Multiple Simultaneous Appraisal Experience
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Ron Radice
Nina Modi
Jyoti Mohile
Sandeep Rekhi
Sudha Prakash
Topics

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- Tata Consultancy Services Ltd. (TCS)
- TCS Clients
- What is a Multiple Simultaneous Appraisal (MSA)?
- MSA at TCS
- Success Factors
- How Big Was The MSA?
- Planning Considerations
- Benefits
- Challenges Faced
- Considerations for Users of MSA
- Further Considerations SEI Might Take
Overview

• This presentation explains the concept of a Multiple Simultaneous Appraisal (MSA)

• It shares experiences of a large Multiple Simultaneous Appraisal, conducted in Tata Consultancy Services Ltd. (TCS), using CMMI-DEV and CMMI-SVC concurrently

• It further lists some considerations to be explored for Multiple Simultaneous Appraisals
Corporate Facts

- Established in 1968
- FY 2010 revenue of USD 6.34 billion
- Over 142 Offices in over 42 countries
- First and Largest
  - Software exporter in India
  - Software R&D centre in India

TCS Revenues in USD Millions

* All Figures as of March 31

TCS’ Quality Journey

- TCS wide ISO 9001:1994 certification
- 17 centers assessed at SW-CMM® Level 5
- 4 centers assessed at P-CMM® Level 4
- TCS wide ISO 9001:1994 certification

- TCS wide ISO 9001:2000 certification
- TCS wide BS7799, BS15000
- TCS wide TL9000, AS9100, IS13485, ISO 27001, ISO 20000

- TCS wide CMMI® v1.2 Level 5; ISO 14001
- TL9000, AS9100, IS13485, ISO 27001, ISO 20000
- TCS wide ISO 9001:2000, BS7799, BS15000

- TCS wide CMMI® and P-CMM® Level 5, JRD QV Award
- TCS wide ISO 9001:2000 certification
- 4 centers assessed at P-CMM® Level 4
- 17 centers assessed at SW-CMM® Level 5

- 2009
- 2010

- TCS wide CMMI DEV v1.2 Level 5
- TCS wide CMMI SVC v1.2 Level 5

- TCS wide Triple ISO Audit
TCS Current Engagements

Development and Services: Some key offerings

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What is a Multiple Simultaneous Appraisal

MSA is
- An appraisal conducted using more than one CMMI® constellation (DEV, SVC and ACQ)
- Carried out in the same appraisal period with one ATL

SEI requirements
- Appraisal to be completed within the 90 day Phase 2 constraint of SCAMPI\textsuperscript{SM} - MDD
- 2 or 3 separate SAS entries
- 2 or 3 separate Appraisal Plans
- 2 or 3 final reports to be submitted
Multiple Simultaneous Appraisals at TCS – Need

- TCS appraised enterprise-wide in 2007 against CMMI-DEV 1.2 and 3 year PARS recording was to end in 2010

- With the release of the CMMI-SVC model and with TCS having offerings in the development and service domain, it was appropriate to include both CMMI-DEV and CMMI-SVC for the re-appraisal in 2010

- Separate appraisals against the two constellations, done serially would have a large impact on the organization, hence the need for MSA

MSA conducted for TCS, Enterprise wide, using multiple CMMI® constellations – CMMI-DEV and CMMI-SVC during the same appraisal period
Multiple Simultaneous Appraisals at TCS - Approach

- A seamlessly integrated appraisal approach, ensuring full compliance to SCAMPI\textsuperscript{SM} v 1.2 method, keeping the identity of CMMI-DEV and CMMI-SVC constellations separate through the MSA, without compromising the purpose of two individual appraisals, in any way.

- MSA conducted by a trained, qualified and experienced team comprising of the appraisal team lead and twenty four appraisal team members.

- Two SAS entries filed for CMMI-DEV and CMMI-SVC separately, clearly showing parameters, findings and ratings.

- Combined appraisal report with findings and ratings for SVC PAs, DEV PAs, and core PAs shown separately (tailoring done after obtaining SEI approval).
Success Factors for this MSA

- Detailed and thorough integrated planning ensuring that SEI requirements for the MSA were adhered to
- Selection of appraisal team members and extra training to ensure appropriate and effective handling of both constellation requirements
- Experience of the lead appraiser and the appraisal team members
- PMO support for the entire duration of the appraisal
- Separate sampling of projects in each constellation and adequate coverage of critical factors for the two constellations
- Took advantage of synergies between the two constellations – CMMI-DEV and CMMI-SVC; e.g. the Core PAs, architecture of constellations
- High quality technical infrastructure availability - use of videocons for coverage, so as to save time of ATM travel
- Multi site draft and final presentations using multiple stream interactive video conferencing
- Use of interpreters for overcoming language barriers
- Robust, in-house developed, automated PA Workbook Tool
Scope of Appraisal - Size of the OU

- Organizational Unit (OU) included 4,983 projects and over 98,000 people across the 2 constellations

Projects

- CMMI-DEV: 2,212 projects
- CMMI-SVC: 2,572 projects
- Both constellations: 199 projects

People

- CMMI-DEV: 37,339 people
- CMMI-SVC: 54,292 people
- Both constellations: 6,743 people

Projects for which both constellations are applicable
Scope of Appraisal - Demographics

**CMMI-DEV**

**OU Scope**
- 2,411 projects
- 47,475 people

**Critical Factors**
- Project Types: 9
- Delivery Units: 32
- Peak size types: 3
- Methodologies: 11

**CMMI-SVC**

**OU Scope**
- 2,771 projects
- 64,428 people

**Critical Factors**
- Service Types: 5
- Delivery Units: 33
- Peak size types: 3
- Methodologies: 9
Scope of Appraisal - Sampling

- Sampling done using 95% CL and 10% CI with strict random selection across the full set of OU projects was applied resulting in 96 projects selected.

CMMI-DEV

Sample
- 5 Focus projects
- 39 Non-focus projects
- 3.41% associate population covered through focus & non-focus projects and support functions
- 58.3% associate population covered through account relationships represented by focus and non-focus projects and support functions

CMMI-SVC

Sample
- 7 Focus projects
- 45 Non-focus projects
- 3.26% associate population covered through focus & non-focus projects and support functions
- 29.7% associate population covered through account relationships represented by focus and non-focus projects and support functions
Scope of Appraisal – OU Coverage

CMMI-DEV

Critical Factor Coverage
- Project Types - 100%
- Delivery Units - 87.5%
- Peak size types - 100%
- Methodologies - 100%

CMMI-SVC

Critical Factor Coverage
- Service Types - 100%
- Delivery Units - 97%
- Peak size types - 100%
- Methodologies - 100%
Planning Considerations – Team

- 1 Team Lead and 24 Team Members
- 3 mini teams to address all PAs across the two constellations
- Collective full team consensus
Planning Considerations – Team Experience

- Long experienced HMTL from outside TCS
- ATMs with previous SCAMPI\textsuperscript{SM} A experience

Avg. industry experience of ATMs - 14 yrs
Avg. management experience of ATMs – 11 yrs
PAs distributed to ATMs, based on knowledge and experience
Planning Considerations – Schedule

ATM Training
8\textsuperscript{th} – 10\textsuperscript{th} April’10

PIID Preparation
28\textsuperscript{th} July’10 – 20\textsuperscript{th} Aug’10

Document Review
10\textsuperscript{th} Sept’10 – 19\textsuperscript{th} Sept’10

Interviews
13\textsuperscript{th} Sept’10 - 16\textsuperscript{th} Oct’10

Consensus & Report Preparation
16\textsuperscript{th} Oct’10 – 8\textsuperscript{th} Dec’10
Appraisal Statistics

Document Review
Onsite

3360 person hours
9020 person hours

CMMI-DEV
- Process Areas: 22
- Practices: 437
- Instantiations: 4829
- Documentary Evidences: 9587
- Affirmation Coverage: 95%

CMMI-SVC
- Process Areas: 24
- Practices: 470
- Instantiations: 7213
- Documentary Evidences: 14302
- Affirmation Coverage: 94%
Benefits from MSA

- Effort and cost savings on account of
  - Planning
  - Training
  - Tool development
- Reduction in overall cycle time as compared to conducting separate and serial appraisals
- Minimum impact of appraisal on the organization, as compared to separate appraisals
- Uniform verification across the organization for the two constellations
- Common interviews for groups supporting both the constellations
- Improved appraisal productivity
- A single event
- Pilot experience filed with SEI

TCS appraised at **Optimizing Level 5** for CMMI-DEV and CMMI-SVC
Challenges Faced and How They Were Overcome

- Required a large team to handle PAs of both constellations
  - Experienced LA long versed in both models
  - Optimal distribution of DEV and SVC PAs across ATMs
- Needed to handle large volume of data across 2 constellations
  - PAWB tool enhanced to handle huge data volumes
- Some entities required to be covered for both DEV and SVC; e.g., support groups like Process Excellence, Training, Infrastructure Support
  - Common interview sessions for such entities
- Initially required to prepare and present 2 reports for DEV and SVC
  - Joint report prepared with tags to differentiate findings for each constellation
- Organization had a huge size and geographic spread
  - PMO and location contacts set up for the entire duration
  - Videocons used for remote locations
- Required availability of a strong infrastructure – videocons
  - Infrastructure for multiple site videocons and backup facility
  - Extensive videocon testing with 31 sites
- Needed to address language barriers in some GDCs
  - Interpreters used as appropriate
Considerations To Be Explored

- MSA worked in TCS, a large organization. Will it work in small organizations?
  - We believe “YES” but the key to success is a well defined and managed plan with much more deliberation than in a one constellation appraisal
- What impact must be addressed when including three constellations?
  - Or four, as PCMM is permitted with SCAMPI v1.3.
- What additional requirements should SEI have of ATLs who lead an MSA?
- What additional common risks should be considered?
- Using MSA when maturity levels differ across constellations
- Using SCAMPI v1.3 with MSA
Further Considerations for SEI

Possibility of:

- Combined interview sessions for projects, for the common PAs
- Single Appraisal Plan for multiple constellations
- Single SAS entry as an MSA
- Common practice characterization across all constellations
- Combining validation sessions
- Going beyond the 90 day Phase 2 duration, as it is more than 1 appraisal
- Refined statement on what should be in a common Final Report, for consistency across ATLs
  - Format
  - Tagging of differences in constellation findings
  - Additional content due to a MSA versus single constellation reports
Acknowledgements

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Contact Information

Software Technology Transition
Ron Radice
SEI ID# 0100095-00

Tata Consultancy Services Ltd.
Nina Modi
Jyoti Mohile
Sandeep Rekhi
Sudha Prakash

www.stt.com
rradice@stt.com

www.tcs.com
nina.modi@tcs.com
jyoti.mohile@tcs.com
sandeep.rekhi@tcs.com
sudha.prakash@tcs.com
Thank You
Questions?
Example Tagging in Measurement and Analysis PA

Strengths:
- TCS has identified Certainty Metrics in line with its Experience Certainty objective from its repository of metrics such as On Time Delivery, Defect Free Delivery, SLA Compliance, Bad Fix, Customer Budget Variance [DEV & SVC]

- Additional metrics beyond Metrics Program which are aligned to either customers’ or units’ strategic objectives as per Balance Score Card (BSC) are identified, measured and tracked at IOU and project level such as:
  - Velocity and Burn-down charts for Agile methodology based projects [DEV]

- Significant investment made in digitizing processes, automating data capturing, analyzing and generating dashboards, thereby increasing the data integrity and slice and dice capabilities. E.g.
  - C Matrix integrated with Business Object with maker-checker concept, SLA tracker in couple of IOUs [SVC]

[DEV & SVC]
[DEV]
[SVC]