KETUA PENGARAH KERJA RAYA

DIRECTOR-GENERAL OF PUBLIC WORKS

Rujukan : JKR.KPKR:121.010/05 Jld. 14 (3)
Tarikh : 25 Julai 2018

Semua Pengarah Kanan/Pengarah Cawangan Ibu Pejabat JKR
Semua Pengarah Kerja Raya Negeri
Semua Pengarah Kerja Raya Wilayah Persekutuan
Semua Pengarah/Pengurus Pembinaan
Pengarah JKR Unit Khas
Pengarah JKR KESEDAR
Semua Jurutera Daerah

SURAT ARAHAN KPKR BIL. 17/2018

ARAHAN PENGGUNAAN *PROJECT LESSONS LEARNED: JKR PRACTICAL GUIDE*

1.0 TUJUAN

Surat Arahan ini bertujuan untuk mengarahkan pemakaian *Project Lessons Learned: JKR Practical Guide* bagi pengurusan pembelajaran projek Jabatan Kerja Raya.

2.0 LATAR BELAKANG

2.1 Pembelajaran projek merupakan salah satu komponen penting dalam mencapai kecemerlangan penyampaian projek. Dengan itu, dokumentasi *Project Lessons Learned* (PLL) telah dijadikan sebagai Petunjuk Prestasi Utama (KPI) Pengarah Cawangan dan JKR Negeri yang mengendalikan projek.

2.2 *Project Lessons Learned: JKR Practical Guide* telah dibentang dan diluluskan dalam Mesyuarat Jawatankuasa Pemandu Pengurusan (JPP) Bil. 10/2017 bertarikh 27 Oktober 2017.

2.3 Pihak pengurusan atasan mengambil berat mengenai jurang pengetahuan yang wujud dan terdapat risiko kehilangan pengetahuan apabila berlaku pertukaran pegawai, lebih-lebih lagi apabila pegawai berpengalaman bersara.

2.4 Dengan itu, pengurusan pembelajaran projek yang efektif perlu diwujudkan untuk memastikan pengalaman projek dan amalan terbaik dapat dikongsikan supaya kualiti penyampaian projek dapat dipertingkatkan.

3.0 GARIS PANDUAN

3.1 *Project Lessons Learned: JKR Practical Guide* bertujuan untuk memberi panduan dalam menguruskan pembelajaran projek antaranya:

a) Metodologi dan teknik mengenal pasti PLL.

b) Proses yang terlibat bermula daripada mengenal pasti sehingga mengaplikasikan PLL.

c) Peranan dan tanggungjawab pihak yang terlibat dalam menguruskan PLL.

d) Panduan dokumentasi PLL.

3.2 Pemakaian garis panduan ini akan dapat menguruskan pembelajaran projek dengan lebih berstruktur dan berkesan serta memastikan penambahbaikan yang berterusan dalam pelaksanaan projek.

4.0 ARAHAN PENGGUNAAN

4.1 Dokumen ini hendaklah diguna pakai oleh semua pejabat JKR Malaysia dalam menguruskan pembelajaran projek.

4.2 *Project Lessons Learned: JKR Practical Guide* boleh diakses menerusi laman sesawang Portal JPedia di http://jpedia.jkr.gov.my/index.php/ PLL_ wiki.

4.3 Semua Pengarah Cawangan dan JKR Negeri yang terlibat hendaklah mengemukakan laporan PLL kepada Unit Enterprise Content & Knowledge Management, Cawangan Perancangan Aset Bersepadu (CPAB), Ibu Pejabat JKR Malaysia Kuala Lumpur sebelum hujung setiap tahun.

4.4 Pemantauan dan pelaporan akan dibuat oleh CPAB pada setiap suku tahun.

4.5 Sebarang pertanyaan berhubung *Project Lessons Learned: JKR Practical Guide* dan penyediaan dokumen PLL boleh dibuat melalui emel kepada cpab.jkr@1govuc.gov.my, Unit Enterprise Content & Knowledge Management, Cawangan Perancangan Aset Bersepadu, Ibu Pejabat JKR Malaysia Kuala Lumpur.

5.0 KUAT KUASA

Surat Arahan ini berkuat kuasa pada tarikh ia ditandatangani dan akan disemak sekiranya terdapat arahan dasar terkini atau perkembangan baru yang memerlukannya dikaji semula dan dikemas kini.

Sekian, terima kasih.

'BERKHIDMAT UNTUK NEGARA'

(DATO' SRI Ir. Dr. ROSLAN BIN MD TAHA)

s.k.

- Timbalan Ketua Pengarah Kerja Raya (Sektor Infra)
- Timbalan Ketua Pengarah Kerja Raya (Sektor Bangunan)
- Timbalan Ketua Pengarah Kerja Raya (Sektor Pakar)
- Pengarah Cawangan Dasar dan Pengurusan Korporat

Project Lessons Learned: JKR Practical Guide

*S*pecial *T*hanks

We wish to thank the following groups who have directly or indirectly contributed to the development of this JKR Project Lessons Learned Practical Guide –
- JKR Knowledge Managers
- Central Portfolio Office staff
- Heads of Project Office in Headquarters and JKR States
- Members of Project Team, Design Team and Supervision Team

Your valuable input in the series of workshops to produce this Guide is highly appreciated.

Preface

The JKR Project Lessons Learned (PLL) Practical Guide aims to provide an understanding of PLL and introduce an integrated approach of capturing project learnings, hence, establishing a uniform practice of among all project teams.

Capturing Project Lessons Learned is a key component of Knowledge Management. JKR has embarked its Knowledge Management (KM) journey since 2008 and since then, has successfully developed and implemented a number of KM initiatives to facilitate sharing of knowledge among the staff and making knowledge more easily accessible. These include a central knowledge repository, *JPedia,* an online discussion forum, *JCoP,* e-Learning, cultivating Communities of Practice, JKR Expert Directory, and the introduction of effective knowledge sharing tools and techniques.
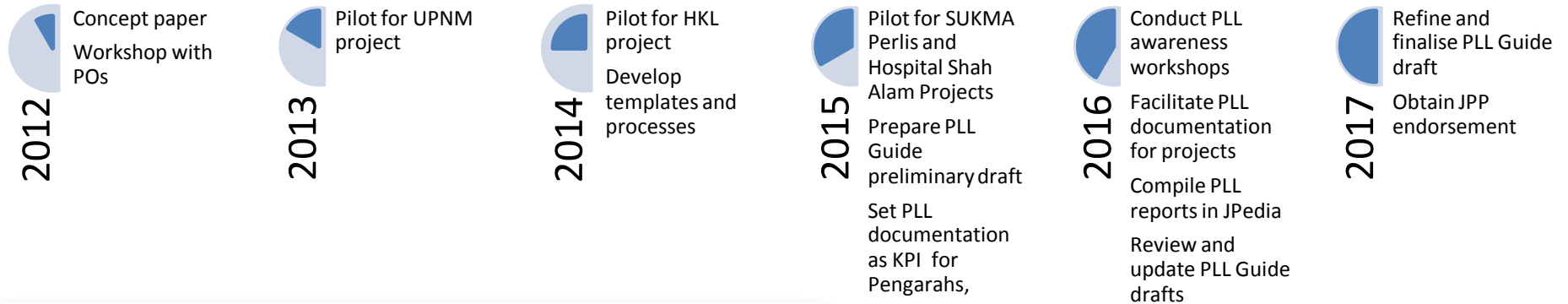
Recognising the need to reduce knowledge gaps and risks of losing *ex*periential knowledge due to retiring baby boomers, capturing and documenting project lessons learned (PLL) has now been made a KPI of all Branch and State Directors as specified in the JKR Strategic Framework.

The rolling out of this new KM initiative is very timely as the ISO 9001:2015 standards which we will be adopting soon, has added a clause on Organisational Knowledge and requires organisations to put in place mechanisms for capturing and sharing lessons learned.

As our project management function becomes more matured, it is hoped that the lessons learned captured will be internalised and applied to help increase the success of future projects.

> For further clarification or assistance, please email to -
> Sr Roznita Othman, CQS (roznita@jkr.gov.my)
> Sr. Dr. Khairil Hizar Md. Khuzaimah, PQS (hizar@jkr.gov.my)

Background of Project Lessons Learned initiatives in JKR

2012
- Concept paper
- Workshop with POs

2013
- Pilot for UPNM project

2014
- Pilot for HKL project
- Develop templates and processes

2015
- Pilot for SUKMA Perlis and Hospital Shah Alam Projects
- Prepare PLL Guide preliminary draft
- Set PLL documentation as KPI for Pengarahs,

2016
- Conduct PLL awareness workshops
- Facilitate PLL documentation for projects
- Compile PLL reports in JPedia
- Review and update PLL Guide drafts

2017
- Refine and finalise PLL Guide draft
- Obtain JPP endorsement

1. KPI

2. Awareness Workshops

3. PLL Workshops

4. PLL Guide

5. PLL Compilation

1

i. What are Project Lessons Learned (PLL)?

"A project lessons learned is the learning gained from the process of performing the project" – PMI PMBOK

Capturing lessons learned is a good work practice that can help avoid recurrence of bad experience or mistakes and also promote repeat successes in future projects.

The primary aim of learning from experience is to achieve continuous improvements in project performance. Hence, the management must provide a **'safety net'** or create an environment that condone blame games. Open mindedness and desire to learn need to be inculcated.

A lesson is only considered as learnt if it is accompanied by an action and lead to a positive change in personal or organisational behaviour This is the desired learning outcome.

Common excuses why Lessons Learned are not captured, or if they are captured, but not used:

❏ Not sure what they are

❏ No knowledge or lack of clear directives on who and how to capture lessons

❏ Lack of time and resources

❏ Lack of management support

❏ Not knowing where to store or search for lessons learned

❏ Fear of getting blamed or feeling ashamed if mistakes are exposed

❏ Fear that auditors pick up wrong doings

ii. Where can PLL be derived from?

Anyone who knows about an experience, activity, event or good work practice that is of value to others can originate a lesson learned.

Learning from incidents
- After Action reviews
- After an event/post mortem
- Post Implementation review

Knowledge sharing activities
- Individual experience
- Observation

External Reviews
- Audits

Examples of Sources of PLL

- ✓ Gerbang Nilai Review reports
- ✓ Risk Management Reviews
- ✓ Value Management (VA, VE, VR) reports
- ✓ Non compliance reports
- ✓ Audit reports (project audits, road safety audits, internal quality audits, external audits, etc)
- ✓ Energy Efficiency Reports
- ✓ Corrective Action Reports
- ✓ Environment, Safety and Health Reports
- ✓ Tender documentation Reviews
- ✓ Project Planning Reviews
- ✓ Minutes of meeting (technical meeting, coordination meetings, site meetings, VO and Claims Committee meetings)

"A man who never made a mistake, never made anything"
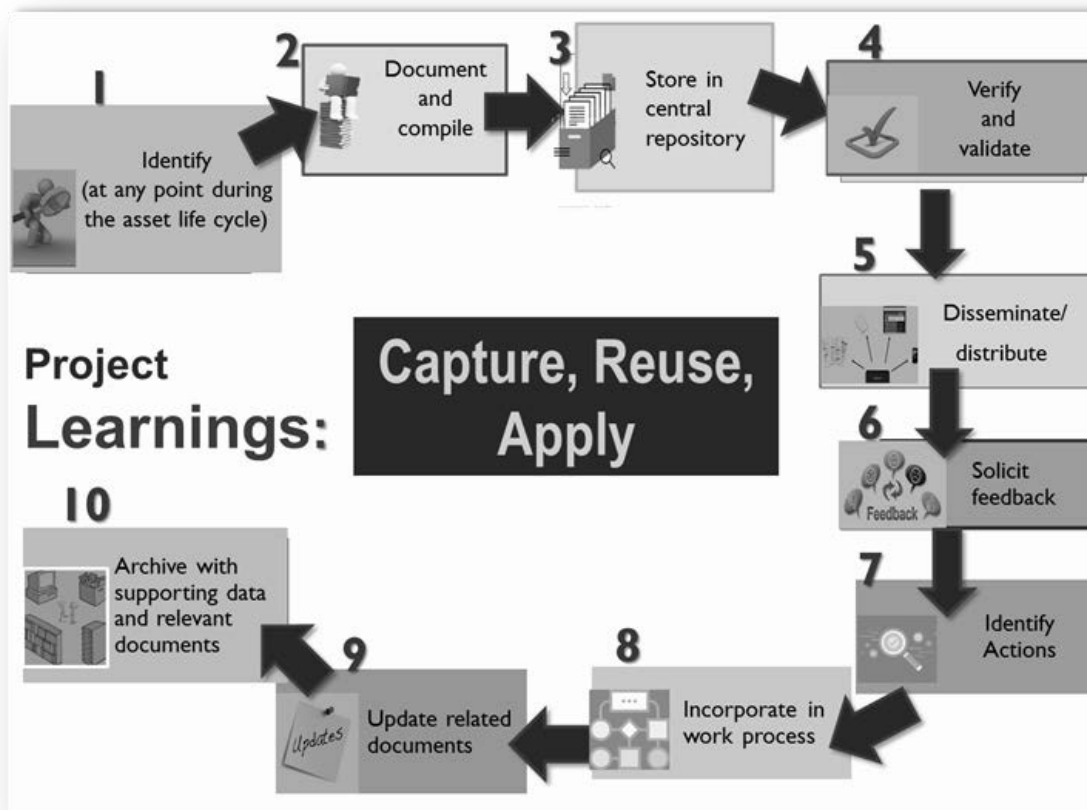**- Mark Twain**

image from http://bit.ly/1jxnRnj

Rules when making a mistake:

- Admit it
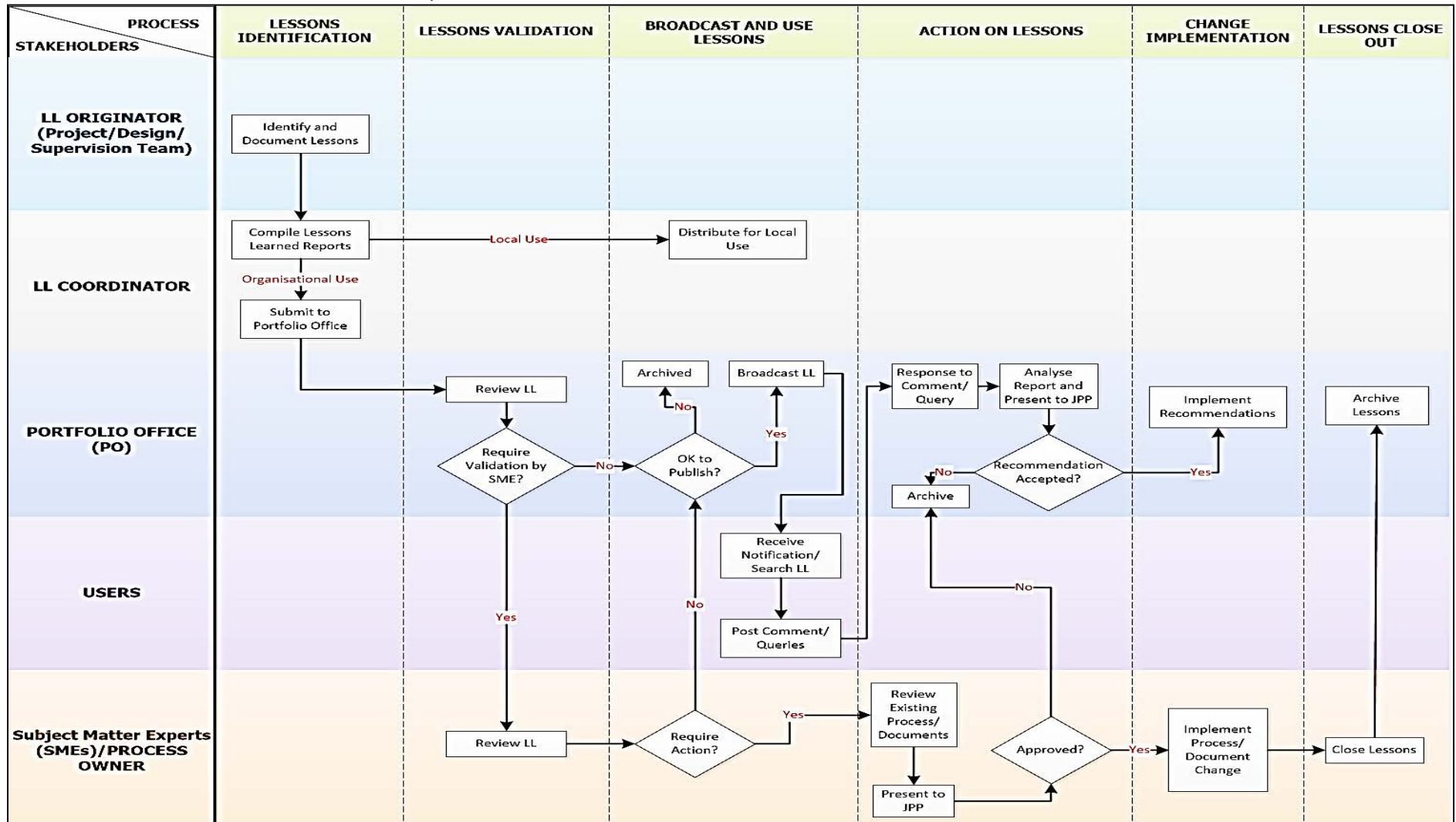- Learn from it
- Never do it again

2

i. What are PLL Activities?

> " A Lesson Learned process implements a strategy to collect, verify, store, disseminate, and reuse lessons to continually support an organization's goals "

1. Lessons should be identified at any point of the asset/project life cycle, or at the end of a project phase or milestone and not wait until the end of the project. Capture lessons learned together as a team.

2. Lessons learned must be reused and applied by others and not just sit in the repository.

3. Before lessons learned are disseminated, they need to be verified and validated to ensure that they are real lessons and not one person's opinion.

4. To ensure lessons are applied across the department, they must be incorporated in work processes by updating related procedures or reviewing existing processes.

5. After changes in process or document are implemented, the lessons are considered closed and should be purged out from the repository. However, they should be archived for future reference.

ii. The PLL Process Map

PROCESS STAKEHOLDERS	LESSONS IDENTIFICATION	LESSONS VALIDATION	BROADCAST AND USE LESSONS	ACTION ON LESSONS	CHANGE IMPLEMENTATION	LESSONS CLOSE OUT
LL ORIGINATOR (Project/Design/ Supervision Team)	Identify and Document Lessons					
LL COORDINATOR	Compile Lessons Learned Reports → Local Use → Distribute for Local Use; Organisational Use → Submit to Portfolio Office					
PORTFOLIO OFFICE (PO)		Review LL → Require Validation by SME? (No)	Archived ← No — OK to Publish?; Broadcast LL → Yes → OK to Publish?; Receive Notification/Search LL	Response to Comment/Query → Analyse Report and Present to JPP → Recommendation Accepted? (No→Archive; Yes→Implement Recommendations)	Implement Recommendations	Archive Lessons
USERS		(Yes)	Post Comment/Queries			
Subject Matter Experts (SMEs)/PROCESS OWNER		Review LL	Require Action? (Yes)	Review Existing Process/Documents; Present to JPP; Approved? (Yes→Implement Process/Document Change)	Implement Process/Document Change	Close Lessons

JPP: JK Pemandu Pengurusan (Management Steering Committee)

3

i. Who are involved and what are their responsibilities?

Project Team
- Identify and capture PLL

Project Office at Branches and State Offices
- Facilitate and coordinate preparation of PLL

Portfolio Office (CPAB)
- Verify with SME
- Approve PLL
- Upload PLL to JPedia
- Analyse PLL
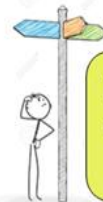- Escalate critical issues to top management for decision if necessary

SME
- Verify PLL
- Review existing procedures/processes and recommend improvements if necessary
- Refer to process owners for decision

Users
- Give feedback
- Send queries

Process Owners
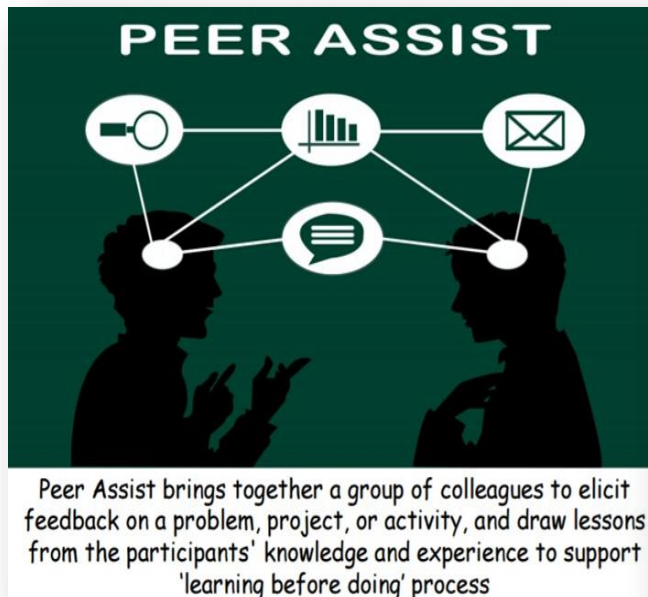- Decide whether existing documents need to be revised

ii. Detailed Roles and Responsibilities

Pengarah	❑ Identifies projects ❑ Initiates PLL
Project team (including Design/ Supervision Team)	❑ Identify and compile PLL using the following techniques: ❑ Capture and document PLL
PLL Coordinator (Project Office at Branches and States)	❑ Facilitates PLL workshops/meetings ❑ Coordinates the development of PLL ❑ Follow up on actions to derive and develop PLL ❑ Submits PLL Reports to PO
ECKM Office	❑ Develop PLL processes, governance, guidelines, templates ❑ Conduct training and facilitation of PLL ❑ Assist uploading of PLL documents to repository ❑ Reports on PLL KPI achievement
Portfolio Office (PO)	❑ Review and approve PLL to be shared and published ❑ Coordinate with the appropriate SMEs for reviewing and validating PLL ❑ Reports to the JK Pemandu Pengurusan (JPP) on issues that need attention/decision ❑ Monitor the application/usage of PLL ❑ Analyse PLL and recommend appropriate actions
Subject Matter Experts (SMEs)/Process Owners	❑ Review PLL to ensure its validity, accuracy and currency as and when needed ❑ Recommend incorporation of PLL into appropriate activities, best practices, improvement initiatives, etc. ❑ Recommend updates to related documents and obtain approval from Process Owners
Users	❑ Use PLL ❑ Post Comments/Queries

4

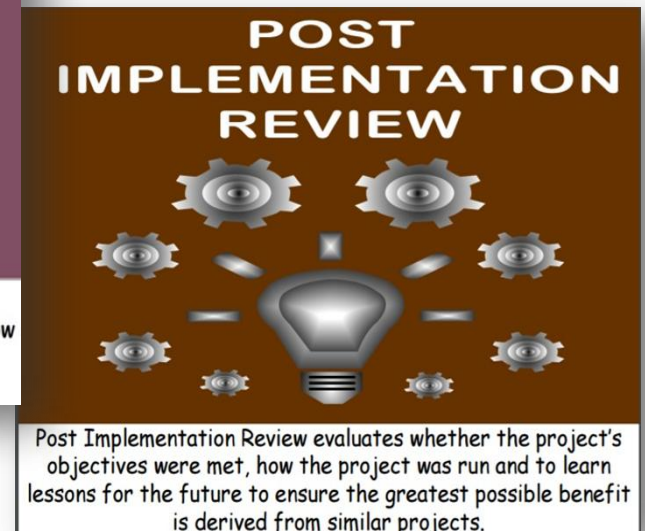## i. Approach of "Learning Before, During and After" to identify Lessons

1. Learn Before

PEER ASSIST

Peer Assist brings together a group of colleagues to elicit feedback on a problem, project, or activity, and draw lessons from the participants' knowledge and experience to support 'learning before doing' process

2. Learn During

AFTER ACTION REVIEW

After Action Review is a structured review or de-brief process for analysing what happened, why it happened and how it can be done better, by the participants and those responsible for the project or event.

3. Learn After

POST IMPLEMENTATION REVIEW

Post Implementation Review evaluates whether the project's objectives were met, how the project was run and to learn lessons for the future to ensure the greatest possible benefit is derived from similar projects.

4

ii. Learning Before – Peer Assist

1. Peer Assist involves two teams- the host team i.e the project team, who need the knowledge and the visiting team, who have recent experience from similar projects and practical knowledge to share.

2. The host team presents the background of their project, the current status, their plans, risks and issues that they face.

3. The visitors talk through recent relevant experience to the host team, explaining their experience relating to the issues.

4. Through dialogues involving specialists, the visiting team gains a better understanding of the issues in the project. The host team questions the visitors about their experience and learning, and any insights they can bring to the project.

5. A formal conclusion and feedback session at the end of the Peer Assist summarises the outcome of the analysis, and present the results from the visiting team. The host team presents what they have learned from the visitors and what they are going to do about the issues.

Please refer to KM Toolbox's Peer Assist booklet

4

iii. Learning During - After Action Review

1. Participants are grouped according to the following project phases: Inception and Planning, Design, Procurement, Construction, Handing Over

2. Each group are asked to identify key events/incidences that have occurred during that project phase and provide the following input

   ✓ What was supposed to happen?

   ✓ What actually happened? Why did it happen?

   ✓ What are the consequences?

   ✓ What are the key lessons?

3. Participants then are asked to move from group to group to provide input based on their perspectives (sample 1)

4. The input gathered are cross checked with relevant documents and other sources

5. The participants go back to their own group and propose improvements or changes based on the lessons captured (see sample 2)

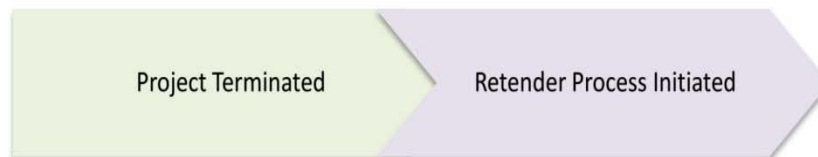** Please refer to KM Toolbox's After Action Review booklet*

Sample 1: After Action Review of Procurement phase

What actually happened?	The criteria should be maintained to ensure only tenders that meet the requirement are awarded the contract.
What is supposed to happened?	Evaluation criteria for the tender was reviewed when all the tenders could not fully comply with the requirements of the project.
What are the consequences?	▪ Selected contractor not sufficiently competent; ▪ Delays in project completion; and ▪ Rework and increased cost.
What are the key lessons?	1. Recall tender if none of the contractors meet the technical requirements stipulated. 2. Be stricter in terms of meeting technical criteria for future projects.

Sample 2: Recommendation of change in procedure based on project lessons learned

Key lessons learned	Review of retendering procedure
Issues	It appears that the retendering process was done in a haphazard and hurried manner without proper supervision and oversight. Consequently, many associated problems were faced, such as: ▪ Relevant drawings and documents not passed over to the project team that over the project; ▪ Room data information details was not available; ▪ List of Non Compliance Requests (NCR) that were not closed was not available; ▪ There was insufficient time for review of the project requirements before retendering; and ▪ The scope of work to be done was not well documented in the terminated project file.
Proposed Change	In the light of the problems that surfaced during the retendering of the project, it is proposed that the procedure for retendering be reviewed and where possible changed so that retendering process may be undertaken in a more coordinated and structured manner in future.

Present process

Project Terminated → Retender Process Initiated

Proposed process

Project Terminated → Face to face discussion with outgoing project team → Retender Process Initiated

4

iv. Learning After - Post Implementation Review

Method 1:   Analysis of key issues

1. Break up into groups according to their discipline or roles in the project

2. Each group is given a **Lessons Learned Questionnaire** listing important aspects of the project. They are asked to rate each item on a scale of -5 to +5, based on the given description. This is to establish the overall perception of the project team members on key aspects of the project.

3. The scores given to each item from all the groups are totaled up. Items with highest and lowest scores are key aspects having high positive and negative impact on the project respectively.

4. Select top 3 aspects with highest scores and 3 aspects with lowest scores,

5. Each group discuss on one or two aspects, analyse the root causes and their effects

6. Present suggestions on options that are available to resolve the related issues.

Scale	Description
-5	Disastrous
-4	Horrible
-3	Very Poor
-2	Quite Poor
-1	Can do with slight improvement
1	Reasonably Good
2	Good
3	Very Good
4	Excellent
5	Reasonably Good

Sample: Lessons Learned Questionnaire

Rate each of the statements below on a scale of -1 to -5, denoting a weakness and from +1 to +5 denoting a strength in the area being assessed based on the statements provided.- 1 to -5 denoting weakness in an increasing scale and +1 to +5 denoting strengths in an increasing scale

| No	Statement	-5	-4	-3	-2	-1	+1	+2	+3	+4	+5
1	Overall Planning of the Project / *Perancangan Projek Secara Keseluruhan*										
2	Overall Monitoring of the Project / *Pemantauan Projek Secara Keseluruhan*										
3	Overall Execution of the Project / *Perlaksanaan Projek Secara Keseluruhan*										
4	Information sharing among Project Team Members/*Perkongsian Matlumat (dalam)*										
5	Information sharing with external stakeholders/*Perkongsian Matlumat (luar)*										
6	Cooperation of the Main Contractors / *Kerjasama dengan Kontraktor*										
7	Support from Top Management / *Sokongan dari Pengurusan Atasan*										
8	Decision Making/ *Membuat Keputusan*										
9	Handling Changes / *Pengurusan Perubahan*										
10	Project Team Motivation/ *Motivasi Ahli Projek*										

Sample: Lessons Learned Questionnaire

Rate each of the statements below on a scale of -1 to -5, denoting a weakness and from +1 to +5 denoting a strength in the area being assessed based on the statements provided.- 1 to -5 denoting weakness in an increasing scale and +1 to +5 denoting strengths in an increasing scale

No	Statement	-5	-4	-3	-2	-1	+1	+2	+3	+4	+5
11	Project Team Skill Level / *Kemahiran Ahli Projek*										
12	Contractor Capability / *Kebolehan Kontraktor*										
13	Meeting Customer Expectation / *Memenuhi kehendak pelanggan*										
14	End User Engagement *Penglibatan pihak pengguna*										
15	Assessment of Duration of Project / *Jangkaan masa untuk siap projek*										
16	Feedback regarding project progress/ *Maklum balas mengenai kemajuan projek*										
17	Ownership of project / *Tahap komitmen terhadap kejayaan projek*										
18	Problem Solving Capability / *Kebolehan meyelesaikan masalah*										
19	Project Managers Leadership Style / *Gaya kepimpinan oleh pengurus*										
20	Verification of Information Shared/ *Pengesahan matlumat yang dikongsi*										

Sample of total scores obtained from the survey

Overall Project Perception
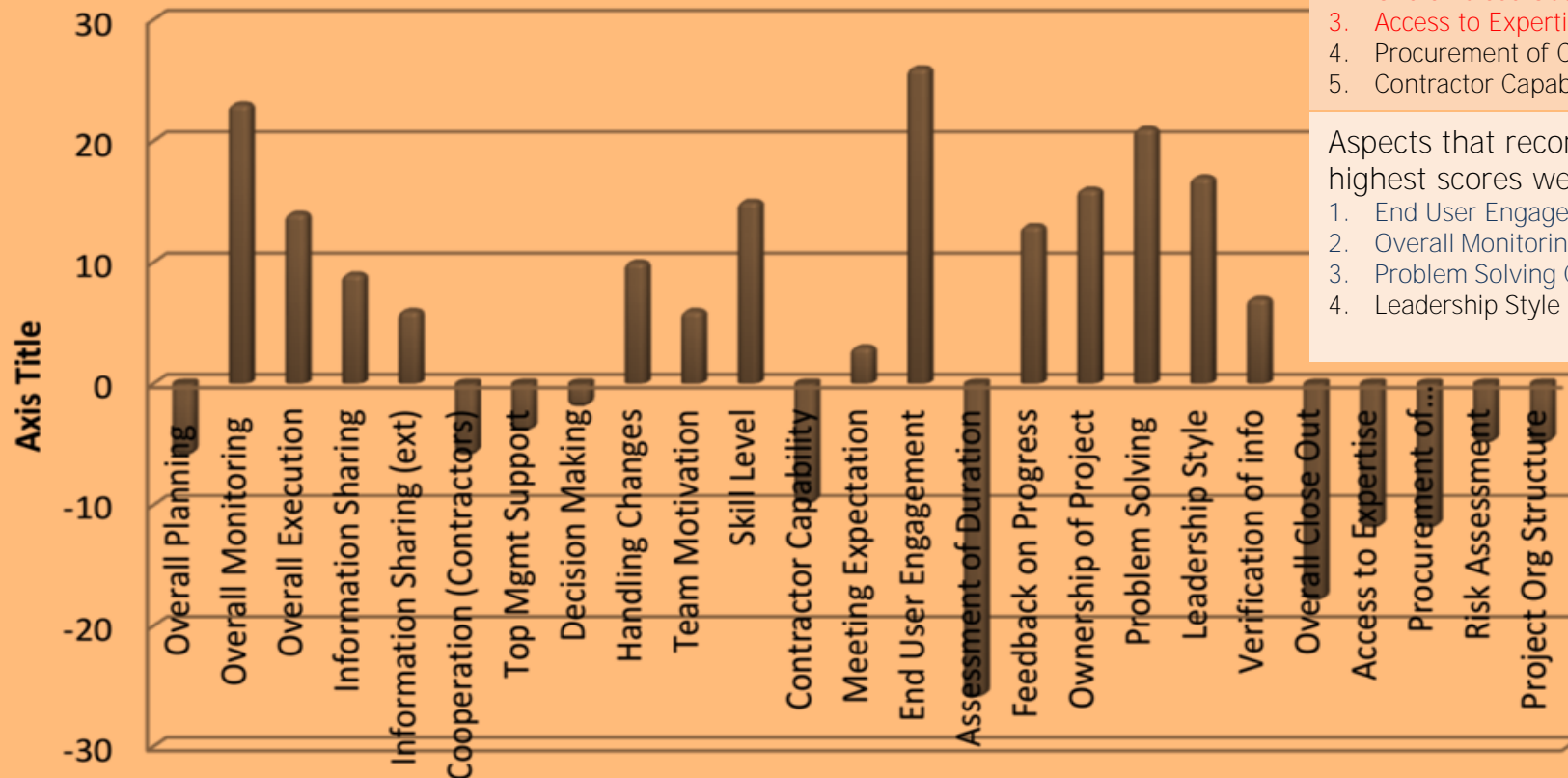
Aspects that recorded the lowest scores were:
1. Assessment of Duration of Project (-26)
2. Overall Close Out Process (-18)
3. Access to Expertise (-12)
4. Procurement of Contractors (-12)
5. Contractor Capability (-10)

Aspects that recorded the highest scores were:
1. End User Engagement (+26)
2. Overall Monitoring (+23)
3. Problem Solving Capability (+21)
4. Leadership Style (+17)

Sample of mind map on analysis of issues

The findings of the brainstorming session were used to determine causes for:

1. Poor assessment of duration of the project; and
2. Overall closeout issues of the project

4
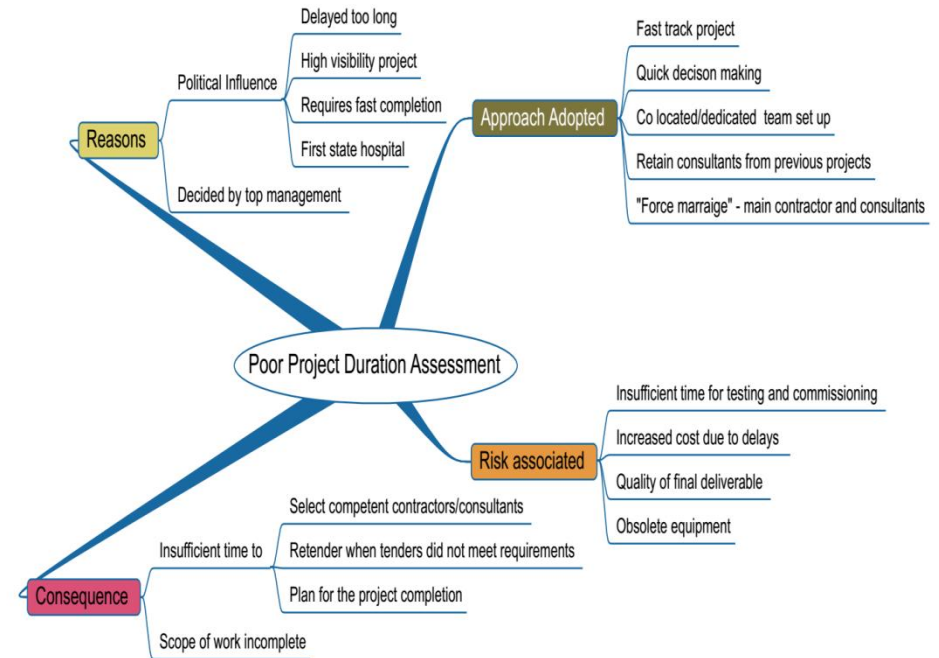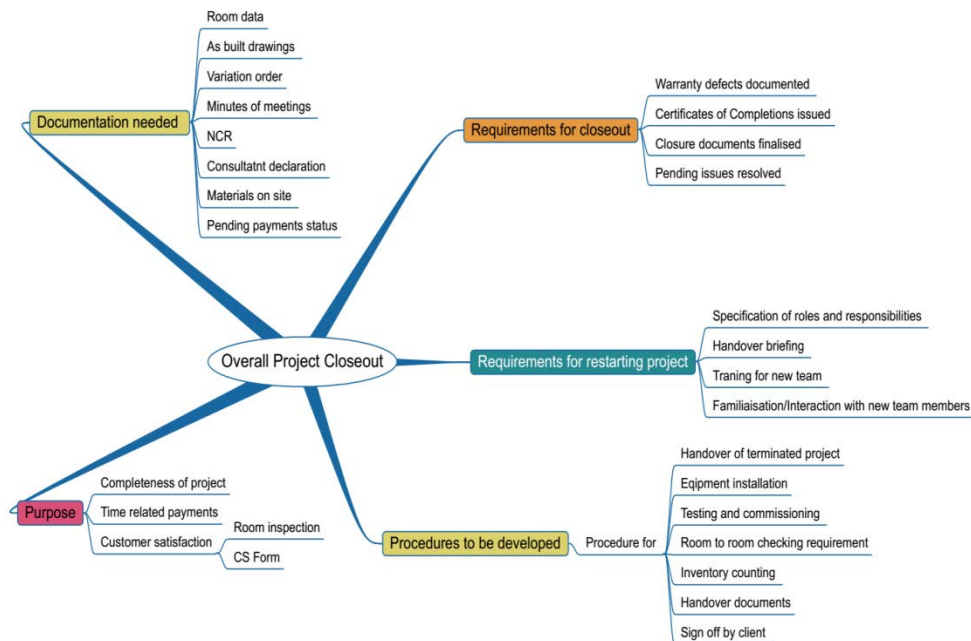
Learning After - Post Implementation Review

Method 2: Reflective Analysis

1. Break up into two groups

2. One group to reflect on what went well and the other group reflects on what did not go well. A **Lesson Learned Checklist** as attached may be used to trigger the thinking process.

3. Each group suggests what could have been done better and what lessons can be derived

4. Select top 3 key learnings and present

Sample: Lessons Learned Checklist

No	Lessons Learned Checklist	Yes	No	Comments
1.	Project Objectives were specific, measurable, attainable, results-focused and time-bound			
2.	Purpose and Need was clearly defined			
3.	Project Management Plan was well-documented, with appropriate structure and detail			
4.	Project Schedule encompassed all aspects of the project			
5.	Tasks were defined adequately			
6.	Stakeholders (client, service providers, local authority, etc) gave appropriate input into the project planning process			
7.	Project budget was well defined			
8.	Specifications were clear and well-documented			
9.	Project scoping was adequate, understandable, and well-documented			
10.	Project baselines (Scope, Time, Cost, Quality) were well-managed			
11.	Project milestones were clearly identified for all project phases			
12.	Design changes were well-documented			
13.	Project management processes were well managed			

No	Lessons Learned Checklist	Yes	No	Comments
14.	Project progress tracked against baselines and reported accurate status			
15.	Procurement process went smoothly			
16.	The project had adequate Quality Control			
17.	Risks were identified and manageable			
18.	Project governance was effective			
19.	Project Team was properly organised and staffed			
20.	Project Team received adequate training			
21.	Project Team's experience were adequate			
22.	Project team worked effectively on project goals			
23.	Project team worked effectively with external entities (contractors, consultants, etc)			
24.	There was good communication within the Project Team			
25.	Management gave this project adequate attention			
26.	Authority and accountability were well defined			
27.	Initial cost and schedule estimates were accurate			

Page 3 of 4

Sample: Lessons Learned Checklist

| No	Lessons Learned Checklist	Yes	No	Comments
28.	Project was delivered within approved revised schedule			
29.	Project was delivered within revised budget			
30.	Overall project planning and execution was effective			
31.	External dependencies were understood and well-managed			
32.	Project records were well kept and maintained			
33.	Stakeholders' needs/requirements were met			
34.	Client was satisfied with the project			
35.	Project Objectives were met			

Additional comments:

4

Learning After - Post Implementation Review

Method 3: Retrospect

1. Conduct a **Knowledge Café session *** to brainstorm on

   i. factors that contribute to the success of the project

   ii. factors that contribute to the failure of the project

2. Present suggestions on strategic improvements that can be implemented in future projects
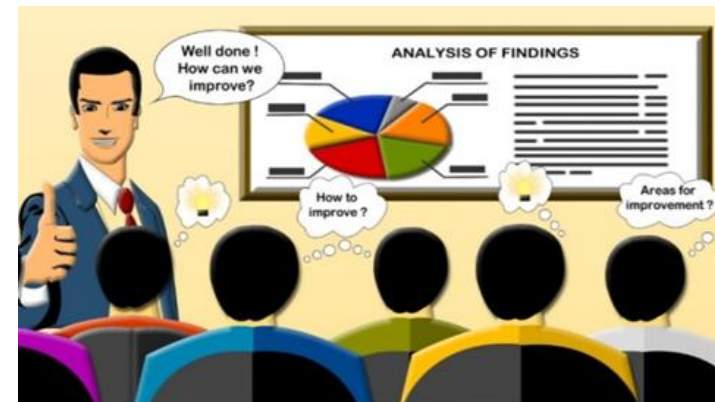
* Refer to the KM Tool Box in JPedia

Sample: Success Factors

Group Discussion

A. List the project's three biggest successes.

Description	Factors that Contributed to this Success

B. List other successes that the team would like highlighted:

Description	Factors that Contributed to this Success

C. List areas of potential improvement along with *high-impact* improvement strategies:

Description	Strategies for improvement

D. Enter other comments:

10 Golden Rules of collecting PLL

1. Be clear of the scope and purpose of lessons learned reviews beforehand
2. Include all members of the project team and the key stakeholders in the lessons learned exercise
3. Appoint a facilitator who is not closely connected to the project
4. Conduct the lessons learned review session in a comfortable setting
5. Set and agree on ground rules and timelines
6. Act responsibly. Never blame others or feel blamed
7. Trust each other and respect others' opinion
8. Focus on behaviors or tactics that were successful or problematic, rather than on people
9. Avoid biasness towards negative or positive comments
10. Write lessons learned in a manner that promotes their use as best practices.

5

i. What do I write in the PLL report?

- A lesson identified needs to be "A recommendation, based on analysed experience, from which others can learn in order to improve their performance".

1. Document cause of issues and reasoning behind any corrective action to address issues.

2. Some of the project learnings to be captured:
   - What was learned about the project in general?
   - What was learned about project management?
   - What was learned about communication, budgeting, procurement?
   - What was learned about working with sponsors, customers?
   - What was learned about what went well, what did not go well, what needs to change?
   - How will/was this incorporated into the project?

3. Draw on both positive and negative experiences.

4. Should contain at least the following general statements:
   - Project information and contact information for additional detail
   - A clear statement of the lesson

5. A lesson needs to be specific enough that you can learn from it.

6. It needs to be actionable - people need to be able to take action. Identify action plan and persons (process owner) responsible.

7. It needs to be a recommendation, rather than an observation. For example, if the team encountered great difficulty in certain situation, explain why they encountered difficulty, and what would their recommendation be for other teams, to avoid that difficulty.

8. Include some analysis, so that specific actionable recommendation can be made.

9. Write lessons learned in a manner that promotes their use as best practices. Express them as advice or guidelines for the future

10. Avoid expressing lessons learned in a passive, past tense.

5

ii. PLL Report Format

Executive Summary	Summarize the methodology, Key Issues and Key Lessons Learned
Project Background	Provide an overview or description of the project
Methodology	Steps used for capturing, analyzing, validating and communicating PLL
Key Issues	Summarize all the key issues found from data collections through Questionnaire, Interview etc.
Key Lessons Learned	List all key lessons learned captured
Primary Challenges	Summarize the challenges the team identified for the project
Conclusion and Recommendations	Conclude and provide the top recommendations Lessons Learned of the project

6

i. Advice to Project Managers

"A lesson Learned is a change in personal or operational behaviour as a result of experience. If nothing changes, nothing has been learnt" – Nick Milton

1. Spend the time to find lessons learned in JPedia or other repositories, go over key learnings from past projects to determine if your project would benefit if they are applied to your project.

2. Start collecting lessons learned from the kick off meeting and continue that process throughout the project. Always ask "What is going well?" & "Where are we struggling?" "How are things going? This allows you to make corrections along the way.

3. Look for trends and continue to look for areas of improvement on your project

4. Incorporate your lessons learned into your project status meeting agenda as it can help you tremendously in driving your project and in identifying the need to do any corrections, adjustments of staff, or process changes.

5. Communicate changes in documents/ procedure/policy/structure/budget so that working practices can be changed as a result.

1. Abudi, G. (2010), Capturing Those Lessons Learned, Project Smart.

2. CDC (2006), CDC Unified Practices Guide: Lessons Learned, Access July 2016,
    http://www2.cdc.gov/cdcup/library/practices_guides/CDC_UP_Lessons_Learned_Practices_Guide.pdf

3. Chirumalla, K. (2013). Development of a Methodology for Lessons Learned Practice, unpublished PhD Thesis, Luleå University of Technology, Sweden.

4. DOE USA (1995), DOE Handbook: Implementing U.S. Department of Energy Lessons Learned Programs, August.

5. Knoco (2009), The Status of Lessons Learning in Organisations, Access July 2016,
    http://www.knoco.com/Knoco%20White%20Paper%20-%20Lessons%20Learned%20survey.pdf

6. Milton, N. (2010). The Lessons Learned Handbook: Practical approaches to learning from experience. Elsevier.

7. NATO (2016), The NATO Lessons Learned Handbook, 3rd Edition, Joint Analysis and Lessons Learned Center.

8. White, M. and Cohan, A. (2015), A Guide to Capturing Lessons Learned, The Nature Conservancy. Access July 2016,
    https://www.conservationgateway.org/ConservationPlanning/partnering/cpc/Documents/Capturing_Lessons_Learned_Final.pdf

9. UNHCR (2001), Refugee Operations and Environmental Management: A Handbook of Selected Lessons Learned from the Field.

10. JKR JPedia

After Action Review (AAR) – a structured review or de-brief process for analyzing what happened, why it happened, and how it can be done better by the participants and those responsible for the project or event.

Central Repository – a collection of stored data from existing database merged into one so that it may be shared, analyzed or updated throughout an organization.

External Reviews – to provide feedback to the unit about what the unit is doing effectively and to identify areas for improvement.

Governance – the processes deployed to effectively oversee, coordinate and report the planning, procurement and delivery of the project.

Historical Data – Past-periods data, used usually as a basis for forecasting the future data or trends.

Lesson learned (LL) – a good work practice or an innovative approach that is captured and shared to promote repeat application or avoid recurrence.

Project lessons learned (PLL) – the learning gained from the process of performing the project.

Project lessons learned (PLL) process – refers to an organization's efforts for managing Lessons Learned

Project Life Cycle – refers to a series of activities which are necessary to fulfill project goals or objectives. It has a beginning and an end and passes through several phases of development.