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EPIC - Effective improvement of leadership and safety culture

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Background and objectives

- **<u>Motivation:</u>** Safety culture improvement, what are the effective practices, and what makes them effective, has received little research attention and practical guidelines are limited.

- **<u>Goal</u>**: Develop knowledge and approaches that support effective improvement of nuclear safety through **leadership and safety culture**
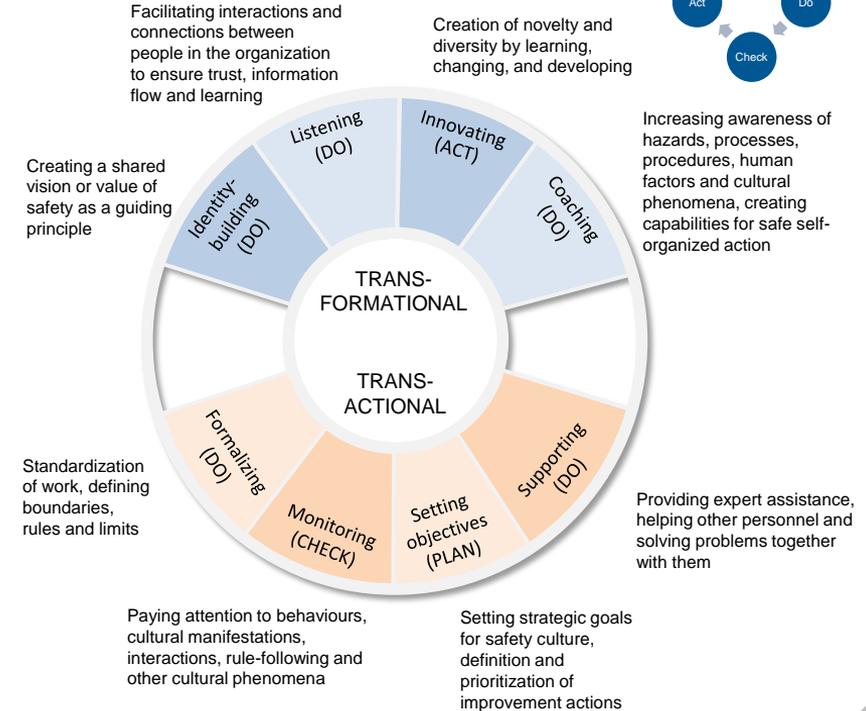
Methodical safety culture improvement

- Case studies were conducted in all Finnish nuclear power companies to model the approaches to **implement systematic safety culture improvement**

- **Fifteen generalized good practices** which describe the characteristics or preconditions for effective safety culture improvement were formulated based on the findings

Organizing

Role of safety culture experts

Organizational positioning

Activities

Facilitating interactions and connections between people in the organization to ensure trust, information flow and learning

Creation of novelty and diversity by learning, changing, and developing

Creating a shared vision or value of safety as a guiding principle

Increasing awareness of hazards, processes, procedures, human factors and cultural phenomena, creating capabilities for safe self-organized action

Plan — Do — Check — Act

Listening (DO)

Innovating (ACT)

Coaching (DO)

Identity-building (DO)

TRANS-FORMATIONAL

TRANS-ACTIONAL

Formalizing (DO)

Monitoring (CHECK)

Setting objectives (PLAN)

Supporting (DO)

Standardization of work, defining boundaries, rules and limits

Providing expert assistance, helping other personnel and solving problems together with them

Paying attention to behaviours, cultural manifestations, interactions, rule-following and other cultural phenomena

Setting strategic goals for safety culture, definition and prioritization of improvement actions

Conceptualization

Definitions

Models

Approach

Interactions

Unidirectional

Bidirectional

Case studies to identify good safety leadership practices in Finnish nuclear industry

- ODM process: The system is working well for its purpose and is a matured practice. Factors behind the successful ODM process included **procedural and cultural preconditions, and leadership activities** (e.g., promoting open atmosphere and ensuring that everyone gets heard)

- Middle managers: Well-performing managers emphasised **both task-orientation and people-orientation**, were highly **motivated** for leading (not just managing) and had **developed their own ways of working** with their subordinates, emphasizing trust and loyalty to their team

- Safety walks: **Great variety** of safety walks was observed, but they often focused on **technology rather than people**. Interacting with people was perceived easy, but discussing "people issues" (well-being, perception of work, etc.) was harder

Effectiveness assessment of safety culture improvement

- Two **approaches** to assessing the effectiveness of safety culture improvement were identified with complementary focus areas
  - **Phenomenon**-based approach: focus on interactions and dynamics of cultural phenomena
  - **Process**-based approach: focus on safety culture improvement as an organizational function
- Four **practical assessment tools** were created
  - Tools for modelling two safety culture attributes: reporting behavior and procedure compliance
  - Maturity evaluation tool for safety culture assessment process
  - Tool for assessing the effectiveness of safety culture trainings
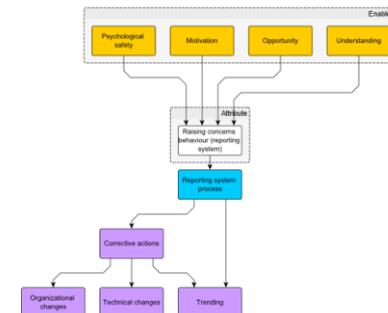
Conclusions

- **Leadership best practices** include successful balancing between people and task orientation, people and technology orientation, and creation of procedural and cultural preconditions
- **Safety culture experts' work** is steered by the conceptualization of safety culture in the company and its formal organization. They can implement a wide variety of activities and are extensively connected to other organizational functions
- **Effectiveness assessment** of safety culture improvement can be viewed from phenomenon and process-based approaches, which lead to complementary insights and tools