IT6423 IT Systems Acquisition and Integration
Exercise 3- CMMI-ACQ and CMMI-DEV
Developed by Richard Halstead-Nussloch Version 07Jan13
To accompany material developed by Han Reichgelt

All Students are required to complete Exercise 3

Your name: Kornchai Anujhun

Policies:

- Submissions made through a means other than the GeorgiaView D2L Dropbox will be ignored and earn a 0.
- Submissions without your name stated above earn a 0.
- Submissions not in an rtf or pdf file or with the original questions and/or formatting removed from the file earn a 0.
- Submissions without adequate references or acknowledgements will earn a discounted grade, potentially a 0.
- Submissions that I can not open or require a password will earn a 0.
- Second chances might be requested at any time through GeorgiaView email, and are awarded at the sole discretion of the instructor.

Submissions should use and cite at least one reference and explicitly state who is being acknowledged. Put them in the end of this exercise document in the appropriate sections.

URLS used in this exercise:

CMMI Portal
http://cmmiinstitute.com/

CMMI-ACQ V1.3
http://www.sei.cmu.edu/library/abstracts/reports/10tr032.cfm

Understanding and Leveraging a Supplier CMMI Efforts: A Guidebook for Acquirers
http://www.sei.cmu.edu/library/abstracts/reports/11tr023.cfm

CMMI-DEV V1.3
http://www.sei.cmu.edu/library/abstracts/reports/10tr033.cfm

Section 1 CMMI-DEV and CMMI-ACQ

Deliverables:

- Seven questions answered below.
- Entry on WebCT Blog for IT Lifecycles – Module 3 Discussion Topic
- Entry on your Personal BLOG on WebCT

Q1) Please read the guide to CMMI posted in the module, as well as pages 1-72 of the CMMI-ACQ V1.3 document and pages 1-43 of the document entitled "Understanding and Leveraging a Supplier CMMI Efforts: A Guidebook for Acquirers". Both can be downloaded from the SEI web site and the URLs are above. Module 3 of the course presented a life cycle model for IT system or service acquisition projects. Review the model and, for each of the 22 process areas included in CMMI-ACQ, determine which phase or phases, if any, it specifically is applicable to, or whether it is applicable to all phases. Provide here a document indicating which phase or phases, if any, the process areas are applicable to with a brief (2 or 3 sentence) justification. The readings described in the previous paragraph should be sufficient for you to complete this task, but feel free to skim the remainder of the CMMI-ACQ document if you need additional information. Don't forget to cite your references!

ANSWER

A life cycle model for IT system acquisition contains two high level activities: System selection and acquisition and System implementation and integration. The first high level activity consists of six phases covered acquisition and project planning, analysis and architect solution, supplier evaluation and selection, project oversight and supplier management, system acceptance, and transition management (Hofmann & Yedlin, 2005).

CMMI-ACQ consists of 22 process areas. They are categorized into four groups, which are Project processes, Organizational processes, Support processes, and High maturity processes. There are 11 processes that are considered as **The Project process areas**. They contain practices that address acquirer activities related to establishing, executing, and ensuring the transition of an acquisition project. The following are indicating which phase or phases the *Project process areas are applicable to*:

1. **Project Planning (PP)**

The Project Planning process area is applicable to the acquisition and project planning activity. In this phase, Project Planning practices can be used to establish an acquisition strategy, develop the project plan, involve stakeholders appropriately, obtain commitment to the plan, and maintain the plan in order to acquire an appropriate IT system or IT service. As NASA stated in its Web site, “Good project plans typically contain estimates of scope, a definition of the project lifecycle, estimates of effort and cost, budgets and schedules, risks and risk mitigation strategies, required resources and

training, stakeholder involvement, related activities that may affect the project, and a statement of agreement and commitment from customers and other stakeholders."

2. **Requirements Management (REQM)**

The Requirement Management process area is relevant to all phases in the system selection and acquisition activity. The Requirements Management process area is utilized to maintain using customer and contractual requirements and supplier agreement by obtaining and controlling requirement changes and maintaining relevant plans. Performing the Requirements Management practices in the life cycle model can ensure that requirements are controlled to establish a baseline for acquisition and ensure plans, work products, and activities are consistent with the requirements. Contractual requirements may be changed but must be reflected in the supplier agreements established in Solicitation and Supplier Agreement Development process area.

3. **Solicitation and Supplier Agreement Development (SSAD)**

The SSAD process area involves in the analysis and architect solution phase and the supplier evaluation and selection phase. SSAD practices can be used to help an organization carefully choosing capable suppliers and establishing and maintaining a supplier agreement to acquire an IT system or service. The acquisition strategy and contractual requirements are needed to prepare for the Solicitation and Supplier Agreement Development process area.

4. **Agreement Management (AM)**

The Agreement Management is applicable to the project oversight and supplier management activity, the system acceptance activity, and the transition management activity. The execution of supplier agreements is performed using this process area. Agreement Management practices are used to manage the supplier agreement by performing activities defined in the agreement, monitoring selected supplier processes, accepting the system or service, and managing supplier invoices.

5. **Project Monitoring and Control (PMC)**

The Project Monitoring and Control process area are relevant to all phases in the system selection and acquisition activity. Project Monitoring and Control practices enable an acquirer to monitor and tracking the supplier's project progress, activities, and performance according to the specified criteria including schedule, budget, risk mitigation plans, internal and external commitments, management of project data, and stakeholder involvement. Tracking and monitoring activities usually involve holding scheduled reviews, both internal and external, and identifying corrective actions as needed and tracking them to closure (NASA). As a result, appropriate corrective actions can be taken when the project's performance deviates significantly from the plan.

6. **Integrated Project Management (IPM)**

The Integrated Project Management process area involves in all phases in the system selection and acquisition activity, except the acquisition and project planning phase. The purpose of this process area involves the establishment and management of the project, such as risk management plan and risk migration, and the involvement of the relevant stakeholders according to an integrated and defined process that is tailored from the organization's set of standard processes.

7. **Risk Management (RSKM)**

The Risk Management process area is applicable to all phases in the system selection and acquisition activity. Risk management is a continuous process that addresses issues that could endanger the objectives of a project (Tee, 2010). The acquirer-supplier relationship needs to aggressively detect risks as early as possible because of the complexity of the acquiring process. With Risk Management practices, an acquirer is able to identify and assess project risks during the acquisition and project planning phase and manage it throughout the project.

8. **Acquisition Requirements Development (ARD)**

The Acquisition Requirements Development process is relevant to the acquisition and project planning phase, the analysis and architect solution phase, and the supplier

evaluation and selection phase in the life cycle model. According to Built with WIT (2008), "The Acquisition Requirements Development process area describes two types of requirements: customer requirements, which address the needs of relevant stakeholders for which one or more products and services will be acquired, and contractual requirements, which are the requirements to be addressed through the acquirer's relationship with suppliers and other appropriate organizations." This process area provides a set of the practices that are used to develop and analyze customer, product, and contractual requirements that express customer value.

9. Acquisition Technical Management (ATM)

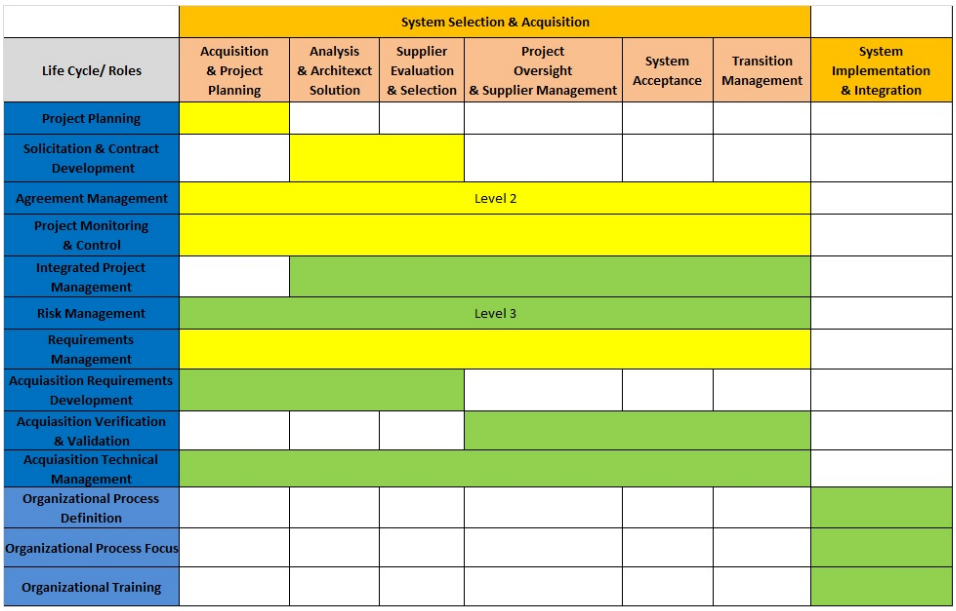
The Acquisition Technical Management process area is relevant to the acquisition and project planning phase, the analysis and architect solution phase, the supplier evaluation and selection phase, and the project oversight and supplier management phase. Acquisition Technical Management practices are used to combine the project's defined process and risk management activities to per form technical and interface management.

10. Acquisition Verification (AVER)

The Acquisition Verification process area is applicable to the project oversight and supplier management phase, the system acceptance phase, and the transition management phase. An acquirer can use this process area to make sure that selected product meets specified requirements. Additionally, it can be used to address peer reviews to remove defects and provide valuable insight into the products being developed and maintained by the acquirer.

11. Acquisition Validation (AVAL)

The Acquisition Validation process area is relevant to the last three activities in the system selection and acquisition activity: the project oversight and supplier management activity, the system acceptance activity, and the transition management activity. The purpose of using Acquisition Validation practices is to ensure that acquired products are fulfilling the relevant stakeholders' needs.



Acquisition Life Cycle and Roles

The Organizational process areas contain the cross-project activities related to defining, planning, deploying, implementing, monitoring, controlling, appraising, measuring, and improving processes. *All process areas in the Organizational process areas are applicable to phases in the system implementation and integration in the life cycle model for IT system acquisition that happens after the acquisition or before the next acquisition*. The following are indicating which phase or phases the Organizational process areas are applicable to:

12. Organizational Process Definition (OPD)

The Organizational Process Definition process area is applicable to phases in the IT system implementation and integration activity. It forms the basis for establishing and maintaining the organization's set of standard processes, work environment standards, rules and guidelines for the next operation of teams, and other assets based on the process needs and the organization's goals.

13. Organizational Process Focus (OPF)

The Organizational Process Focus process area is also relevant to phases in the IT system implementation and integration activity. The purpose of using Organizational

Process Focus practices is to enable an organization to comprehend the current strengths and weaknesses of the organization's processes and process assets for the organizational process improvement. The organization also encourages participation of suppliers in process improvement activities.

14. Organizational Training (OT)

The Organizational Training process area is also applicable to the IT system implementation and integration activity. To recruit a new system, not only an organization needs to change its business process to acquire maximum benefit of the new system, but also its employees need to be trained. Using this process area can provide the development of the set of skills and knowledge of employees, so employees can perform their roles effectively and efficiently.

The Support process areas address acquisition project process and can address processes that apply more generally to the organization. *All Support process areas are used to support other process areas implementing their tasks.* The following are indicating which process areas the Support process areas are applicable to:

15. Configuration Management (CM)

The Configuration Management process area is related to all process areas because it describes establishing and maintaining the integrity of work products using configuration identification, configuration control, configuration status accounting, and configuration audits. Plans, process descriptions, and requirements for example can be placed under configuration control.

16. Decision Analysis and Resolution (DAR) Measurement and Analysis (MA)

The Decision Analysis and Resolution process area is related to all process areas because it describes determining that issues should be subjected to a formal evaluation process and applying a formal evaluation process to them. Decision Analysis and Resolution process is important for an acquirer, both while making the critical decisions

that define and guide the acquisition process and later when critical decisions are made with the selected supplier.

17. Process and Product Quality Assurance (PPQA)

The Process and Product Quality Assurance process area is related to all process areas because it describes specific practices to objectively evaluate performed processes and work products against relevant process descriptions, standards, and procedures, and by ensuring that issues arising from these evaluations are addressed. In other words, The Process and Product Quality Assurance process area objectively analyzes selected acquirer work products and processes.

18. Measurement and Analysis (MA)

The Measurement and Analysis process area is related to other process areas because it guides projects and organizations in aligning measurement needs and objectives with a measurement approach that is used to support management information needs. In other words, an acquirer uses the Measurement and Analysis process area practices to support the information needs of the business, organization and project.

The High maturity process areas describe practices that further align Organizational, Project, and Support processes with the business objectives of the organization. The *High maturity practices can be integrated with the practices in other process areas.* The following are indicating why the High maturity process areas are relevant to other process areas:

19. Organizational Process Performance (OPP)

The Organizational Process Performance process area is used to establish and maintain a quantitative understanding of the performance of the organization's set of standard processes in support of quality and process-performance objectives. It’s also used to provide the process performance data, baselines and quantitatively manage the organization's projects.

20. Quantitative Project Management (QPM)

The Quantitative Project Management process area is utilized to quantitatively manage the project's defined process to achieve the project's established quality and process-performance objectives. In addition, this process area includes managing subprocess performance statistically.

21. Causal Analysis and Resolution (CAR)

The Causal Analysis and Resolution process area is used to identify causes of defects and other problems. Also, it takes action to prevent them from occurring in the future.

22. Organizational Performance Management (OPM)

The Organizational Performance Management process area is used to analyze process performance baselines and models to understand the organization’s ability to meet its business goals. Moreover, it is able to derive quality and process performance objectives.

Q2) Develop one or two powerpoint slides to include your main points of for question 1 above. Post these slides to the discussion about CMMI along with some notes to cover in presenting them. As you think about these matters, try to find connections among the CMMI, Lifecycles, IT business value, IT sourcing, etc.

ANSWER

***Note**

CMMI-ACQ is the model that focuses on acquirer processes and integrates bodies of knowledge that are essential for successful acquisition. It provides guidance to an acquiring organization for the acquisition of IT system, products, or service to eliminate barriers and problems in the acquisition process through improved operational efficiencies and manage such a process.

CMMI-ACQ consists of 22 process areas, and eleven of them are Project processes: PP, REQM, SSAD, AM, PMC, IPM, RSKM, ARD, ATM, AVER, and AVAL. While these Process areas are applicable to a high level activity, the selection and acquisition phase, in the life cycle model, Organizational processes are applicable to another high level activity, the system implementation and integration. Fig1 is showing the relationships between phases in the life cycle model and process areas that are relevant to.

CMMI-ACQ allows the acquirer to match capabilities with their supplier to help assure the success of the relationship. As a result, the acquirer successfully obtains services or products that are appropriate for its business process. Furthermore, CMMI-ACQ increases IT business value to companies in the way that services or products are delivered in a better, quick, and cost effective way.

Q3) In the CMMI discussion, post your impressions of a) the applicability of CMMI-ACQ to IT system and service acquisition projects and b) the applicability of CMMI-DEV to IT system and service acquisition projects.

ANSWER

The following are my impressions of:

A) The applicability of CMMI-ACQ to IT system and service acquisition projects

My impression of the applicability of CMMI-ACQ is that it provides benefits to IT system and service acquisition projects as it provides guidance for efficient, effective improvement across process disciplines in the acquirer. CMMI-ACQ is the model that focuses on acquirer processes and integrates bodies of knowledge that are essential for successful acquisition. Additionally, it is used to avoid or eliminate barriers and problems in the acquisition process through improved operational efficiencies, to initiate and manage a process for acquiring products and services, including solicitations, supplier sourcing, supplier agreement development and award, and supplier capability management, and to utilize a common standard for both acquirers and suppliers so that quality solutions are delivered more quickly and at a lower costs with the most appropriate technology (Play-In-Business, 2011).

B) The applicability of CMMI-DEV to IT system and service acquisition projects

CMMI-DEV impresses me as it does specify that an organization should have processes that address development related process areas in order to deliver products or services faster, better, and cheaper. CMMI-DEV enables an organization to incrementally improve processes corresponding to an individual process area or group of process areas selected by the organization and to improve a set of related processes by incrementally addressing successive sets of process areas. CMMI-DEV mostly contains similar process areas to CMMI-ACQ, that's why it has the applicability to IT system acquisition project as well. Instead, CMMI-DEV focuses on activities for the development of products or services to meet the needs of customers and end users as it provides guidance to manage, measuring, and monitor development processes.

Q4) Reflect on what you have done so far in the course. Include those reflections, analysis and observations here and in your Blog for this course. A good focusing question is: After further consideration of the two options for an individual project--a) follow the textbook and complete a case study analysis or b) do a small but significant research project in the area of IT systems acquisition and integration--I would prefer to take the option of (choose one) because (fill in the reason).

ANSWER

I have finished an exercise 0, an exercise 1, an exercise 2 and all of the discussion in these modules. Those I have finished are helping me get familiar with IT system acquisition, The IT system acquisition life cycle, and IT business value. About RFP project, my teammates and I now are discussing about a potential RFP topic. Each of us is having a different idea, so we haven't decided the topic yet. However, we believe we will get into the conclusion before the due date, Feb 25.

I'm considering working on a concept paper on Virtualization topic. At the first place, I wanted to take the first option because I'm interested in ERP. I have known that due to new IT systems that depend on technologies, many organizations often didn't communicate with each other. Thus, ERP is the solution for this issue. However, due to RFP topic, a concept paper about Virtualization may help me working on RFP project easier.

Section 2 for Exercise 3

Actions and Deliverables:

• After the CMMI discussion gets going, review CMMI postings and make a substantive and reasoned comment (of at least one paragraph) on postings by 2 other students. Summarize here why you choose those students' entries and how you formulated your comments.

ANSWER

I chose those entries because of the interesting contents. I've gained a lot of knowledge by reading the discussions and discussing with the writers. They have their own perspective that is similar to mine, and that makes our discussions more knowledgeable. We've shared our own points and clarified why we have that believe. I very enjoy having discussion with them. I formulated my comment by using the information I acquired when doing the exercises.

• In your personal Blog for the course, make at least one reflective and integrative observation about the lifecycle models appropriate for IT and/or the role of business process models in IT systems.

ANSWER

The lifecycle models appropriate for IT

According to my current knowledge, I can group appropriate life cycle models in IT into three categories: a life cycle for IT system or service acquisition, a life cycle for IT development, and a life cycle for IT service. The IT system or service acquisition life cycle describes the life of an acquisition process in IT, from planning, selecting, evaluating the multiple suppliers to acquire the most appropriate products for acquirer's business strategy and processes, implementing the new IT products, and integrating them with acquirer's business strategy and processes. Second, The IT development life cycle is the dynamic, iterative process of developing an enterprise over period by incorporating new business processes, new technology, or new capabilities, as well as maintenance and management.

The last life cycle is the IT service life cycle. It describes the life of IT services, from planning and optimizing the IT services through the design and delivery of IT services aligned with the business strategy. The life cycle models in IT essentially take an important part of an organization because they help the organization accomplish business

objectives. Moreover, for years, organizations have been encouraged to use an integrated set of practices structured around the concept of a capability maturity model to guide them process improvement across a project or even an entire organization. As Sharifloo, Motazedi, Shamsfard, & Dehkharghani (2008) described, "Today organizations are concentrating on improving their processes for achieving much more benefits. Therefore many approaches have been presented to reach a set of sufficient processes." CMMI models benefits the organization by decreasing costs, improving on-time delivery, productivity, quality, and customer satisfaction, and giving impressive return of investment (ROI).

The role of business process models in IT systems

A business process model takes an important part in the success of any organizations as it explains how that business earns revenue. All business process models address questions: how does an organization sustainably deliver value to its customer. Business process models can serve three different purposes. They can describe different kinds and types of businesses. This is critical if firms are trying to study them analytically. They can be shorthand descriptions of how firms operate: the primary value here is that a company can use the business process model to ensure that the company have strategic fit across activities, or they can be role models. The company can use them to describe how the company wants your organization to function (Fuller & Morgan, 2010). Not only a business process model is a part of a successful organization but also strategy is a crucial step in the evolution of a business.

For example, even if you may think that Wal-Mart pioneered a new business process model on its road to success, the reality is that the model was really similar to the one Kmart was using at the time. However, it was what Sam Walton chose to do differently from Kmart, such as focusing on small towns as opposed to large cities, and everyday low prices, which was the real reason for his success. Even though Sam Walton's business model wasn't different from Kmart's, his unique strategy made him a success. This short example demonstrates the role a business process model and strategy in IT.

Sources and works used in completing this exercise:

(Please add your references. You must list at least one and use the method-ACM, APA or MLA-chosen at the beginning of the term.)

Please complete the following:
___ I did not use any method of citation (maximum B on the assignment).
___ I used the ACM approach and have cited my references as I went in the text and also listed them at the end.
__√_ I used the APA approach and have cited my references as I went in the text and also listed them at the end.
___ I used the MLA approach and have cited my references as I went in the text and also listed them at the end.

Acknowledgements of people (and other exercise submissions) used in completing this exercise:

(You should at least acknowledge the students for whom you wrote Section 3 comments.)

References

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