

# KNOWLEDGE MANAGEMENT INITIATIVES AT MINT

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Nuclear Technology Research (MINT))*

TECHNICAL MEETING/WORKSHOP ON  
MANAGING NUCLEAR KNOWLEDGE 22-26 August  
2005, Trieste, Italy

## CONTENT

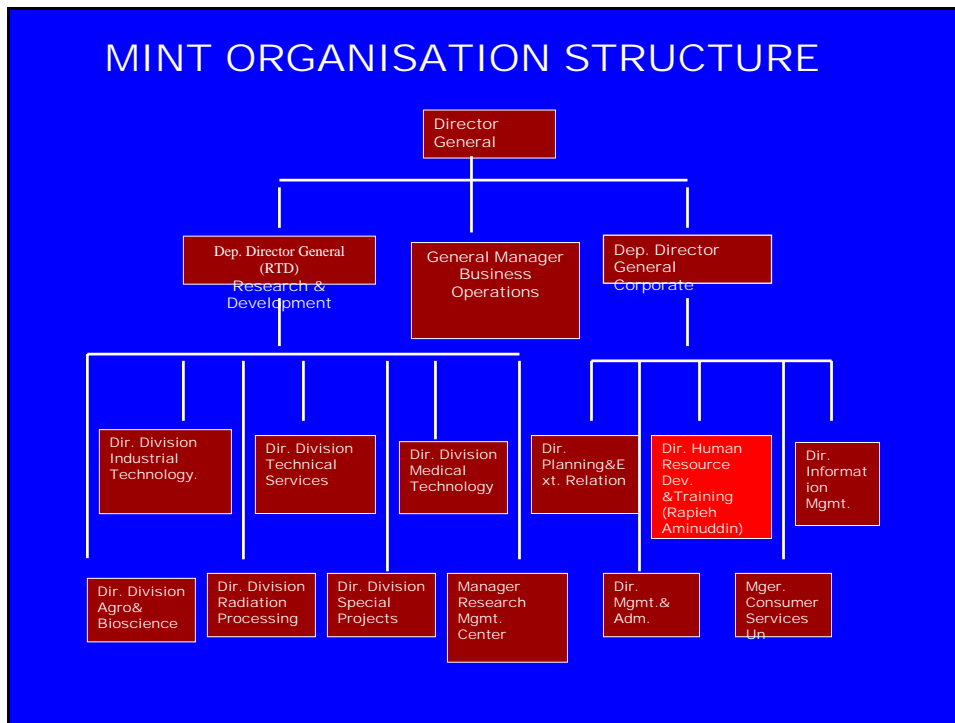
- Background
- KM from MINT's perspective
- KM initiatives in MINT
- Challenges
- Conclusion

## BACKGROUND

## BACKGROUND

- Malaysia has a population of more than 23 million
- 17 public universities (6 bigger and older than others)
- MINT has ~800 (330 professionals)
- We have no nuclear power
- However, in the last month we are getting indications of great interest in nuclear power among policy makers and businessmen due to rise in oil price recently. Nothing in black and white as yet.

## MINT ORGANISATION STRUCTURE



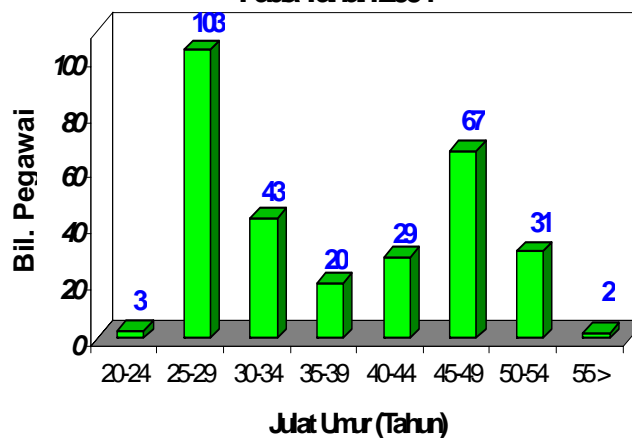
## BACKGROUND OF KM IN MINT

- 2002- KM workshop was held in MINT
- 2002- K-Economy Master Plan was announced
- KM enthusiast went for training
- 2004- Reorganize HRD in line with KM principles, produce new guidelines and start to develop HRD information system
- Other KM enthusiasts implemented KM in their own area of responsibility
- 2005- KM Strategic plan
- 2005- KM Familiarization workshop for mgmt.

## RATIONAL FOR KM

- MINT is a knowledge- based R&D organization
- Need to increase innovation intensity to gain competitive advantage
- Information is scattered, lies with individuals or units, not with organization
- Reinventing the wheel and repeating the same mistake over and over again
- 2000-2002 recruited ~160 new researchers
- Senior researchers are nearing retirement age of 56
- Need to retain and transfer knowledge

Gambarajah 1: Profil Umur Pegawai Penyelidik MINT Pada Tahun 2004



## DEFINITION AND KM FROM MINT'S PERSPECTIVE

### 3A. WHAT IS KM

“ **ACHIEVING SUSTAINABLE  
SUPERIOR PERFORMANCE**  
by  
**LEVERAGING ON KNOWLEDGE** ”

JT Frank

## KNOWLEDGE MANAGEMENT

- Management of organizational knowledge for creating organizational value, generating advantage and achieving goals
  - from core competencies
  - through creation, communication, and application of knowledge
- Addressing organizational problems
  - delivering innovative products and services,
  - managing and enhancing relationships
  - improving work processes and practices

## KNOWLEDGE MANAGEMENT (KM) IN MINT

- Managing the KM culture and managing the KM system.
- Culture first then system

## HABITS AND CULTURE

- Habit is singular
- Applies to individuals
- Know, learn to do, do it most of the time, do it every time until it becomes a habit (know what, know how, know why and care why)
  
- Culture- plural
- Applies to groups, organization, community, etc.
- When everyone or most of the individuals practice the habit it becomes a culture

## 8 KEY FOCUS/HABITS OF KM

1. K-Identification,
2. K-Acquisition,
3. K-Application,
4. K-Sharing,
5. K-Development,
6. K-Creation,
7. K-Preservation, and
8. K-Measurement.

## K-ENABLERS

1. Physical architecture
2. Structural design
3. Living k-policy
4. K-tools
5. Human capital
6. Technology

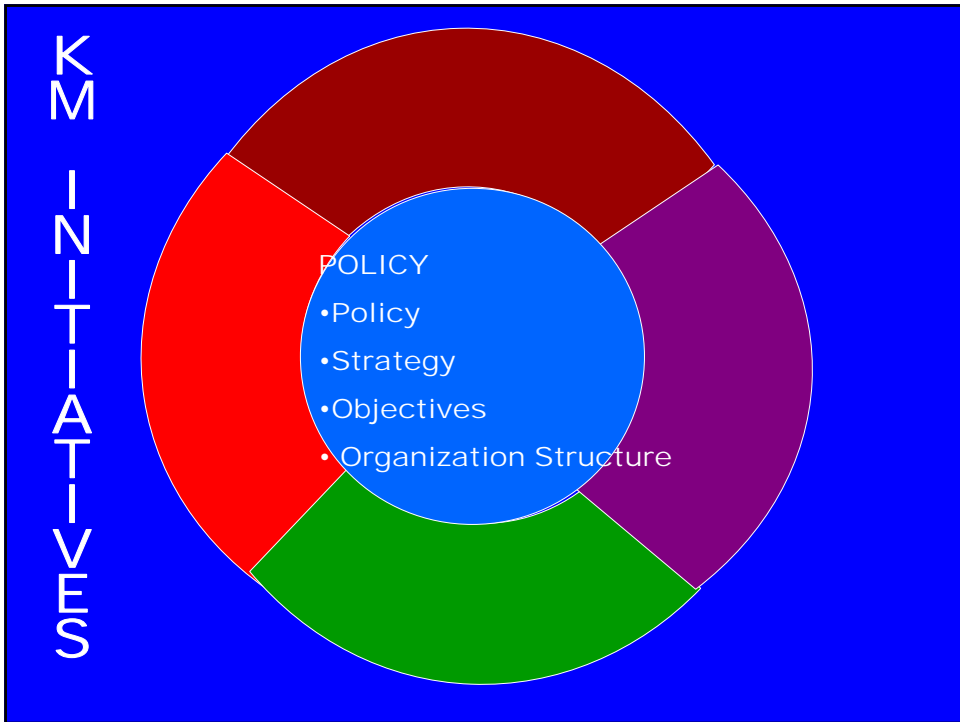
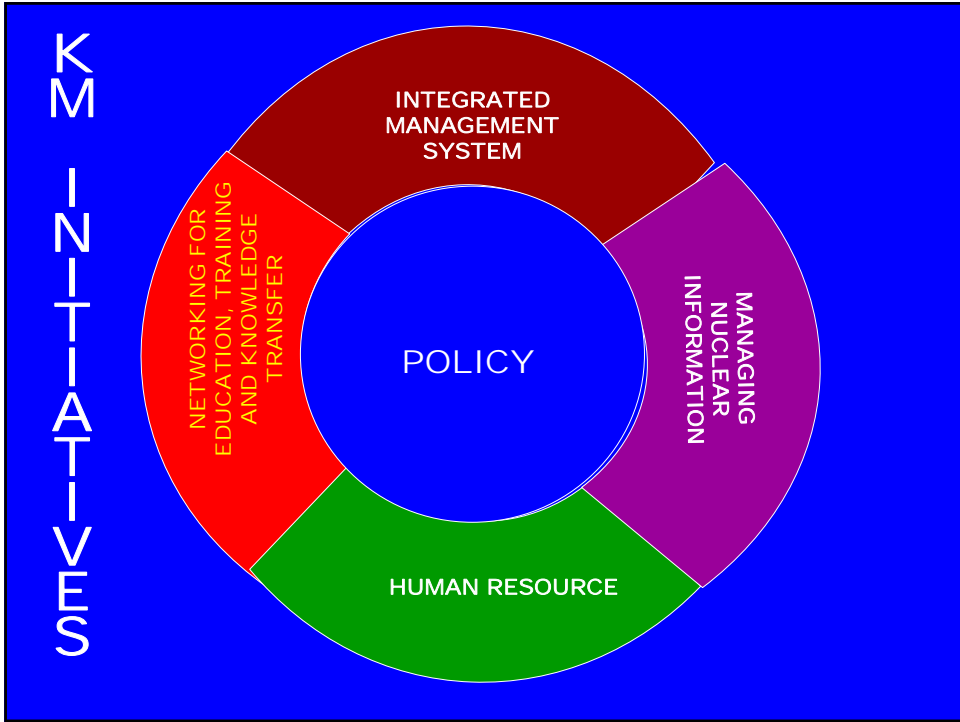
## HUMAN CAPITAL

## DISTINCTIVE COMPETENCIES OF K-PROFESSIONAL

- Innovative thinking
- Knowledge responsibility
- Performance-Directed Learning
- Contributing in Innovative Teams
- Professional Discipline
- Self-Driven Innovative Habits
- Solution Focus Mindset
- Personal Knowledge Creation

## INNOVATIVE LEADERSHIP

- Practice of KM
- Develop K-Professionals
- Power of Staying Focus
- Build Performance Environment
- Creating Innovative Teams
- Promote K-Sharing
- Culture of Innovation



## MINT KM POLICY

As a knowledge-based organization MINT shall strengthen its KM by:

- inculcating and nurturing KM habits particularly k-identification, k-acquisition, k-sharing and k-preservation
- establishing mechanisms, procedures and systems to gather, organize and share explicit and tacit knowledge (publications, experience, etc.) of researchers and technical support staff, lessons learnt and frequently used information so that it could be shared, utilized and further developed

## KM OBJECTIVES

- Inculcate KM culture
- Develop innovative k-workers
- Intensify innovation
- Increase customer and stakeholder satisfaction
- Improve organizational excellence

## KM STRATEGY

1. Inculcate **KM habits** through specific program and activities and by providing the system, procedures, time and place to practice the habits
2. Transform MINT staff into **k-workers**, knowledgeable, innovative, satisfying customers and stakeholders and practicing teamwork
3. Capture information and knowledge at the point it is produced, **document, organize and preserve**

## KM STRATEGY

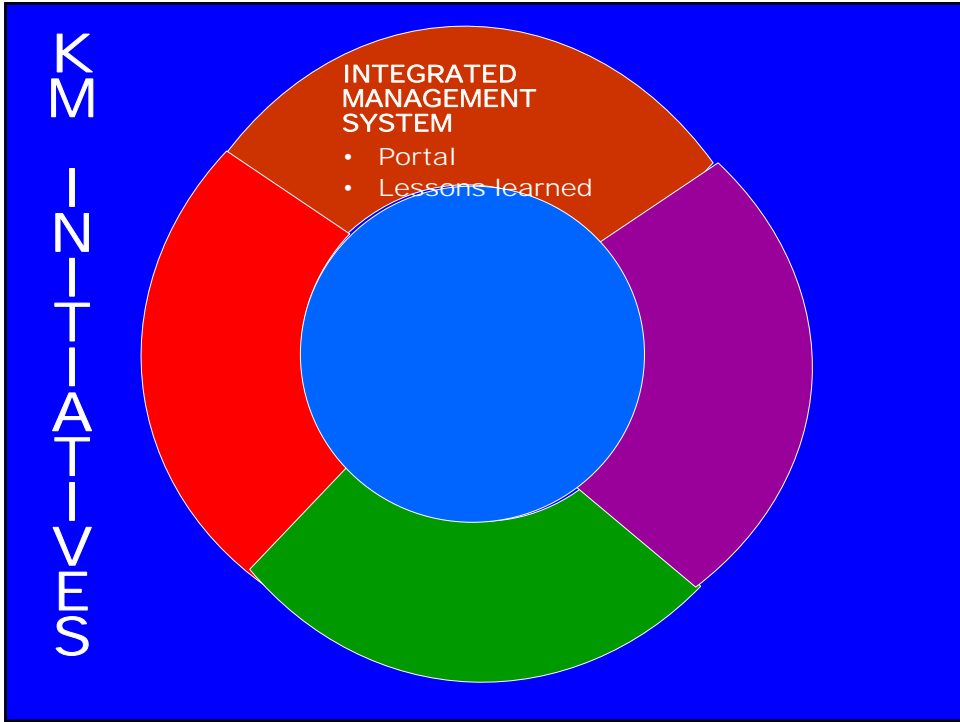
4. Encourage **utilization** and **sharing** of knowledge
5. Promote **life-long learning**
6. Develop systems, procedures and technology to capture, share and utilize **lessons learned** and develop best practices
7. Organize programs and develop systems for sharing and transferring knowledge on **core competencies** among organizational members

## KM STRATEGY KM STRATEGY

8. Promote formation of community of practice **CoP** to provide forum sharing and transferring of knowledge, intellectual discussion, collaboration, cooperation and networking
9. Develop **infrastructure** and **info-structure** to support KM initiatives

## KM ORGANIZATION STRUCTURE

- KM STEERING COMMITTEE
  - DG, DDG (R&TD), DDG (Corporate), GM Business Operation, Divisional Directors
- IMPLEMENTATION COMMITTEE
  - DDG (Corporate) and divisional representatives
- Division of HRD&Training is the secretariate



## INTEGRATED MANAGEMENT SYSTEM

Initiative	Description	Technology or system
Portal	-Is being designed and integrates all web-based systems	Purchase
Lessons learned	-Lessons learned are recorded on completion of work- post-lessons learned and stored in a central file -Lessons learned stored in the file must be selected before beginning any work, applied and recorded as pre-lessons learned -Every report of project or activity is accompanied by pre-lesson learned and post-lesson learned- integral part of <i>project management</i> -Manual of procedures are revised accordingly for <i>continuous improvement</i>	Excel file

## LESSONS LEARNT- (POST)

PROCESS:

PROJECT/ACTIVITY:

PHASE:

CONTRIBUTER/AUTHOR:

Code No.	Description of issue	Root cause	Lessons learnt	Action /mitigation plan
	What went wrong			
	What went well			

## LESSONS LEARNED (PRE)

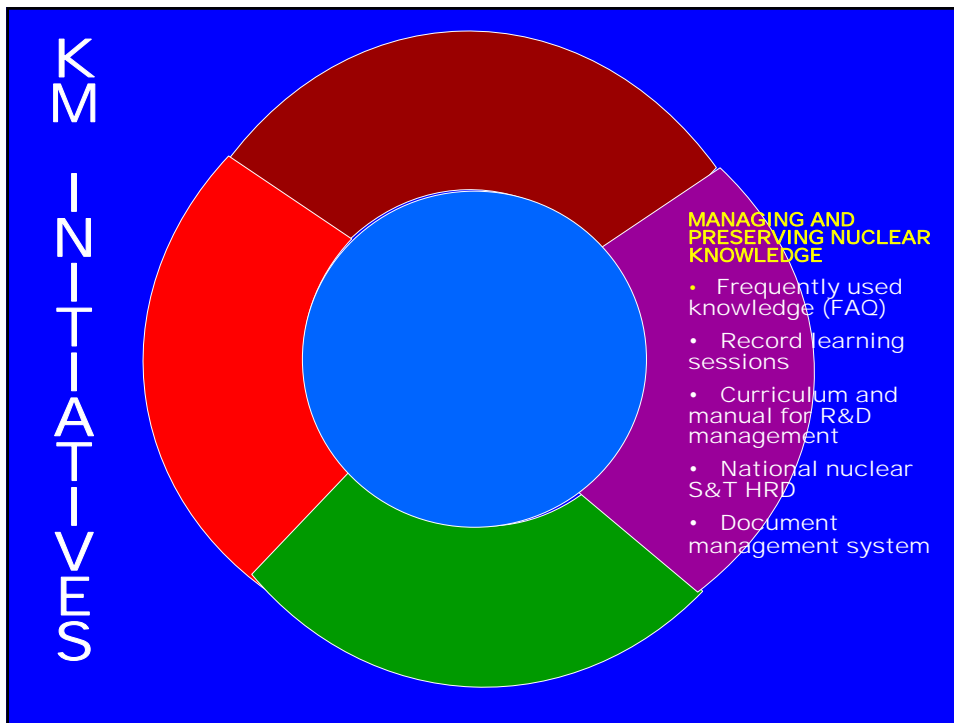
PROCESS:

PROJECT/ACTIVITY:

PHASE:

CONTRIBUTER/AUTHOR:

Code No.	Description of issue	Root Cause	Lessons Learnt	Action/Mitigation Plan	How lessons learnt will be used	Tracking (by who and when)

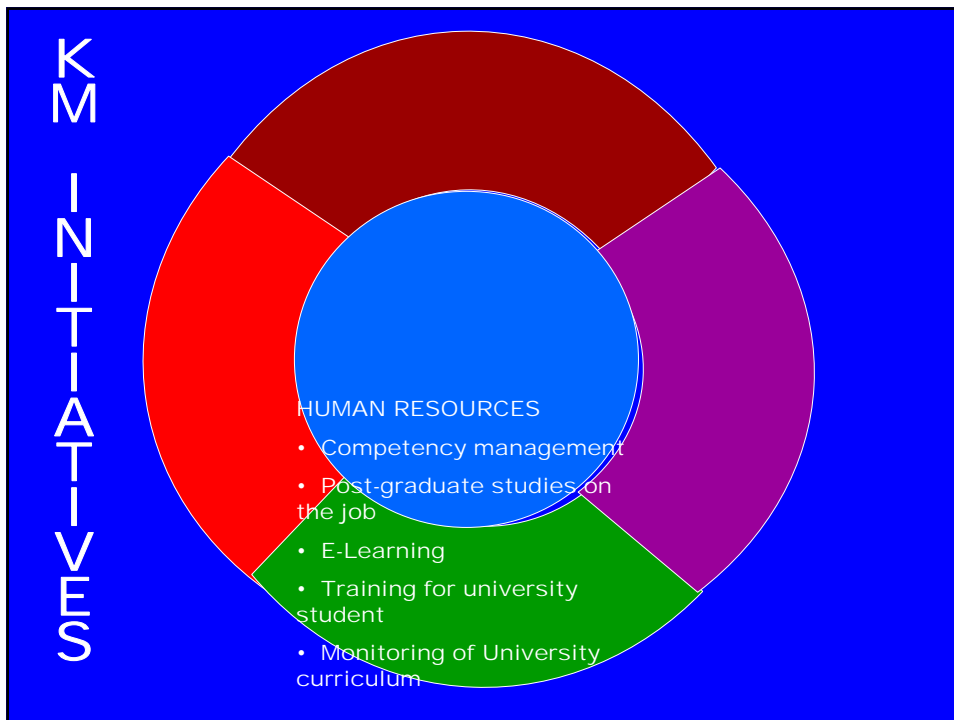


### MANAGING AND PRESERVING NUCLEAR KNOWLEDGE

Initiative	Description	Technology or system
-Frequently used knowledge	-FAQ	-Local web
-Record learning sessions	-Training rooms designed for recording	-recording system and courseware development process developed in-house
-Curriculum and manual for R&D management	-50 researcher to design curriculum and prepare power-pt slides, and write manual and book (7 chapters)	-
-National nuclear S&T HRD	-A database of people who have been trained in nuclear S&T (K-pointers) -meta-data of training manuals	Training record in access file

## MANAGING NUCLEAR INFORMATION

Initiative	Description	Technology or system
Generic office environment (GOE)	-in-coming and out-going letters -Administration of meetings	Generic office environment (GOE)- Malaysian government initiative
Report management	The normal function performed by information management division	various





## CRITERIA FOR COMPETENCY LEVEL ASSESSMENT

CRITERIA	LEVEL1	LEVEL2	LEVEL3	LEVEL4	LEVEL5	LEVEL6
Mastery level	know	understand	apply	analyze	synthesize	evaluate
Area of influence	Being coached	Can work independantly	Sub-project	Project	Unit	Division / programme
Publication	Co-author	Co-author	few	moderate	high	Very high
Public recognition	-	At times	low	moderate	high	Very high
Patent	none	none	none	At least one	A few	Many
Innovation award	none	At least one	A few National awards	At least one international	A few international	Many international

## COMPETENCY LEVEL ASSESSMENT

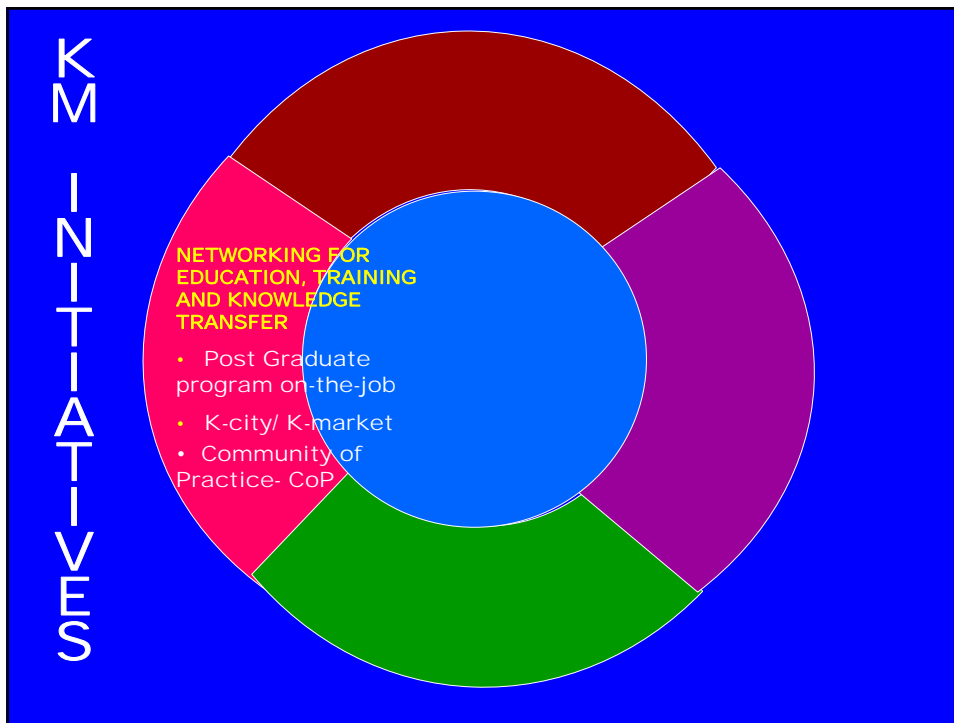
- Level 1&2 by examination (special syllabus developed and approved)
- Level 3-6 by course assessment (special curriculum developed and approved)
- Very difficult to set syllabus and curriculum because researchers work in different projects requiring different competencies (42)
- An alternative evaluation mechanism can be considered
- Get some ideas with participants in this matter

## THE IMPORTANCE OF MEASUREMENT

- Manage what you measure
- What gets measured gets done
- Competency levels in public service in Malaysia are linked to salary
- It is very important that assessment of competency level is done accurately
- Human capital can be calculated based on competency level of staff
- Can calculate ROI in learning
- Can measure learning effectiveness

## HUMAN RESOURCES

	Post Graduate programme on the job	-research project used for Masters and PhD work -Average 30 MSc, 27 PhD / yr -networking and collaborating with university professors -all major universities participate	-
2	E-Learning	To support syllabus and curriculum	-LMS -Courseware development
3	Training for university student	-student experiments -10 weeks industrial training -Final year project -MSc /PhD project	-web-based external trainee system
4	Monitoring of University curriculum	-nuclear courses -non-nuclear courses	S&T Education database



**NETWORKING FOR EDUCATION, TRAINING AND KNOWLEDGE TRANSFER**

	Initiative	Description	Technology or system
1	MOU, MOA, Bilateral	With major universities, JAERI, ...	-
2	FNCA	Forum for Nuclear Cooperation in Asia- 9 projects inc. HRD	
3	ANENT	Asian Network for Education in Nuclear Technology- 5 activities	
4	ANSN	Asian Nuclear safety Network	-
5	Community of Practice- CoP	Groups of people with common interest meet to share and exchange knowledge on a regular basis	
6	K-city/ K-market	Individuals maintain mini websites to showcase their expertise so that users attracted to them- facilitate transfer and sharing of K	- Web-based system will be developed

## CHALLENGES AND CONCLUSION

### CHALLENGES

- To maintain KM system with existing manpower
- Technology support- requires high investment, skill, a lot of effort and time
- To make leadership support strong and visible to people in the organization
- To grow and sustain many KM champions
- To motivate people to bear the extra workload as a result of KM
- Inculcation of culture takes time

## CONCLUSION

- Brief overview of KM or managing nuclear knowledge in MINT
- Presentation is broad in scope to gauge area of interest of this meeting
- It is hoped that delegates find at least one thing interesting or new
- Will focus on specific area of interest in future