Experience Sharing of the first CMMI-ACQ Appraisal
Presenters

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Agenda

- Background
- Some Improvement Sample
- Experience Sharing
- Summary

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Background
Introduction of FDC

Financial Data Center, Ministry of Finance, R.O.C. (Taiwan)

Established in 1968, jointly by the Taxation Reform Commission and the Ministry of Finance of Taiwan.

It was established with a purpose to improve efficiency of taxation by way of introducing a computerized information system.

The function of this Center is many-fold:

- The Minister's staff on computerization affairs.
- Development and maintenance of software used by local taxation offices throughout the nation for taxation management, and it also provides centralized processing services for them.
- Helps office automation movement of the Ministry headquarters.
- Provides an inquiry service to other government agencies or research institutions which need income or property data for public purposes.
Appraisal OU

- The appraisal OU is Division 4 of FDC
- FDC Div 4 employs approximately 75 people and its overall operation budget reaches US$ 5,300,000 in 2007.
- Lines of business performing acquisition:
  - the e-invoic
  - e-tax plan
  - Operation management
- The Acquisition types including:
  - Hardware procurements
  - Software outsourcing
  - Service outsourcing (Such as Security weakness scan)
The CMMI-ACQ journey of FDC -1

July, 2004, Ministry of Economic Affair, Executive Yuan, R.O.C. announced the CMMI impetus program.

Dec.26, 2006, NCC, Executive Yuan, R.O.C. announced “The impetus of CMMI appraisal or equivalent appraisal is an important policy for improving government system quality and information service competition.”

For improving the information system quality and information service quality, FDC decided to implement the CMMI-ACQ at 2006.

- Oct. 2004 invited Dr. Hung to have a CMMI topic speech for FDC: ”Light-weight CMMI for supplier sourcing “.
- Since 2004, FDC has had training for CMMI:
  - Software Quality Engineer Training for all Software Engineers.
  - Attending the SEI’s training: “Introduction to CMMI” and “Intermediate concept for CMMI”
- May, 2006, in the meeting with MOEA, it decided the FDC will be the demo. Site of government CMMI-ACQ adoption.
The CMMI-ACQ journey of FDC -2

The CMMI-ACQ Project kicked off at Nov. 2006.

- Organization Unit: Division 4, FDC.
- Target level: ML 2
- Expected Duration: 2 years.
- First based on the Preliminary Report, then transferred to CMMI-ACQ V1.2 at Nov. 2007.

FDC Div.4 was appraisal as CMMI-ACQ ML2 at June 2008

- Lead Appraiser: Margaret Glover
- Senior Member of the Technical Staff, SEI
Why CMMI-ACQ

- FDC is a acquisition based organization, most system development and maintenance work are outsourced.
- For a pure acquisition organization, it may need many interpretations for adopting CMMI-DEV.
- There is a SAM PA in CMMI-DEV. But it is more focused on Developer and sub-contractor relationship.
- Although the SAM PA described some important practices while acquisition, but it is insufficient in guiding a acquisition organization to establish a systemized and continuously improved acquisition processes.
After 4 years’ program in promoting CMMI-DEV in Taiwan, the voices for improving acquisition process are raised from industry, academic, research institute and government agencies.

RDEC (Research, Development and Evaluation Commission, Executive Yuan) is actively promoting the adoption of CMMI-ACQ in Government since 2006.

FDC (Financial Data Center, Ministry of Finance) had adopted CMMI since Nov. 2006, and conducted the first CMMI-ACQ SCAMPI A Appraisal at June, 2008.

RDEC is adopting for CMMI-ACQ continuous representation. The REQM, CM, PP and PMC are the first batch improved PA’s.

Taipei County government started to adopting CMMI-ACQ at Aug. 2008. The scope included 14 PA’s (9 from ML2, and 5 from ML3) and the related tools.

The IT center of Legislative Yuan prepares to start their CMMI-ACQ improvement by the end of 2008.
Some Improvement sample
Project estimation

**Improvement**

- Before: FDC originally used the node number and other sizing metrics to estimate the HW cost, but the software cost was only estimated by experience and market survey.
- Improved: FDC introduced the FPA to estimate outsourcing software sized, and the history data for productivity parameter.

**Benefit**

- The estimation of Software cost, which was most difficult before, can be standardized.
- The rational of software cost is clear and can support the price negotiation with supplier.
- At Apr., 2008, saving extra 10% cost on one project by clear cost estimation.
Improvement

- Before: There were only the project plans developed by supplier. The acquirer only had some control charts or schedules to control the projects.
- Improved: Considering the limited resource of acquirer. A project planning table were designed and deployed to each project. Combining with WBS, it is used to plan the acquirer’s activities.

Benefit

- Better estimation of original software size and dates gave a more realistic schedule as actual amounts were tracked against the estimates.
The relationship of project management
The Improvement for SSAD and AM

Improvement

- Before: The projects followed the Procurement process which is complied with the Procurement Law of R.O.C.. The Procurement process is mostly complying with the practices of SSAD and AM.
- Improved: The most significant improvement is the “SP 1.2 Monitor Selected Supplier Processes.” of AM. Organization has setup the guideline for the selection of critical process and the method of monitor.

Benefit

- In fact, some project managers wished to do it before. However, without the process and agreement, they were hard to do it. The process grants the right to PM.
- It is helpful to PM for better understanding and controlling the supplier’s quality, not only for software development project, but also the service providing project, such as security service.
The Improvement for MA

Improvement

- Before: There was very little or none systemized MA in FDC.
- Improved: A MA methodology was introduced. Organization had setup 4 standard MA objective, and project can choose their MA objective from them or setup their own MA objective.
- 4 MA objectives was setup:
  - Schedule variation for each phase
  - Defect rate for each phase
  - Effort variation for each phase
  - Productivity (FPA/person day)

Benefit

- The MA result is used to plan and control the project. The most important improvement is to have the productivity parameter for cost estimation.
Sample of effort variation.

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<tbody>
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<td>Prj1 effort variation</td>
<td>50%</td>
<td>25%</td>
<td>-25%</td>
<td>25%</td>
<td>-25%</td>
<td>60%</td>
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<tr>
<td>Prj2 effort variation</td>
<td>23%</td>
<td>21%</td>
<td>-20%</td>
<td>18%</td>
<td>-26%</td>
<td>27%</td>
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<tr>
<td>Prj3 effort variation</td>
<td>27%</td>
<td>27%</td>
<td>-27%</td>
<td>26%</td>
<td>-26%</td>
<td>26%</td>
</tr>
<tr>
<td>Mean</td>
<td>34.3%</td>
<td>24.3%</td>
<td>-24%</td>
<td>23%</td>
<td>-25.6%</td>
<td>37.6%</td>
</tr>
</tbody>
</table>

![Graph showing effort variation across phases](image-url)
The Improvement for CM

**Improvement**

- **Before:** Some projects have CM system, but not every project.
- **Improvement:** Introduced the CM process and the Serena VM system. The Serena TeamTrack is also introduced for change control and other processes.

**Benefit**

- The document and data of projects are well controlled.
- The VM is also used for PAL.
- The change are tracked between Acquirer and Supplier.
- TeamTrack are used not only for CM but also for other processes. It make the process can be tracked and controlled.
Serena Library Sample
The flow design for TT
Personal Portal
e-Form on TT
Work flow tracking
CMMI-ACQ experience sharing
Benefit -1

- The Acquirer process is better integrated with Supplier process. It enable a better communication.
  - Requirements are better managed and easier to trace.
  - Configuration is better controlled between parties.
  - Project is better managed, not only Supplier’s activities are monitor, but also acquirer’s activities.
  - The acquirer can better estimate the reasonable outsourcing budget.
  - The clear and traceable requirements, from customer requirement to contractual requirement help to better understand the requirement and control the change.
Benefit -2

The acquirer can better monitor the supplier.

- Acquirer can better understand the CMMI, and know how to request supplier.
- The request of process and pre-request of monitor are clearly identified in RFP or contract.
- Acquirer can collect and analyze the quantitatively data of supplier, such as cost, quality, to better estimate and control the outsourcing project.
Challenge

When Adopting CMMI-ACQ, FDC experienced some specific challenges, such as:

- People resistance
- Resource issue
- Co-Work with Supplier
- Cooperating with regulation
People resistance

Voice:
- We have done the acquisition well, why we need to be improved?
- That’s Supplier’s job.
- Well, we are buyer, we don’t need to be “Certificated”.

Suggestion
- You need to tell them what’s the benefit for better acquisition process. And what they lost from their current “doing well” process.
- Senior officer support will be very important, even more than CMMI-DEV.
Resource

Issue

- For an acquisition organization, the resource for an acquisition project is often very limited. Maybe one man for more than one projects.
- No resource for supporting process, such as CM, PPQA, MA...

Suggestion

- It take time to get more resource, sometimes even is not doable.
- Adjust the project structure from “one man for one project” to “A team for a group of project” will be very helpful.
- Some supporting function can co-work with Supplier, such as CM, MA, even outsourcing.
- Automatic tool is very helpful.
Co-Work with supplier

Issues:

- The process maturity of various Supplier are very different. Even they claim to be at specific Maturity level.
- The technology, tool and documentation are very different among suppliers.
- It will cause the acquirer hard to monitor the projects and hard to compare or measure across the projects.

Suggestion

- Review the current environment and process, identified what’s doing well and what’s not.
- Establish a guideline or standard in RFP for new project to standardized the interface with supplier’s process.
- The policy for acquisition, the standard work environment or interface between Supplier will be important.
Adopting with regulation

Issue:

- The existing Law or regulation might have constrain for some CMMI-ACQ practices, such as the “identified potential supplier”.
- The same word may have different meaning, such as “Supplier negotiation”.
- Some concept might be conflicted, such as “Price” and “Quality”

Suggestion

- The EPG should be well educated for the related law, regulation, company policy and process, not only CMMI-ACQ.
- Interpretation will be important.
Notes

Some other experience might be help:

- The acquirer people are used to request supplier. Sometimes they are not very familiar with the practice of technical and skill. The hands-on training might be important.
- The continuous representation might be a good choice for adopting CMMI-ACQ. Acquirer can focus on the process directly related with their improvement goal.
- A Maturity level Appraisal is still important. It is not only a benchmark and check of the process improvement. It also helps the organization to establish a “common objective”.
Summary

- The projects of FDC Div. 4 mostly are small to medium schedule and the human resource of FDC Div. 4 is also very limited. But the CMMI-ACQ ML2 PA’s can still work well in such an organization.

- People resistance and resource issue are the two critical issues we faced in CMMI adoption.

- Strong senior manager support is the most important strength we have in this adoption.

- The use of automation tool is also very helpful.

- The continuous representation may be a good choice for acquirer’s improvement. However, the Maturity level appraisal can play as a good benchmark and establish the “Common Objective”.
Thank You!
Presenters

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