Practitioner’s concerns needing EE-research

Martin Op 't Land
June 2nd, 2016

6th Enterprise Engineering Working Conference
(EEWC 2016, Madeira)
Our goals as Enterprise Engineering institute (EEi)

- to promote the professional use and further development
- of Enterprise Engineering methodologies in general, and DEMO-methodology specifically
- as open standard for the methodological design and implementation of enterprises
- such that enterprises are built that operate as a unified and integrated whole

We are here to confront needs of practitioners with your research power
Goal of this workshop

• share insight: match of current research areas with practitioner’s needs?
• to find out
  – which of the practitioner’s needs could be adopted as research subjects, or
  – which of these practical issues are already (partly) solved by existing theory –
    but might be needing valorization or industrialization

Expected benefits = stronger cooperation of research with industry
• simplifying finding internships for Master Students and practical case studies for their PhD’s
• may be even find new ways for the funding of research

After this workshop, we would like to have a “message” for EE-practitioners: what can they expect from EE-research?
Agenda

- Goal of the survey
- Responses
  - wordcloud
  - statistics
- Our EEWC-2016 research positioned
- Group reflection:
  - recognition?
  - possible next steps?
The goal of this survey is to collect issues (a) as experienced in practice when trying to apply Enterprise Engineering in general, and of DEMO in particular (b) for which it is assumed that additional theory is needed to solve these issues structurally.
We got 70 (14%) responses out of some 500 addressees

Which DEMO certificates (if any) do you hold?

- DEMO Professional (up to 2014, inclusive): 44 (74.6%)
- DEMO Master (up to 2014, inclusive): 11 (18.6%)
- DEMO Bachelor (from 2015): 10 (16.9%)
- DEMO Master (from 2015): 7 (11.9%)

Years of working experience

<table>
<thead>
<tr>
<th>Years of Working Experience</th>
<th>#Persons</th>
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<tbody>
<tr>
<td>0-9</td>
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<td>10-19</td>
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<td>40-49</td>
<td>3</td>
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</table>
What is the relevance of further Enterprise Engineering research in the following areas for you as practitioner?

<table>
<thead>
<tr>
<th>area</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Context</td>
<td>laws &amp; regulations; trends in (demand/supply) markets; products and competitors</td>
</tr>
<tr>
<td>2. Function</td>
<td>goals/objectives; BID (Business, Informational, Datalogical) needs, products, product structure, and services2. affordance and value; Quality of Service (QoS) / “non-functional” requirements (NFRs); House of Quality / Quality Function Deployment, etc.</td>
</tr>
<tr>
<td>3. Ontology</td>
<td>completeness / correctness of the universal transaction pattern?; how do ontological models depend on production technologies?</td>
</tr>
<tr>
<td>4. Realization</td>
<td>Connecting the Business, Information and Datalogical Organization, including the relationship of Information Products with Information Needs and information links; relationship of Data Products with Data Needs, ...</td>
</tr>
<tr>
<td>5. Organizational implementation</td>
<td>Assignment of people and parties to elements in the ontological model (including e.g. functionary types, departments), and the impact of organization philosophy on that (such as alternative distributions of responsibilities in an organization), ...</td>
</tr>
<tr>
<td>6. (ICT and other) means</td>
<td>Assignment of (amongst other ICT-) means to elements in the ontological model, e.g. Normalized Systems, software (packages), databases, ICT-replication strategies and ICT-performance measures, ...</td>
</tr>
<tr>
<td>means implementation</td>
<td></td>
</tr>
<tr>
<td>7. Governance</td>
<td>Enterprise, Information and Data Governance, Steering on Enterprise Transformation, ...</td>
</tr>
<tr>
<td>8. Architecture</td>
<td>relating principles, requirements and implementation choices</td>
</tr>
<tr>
<td>9. Enterprise Transformation</td>
<td>waterfall or agile or DevOps or the “run-time organization”? elaborating Minimum Viable Products in a durable way, ...</td>
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</tbody>
</table>
What is the relevance of further Enterprise Engineering research in the following areas for you as practitioner?

1. Context
2. Function
3. Ontology
4. Realization
5. Org impl
6. ICT impl
7. Governance
8. Architecture
9. Transformation

StDev
Average

Irrelevant
Not so very relevant
Relevant
Quite relevant
Most relevant
What methodology (bridges) would contribute most to your success as Enterprise Engineer?

![Bar chart showing the average and standard deviation for various methodologies]

- e3Value
- Modern Socio Technique
- Benefits Logic and Business Case
- TOGAF
- Business Model Canvas
- LEAN Six Sigma
- Model Driven Software
- Archimate
- BPMN
- SCRUM/Agile

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Average</th>
<th>StDev</th>
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</thead>
<tbody>
<tr>
<td>e3Value</td>
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We received 121 suggestions for research-subjects, with 117 underpinnings and 110 indications of urgency

- What should be researched?
- Why should this be researched?
  - What is the relevance (what goes wrong if we don’t do it) and why is that so urgent?
- Urgency: when should the results for this subject be available?

To be processed & ordered yet
Ordering our EE-research demand & supply: to let enterprises operate as a unified and integrated whole

*The Enterprise Engineering Framework (EEF) was introduced in Impact of Principles on Enterprise Engineering (Op ‘t Land & Proper, ECIS-2007)*
Emphasis in EE-research demand: impression

*The Enterprise Engineering Framework (EEF) was introduced in Impact of Principles on Enterprise Engineering (Op ‘t Land & Proper, ECIS-2007)

**Practitioner’s concerns needing EE-research**
Our EEWC-2016 research, summarized in EEF

context

function

construction/ontology

construction/implementation

perspective

business

informational

datalogical

system type

1

2

3

4

5

6
Group reflection

- recognition?

- possible next steps?
Appendix
DC1: Cross Channel Communication Design Research proposal (Mark Mulder)

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DC2: Enterprise Operating System (Alexey Sergeev)

- **Context**
  - Business
  - Informational
  - Datalogical

- **Function**

- **Construction/Ontology**
  - Parties & People
  - ICT & Other Means

- **Construction/Implementation**

Perspective: Practitioner's concerns needing EE-research
DC3: Towards an account for dealing with document act in DEMO Method (Kátia Coelho)

- context
  - business
  - informational
  - datalogical

- function
  - general

- construction/ontology
  - parties & people

- construction/implementation
  - ICT & other means

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## DC4: From the Essence of an Enterprise towards Enterprise Supporting Information Systems (Tatiana Poletaeva)

### Practitioner's concerns needing EE-research

<table>
<thead>
<tr>
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<th>System Type</th>
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<tbody>
<tr>
<td><strong>context</strong></td>
<td><strong>business</strong></td>
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<tr>
<td></td>
<td><strong>informational</strong></td>
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<tr>
<td></td>
<td><strong>datalogical</strong></td>
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<tr>
<td><strong>function</strong></td>
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<td><strong>construction/ontology</strong></td>
<td><strong>parties &amp; people</strong></td>
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<td><strong>ICT &amp; other means</strong></td>
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**ENTERPRISE ENGINEERING institute**

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DC5: Core Component of Communication (Duarte Gouveia)

- **Context**: Business, Informational, Datalogical
- **Function**: General
- **Construction/Ontology**: Parties & People
- **Construction/Implementation**: ICT & Other Means

System type
Practitioner’s concerns needing EE-research

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## WC0, Keynote: What’s in a Service?: An Ontological Perspective (Giancarlo Guizzardi)

<table>
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<tr>
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<tbody>
<tr>
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**System Types**

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WC1.1: Towards the Ontological Foundations for the Software Executable DEMO Action and Fact Models (Marek Skotnica, Steven van Kervel and Robert Pergl)

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WC1.2: Cross Channel Communication Design Critical Literature Review (Mark Mulder)

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WC1.3: Things, References, Connectors, Types, Variables, Relations and Attributes – Contribution to FI and MU Theories (Duarte Gouveia and David Aveiro)

Practitioner’s concerns needing EE-research

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WC2.1: Formalizing Organization Implementation
(Marien Krouwel, Martin Op ’t Land and Tyron Offerman)

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WC2.2: Supporting Organizational Implementation Decisions by DEMO and Process Simulation (Lotte de Laat, Martin Op ‘t Land and Marien Krouwel)

Practitioner’s concerns needing EE-research

<table>
<thead>
<tr>
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<th>Business</th>
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System type
WC3.1: Perceptual Discriminability in Conceptual Modeling (Jeannette Stark)

The diagram illustrates the relationship between system type and perspective. The vertical axis represents the perspective, which includes context, function, construction/ontology, and construction/ implementation. The horizontal axis represents the system type, which includes general, business, informational, and datalogical. The diagram shows how different perspectives and system types are related, with various components such as parties & people and ICT & other means.
### WC3.2: From the Essence of an Enterprise towards Enterprise Ontology Patterns (Tatiana Poletaeva, Habib Abdulrab and Eduard Babkin)

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- **Context**: Business, Informational, Datalogical
- **Function**: General
- **Construction/Ontology**: Parties & People
- **Implementation**: ICT & Other Means

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WC3.3: Extended Viable System Model (Alexey Sergeev and Jose Tribolet)

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## WC4.1: Objectifying Value Co-Creation – an exploratory study

(João Pombinho, Carlos Mendes, Bruno Fragoso, Ricardo Santos, Nuno Silva, Elton Sixpence and Jose Tribolet)

### Diagram:

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<table>
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</tbody>
</table>
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### Practitioner's concerns needing EE-research

- **context**:
  - business
  - informational
  - datalogical

- **function**:

- **construction/ontology**: parties & people

- **construction/implementation**: ICT & other means

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WC4.2: Towards Co-Creation and Co-Production Chains Modeled in DEMO with REA Support (Frantisek Hunka, Steven van Kervel and Jiri Matula)

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WC5.1: Building an Evolvable Prototype for a Multiple GAAP Accounting Information System (Els Vanhoof, Peter De Bruyn, Walter Aerts and Jan Verelst)

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WC5.2: On the Evolvable and Traceable Design of (Under)graduate Education Programs (Gilles Oorts, Herwig Mannaert, Peter De Bruyn and Ilke Franquet)

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