Human Factors Affecting Enterprise Architecture Acceptance

Sonja Gilliland
PhD student

1 Aug 2013
Discussion

   - EARF
   - People
   - Opportunities

2. Research plan: EA process similarities

3. My research
   - Idea
   - Course of the research
   - Outcomes
Where did it all start?
Research – the beginning

Role of EARF

- Workshop on EA in Sept 2008 – Zachman framework explained

- Compiling of EARF definition of EA
  - “EA is the continuous practice of describing the essential elements of a socio-technical organisation, their relationships to each other and to the environment, in order to understand complexity and manage change”

- Zachman and TOGAF – presentations, discussions and training

- Research training

- Speakers and opportunity for networking
Research building blocks
Research – idea

EARF SPEAKERS

• Zachman – Feb 2010 and Des 2010

Perspective
work
roles

Behaviour ideas
Organisations
Cycles
Policy

Behaviour reality
Users
Performance
Rules
Research – human factors

All rows of the Zachman Framework for EA

**Who** column (Zachman framework)
- Roles in Organization and
- Work in Groups are
- Allocated to achieve Performance by
- Managing through Accountability

**When** column (Zachman framework)
- Timing and
- Response times and
- Coordination and Synchronization

**Why** column (Zachman framework)
- Motivation
- Reasons
- Purpose
“Any organization in any culture depends on the performance of people” (Hofstede & Hofstede, 2005:272)

SPEAKERS and NETWORKING

- Mauritz Klopper – King III
- Howard Hamilton – The value of a system’s architect
- Len de Villiers – CIO, technology strategies and enterprise architecture
- Chris van Zyl – Casewise and Modeling the enterprise
- Fellow students – Marianne, Jan, Louw, Elize, Marné, Hanlie, Dina, others
- Willie Needham – GWEA
- Jorg Lalk, Duarte Goncalves – Systems thinking and EA
Research Idea

The success of organisations - dependent on humans

Success of EA in organisations – dependent on human

Human element in EA adoption and acceptance
FOCUS: Humans in organisations

LITERATURE - THE HUMAN VIEW IN:
Organisations as social systems – cybernetics from 1930’s
• Quote Beer/Wiener

Organisational design, culture, operations, management, behaviour, change – past, present
• Quote Senge, Robbins, Brooks, Argyris, Kotter

Systems Engineering and IS in organisations
• Quote Checkland, Mingers, Dietz, Walsham

Enterprise Engineering – Hoogervorst, Dietz

EA and EA frameworks - Zachman, TOGAF, GERAM, others
Explain: Adoption and Acceptance

Both terms are used – strategic decision to change to / implement / use “new” method, system (choosing, approving, following)

For the purpose of study - necessary to theoretically differentiate:

**Adoption:** Strategic decision to change to / implement / use “new” system

**Acceptance:** Individual / group endeavour and response which occur after a method, plan or strategy has been adopted

Although adoption of Enterprise Systems had to be reviewed, the *focus of my research* was not on economic and technical impact on enterprises of such systems but on the *social* (human in organisation) impact.
Human acceptance of “new” things

• Three basic theories of resistance – human factors of people, poor system design and non-correlation of system design and organisational intentional use – Markus (1983)
• “The human element adds to the difficulty, complexity and uncertainty of EA practice within organizations” - Zachman (2010)

Technology acceptance - models, theories, frameworks

• TAM – Venkatesh, Davis
• Unified Theory of Acceptance and Use of Technology – (UTAUT) - Venkatesh et al.
• Actor-Network Theory (ANT) – Callon & Latour
• Structuration theory (ST) – Lee et al.
UTAUT

Performance Expectancy
Effort Expectancy
Social Influence
Facilitating Conditions
Gender
Age
Experience
Voluntariness of Use

Behavioral Intention
Use Behavior
ANT and ST

**ANT**
- “Actor” = human, non-human, both (workspace, technology, person)
- Network = organisational structure

Research connection with EA
- Enterprise, architecture, IT solutions are all examples of AN’s
- EA is “integrated and transparent representation of aligned interests”

**ST**
- Demonstration of the impact of human action and interaction at different social levels in an organisation

Research connection with EA
- Describe organisational context (time and space)
- Gathering of useful information (tacit knowledge) and reporting
- Human position within organisation (work role, motives, expectations)
Research building blocks
Research Objectives

1. Identify the human factors affecting EA acceptance in organisations
   - Case study
   - Human factors – literature
   - Combined list
   - Classification scheme
Research project – Mouton (2001)

Project

Research design

Research process or Research methodology

• DSR paradigm

• “Knowledge building through making”

• Artefact design

• Relevant problem

• Research rigor

• Evaluation
Strategy – began with case study

Aim:
Identify human factors affecting EA acceptance

Data gathering methods:
Interviews and focus group in one organisation

Type of data gathered:
Qualitative data

Outcome:
List of human factors
Human factors - defined

Jeyarah distinguish five areas of human factors:

- Individual
- Structural
- Technological
- Task-related
- Environmental

Human factors = any human element/quality of a human participant impacting on action or interaction

Individual
Structural (informal, networking, formal, functional)
Technological (compatibility, complexity)
Task-related (autonomy, responsibility, feedback)
Environmental (inter-organisational dependence, uncertainty)
Research building blocks

Case study
Zachman
TOGAF
Speakers

Literature

EARF
Research building blocks

- Case study
- Questionnaires
- Interviews
- 4-5 years “Hard Labour”
- Zachman
- TOGAF
- Speakers
- Literature

EARF
Research building blocks

- PhD
- Case study
- 4-5 years “Hard Labour”
- Zachman TOGAF Speakers
- Literature
- EARF
PhD - GAP
What I have learned

What I have learned from Zachman about dealing with complexity and change in organisations:

• One thing to say “Yes – it can be done!” or “No problem – we’ll do it!” and then figure out afterwards what to do and how to deliver!!
• But - it is another story (leading to success) when an enterprise uses EA, understands complexity and plans for change/development/expansion/growth/cost reduction/etc.

• Need for architecture = “engineering” and implementation = “manufacturing”

• “Total knowledge base” of an enterprise refers

• People are involved – “resistance to change”
Findings and suggestion
Usable – humans in organisations
Thank you
• In EA – socio-technical process theory (Zachman, 2010; Kappelman, 2010)
  “The human element adds to the difficulty, complexity and uncertainty of EA practice within organizations”
  “EA as seen through actor-network theory”
• In SE – P-CMM = framework, people capability maturity model (McGovern et al., 2004; SEI, Carnegie Mellon Univ)
• In IT – programmer, The mythical man-month (Brooks, 1995; Weinberg, 1971; )
• In organizational behaviour – (Beer, 1972, 1975; Senge, 1994; Argyris, 1990, 2008; Robbins, 2005)
• In organizational architecture – change management, power, anxiety, control, motivation, constructive behaviour, culture, values, beliefs, norms (Nadler & Tushman, 1997)
• In human resources and social systems (Latour, 2005)
• De Marco & Lister, 1987, Peopleware: Productive projects and Teams