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Experience Sharing of the first CMMI-ACQ Appraisal

未經本公司書面許可，請勿翻印

Presenters

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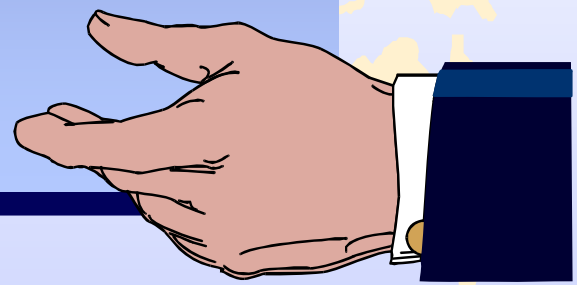
Agenda

- 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 it's 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 a 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.**
  - **Consultant: Polar Tech. Co., Ltd.**
  - **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.

CMMI-ACQ in Taiwan

- 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.

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Some Improvement sample

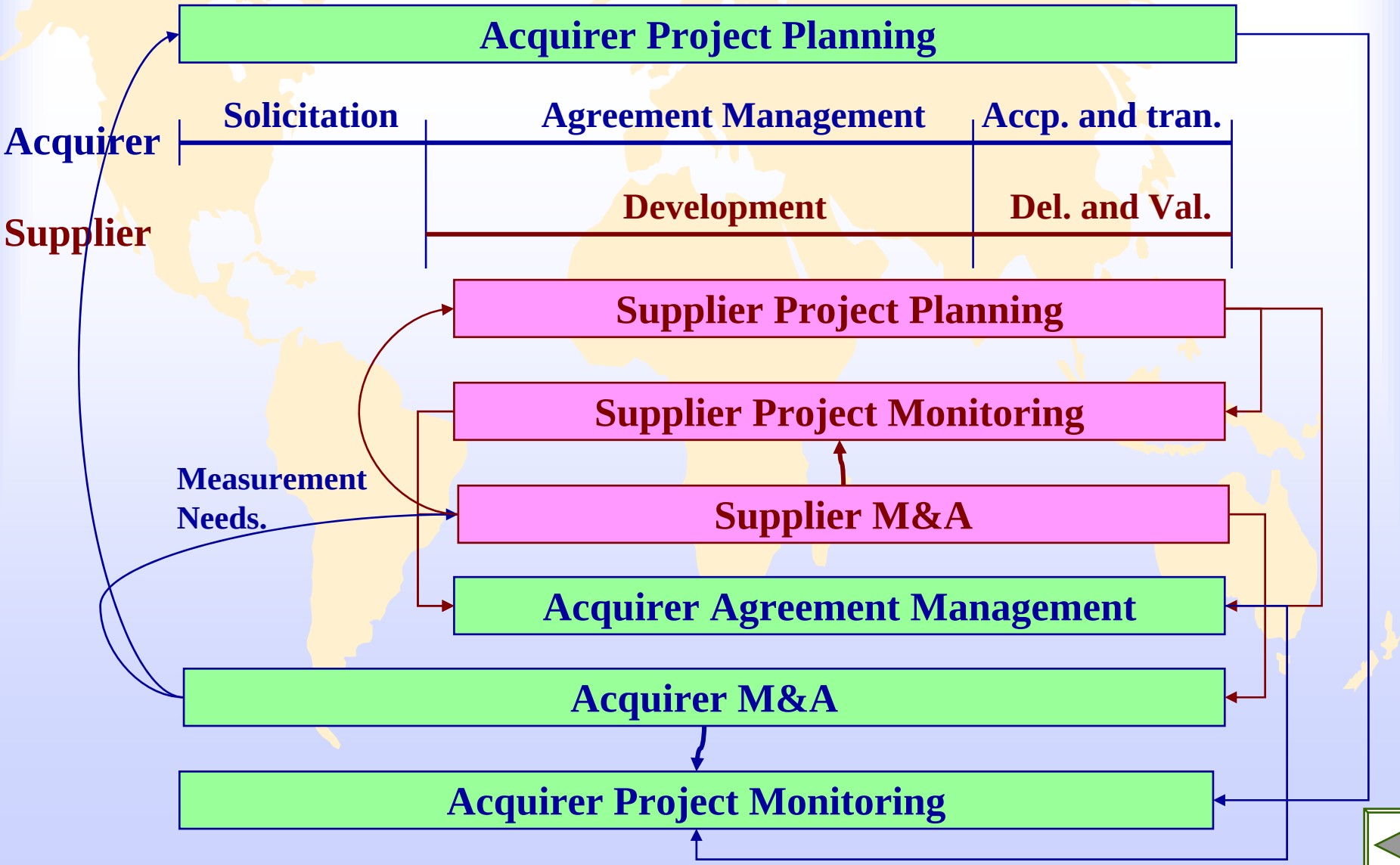
Project estimation

- 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.**

Project planning

- 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

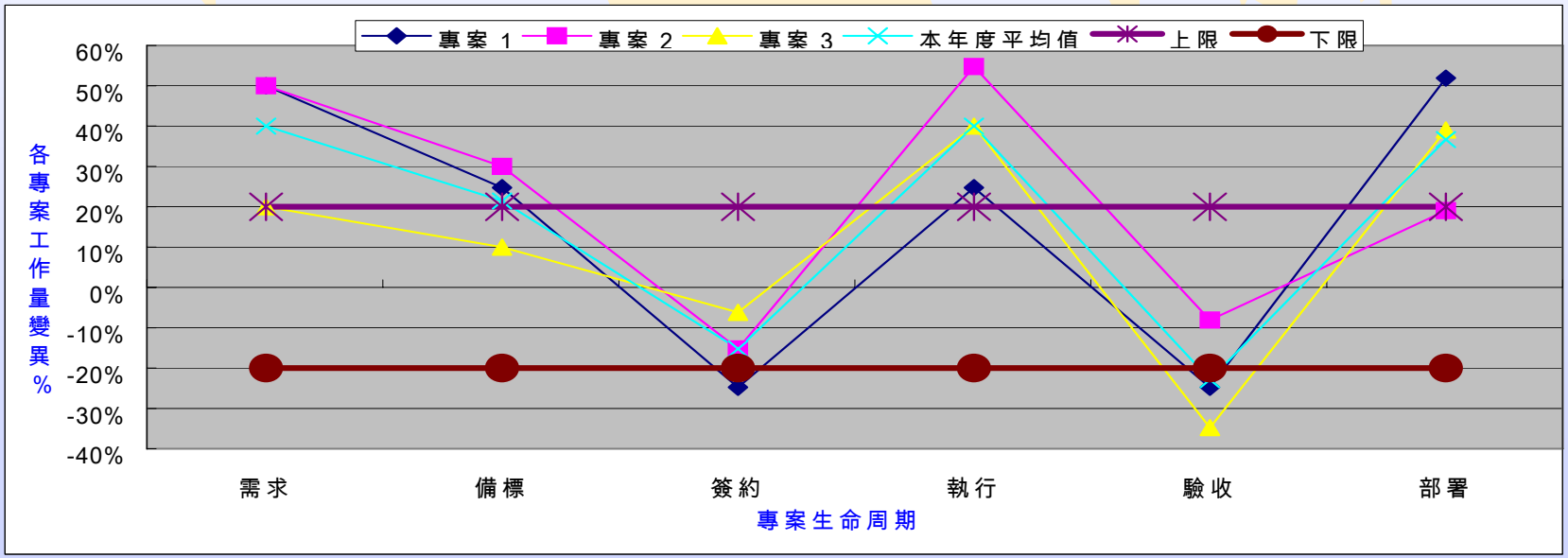
- Improvement
  - **Before: The projects followed the Procurement process which is complied with the Procurement Law of R.O.C.. The Procurement process is mostly complying with the practices of SSAD and AM.**
  - **Improved: The most significant improvement is the "SP 1.2 Monitor Selected Supplier Processes." 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.

Phases	Req.	Sol.	Cont.	Est.	Accept.	Deploy.
Prj1 effort variation	50%	25%	-25%	25%	-25%	60%
Prj2 effort variation	23%	21%	-20%	18%	-26%	27%
Prj3 effort variation	27%	27%	-27%	26%	-26%	26%
Mean	34.3%	24.3%	-24%	23%	-25.6%	37.6%



The Improvement for CM

- Improvement
  - **Before: Some projects have CM system, but not every projects.**
  - **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.**

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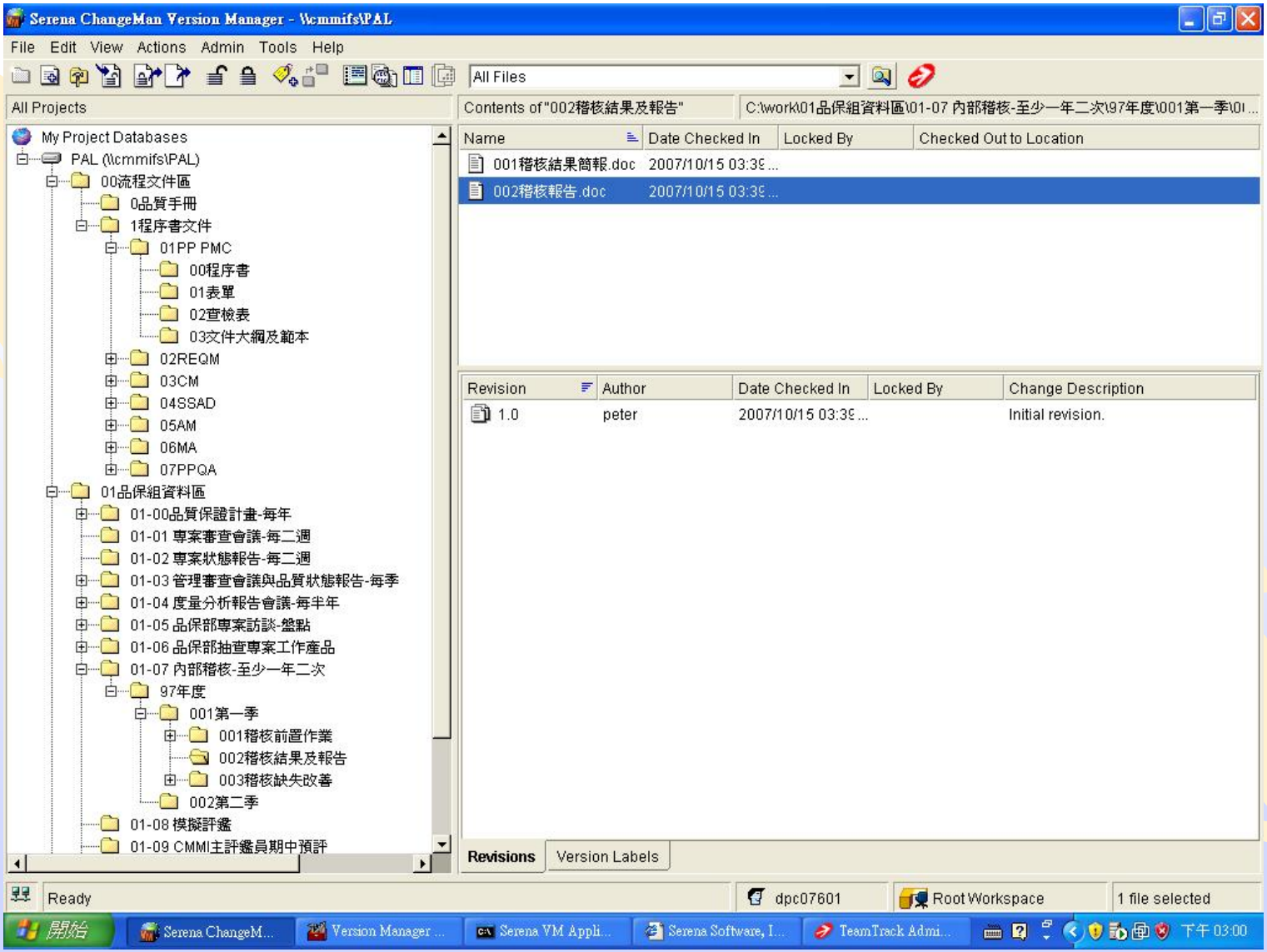
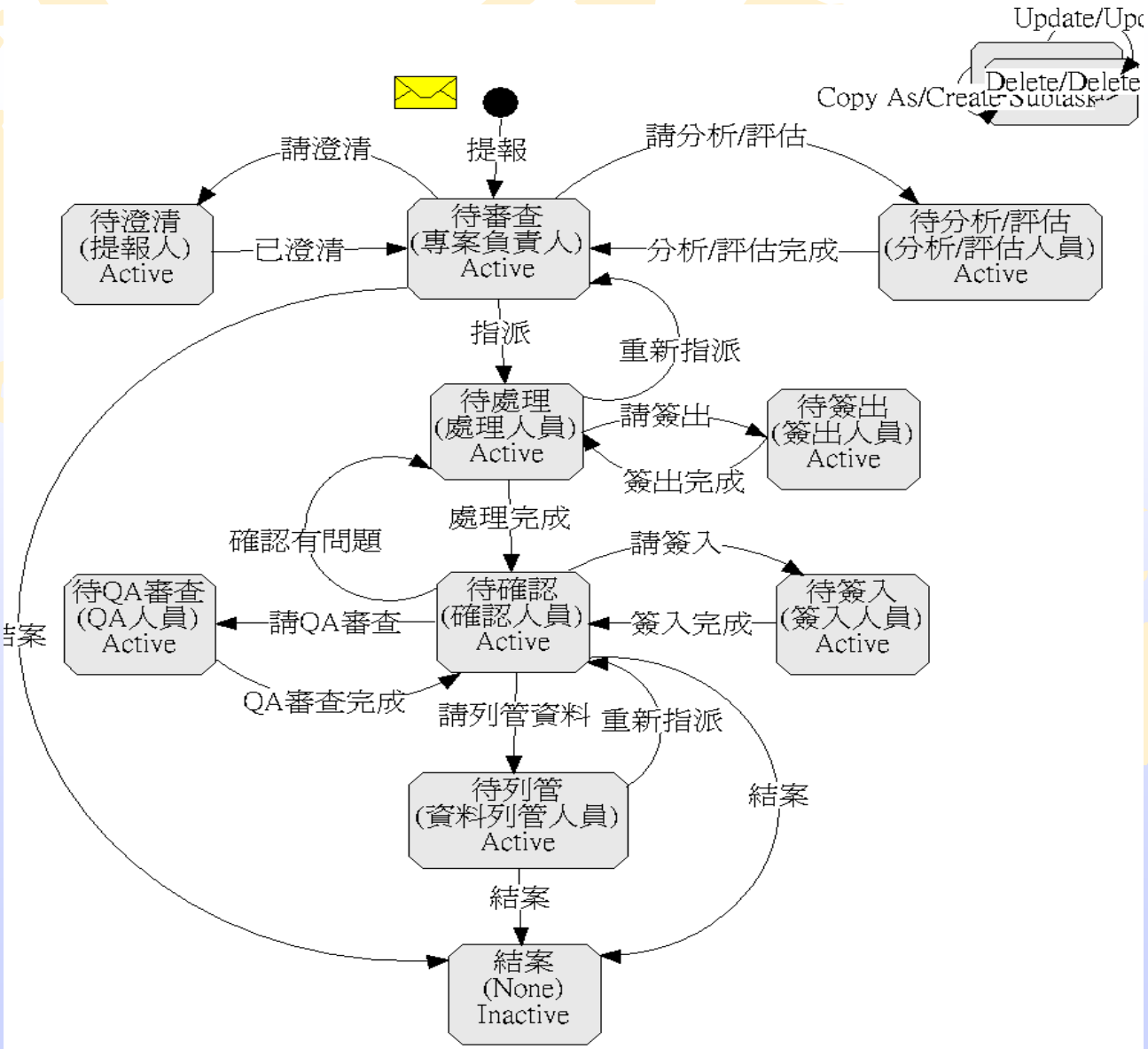
Serena Library Sample



The flow design for TT



Personal Portal

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e-Form on TT

Work flow tracking

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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 clear identified in RFP or contract.**
  - **Acquirer can collect and analysis 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 “indentified 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 a organization.
- People resistance and resource issue are the 2 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".

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Thank You !

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