



**The Abdus Salam
International Centre for Theoretical Physics**



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Joint ICTP-IAEA School of Nuclear Knowledge Management

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Elements of Knowledge Management and KM Assessment

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TO MEMBER STATES*

Knowledge Management Performance Assessment

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School of Nuclear Knowledge Management, 1 – 5 September 2008, Trieste, Italy



IAEA

*Atoms for Peace: The First Half Century
1957–2007*

Objectives

- To evaluate existing knowledge management practices
- Determine areas in need of improvement
- Provide feedback needed for improvement is adequate
- Ensure KM supports informed decision making (all levels)
- Ensure KM objectives aligned with strategy
- To communicate management goals or priorities
- To promote and motivate desired behaviour of employees (motivate knowledge sharing etc.)
- To stimulate learning and innovation

Example KM Performance Indicators

Savings due to knowledge re-use

Knowledge user complaints & satisfaction

Network building

Tool Availability, Accessibility, and Usability

Information maintenance

Time to create new knowledge

Mentoring

Proportion employees making new idea suggestions

Rate of new idea generation, utilization

Information Integration

Contribution to knowledge bases

Information Quality

Information Sharing

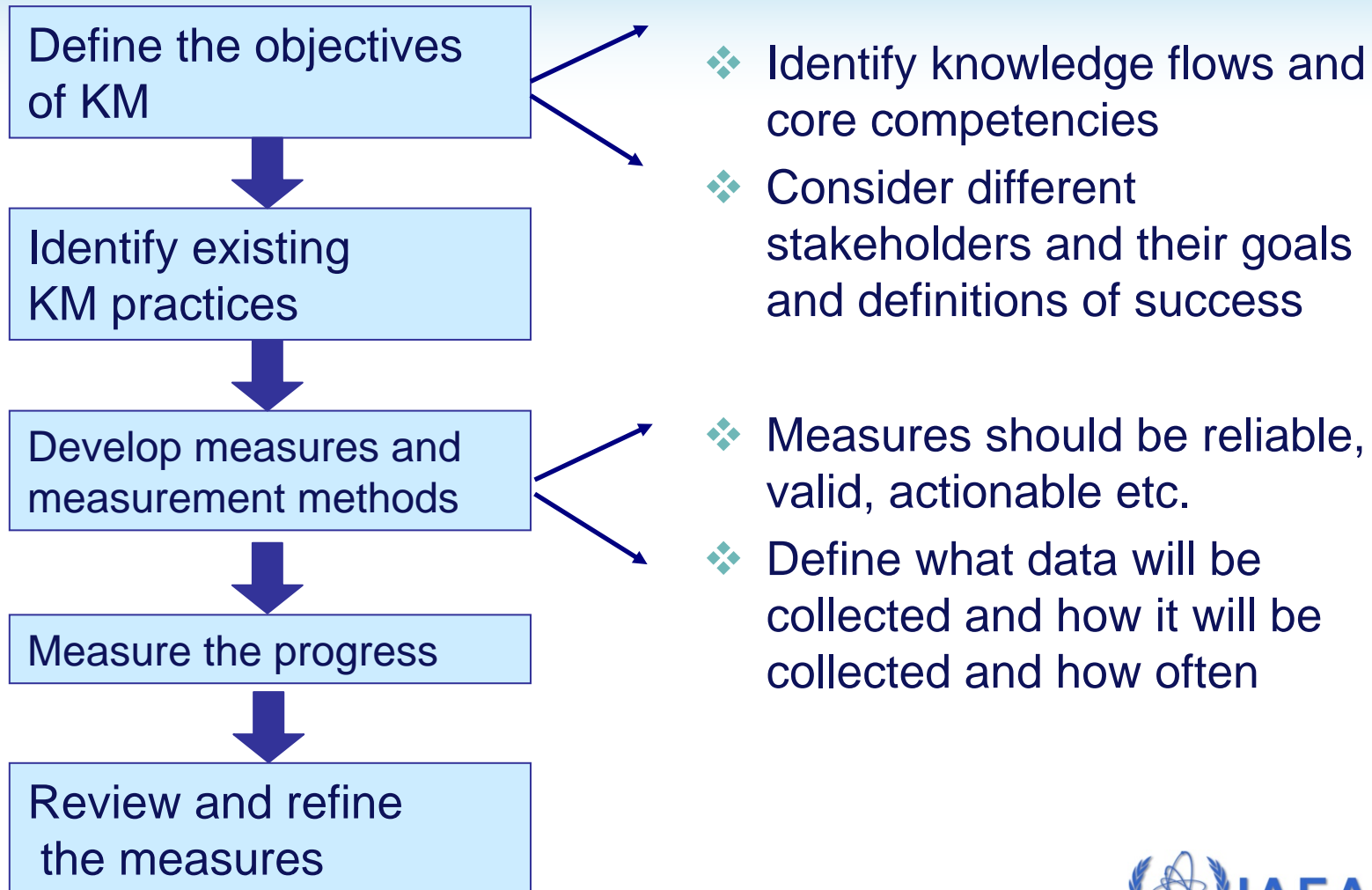
Competence maintenance

K-Gaps

KM Culture

K-utilization

KM Performance Assessment Stages



IAEA KM Assessment Tool

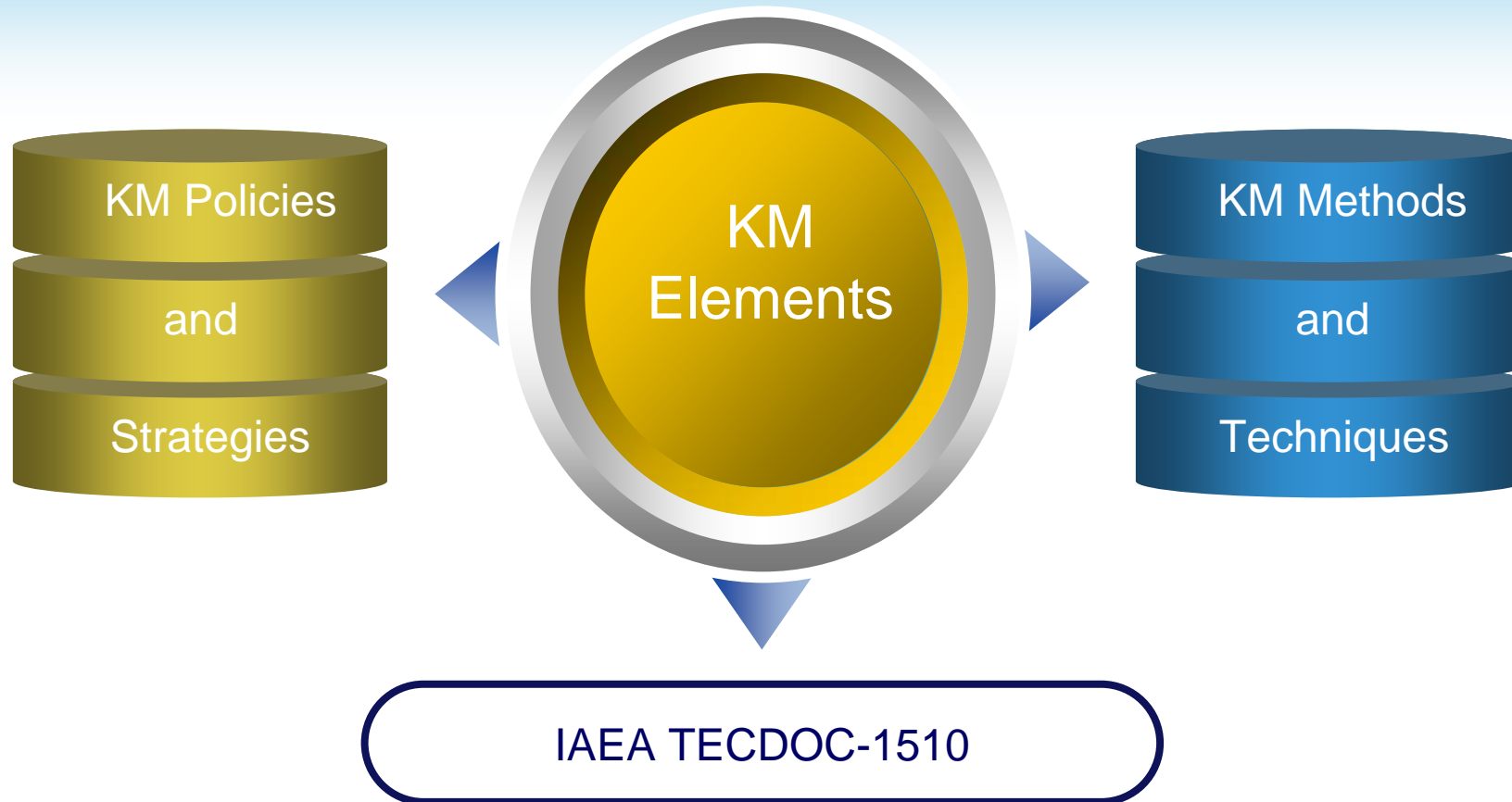
The IAEA guidelines (TECDOC-1510):

- **for a self-assessment against this document of its Knowledge Management (KM) functions, or**
- **for an independent, external review of an NPP operating organization.**
- **These criteria are not a ‘report card’ as they are to help managers to identify strengths to build upon and weaknesses to be addressed in the knowledge management area.**

Relevant documents

- ❖ **IAEA-TECDOC-1399 - Ageing Workforce: Transfer of Knowledge To The Next Generation**
- ❖ **IAEA-TECDOC-1510 - Knowledge Management for Nuclear Industry Operating Organizations**
- ❖ **STI/PUB/1248 - Risk Management of Knowledge Loss in Nuclear Industry Organizations**
- ❖ **STI/PUB/1266 - Managing Nuclear Knowledge IAEA Proceedings**
- ❖ **STI/PUB/1235 - Managing Nuclear Knowledge: Strategies and Human Resource Development**
- ❖ **IAEA Safety Standards No. GS-G-3.1, Application of the Management System for Facilities and Activities, 2006**

Knowledge management elements as TECDOC-1510



IAEA TECDOC Series No. 1510, October 2006 **Knowledge Management for Nuclear Industry Operating Organizations** identifies the fundamental elements needed for an effective knowledge management system.

Activities after TECDOC-1510

- IAEA Assist Visits – Krsko NPP, Kozloduy NPP, Paks NPP, Ignalina NPP, Darlington NPP, Bruce Power NPP, Zaporozhe NPP**
- A new document on Planning and Execution of Knowledge Management Assist Missions for Nuclear Organisations – in print**
- The document was developed by experts from Canada, Hungary, Russia, UK, USA and IAEA staff**

KNOWLEDGE MANAGEMENT ASSESSMENT TOOL

Policy /
Strategy

Human Recourse (HR)
Planning and HR
Processes

Methods, Procedures &
Documentation
Processes for Continual
Improving KM

Technical (IT)
Solutions

Approaches to
Capture/Use
Tacit
Knowledge

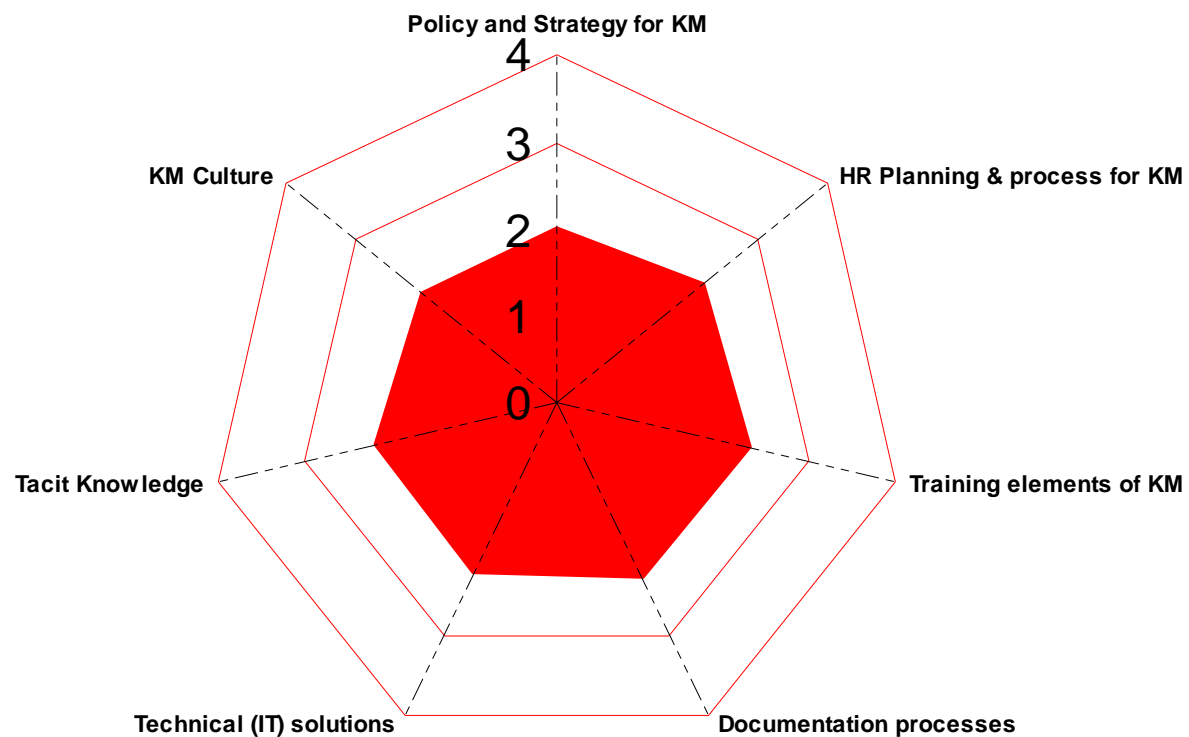
KM Culture /
Workforce
Culture
Supporting KM

Training and Human Performance
Improvement

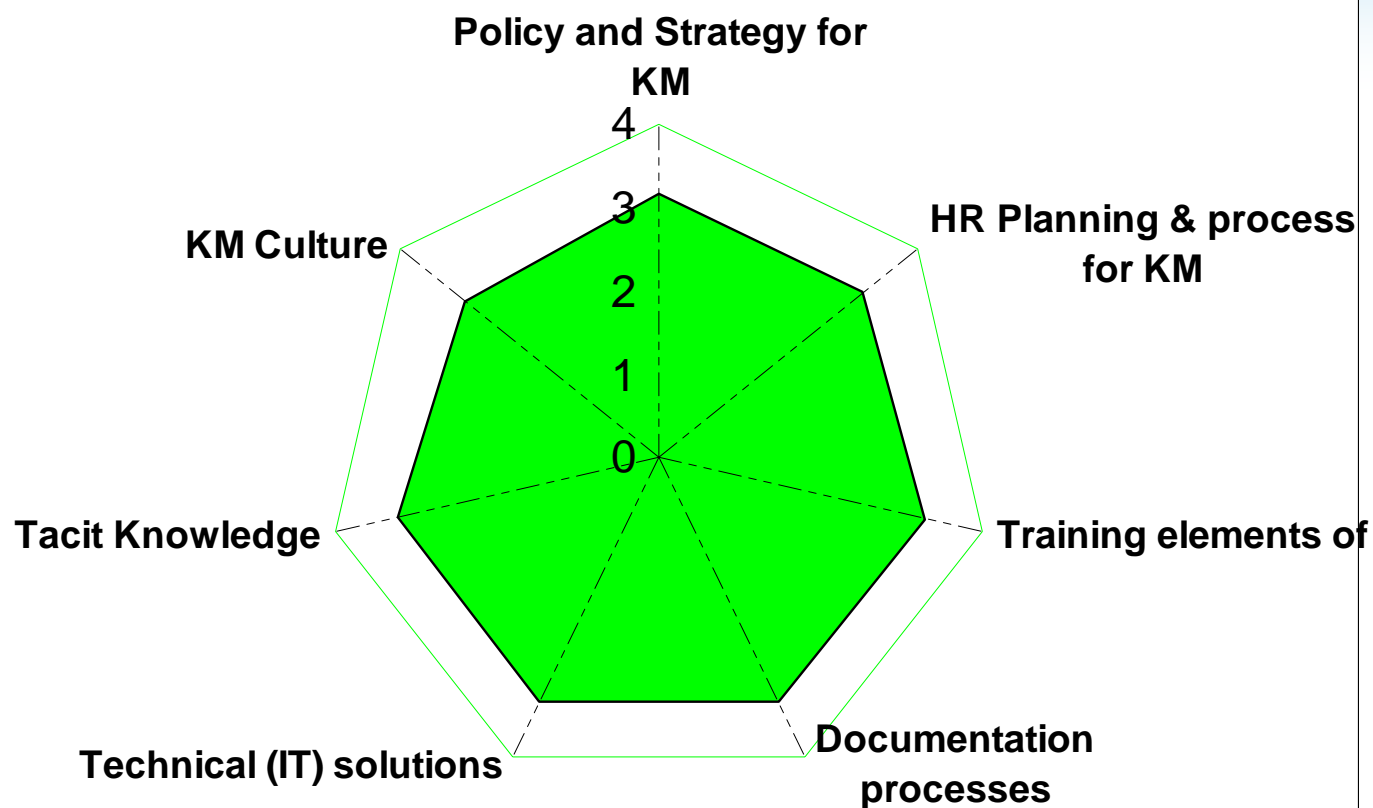
KM Self-Assessment Metrics Scoring

Rating	Extent Currently	Extent Should Be
0	Not utilized at all	Not utilized at all
1	To a little extent	To a little extent
2	To some extent	To some extent
3	To a great extent	To a great extent
4	To a very great extent	To a very great extent

KM Assessment Approach (1)



KM Assessment Approach (1)



1. KM Policies and Strategies

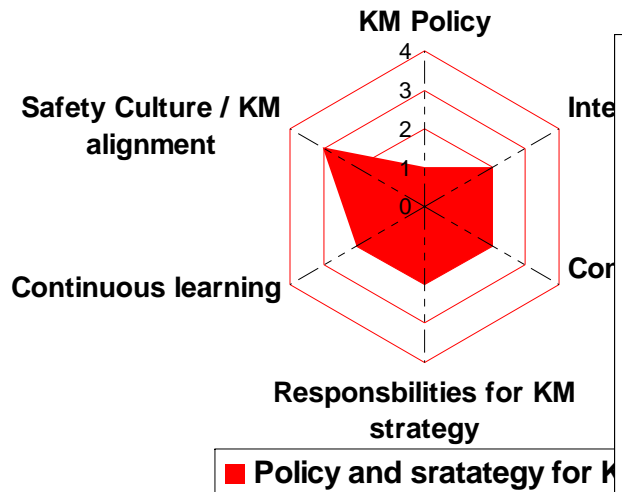
- **Written policies for implementing KM strategy**
- **KM policy integrated into management system**
- **Communication strategy**
- **Identification of KM responsibilities**
- **Managers are personally involved in the KM programme**
- **Organization's strategic focus supports a continuous learning environment**

Assessment Criteria/Questions

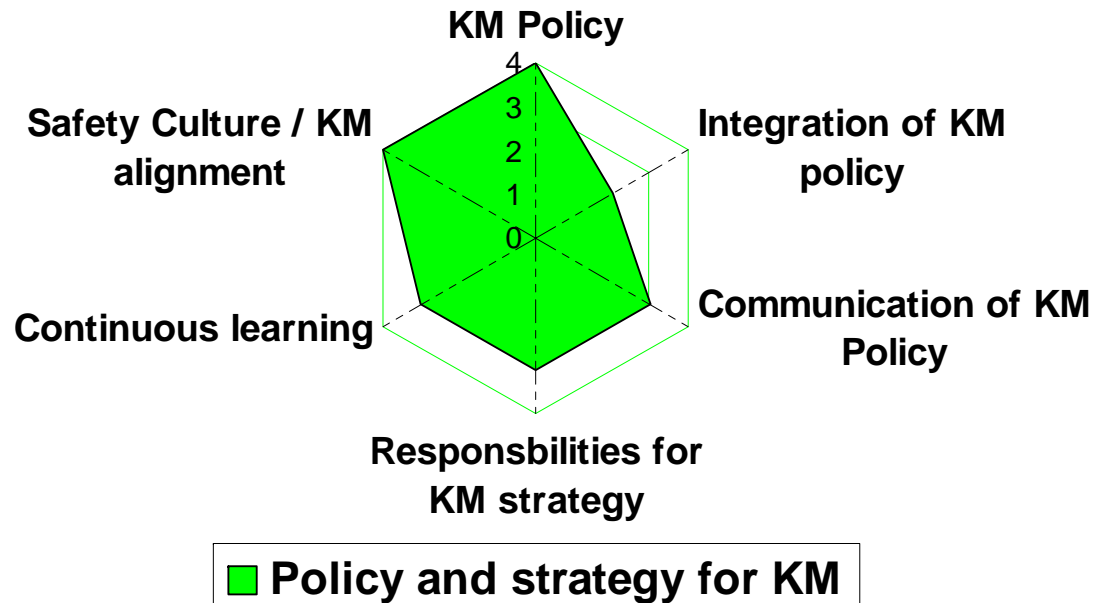
1	Does the organisation have a written policy for implementing its KM strategy?
2	Is this KM policy integrated into the management system?
3	Is the KM policy communicated to all staff in the organisation?
4	Are those responsible for formulating and implementing KM strategy in the organisation clearly identified?
5	Does the organisation's strategic focus support continuous learning to improve individual and organisational performance?
6	Is the organisation's KM policy aligned with continued emphasis on a strong safety culture?

1. KM Policies and Strategies

Extent Currently



Extent Should be

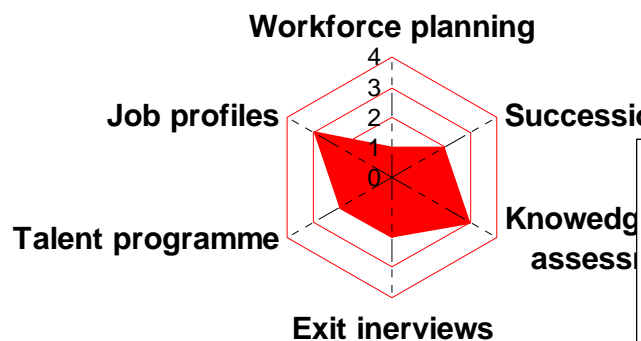


2. HR planning and HR processes

- **Workforce planning – a comprehensive workforce planning methodology**
- **Succession planning**
- **Risk assessment for critical knowledge loss**
- **Employee development plans for KM**
- **Job profiles or equivalent to assess and monitor skills/competency**

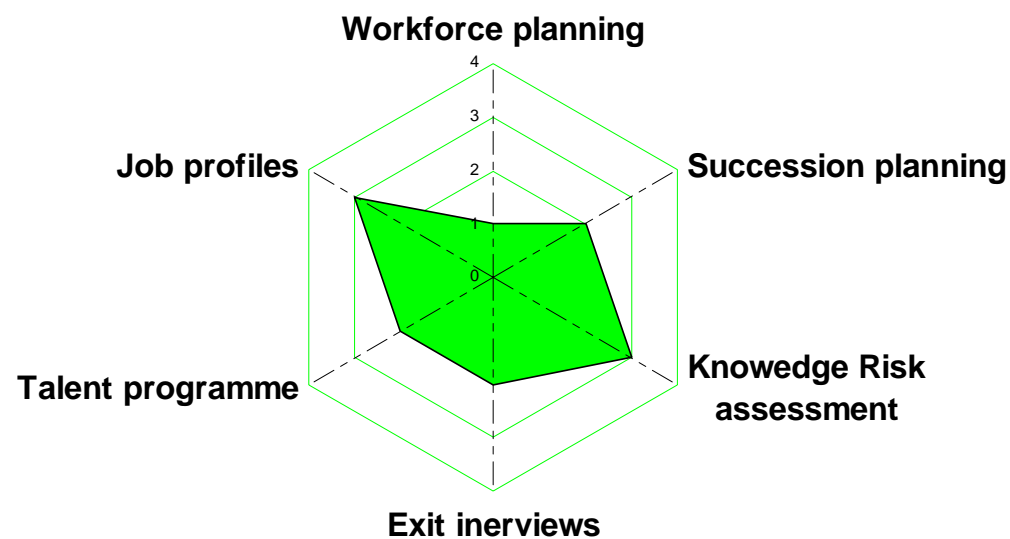
2. HR planning and HR processes

Extent Currently



■ HR Planning & processes for KM

Extent Should be

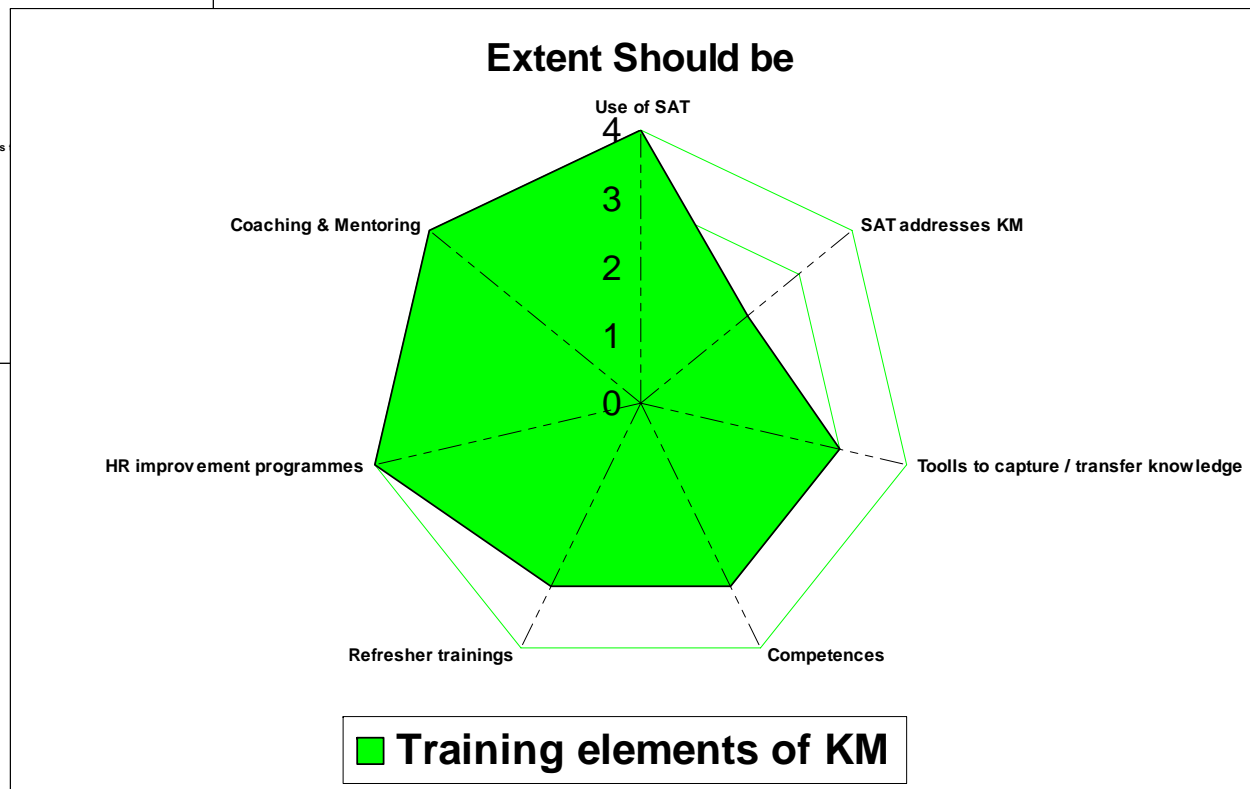
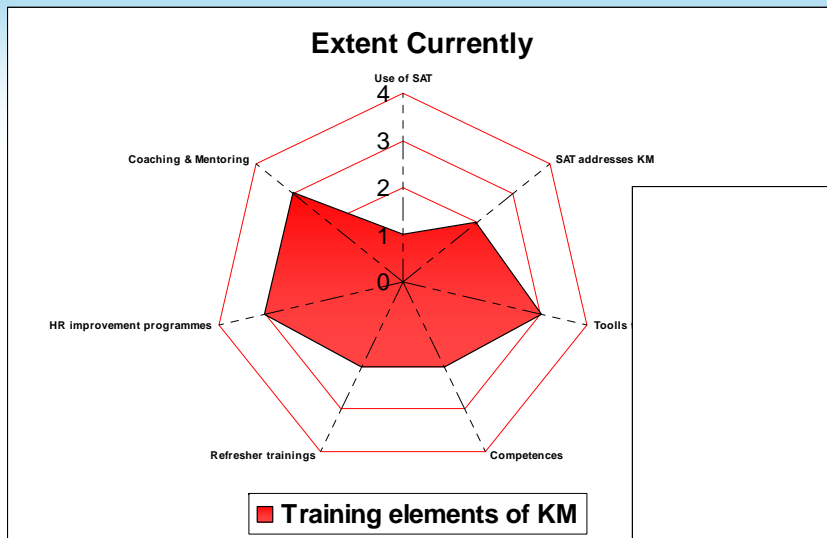


■ HR Planning & processes for KM

3. Training and Human Performance Improvement

- **Coaching and mentoring**
- **SAT**
- **Simulator use**
- **CBT (e-learning)**
- **Refresher training**
- **Human Performance Improvement**

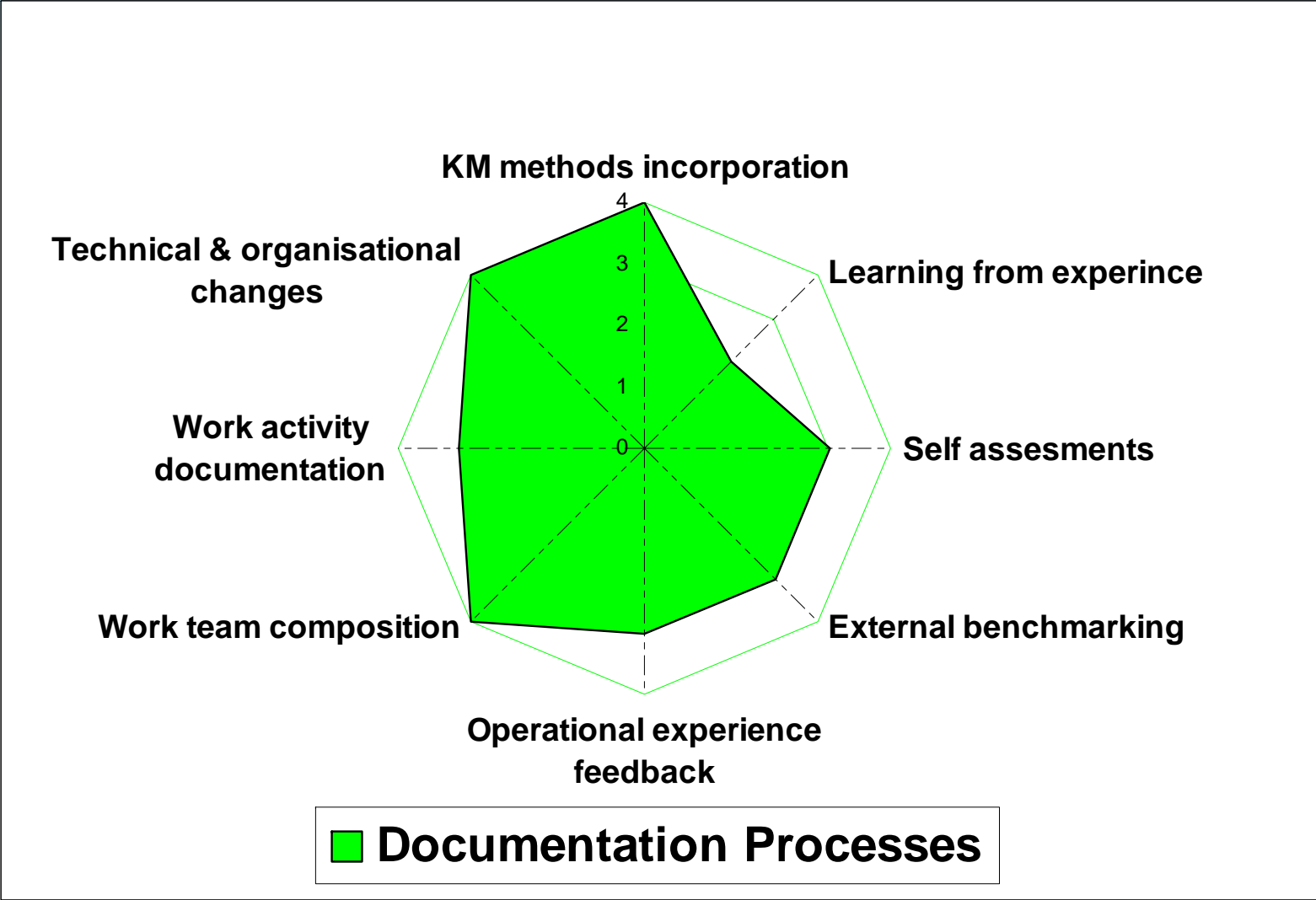
3. Training and Human Performance Improvement



4. Methods, Procedures & Documentation Processes for Continual Improving KM

- **Learning from Operating Experience**
- **Work control methods**
- **Error prevention**
- **Document control/Configuration**
- **Corrective action programme**
- **Benchmarking**

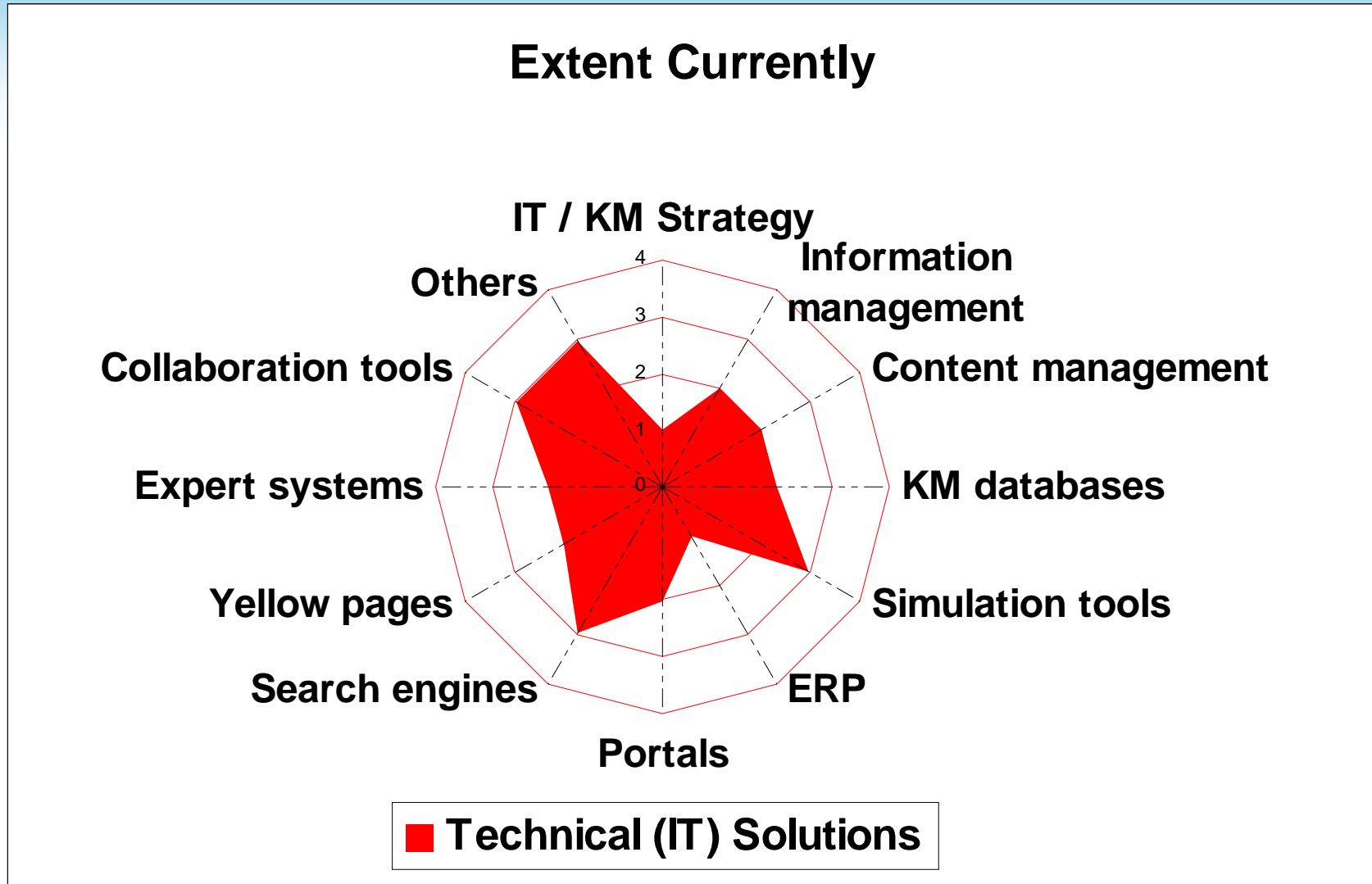
4. Methods, Procedures & Documentation Processes for Continual Improving KM



5. Technical (IT) Solutions

- Knowledge data bases
- Content/document management systems
- Search engines
- Portals/Intranet
- Wikis/blogs
- Skill/competency databases
- Expert yellow pages
- Enterprise Resource Planning (EPR)

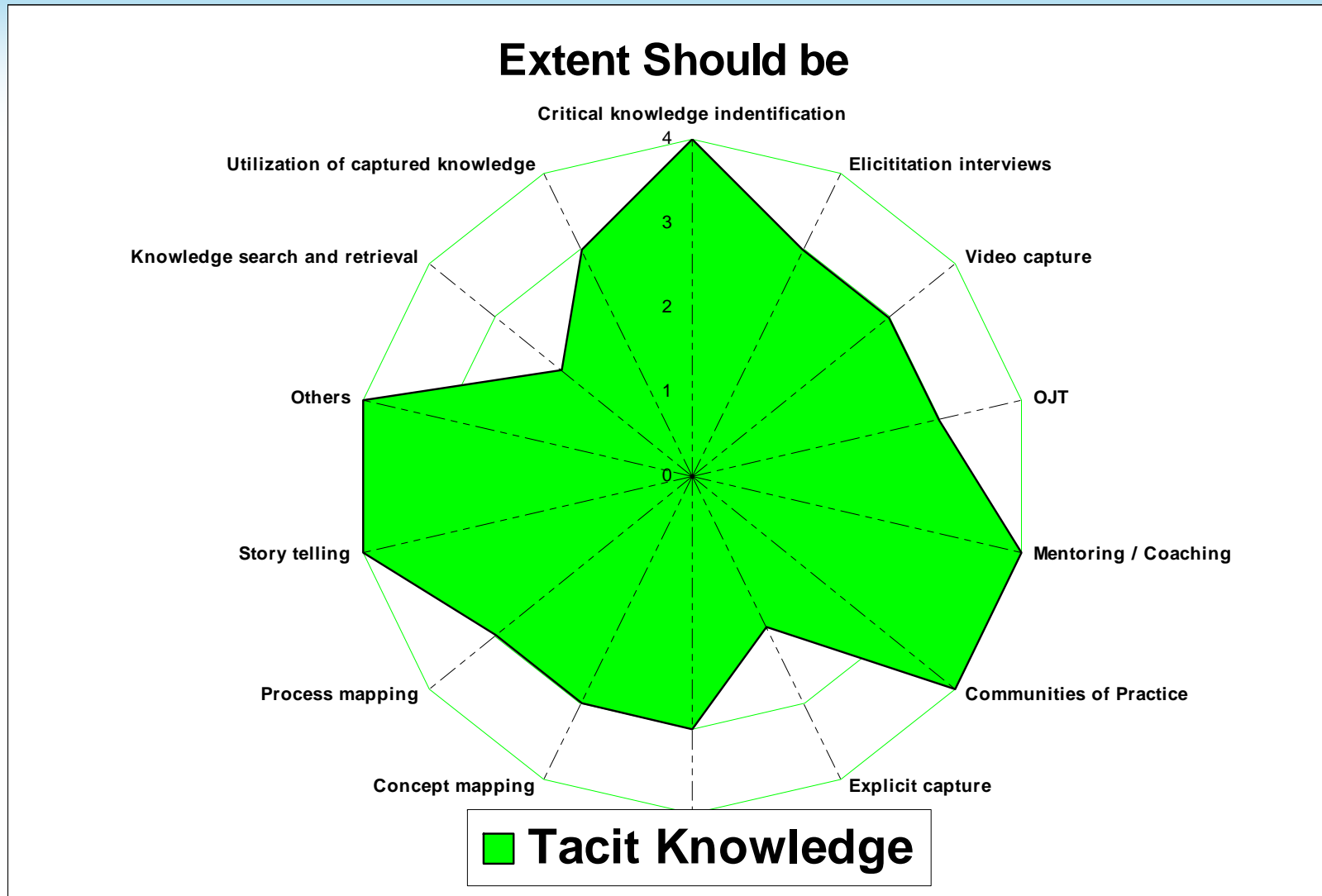
5. Technical (IT) Solutions



6. Approaches to Capture/Use Tacit Knowledge

- **Taxonomy development**
- **Process for critical knowledge ID**
- **Processes for knowledge elicitation/harvesting**
- **Concept mapping**
- **Communities of Practice (COPs)**
- **Coaching & mentoring**
- **Utilization of captured knowledge**

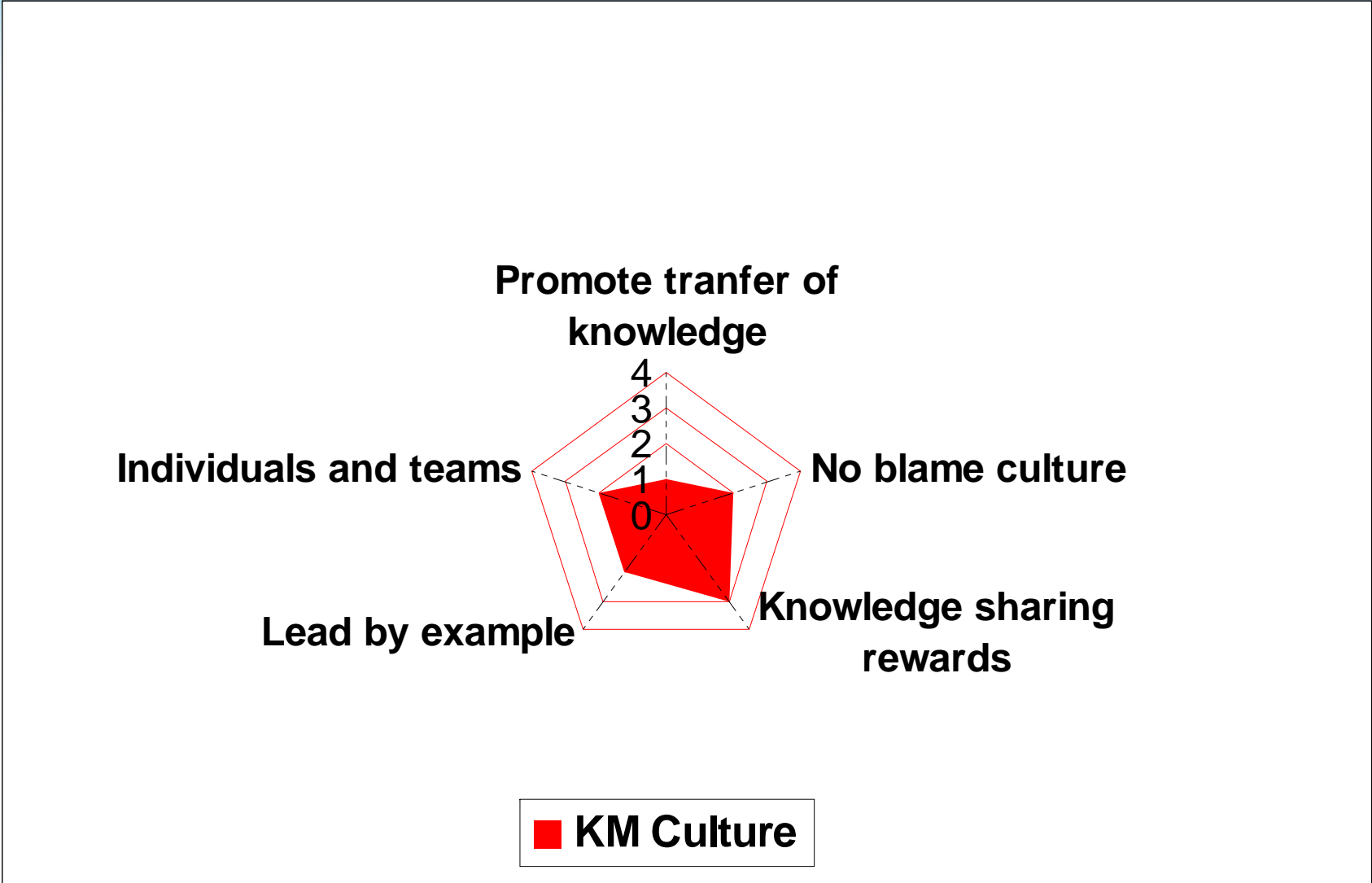
6. Approaches to Capture/Use Tacit Knowledge



7. KM Culture/Workforce Culture Supporting KM

- **Culture of the NO promotes the K-transfer**
- **No blame environment – reporting incidents/events and sharing from lessons learned**
- **Sharing knowledge**
- **Leadership/commitment**

7. KM Culture/Workforce Culture Supporting KM



Guide on KM Assist visits

- ❖ **Planning and Execution of Knowledge Management Assist Missions for Nuclear Organisations**
- ❖ **Draft document developed**
- ❖ **Publication in 2008**



KM Performance Assessment

Thank You !



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