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Applying Continual Service Improvement Practices to Study Quality of Healthcare Information System Services: A Case Study

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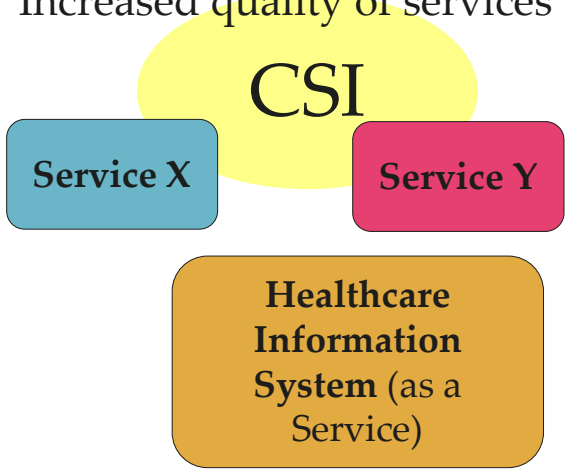
1. Introduction

- Continual Service Improvement (CSI) is a service lifecycle phase that is responsible for **improving** the **quality** of IT **services** and underlying products, components, processes and practices.
- **Interoperability** and **security** of IT services play a crucial role especially in healthcare sector.
- IT service providers need to play an active role in developing digital solutions that integrate with healthcare processes and systems.

Business benefits of CSI:

- Faster implementation of new service features
- Increased transparency of improvements
- Increased quality of services



Response to changes in medical device regulation

Improvements in service quality

Modernization due to digital transformation

Patient safety improvement actions

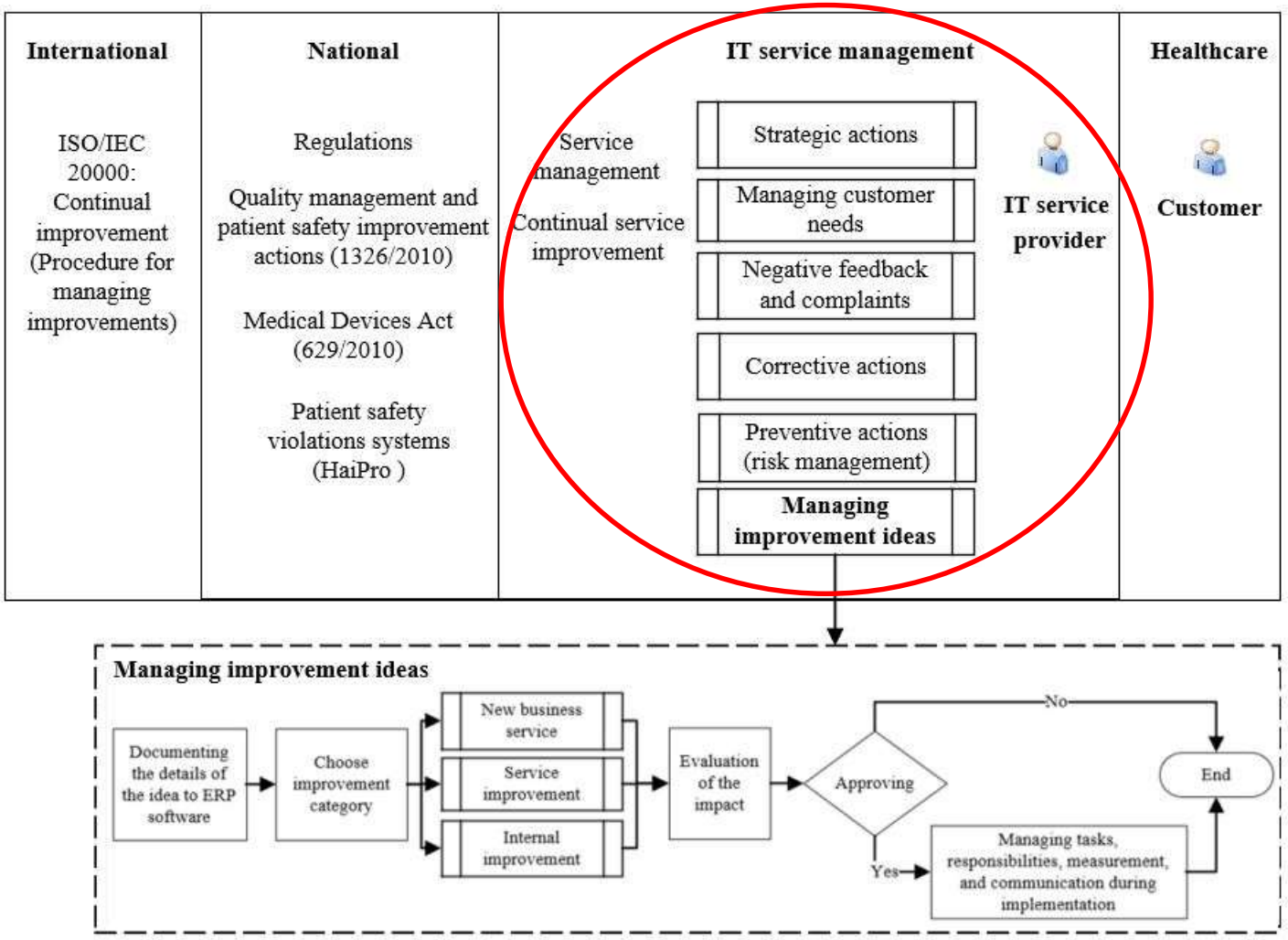
2. Research Methods

ISO/IEC 20000
Part 1: Service management system requirements

- Research problem:
  - How to manage service-related improvements with ISO 20000 compliant CSI model?
- The main contribution of this study is to explore
  - How service-related improvements are managed in Enterprise Resource Planning (ERP) software?
  - How CSI model can be applied to IT services on the healthcare domain?
  - How CSI is operated in a multiactor network?

In our case: ERP=ITSM

2.1 Context of the case study



2.2 Data collection

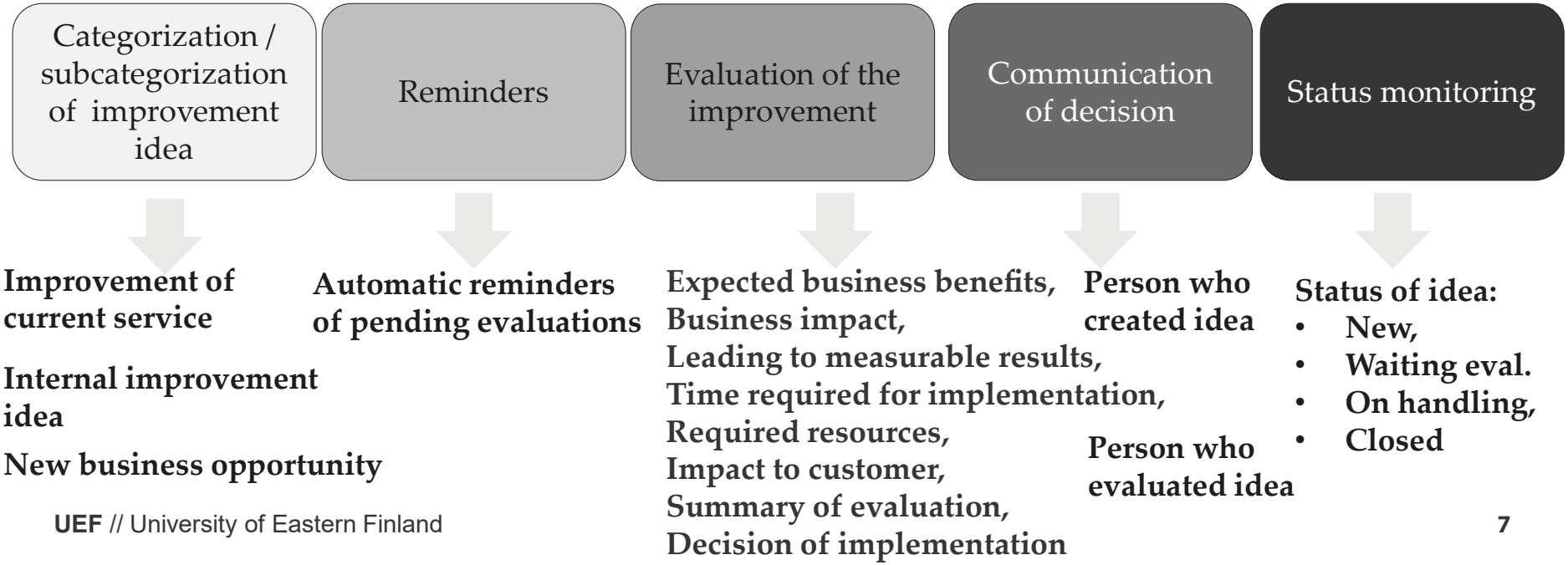
Documentation	Case documentation (quality handbook), ITSM process descriptions, ITMS process charts, standards: ISO 9001 and ISO/IEC 20000, monthly steering board info, intranet information letters
Archives/Records	Improvement records in the ERP software
Interviews/ discussions	CSI process owner, quality manager, quality specialist, group managers, ITSM tool specialist, process managers in Service Management Office (SMO)
Validation interviews	ERP software main user (1), Security manager (1), Information management specialist (1), Software architect (1), Directors (4), HR Development Manager (1), Executive Assistant (1), Development manager (3)
Theme interviews	Semi-structured theme interviews: two service managers of social and healthcare information system services
Participative observation	Observations on CSI, participation in SMO meeting, participation in a business steering group meeting
Direct observation	Direct observations: Listening and making notes from conversations during training sessions (ITIL 4)

3. Results

Case study on Continual Service Improvement

3.1 How service-related improvements are managed in Enterprise Resource Planning (ERP) software?

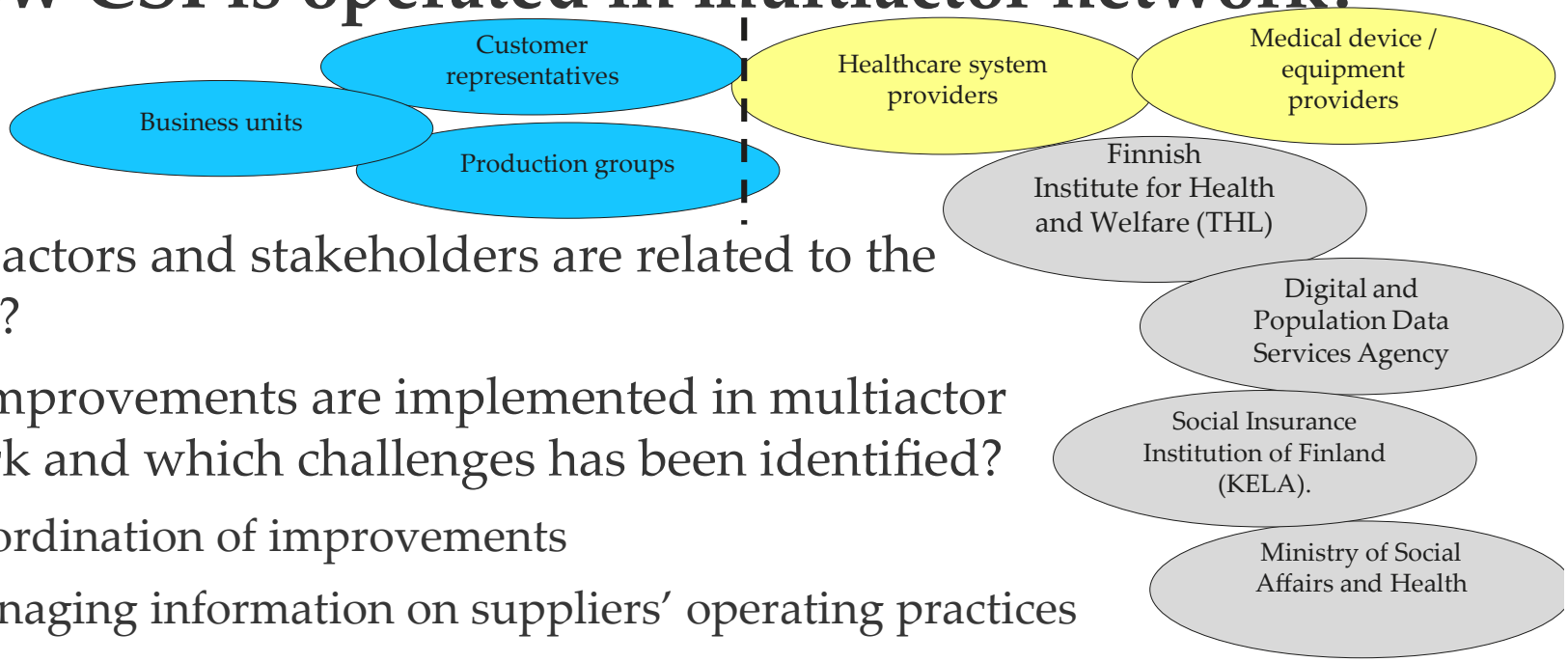
- A structured and informative Continual Improvement record



3.2. How CSI model can be applied to IT services on the healthcare domain

- **How service is measured?**
  - Various metrics on service and customer satisfaction, collected in customer surveys, customer feedback, project feedback
- **What type of knowhow is required in a service manager role?**
  - Customer relationship management, service pricing, performance of maintenance, contract management, procurement, service reporting
- **How service managers perform service improvement?**
  - Service improvement requires ITSM processes that are running smoothly and there should be time to improve IT service delivery and related processes
- **Which roles participate in decision making of service-related improvements?** Business manager, specialists and service managers.
- **How service review meetings are organized?** 2-4 service meetings / year

3.3. How CSI is operated in multiactor network?



- Which actors and stakeholders are related to the service?
- How improvements are implemented in multiactor network and which challenges has been identified?
  - Coordination of improvements
  - Managing information on suppliers' operating practices
- What types of expectations customers have regarding the service?
  - The service provider should have holistic view in providing solutions to a customer
  - Staff aware what is happening in service environment

Service Level Requirements

4. Analysis of results

STS	Findings (Source)	Implication to CSI
People	Interaction and cooperation skills IN	Ensure that CSI skills exist
	Creativity & innovation to improve services DI, IN	Foster innovation skills
	The tool provides a channel to present ideas related to service innovation DI, IN	Utilize the full org. potential in CSI.
	Be aware of changes in service environment IN	Know the service environment.
	Have readiness to improve provided service IN	
	Collaborate and engage stakeholders IN	Plan engagement.
Structure	Various roles participate in design, decision making, and implementing improvements. IN	Set clear roles and responsibilities to support smooth CSI.
	Communicate improvements to employees IN	Create visibility to CSI
	Measurement of the service benefits and impact from value creation perspective. IN	Emphasize managem. of benefits
Process	Meetings with customers and suppliers related to service delivery. IN, DO	Organize service meetings to improve service delivery
	Planning the future roadmap helps to gather and implement service improvements. IN, DO	Use roadmaps to show direction for improvement
	Managing improvement ideas process ensures unified processing of ideas. IN, DO, PO, DI	Define a process for managing improvements
	Common methods and criteria needed to evaluate service improvement targets. IN, AR, DO	Evaluation of improvements requires clear criteria
Technology	ERP should enable managing service tasks and support effective work. DO, PO, IN	Design a system supporting service lifecycle management.
	ERP should produce monitoring data DO, PO, IN	
	Design a workflow where ideas can be captured in a common form; helps creating an informative impr. record. DO, PO, IN	Use standardized procedures and workflows in ITSM tools.

Conclusions

- Lessons learnt:
  - The ERP/ITSM system plays a central role in continual service improvement of the case organization
  - Continual improvement can be seen as a mandatory process area for IT services (ISO 20000 requires CSI) and there is a need to increase visibility of CSI.
  - Service improvement requires effective IT service management processes and systematic coordination of multiple actors involved in improvement work.

Implement a tool for managing workflow of improvements

Increase awareness of CSI

Implement processes & coordination structures supporting CSI

Thank you! Comments / Questions?

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