responsible for the project execution. This individual ensures the project scope is delivered within the allocated budget and within the planned schedule. A project is considered successful if the project deliverables meet expectations, the project spending stays within the limits of the project budget, and the project is completed by the target date established in the schedule.



The project manager is not the only individual involved in the project. Individuals associated with a project are referred to as project stakeholders. Project stakeholders are considered any individual or group with a vested interest in the project outcomes. These groups include the project manager; the team of multidisciplinary specialists performing work on the project; the customers that will receive and use the results of the project; the project sponsor or project owner who pays for the project and makes decisions over the project scope, budget, and schedule; and the project champion who provides executive-level support to ensure the organizational resources are made available to the project team and any organizational or political hurdles are

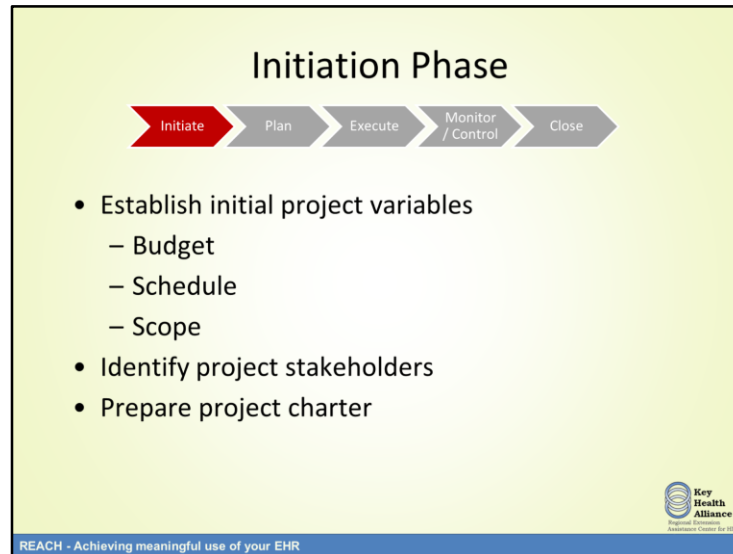
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With a cursory understanding of projects and project management we can now shift our focus to the project management process. The Project Management Institute, a professional organization for project managers, refers to a set of process groups that make up the project management practice. These process groups can be considered different phases of the project. However, it should be noted that these phases are not necessarily sequential, but may be conducted simultaneously with other phases.

This diagram depicts the five phases and illustrates how these phases may be carried out over the life of a project. Over the next few sections

of this presentation we will investigate the activities that take place during each of these project phases.



The first phase is the initiation phase. During the initiation phase, the project is defined in terms of scope of work, the estimated schedule, and the planned budget. The scope, budget, and schedule are the three variables of project management. These three factors will change over time and require the project manager and project team to adapt to new or revised scope, budget cuts, or schedule accelerations. Also, during the initiation phase, the various stakeholders are identified and engaged in the project.

The resulting artifact of the initiation phase is a project charter. The project charter document outlines the work to be completed, defines the

project budget and schedule, and identifies the key stakeholders, such as the project owner and project champion. This document becomes a type of contract for the project team by establishing the goals the team is expected to reach.

It is important to keep in mind that the scope will most likely change during the project, and that the schedule and budget are only estimates. The project stakeholders must recognize these as rough estimates used in the project charter and must be willing to accept further scope, budget, and schedule refinements as a more detailed analysis of the project requirements are conducted during the next phase.

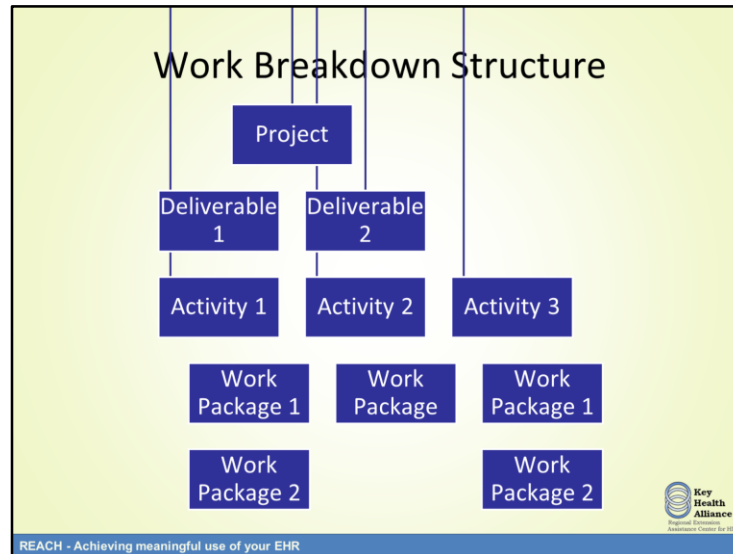


The second project management phase is based on the project charter established as a result of the initiation phase. The planning phase is used to carry out a detailed analysis of the project as it was defined in the project charter and develop a plan to deliver the project.

During the planning phase of the project the project scope is further investigated to provide a more detailed view of the anticipated deliverables and the corresponding costs and timelines. Keep in mind that with analytics projects, or other projects where the information is a key success driver, the information needs must be considered when determining the requirements for the project. These projects should not

be considered technology implementations but rather the development of information assets. Therefore, the information needs and business rules must be considered first and then the technology requirements considered as a means to produce the desired information.

Once the scope is clearly defined and requirements identified, a more accurate budget and schedule can be established. The next few slides illustrate some of the more common tools and techniques used to prepare the project budget and schedule.

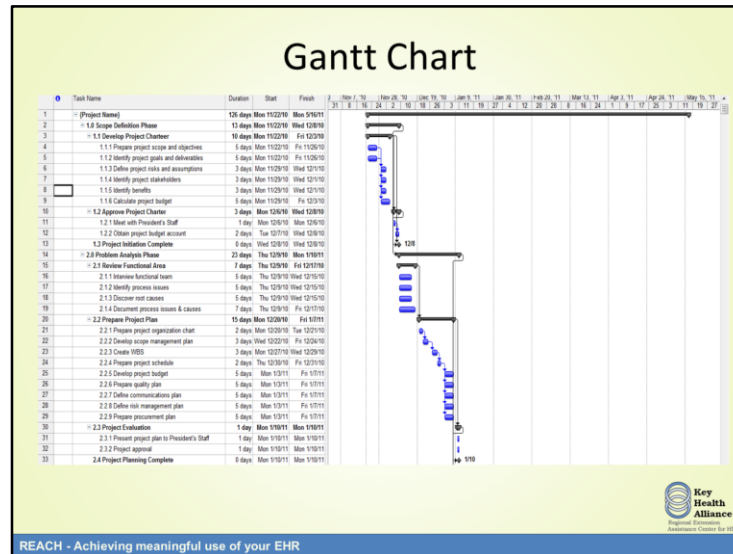


A work breakdown structure is commonly used to dissect a project into smaller components. This dissection makes it easier to understand all of the activities that must take place in order to deliver the project. The work breakdown structure looks similar to an organizational chart where the project is broken down into deliverables or phases, activities needed to prepare the deliverable, and the individuals tasks that must be executed to complete the activity.

The bottom level tasks of the work breakdown structure are commonly referred to as work packages. These work packages are smaller units of work that can be assigned to team members. These work packages

are defined to help distribute workload across the team and also support improved estimations and reporting. The estimated time and expenses can be calculated for each of these work packages and then summed up to the activity, deliverable, and project level. By estimating resources and time at the work package level, the project team is able to provide more realistic estimates than simply guessing expenses and duration at the project or deliverable level.

The work breakdown structure also helps to communicate the project execution by breaking down the project into smaller and more manageable pieces. This structure is used as input into the next planning tool; the Gantt chart.



The Gantt chart is a popular project management tool used to provide an overview of the project and to schedule project tasks. In this example you can see the tasks outlined on the left side of the screen. These tasks can be setup in the same manner as the work breakdown structure where the individual work units (or tasks) rollup to activities, deliverables, and the overall project. The next set of columns are used to define the duration, start date, and end date for each task. The Gantt chart also supports linked tasks to indicate the dependency of a task's start date or end date on the start or end date of another task.

The diagram on the right side of the chart provides a visual

representation of the scheduled tasks across a timeline. Once the tasks are defined, duration estimates provided, and task dependencies identified, the project schedule can be established.

Using the Gantt chart, the project manager can outline all of the tasks that must be completed, identify the duration and schedule for each task, and determine the overall timelines for the project. This chart is frequently used to track the performance of the project during the execution phase.

Project Budgeting - Resources

Task ID	Task Name	Resource Type	Low	High	Moderate	Resource Cost
1 {Project Name}						
2 1.0 Scope Definition Phase						
3 1.1 Develop Project Charter						
4 1.1.1	Prepare project scope and objectives	PM	4	8	5	\$294.40
5 1.1.2	Identify project goals and deliverables	PM	3	6	4	\$230.00
6 1.1.3	Define project risks and assumptions	PM	3	6	4	\$230.00
7 1.1.4	Identify project stakeholders	CM	1	4	2	\$113.62
8 1.1.5	Identify benefits	CM	3	6	4	\$218.50
9 1.1.6	Calculate project budget	PM	4	12	6	\$368.00
10 1.2 Approve Project Charter						
11 1.2.1	Meet with President's Staff	PM	0.5	3	1	\$69.00
12 1.2.2	Obtain project budget account	PM	1	4	1.5	\$101.20
Total:						\$1,624.72



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Once the tasks are identified from the work breakdown structure, a resource budget can be created. The resource budget is used to calculate the cost of the project members. It can be used if external contractors are needed to participate in the project, or if internal resource calculates are required. In this budget calculation each task is associated with one or more project team members. The estimated low, high, and anticipated number of hours to complete the task are provided and a weighted mean is used to calculate the anticipated costs of the task. This process is used to determine the human resource costs associated with each work package (or task) in the project.

Keep in mind, if you are using internal resources to complete the project, this resource budget may not be needed.

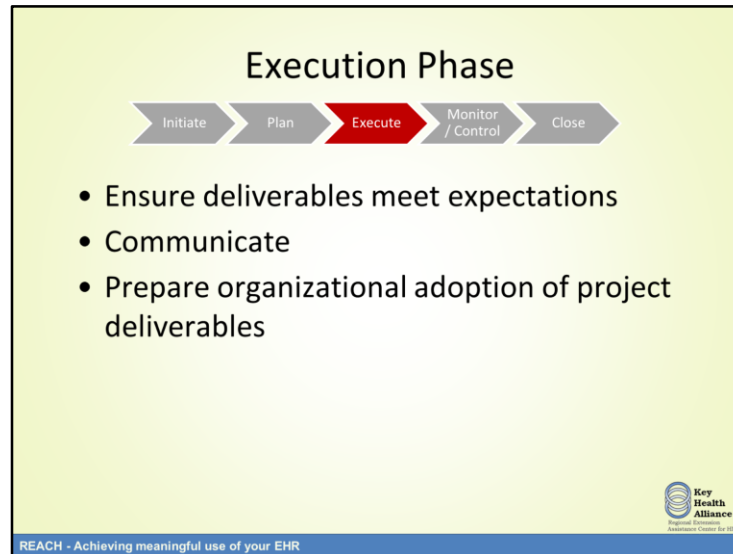
Project Budgeting - Expenses

(Project Name) (Date)			
Budget Area	Development	Maintenance	Description
Human Resources			
Internal Costs	\$30,385.53		Internal staff cost equivalence
Consultants			External consulting services
Temporary Services			Student workers
HR Total:	\$30,385.53	\$0.00	
Hardware			
Servers			Additional servers needed for project
Network Equipment			Additional network components
Workstations			Additional computers
Maintenance			Maintenance costs of additional hardware
Hardware Total:	\$0.00	\$0.00	
Software			
OS Server			OS licenses for additional servers
OS Workstations			OS licenses for additional computers
Functional Application			License costs for application software
Database Software			License costs for database software
Software Total:	\$0.00	\$0.00	
Miscellaneous			
Milestone Events			Funds for milestone celebrations
Travel			Project travel costs
Training Materials			Production costs for training materials
Communications			Production costs for communications
Misc. Total:	\$0.00	\$0.00	
Total Budget:	\$30,385.53	\$0.00	



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Regardless of the type of human resources needed for the project, there will be expenses for the project. These expenses may be associated with the initial delivery of the project or the ongoing costs to maintain the project deliverables. These expenses should be identified and categorized in order to determine and justify the project's financial budget.



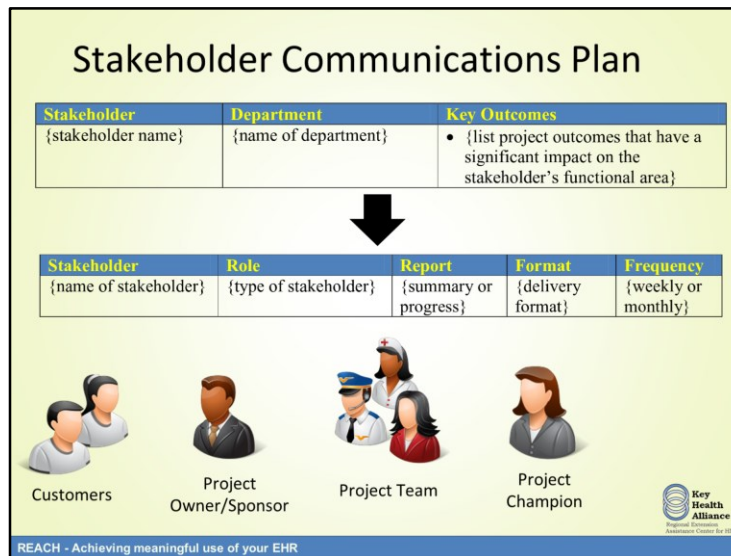
Once the project scope, budget, and schedule plans are underway, the project can move to the execution phase. In this phase, the project plans are carried out. This phase requires careful coordination and communication by the project manager to ensure the plan is executed properly.

The execution phase is carried out to execute the plans made during the planning phase. In the execution phase, the project manager guides the project team and coordinates all activities so that the plan is carried out according to schedule. The team must ensure the project deliverables meet the expectations of the customer so that the

deliverables will be adopted by the organization.

One of the key activities for the project manager in the execution phase is communication. During the project execution phase the project manager must communicate with all project stakeholders. The stakeholders must stay engaged so that they are able to provide the needed support, respond to important project decisions, and are more likely to accept and adopt the project deliverables.

In order to ensure the project manager meets the communication needs of all stakeholders, a communications plan is commonly prepared.

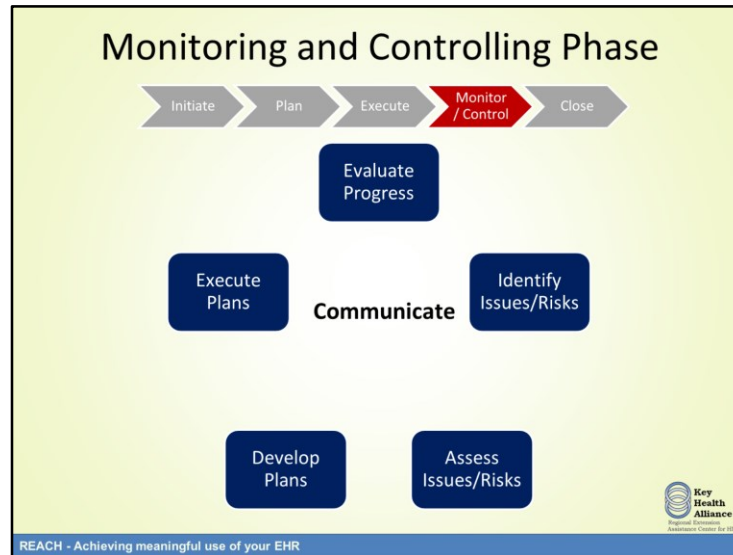


A project communications plan is established to ensure the project manager and project team provides the type of communication needed for each project stakeholder. During the planning phase or early in the execution phase the project manager identifies each of the key stakeholders or stakeholder groups associated with the project. The project manager associates these individuals with their corresponding interest in the project.

Using this matrix, the project manager can determine the type of information each stakeholder or stakeholder group would be interested in and then develop and schedule project reports that meet the

communication needs of these key stakeholders. The communications plan should include both structured and scheduled reports, as well as the semi-structured project reporting meetings.

Using this communications plan the project manager can be sure to provide the information each stakeholder needs to keep these individuals and groups engaged in the project. An engaged stakeholder is more likely to provide support to the project and be available when important decisions are needed. The engaged stakeholders are more likely to be aware of the project deliverables and will be ready to accept and adopt the deliverables at the end of the project.

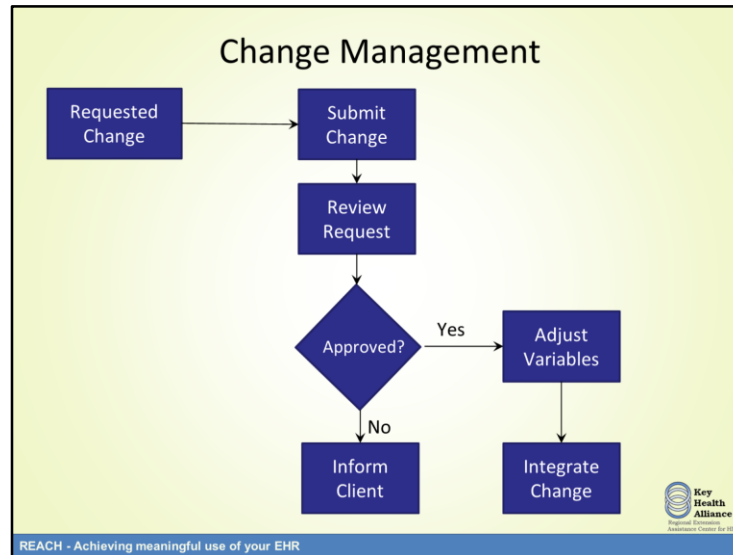


While the project execution phase is underway, the project manager must also monitor and control the project. During this phase the project manager watches over the project to ensure all hurdles are removed, decisions are made, and the path for delivery is cleared.

During this monitoring and controlling phase, the project manager evaluates the project's progress and identifies any issues that must be addressed, and any potential risks that may prevent the project from reaching its goals. As the issues and risks are identified, the project team works together to put plans in place to either respond to the issue or mitigate or remove the risk.

The process of risk analysis and issue tracking and resolution is conducted throughout the project as part of the project monitoring and controlling. This process enables the project team to be more proactive in dealing with uncertainty during the project rather than reacting to issues as they are encountered. Using this more proactive approach to risks and issues, the project team can better manage the schedule and budget and is able to raise awareness of issues and risks in a more timely manner.

Proactive risk and issue monitoring also enables the project team to develop contingency plans to address any potential events before they occur.



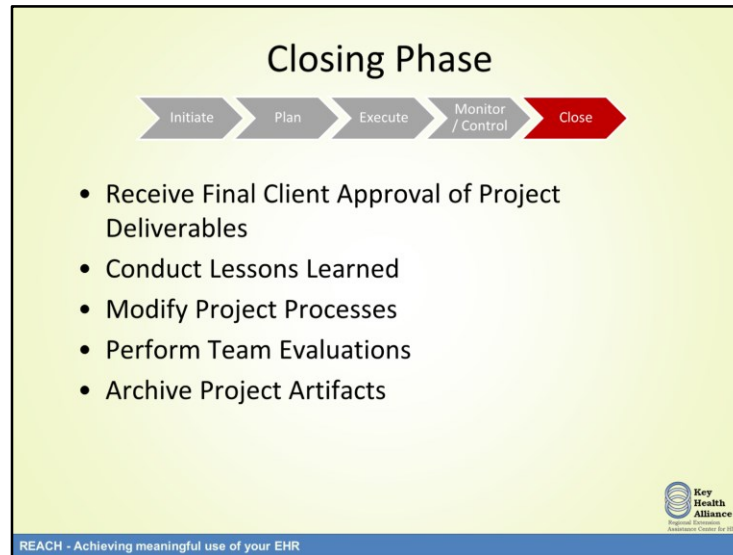
Most projects will encounter change. The scope defined at the beginning of the project is often incomplete or the business environment changes to a point where new or redefined deliverables are needed. The project team must expect that changes to the project scope will occur. As these changes are introduced, a formalized process should be in place so that the project team can address any changes, and revise the project budget and schedule to accommodate the new scope.

The project change management process is put into place to handle changes to the scope as they occur. Using this process, the project

owner is presented with potential changes along with estimates the change will have on the overall project budget and schedule. If the project owner determines that the change is worth the resource and time investment, the change will be approved and the project plan is adjusted to accommodate the new scope. This adjustment is made to the work breakdown structure, Gantt chart, and budget.

If, however, the project owner decides the proposed change is not worth the investment or delay, then the change is rejected and the project team will continue to execute the existing plan without the requested change.

This change management procedure allows the project owner to remain in control of the scope while ensuring the project team is able to realistically meet the scope, budget, and schedule expectations. Keep in mind, these approved change requests serve as addendums to the initial project charter and become the updated project goals.



The final phase of the project management process is the closing phase. In this phase the project is closed down. This phase is consistent with the definition of projects, in that projects are temporary and must end as the project goals are met.

During the closing phase the project is concluded as the project owner approves the project deliverables. During this phase the project manager leads the team in a session where project successes and challenges are identified and documented. Any improvements to the project processes are determined and the processes are updated. The project manager may also conduct an evaluation of the team members

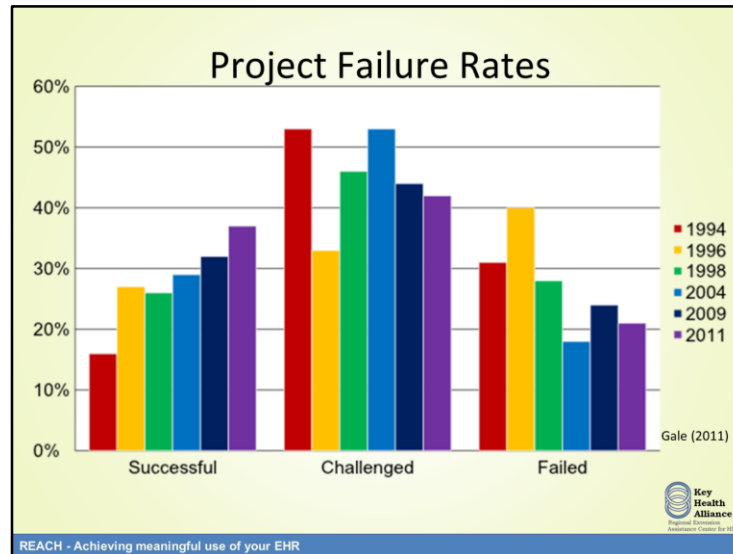
during this phase as well.

At the end of the closing phase, all project artifacts are closed and archived for future reference. At this point, the project is considered complete and the project team members may be assigned to other work or other projects.



Even though there is a process for projects to follow, projects are not always successful. Project teams often are not able to deliver the project scope within the estimated budget and schedule. This should not be too surprising considering that projects are unique, complex, and require work of cross disciplinary specialists from across the organization.

In this section we will look at some of the factors contributing to unsuccessful projects and identify some best practices that can be applied to reduce the likelihood of an unsuccessful project.



Over the past two decades the Standish Group has studied the failure rates of information systems projects. Although success rates have improved dramatically over the years, they remain disappointingly low. As project management processes have improved and become more widely adopted, the success rates have improved, but project teams must still look for ways to increase the likelihood of a successful project.

In this section we will look at a few common sources of an unsuccessful project and identify practices that will address some of these sources.

Common Sources of Project Failure

- No project champion
- Process shortcuts
- Expectations management
- Variable lock-in
- Estimating techniques
- Over optimism
- Adapting to change

Adapted from Whitten & Bentley, 2007



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Projects can fail for a number of different reasons. Here is a small collection of some of the more common causes for project failure.

No project champion. Projects can fail when a project champion is not recruited or the project loses its champion. The project champion provides the executive-level support needed for the project to obtain critical resources and also helps the project team overcome organizational hurdles. Without the project champion, resources may be difficult to obtain and organizational challenges may prohibit the team from reaching the project goals.

Process shortcuts. Processes have been established as best practices and organizations commonly setup operations around these processes. When the project management or organizational processes are not followed, some steps may be missed or the outcome may not be as expected.

Expectations management. If the project owner and customers are not engaged in the project, their expectations of the project deliverables may differ significantly from what is being delivered by the project team. This gap in understanding can cause significant issues and result in rework and missed budget and schedule.

Variable lock-in. Keep in mind the scope, budget, and schedule determined during the project charter are simply estimates. Organizations that lock-in on these variables and expect the project team to meet these expectations will experience more failed projects.

Estimating techniques. Accurate estimation of project work packages requires both expertise of the level of work required, and experience in projects, to understand the project risks that could further lengthen the task duration. Estimations based task durations for optimal conditions result in overambitious project time lines and lead to projects failing to meet the

schedule goals.

Over optimism. Project managers need to be optimistic, but this optimism can also lead to blindness to risk. Risk, or project uncertainties, can sink any project. Project teams that fail to identify and respond to risks throughout the project will experience failed projects.

Adapting to change. As mentioned earlier in the presentation, most projects will experience change. This may come in the form of changes to the scope, changes to the budget or schedule, or changes to the business environment. The project team must be aware of these changes and be willing to adjust the project plans to accommodate change as it is introduced. Failure to do so results in project deliverables that no longer meet the needs of the organization.

Best Practices

- Recruit and maintain champion(s)
- Follow project management process
- Manage variables and expectations
- Recognize evolving nature of estimates
- Experts estimate based on “most likely”
- Be aware of optimism and measure risk
- Look for and respond to change



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In order to address some of these common sources of project failures there are some best practices a project manager and the project team can follow. These practices include:

- Actively recruit and engage a project champion to ensure they are able to support the project
- Plan to follow all project and organizational processes; these processes should be embedded within the project plan
- Frequently communicate with all stakeholders so they understand the state, direction and scope of the project
- Follow a change order process so that changes to the project variables (scope, budget, schedule) are made as project changes are encountered

- When providing work package duration estimates, be sure to consider reasonable risks and don't assume perfect conditions; in other words plan for some difficulties to achieve a "most likely" time estimate
- During project execution the project team must look for potential project risks, develop contingency plans to address these risks, and execute the contingency plans if the risks are encountered.
- The project team must continually scan the organization for changes that could impact the project. This includes not only changes requested for the project deliverables but also changes to the business environment that may affect the value of the project deliverables

The most important thing a project manager can do is to learn from past mistakes. Find out why issues happen and figure out what can be done in the future to prevent these issues. Since each project is unique there will never be a project free from issues. Project managers and the project teams must have the ability to quickly identify and respond to issues. These best practices simply represent some of the more common issues that may arise.

Conclusion

- Meaningful use is a large, complex project
- Project management is a critical component of achieving meaningful use
- There are tools and resources to assist with managing meaningful use projects



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It is clear that demonstrating Meaningful Use of Electronic Health Records is complex, expensive, and extremely difficult. To effectively demonstrate meaningful use and receive incentive payments, the EHR implementation and meaningful use program must be managed by individuals who have an understanding of the essentials of project management. It is critical that the appropriate tools and resources are used to assist eligible professionals and eligible hospitals in successfully carrying out the various projects associated with meaningful use objectives and measures.

References

- Gale, S. (2011). Failure rates finally drop. *PM Network*, 25(8), 10-11.
- Gray, C.F., & Larson, E.W. (2008). *Project management: The managerial process* (4th ed.). Boston, MA: McGraw Hill.
- Project Management Institute (2013). *A guide to the project management body of knowledge* (5th ed.). Newtown Square: PA: Author.
- Whitten, J.L., & Bentley, L.D. (2007). *Systems analysis and design methods* (7th ed.). Boston, MA: McGrawHill /Irwin.

