A Business Context Method Assessment

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Agenda

- Business Context – some points in history
- BPMN business process model
- Score business context definition
- Issues identification
- New E-UCM approach
- Addressing identified issues
Some Points in Business Context History

- ~2000 – ebXML introduces CCTS and Context-based specification of message standards usage
- 2000-2010 – various attempts to enable Context usage in industry, including UCM method
- 2014 – advanced E-UCM developed @ TU Wien to address UCM issues
- 2016 – Score (SRT) @ NIST, OAGi uses Business Context
- 2017 – Business Process Context (BPC) introduced in Business Process Cataloging and Classification System (BPCCS) prototype @ NIST, OAGi
- 2019 – An assessment of E-UCM in industry @ OAGi
Business context

Business process areas

Land O’ Lakes

Agriculture
BPMN model – cross dock

- Prepare Purchase Order
- Process Purchase Order
- Receive Purchase Order
Purchase order model

• **BC_PO** = Business Context of Purchase Order
• **BC_SL** = Business Context of Ship-to-Location
• **BC_L** = Business Context of Location
• **BC_BN** = Business Context of Building Number
• **BC_SN** = Business Context of Street Name
• **BC_CSDC** = Business Context of Country Sub Division Code
• **BC_PI** = Business Context of Plot Identifier
Business context for target business document

- **Purchase Order BC (BC_PO):**
  - Business process: Cross dock
  - Business process role: Purina, Nutrablend
  - Geo-political: US

- **Ship-to-Location BC (BC_SL):**
  - Business process: Cross dock
  - Business process role: Purina, Nutrablend
  - Geo-political: US

- **Location BC (BC_L):**
  - Business process: Transportation
  - Business process role: Land O’ Lakes
  - Geo-political: US, Canada
Ship-to-Location and Location BCs intersection

Location ABIE

<<BBIE>>
Identifier
Name
...
<<ABIE>>
Physical Address
<<BBIE>>
Building Name
Street Name BC_SN
Country Sub Division Code BC_CSDC
Plot Identifier BC_PI
...

BC_BN ∪ BC_SN ∪ BC_CSDC ∪ BC_PI

Intersection?
Key questions

1. Which location format will be used?
2. Which of these business units performs cross-dock operation? How to represent these associations?

The answer

• Reasoning
E-UCM model

- Requested business context is described using BC expression
- BC expression’s operands are formally defined
- Decentralization of original UCM model
1st Question

• Which location format will be used?
Overall contextual knowledge

BC categories

Schemas

Schema values
Reasoning

• Fact 1: Cross-dock is a sub-process of Shipment request and planning business process
• Fact 2: Shipment request and planning is a sub-process of Transportation business process

• Conclusion: Cross-dock is a sub-process of Transportation business process
Overall contextual knowledge
Reasoning

- Fact 1: Nutrablend is a successor BC node of Purina animal nutrition
- Fact 2: Purina is a successor BC node of Purina animal nutrition
- Fact 3: Purina animal nutrition is a successor BC node of Land O’ Lakes

Conclusion: Purina and Nutrablend are successor BC nodes of Land O’ Lakes
Business context for target business document

- **Purchase Order BC (BC_PO):**
  - Business process: Cross dock
  - Business process role: Purina, Nutrablend
  - Geo-political: US

- **Location BC (BC_L):**
  - Business process: Transportation
  - Business process role: Land O’ Lakes
  - Geo-political: US, Canada
• Purchase Order BC (BC_PO):
  ▫ (=Purina) || (=Nutrablend) || (=Cross-dock) || (=US)
BC expression – resolved nodes

- Ship-to-Location BC (BC_SL):
  - (=Purina) || (=Nutrablend) || (=Cross-dock) || (=US)
Location BC (BC_Po):
- (≤Land O’ Lakes) || (≤Transportation) || (≤US) || (≤Canada)
Ship-to-Location and Location BCs intersection

- $\text{BC}_\text{SL} \cap \text{BC}_\text{L}$
Location format

- BC_BN = (≤Land O’ Lakes) || (≤Transportation) || (≤US)
- BC_SN = (≤Land O’ Lakes) || (≤Transportation) || (≤US)
- BC_CSDS = (≤Land O’ Lakes) || (≤Transportation) || (≤US)
- BC_PI = (≤Land O’ Lakes) || (≤Transportation) || (≤Canada)

Needed BBIEs
Outcome: Business Context may help in BIE selection

• Situation 1: BIE with perfect BC matching exists in the repository

• Situation 2: BIE with perfect BC matching does not exist in the repository

• Situation 1: Business context allows BIEs’ reusability

• Situation 2: Business context allows selection of close BIEs to use as starting point for further refinement
2nd Question

• Which of these business units performs cross-dock operation? How to represent these associations?
Decentralized E-UCM graph

• This subgraph comprises only the geopolitical, industry and activity sub-domains of business context which are relevant to the scope where a particular inter-organizational business process operates
BPCCS

- Business process classification using multiple contextual dimensions
- Introspection functionality (allowing discovery of the model properties at runtime) to harvest business-process model information for context definition
BPCCS Introspection as an input for E-UCM sub-graph
Outcome: Business context may help in discovering relationships between processes and organizations.

- BPCCS Introspection is used to create subgraphs for each identified business process.
- In each subgraph, only nodes that describe specific business process operations are presented.
- Organizations included in business process operations can be identified.
Thank you all for listening!

