

## **NDIA CMMI Technology conference**

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# **How to Incorporate “Lessons Learned” for Sustained Process Improvements**

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# Presentation Agenda

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- Introduction
  - “Lessons Learned” ... or were they?
- Issues involved
- Current state of practice
- Opportunities for improvement
- Recommendation – “A Five-Step Approach”
- Conclusion
- Final thoughts



## “Lessons Learned” ... or were they? - 1

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Our experiences, whether “good” or “not so good” teach us important lessons

- Individually, do we really learn from these lessons?
- Even if we learn some of the lessons, do we always share our key learnings with others?
- Even if we share our key lessons with our team members, are they shared with larger entities (projects/organizations)?
- Even if some of these lessons are shared at larger levels, do most of the projects/organizations really learn from and apply them?

Not always!

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## “Lessons Learned” ... or were they? - 2

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Ideally, if we really learned lessons from various project experiences, then...

- One project's mistakes will usually not be repeated on another project
- Process improvement will be a trivial exercise
- Projects will usually be on time, within budget, and deliver high quality products
- Customer and user satisfaction will be higher
- Organization will function more effectively

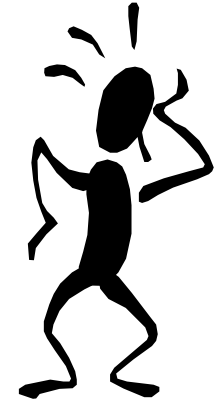


## “Lessons Learned” ... or were they? - 3

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We often hear:

- ❑ “Didn’t we have the same problem earlier?”
- ❑ “I know Joe had encountered this problem on his project!”
- ❑ “I thought project XYZ had solved this problem long ago!”
- ❑ “I really wish we had learned our lesson from their experience!”





I haven't got time to share my knowledge/experience

I could have told them it would/wouldn't work - I have tried it

I'll be damned if I am going to change after all this time.

I'd like to share what I know but no one will listen

I'm not interested in hearing about mistakes - I want to know about successes

The problem is other people!

I'll be damned if I am gonna let the world know I made a mistake!

Yes! But my project is different.

I know what's best for me!

It's safer to follow procedures rather than experiment.

There's nothing I can learn from them.

I don't know how to do this but if I ask it'll make me look stupid

I'll send them on a course and then they'll know how to do it

I haven't time to learn, I have a deadline to meet!

I wish I could talk to someone who has done this before

If I tell them what I know, what's to stop them getting rid of me?

## Reality is ...

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- ❑ We often reflect on our individual experiences and apply the lessons learned into our own work
- ❑ Some cohesive teams share and incorporate project experiences in their future work
- ❑ Some organizations facilitate cross-learning through proper organization structure, open culture, and good tools/technology



**But these are exceptions!**

## Challenges are ...

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- ❑ Today's corporate environment poses several challenges
- ❑ Project teams are:
  - Multi-functional
  - Constantly evolving to meet business and resource constraints
  - Matrix structured
  - Culturally diverse
  - Geographically distributed





## The Result is ...

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- ❑ Today's corporate culture is not very conducive for effective communication and cross-team learning
- ❑ In spite of organizations' intentions to integrate, several cross-team learning opportunities are missed
- ❑ Organizations pay a steep price for repeating similar mistakes and missed opportunities



**Lessons are learned, but after missing the boat a few times**

## The Issue is ...

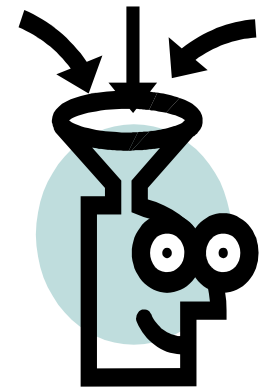
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In today's competitive environment, organizations cannot afford missed opportunities and repeated mistakes

## The Resolution is ...

Organizations must:

- ❑ Constantly and quickly leverage from each other's experiences
- ❑ Provide organizational, cultural, and technological infrastructure to facilitate cross-team learning
- ❑ Enforce the process discipline



***The next best thing to learning from your own lessons is to learn from other's lessons – Gains without much pain!***

## Current Practices

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Some projects:

- ❑ Perform end-of-phase and/or end-of-project retrospective and collect observations/lessons learned
- ❑ Store lessons learned in a searchable database or even in a sophisticated knowledge repository
- ❑ Encourage people to use lessons learned
- ❑ Periodically review the collected lessons learned and make process improvements for persistent problems

## Problems with the Current Practices

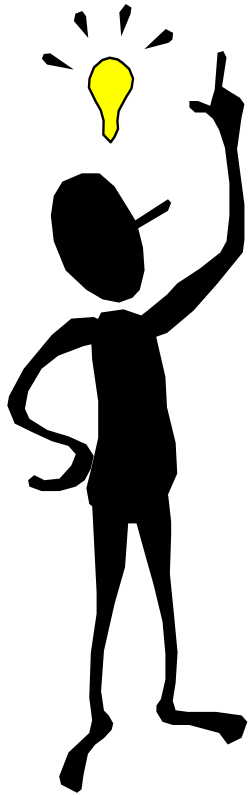
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Significant variability in practice causes inconsistent results:

- ❑ Not all projects conduct end-of-phase and/or end-of-project retrospective and collect lessons learned
  - ❑ Collected lessons learned lack appropriate categorization, context, problem statement and/or solution
  - ❑ Repositories lack easy access, good navigation, and/or sophisticated search & retrieve capability
  - ❑ Overtime, the repositories grows to be big, resulting in stale information, slow searches, and even irrelevant results
  - ❑ Retrieving relevant information is too time consuming and thus people use the practices they are accustomed to
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The Answer is ...

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*“Good ideas are not adopted automatically – they must be driven into practice with courageous patience”* - Admiral Hyman Rickover

## Guidance from CMMI

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Organizational Process Focus (OPF) Level 3 Process Area –  
Practice SP 2.4 : Incorporate process-related  
experiences into organizational process assets:

- Conduct a periodic review of the effectiveness and suitability of the organizational process assets
  - Obtain feedback about their use
  - Derive lessons learned
  - Make lessons learned available
  - Appraise the process, methods, and tools in use and make improvement recommendations
  - Manage process improvement proposals
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## Recommendation: Five-Step Approach

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Systematically apply the following five-step approach to capture and translate key lessons learned into improved practices for sustained process improvements:

- ❑ Step 1: Capture lessons
- ❑ Step 2: Catalog and save lessons
- ❑ Step 3: Communicate and apply lessons
- ❑ Step 4: Incorporate lessons into process assets
- ❑ Step 5: Rollout and institutionalize enriched processes



## Step 1: Capture Lessons

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Capture lessons from the following three major sources:

- ❑ After every major work product inspection, isolate the systemic problems and note key issues/observations
- ❑ Project functional teams must conduct a periodic or end-of-phase retrospective to identify key issues
- ❑ For all operational high severity/impact problems, perform root cause analysis and isolate key issues



*Derive “Lessons” - extrapolated knowledge in terms of Do’s and Don’ts from these issues/observations*

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## Step 1: Capture Lessons (cont.)

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- ❑ Reflect and capture lessons in terms of both - what particularly worked well and what did not
- ❑ For each lesson, record:
  - Project name
  - Project size
  - Project type
  - Project phase
  - Project environment
  - Functional discipline
  - Issue / problem
  - Resolution / Solution
  - Context and key words
  - Scenario, if applicable



## Step 2: Catalog and Save Lessons

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- ❑ Create a single learning/knowledge repository to catalog and save collected lessons
- ❑ Perform a sanity check on collected information
- ❑ Repository should be
  - Searchable by key project attributes such as name, type, size, phase, functional area, and key words
  - Easily accessible, web-based, and secure



## Step 2: Catalog and Save Lessons (cont.)

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Having a single repository for the organization has several benefits:

- ❑ Quickly and easily identifies pattern of similar problems
- ❑ Easier for practitioners to look and search one common repository as opposed to searching three different ones
- ❑ Easier to update and maintain
- ❑ Better utilization of resources

## Step 3: Communicate and Apply Lessons

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- ❑ Disseminate all the recently submitted lessons periodically to project teams (relevant to each functional group)
  - E-mail notifications
  - Organizational meetings
  - Organizational newsletter
  
- ❑ Seek opportunities to apply lessons
  - A successful pilot of a lesson would validate it and pave the way for incorporating it in the process



## Step 3: Communicate and Apply Lessons (cont.)

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### Benefits:

- ❑ Brings information to practitioners
- ❑ Increases the chance of someone in a project team to apply a relevant lesson
- ❑ Encourages everyone to submit to and retrieve lessons from the knowledge pool
- ❑ Allows for informal scrutiny of lessons from peers
- ❑ Permits further improvisations and innovations of lessons

## Step 4: Incorporate Lessons into Process

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- ❑ Identify lessons that can be incorporated into the process:
  - Exhibit a pattern of belonging to a similar problem or solution
  - Have been successfully piloted in another project
  - Have relatively lower process overhead or lesser risk in changing the process
  
- ❑ Improve the process by incorporating the lessons



## Step 4: Incorporate Lessons into Process (cont.)

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Improving the process may mean one or more of the following:

- Enhancing planning templates
  - Enhancing checklists
  - Introducing additional process activities/steps
  - Making steps optional or mandatory
  - Changing sequence of certain activities
  - Suggesting use of new tools/technologies
  - Introducing additional inspections or reviews
  - Changing focus of certain activities
  - Improving tailoring criteria and/or choices
  - Collecting additional measurements
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## Step 5: Rollout and Institutionalize Process

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- ❑ Announce and release enhanced processes periodically in various modes, especially highlighting changes in processes:
  - Organizational meetings
  - Organizational newsletter
  - Process release communiqué
- ❑ Provide training and/or FAQs for updated processes, as needed
- ❑ Maintain knowledge repository:
  - Archive lessons already incorporated in the process assets
  - Keep the repository accurate, concise, and current





## Conclusion

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- ❑ Each organization has an enormous cumulative intellectual capital of experience:
  - In people's minds
  - In organizational repositories
- ❑ These pools of knowledge are not properly utilized for continuous process improvement
- ❑ A systematic five-step approach of collecting and translating key lessons into practices would yield sustained and continuous process improvement:
  - Capture lessons from various activities
  - Catalog and save lessons in a structured knowledge repository
  - Communicate and apply lessons
  - Incorporate lessons into process
  - Rollout and institutionalize enhanced lessons

## In closing ...

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*Continuous process improvement is everyone's responsibility*

*Truly improving business performance demands more than simply putting more knowledge into organizational repositories*

*Lessons are really not learned until relevant process assets have been improved and the process has been institutionalized.*

Thank You!

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Comments



Random  
Thoughts

# Contact Information

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