Identifying concepts for studying implementation of Information Technology in Facilities Management

Paper presentation
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Poul Ebbesen and Sten Bonke
IT implementation in FM often fails

Concepts for studying IT in FM

Ebbesen and Bonke
Only one way of seeing things makes us blind

More than one process. Processes in parallel.
IT implementation processes in FM often fail

Data Containers

External data
Digital archive
Database
GIS
BIM
2D/3D

Workflow systems
IWMS
CAFMS
CMMS

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Where are the challenges?

Focus in this project

Operations  Work flows  Added value

IT  Implementation  Organization

Staff  Standards  Other?
Implementing IT in FM. Many processes in parallel.

Innovation
Decision Process

- Knowledge
- Persuasion
- Decision
- Implementation
- Confirmation

Communication Channels

Domestication Process

- Appropriation
- Objectification
- Incorporation
- Conversion

Change Management process

- Recognize need and start change process
- Diagnosis
- Plan and prepare to change
- Implement the change
- Sustain the change
- Review

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My paper: Recommends a multi conceptual approach

Needed as a basis to study and fully understand the process

Concepts can be used in parallel

Can be established

To:
- Enrich the empirical data collected
- Widen the scope of the data analysis
- Shed light on central aspects of the process
Criteria / filters for identifying theories and concepts

1. Process oriented theories and concepts
2. Suited for the setting
3. Applicable to this specific research
4. Not overlapping

Identified theories and concepts
1. Process oriented theories and concepts

Process oriented Theory clusters

Each with related theories and concepts

But which are relevant?

A cluster of theories

A theory, concept or model

Socio-technical

Innovation

Management

Organizational

Implementation
2. Suited for the setting

Setting

Objectives
- Reliability
- Transparency
- Interoperability

Types of IT
- Data Containers
- Work Flow systems
- Ready to use systems
- Systems already in use

Process
- Limited IT development and design
- Primarily deployment
- Main effort in capturing data

Organizational
- Few people involved
- Different professions and departments
- Strong external actors
3. Applicability to this research

Applicability

Limitations
- My background
- My knowledge
- Resources

Focus area (Process)
- Has to do with:
  - People
  - Technology
  - Organization / Management

Phase in the research
- Data collection
- Analyzing data
4. Not overlapping
Identified theories and concepts

- **Innovation**
  - General Innovation Theory
  - Diffusion of Innovations

- **Sociotechnical**
  - Social Construct of Technology (SCOT)
  - Actor Network Theory (ANT)
  - Boundary Objects
  - Domestication Theory
  - Intermediaries

- **Organizational**
  - Configuration models
  - Diagnostic models

- **Management**
  - Project Management Theory
  - Change Management Theory

- **General Implementation Theory**
  - Structurational model of technology
  - Technology acceptance model (TAM)
  - Success and failure models

Each theory offers approaches, concepts, dimensions and variables for studying, understanding and describing the phenomenon in focus:

Implementation process
Focus in this project
Example: The concept of Translation from ANT 1/2

- Focus on connections between human and non-human entities
- connections creates new entities not necessarily practicing the sum of characteristics of the original entities
- Humans and non-humans are treated equally
- Non-human entities may be inscribed by the creator

First meaning of mediation: Goal translation (Latour 1999, Fig. 6.1)

woman + gun = gunwoman or womangun

revenge
kill?
shoot
The concept of Translation from ANT 1/2

- When people interact with IT a new hybrid entity is created (IT-people or People-IT).
- The original goal for the people was Goal 1.
- The IT is inscribed by the designer with a goal or functions: Goal 2.
- The hybrid actor-network may choose another Goal 3.
Example: “Humans shapes technology” from SCOT 1/2

- Technology does not determine human action
- Human action shapes technology
- For any technical problem there are a range of solutions
- Which technology is chosen depends on
  - social factors
  - the relative power of social actors
- Key terms:
  - Interpretive flexibility
  - Attribute of meanings
  - Closure
Example:
“Humans shapes technology” from SCOT 2/2

A problem:
Overview of facilities is needed

1. CAD
2. BIM
3. GIS
4. 3D GIS

A range of IT solutions are available

Social groups defined by the meaning they attach to / attribute the technology

Focus in this project

If actors in social groups B are the most power full, and they attach a specific culturally / socially accepted meaning to technology 2, then it most likely to be chosen

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To:

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Thereby:

- Finding elements in the process which should be improved in order to add value