CONCEPTUALIZING CONTEXT FOR ADAPTIVE PERVASIVE COMMERCE
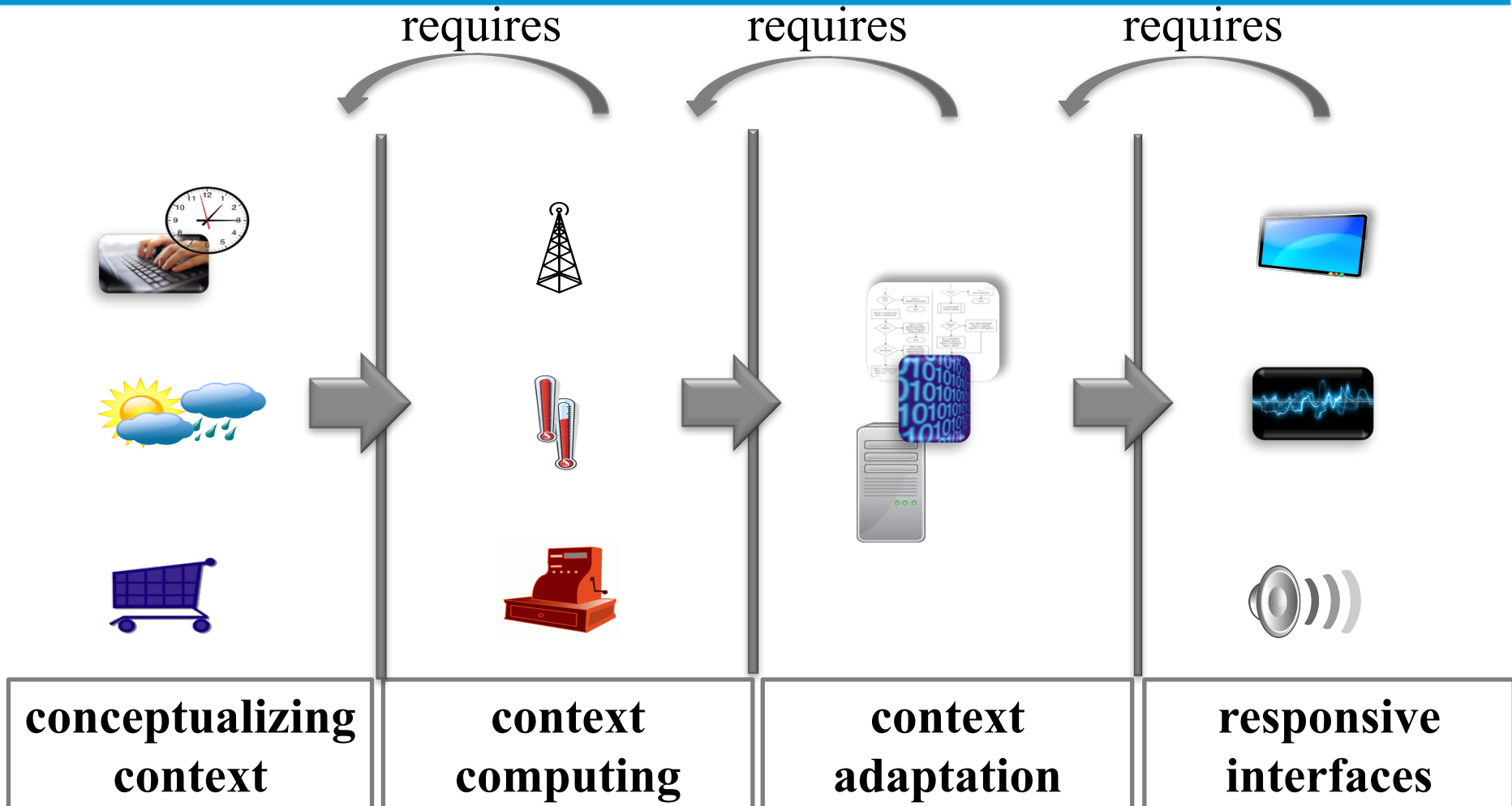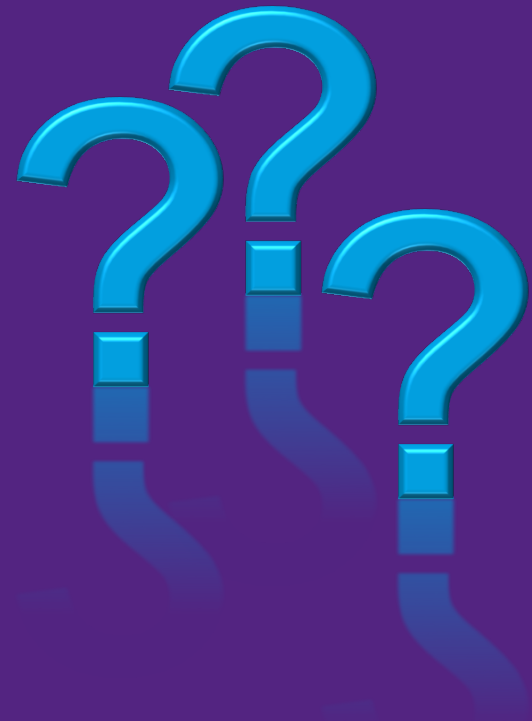
Christine Bauer

19th European Conference on Information System, Helsinki, Finland, June 9-11, 2011

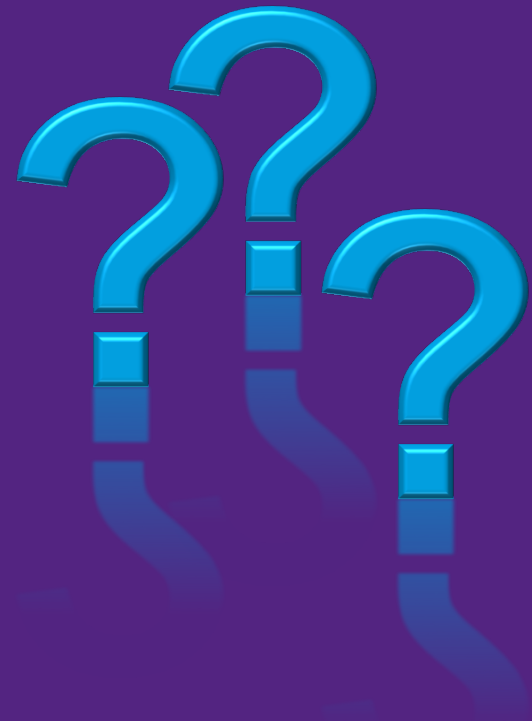# What is adaptive pervasive commerce?

The process of context adaptivity

requires · requires · requires

conceptualizing context · **context computing** · **context adaptation** · **responsive interfaces**

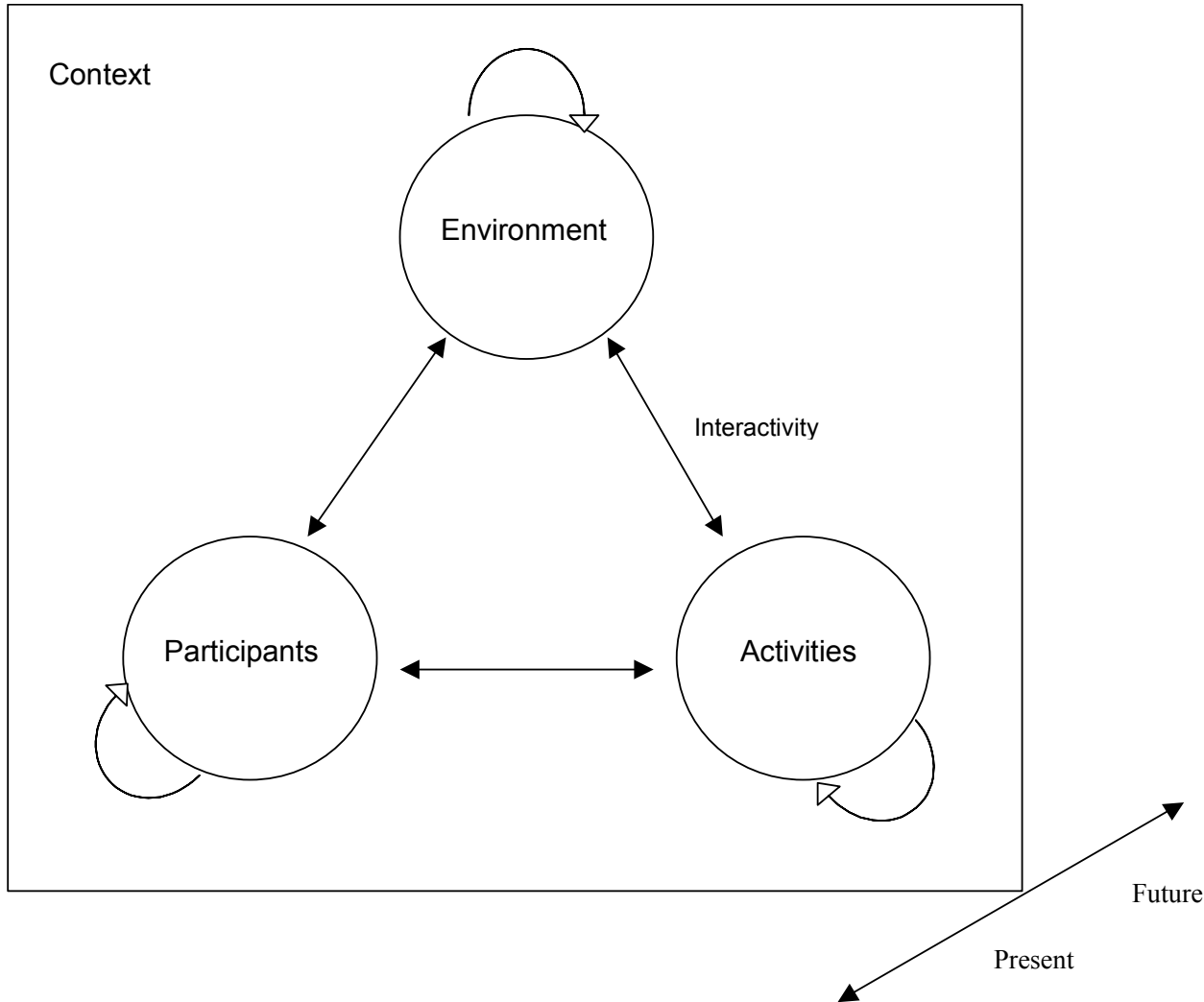CHRISTINE BAUER, CONCEPTUALIZING CONTEXT FOR ADAPTIVE PERVASIVE COMMERCE · OCTOBER 21, 2017

What is context?
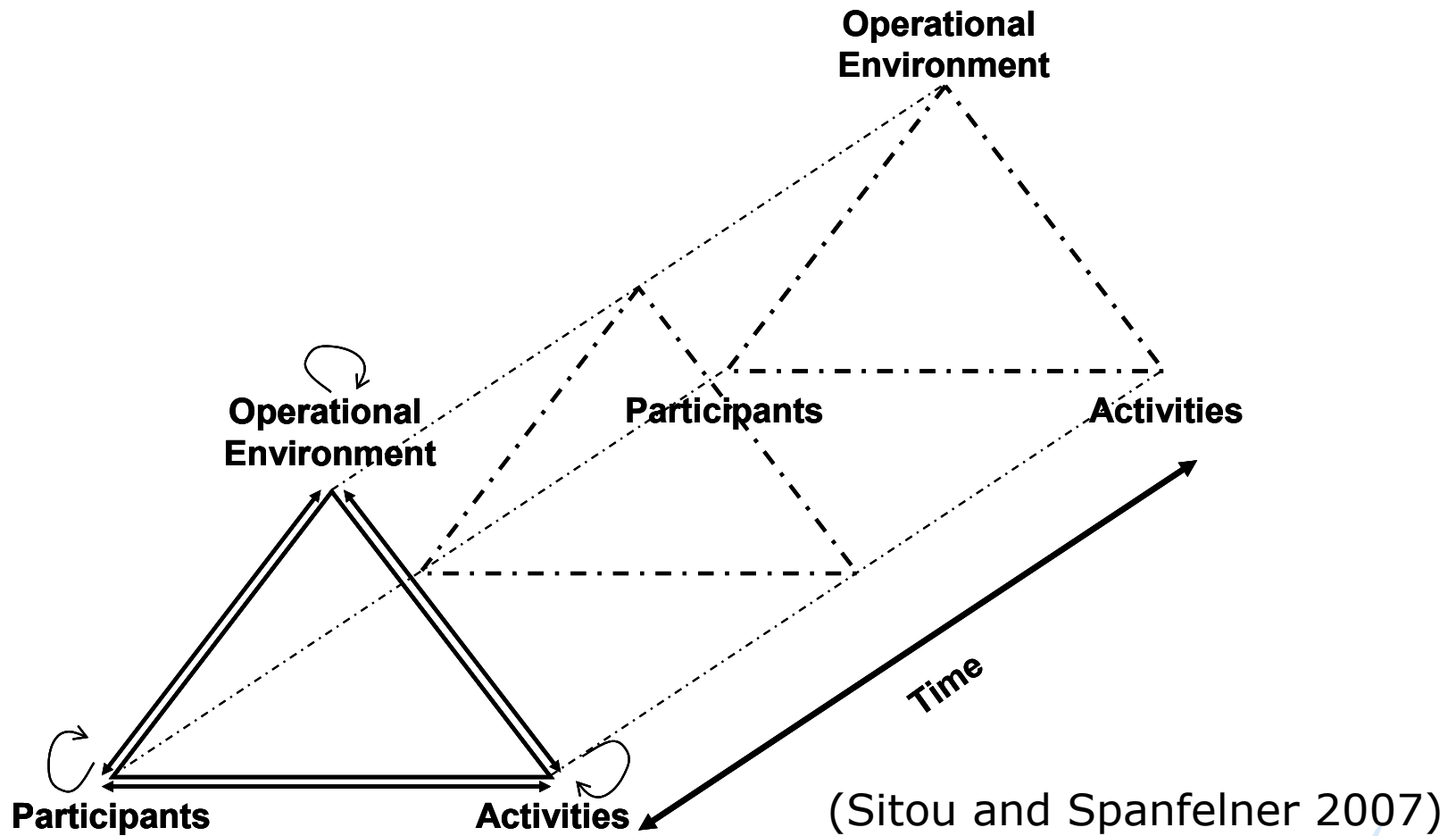
Existing models (1/4)

- built on enumerations (e.g., Schilit and Theimer 1994, Dey 1998)
- built on choosing synonyms for context (e.g., Brown et al. 1997)

- common categories include a user's *location* and *environment*, identities of nearby *people* and *objects*, and *changes* to those entities (Dey 1998)
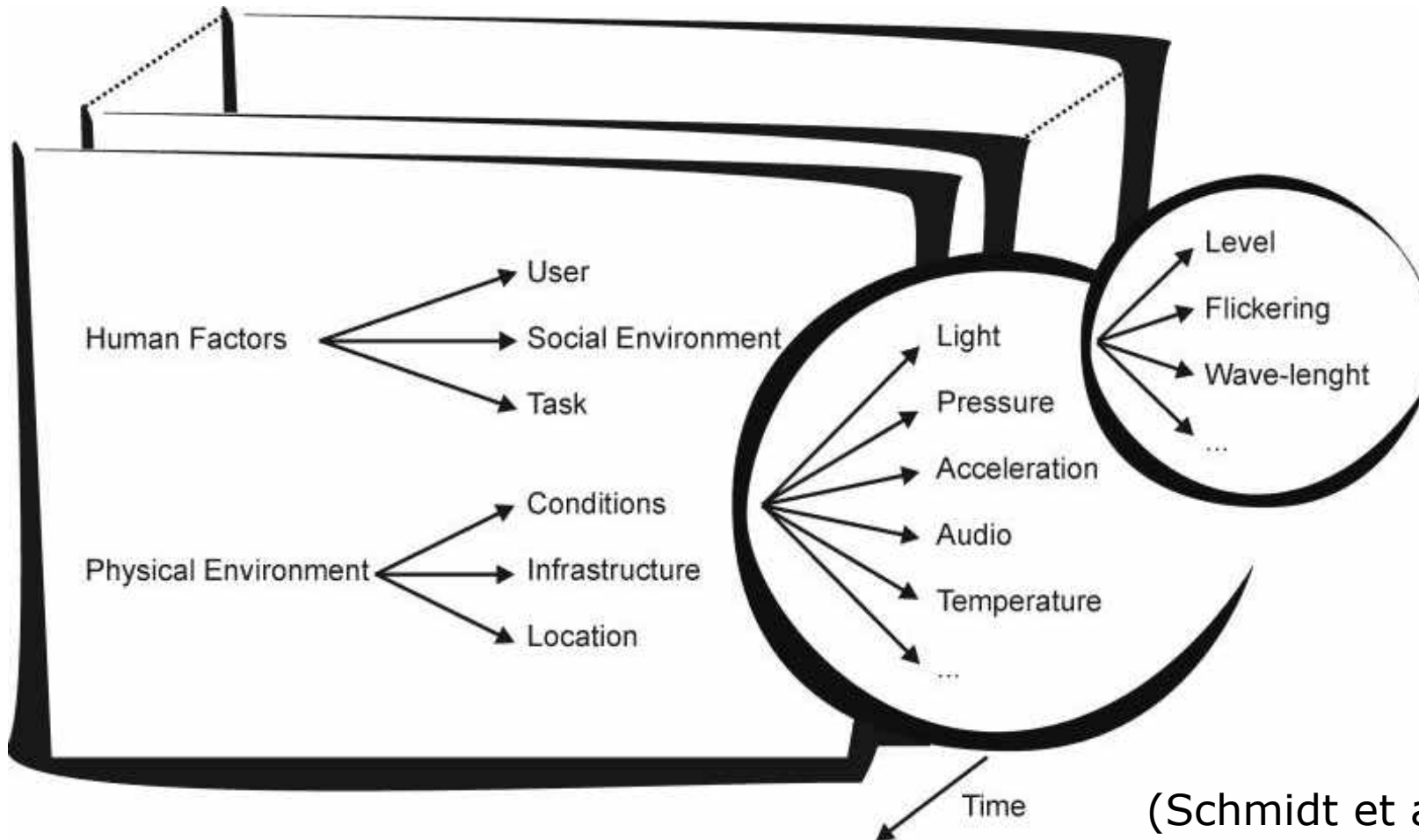- context is anything that is relevant to an entity (Dey and Abowd 2000b)

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Existing models (2/4)

(Tarasewich 2003)

(Sitou and Spanfelner 2007)

Existing models (4/4)

(Schmidt et al. 1999)

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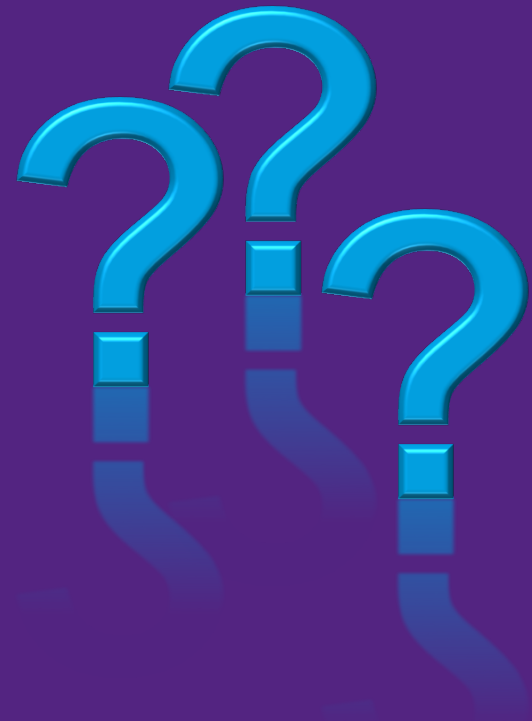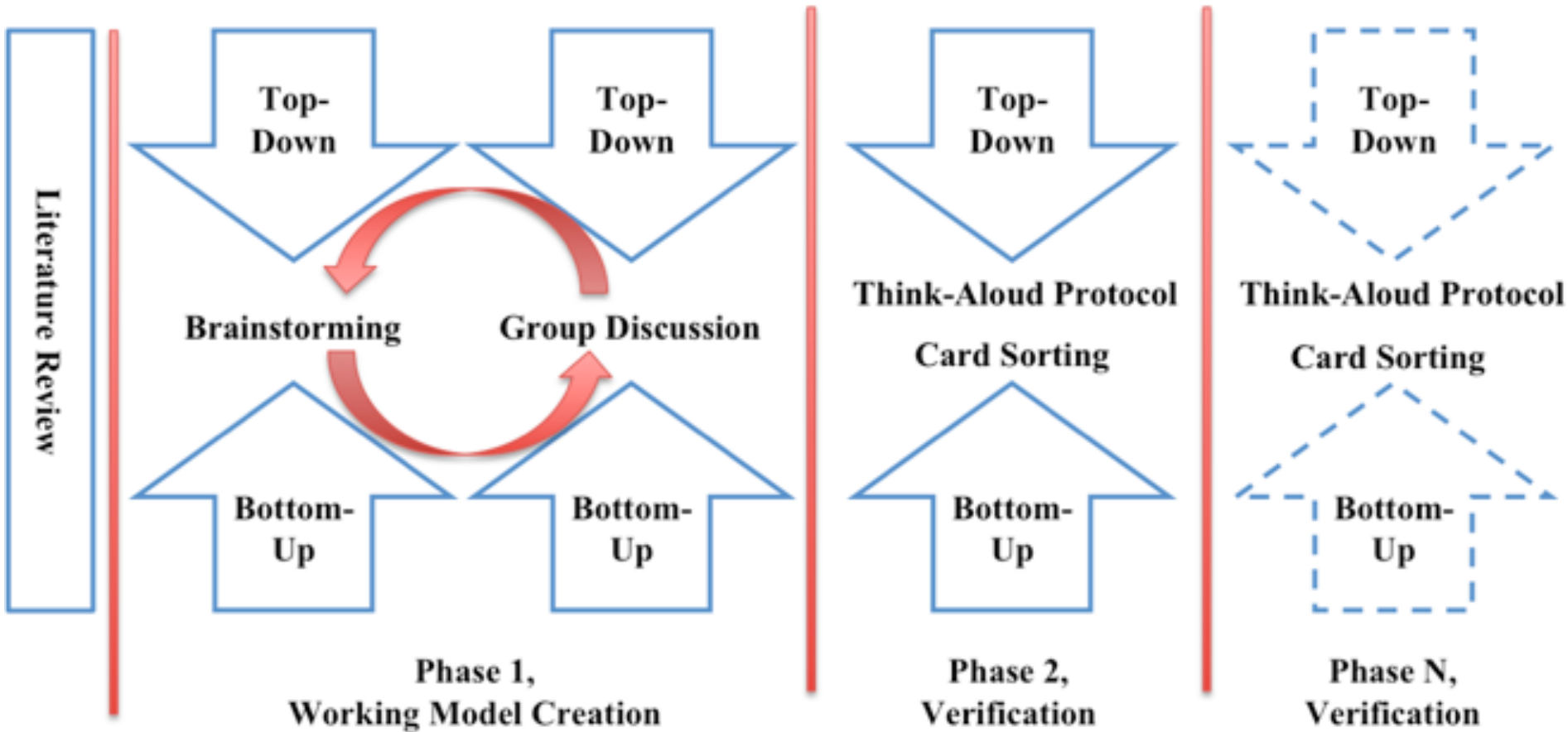
How useful are these context models?
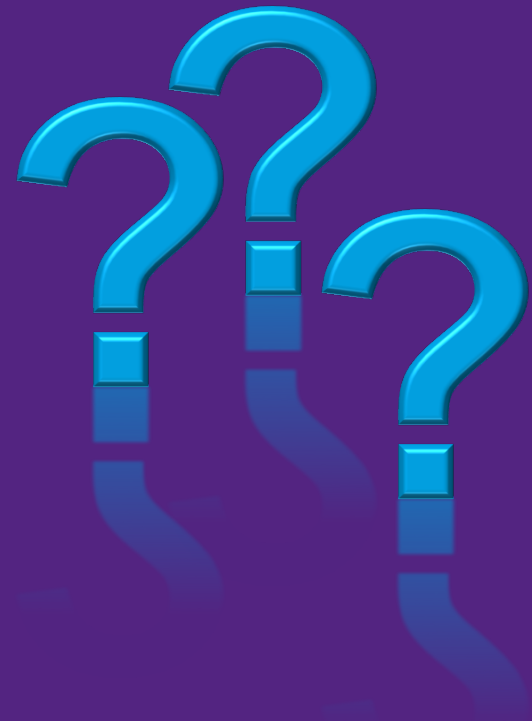
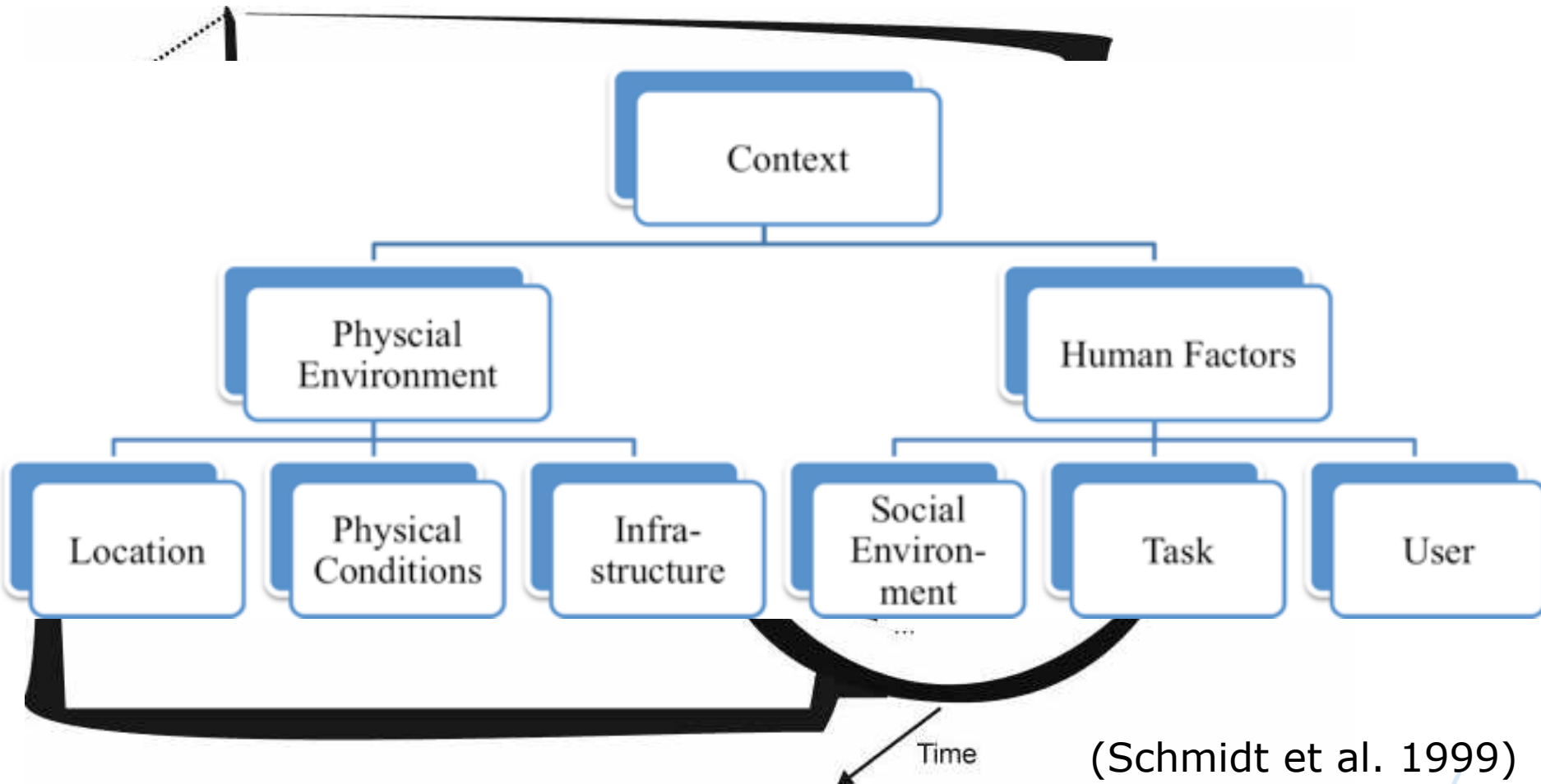# How can we conceptualize context for pervasive commerce?

Methodology for conceptualizing context
The top-level domain is broken into its compositional subsystems (top-down) while individual base elements are pieced together to form grander systems (bottom-up)

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Starting point: Schmidt et al.'s context information categories

(Schmidt et al. 1999)

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Schmidt et al.'s model with extensions (in dotted lines) and refinements (in italics)

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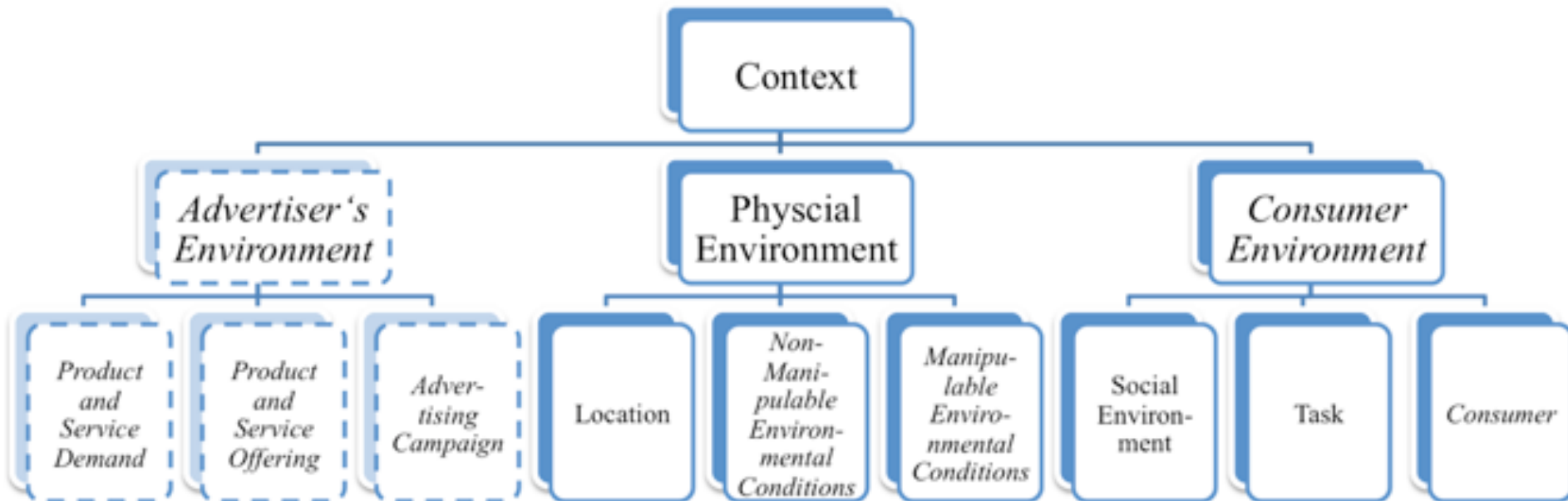
The gap between situational detail and broader categories requires further structuring.

- we used situational scenarios involving adaptive services

- gap between such situational detail and the broader categories → requires further structuring

- we suggest 3 further levels: a *macro*, *micro* and *situational* level

Structuring on 3 levels

macro level

- valid for all model applications
- is a further refinement of the information categories, but specific to pervasive advertising in retail
- e.g., a certain city as location

micro level

- filters macro level category
- helps to apply it to a specific application environment
- e.g., a specific store in a region that has specific clientele

situational level

- describes an 'adaptive incident' or 'moment of service delivery'
- happens in the application environment
- e.g., a certain user in front of a specific display in a particular store

Specifying high level information categories for a context-adaptive service situation
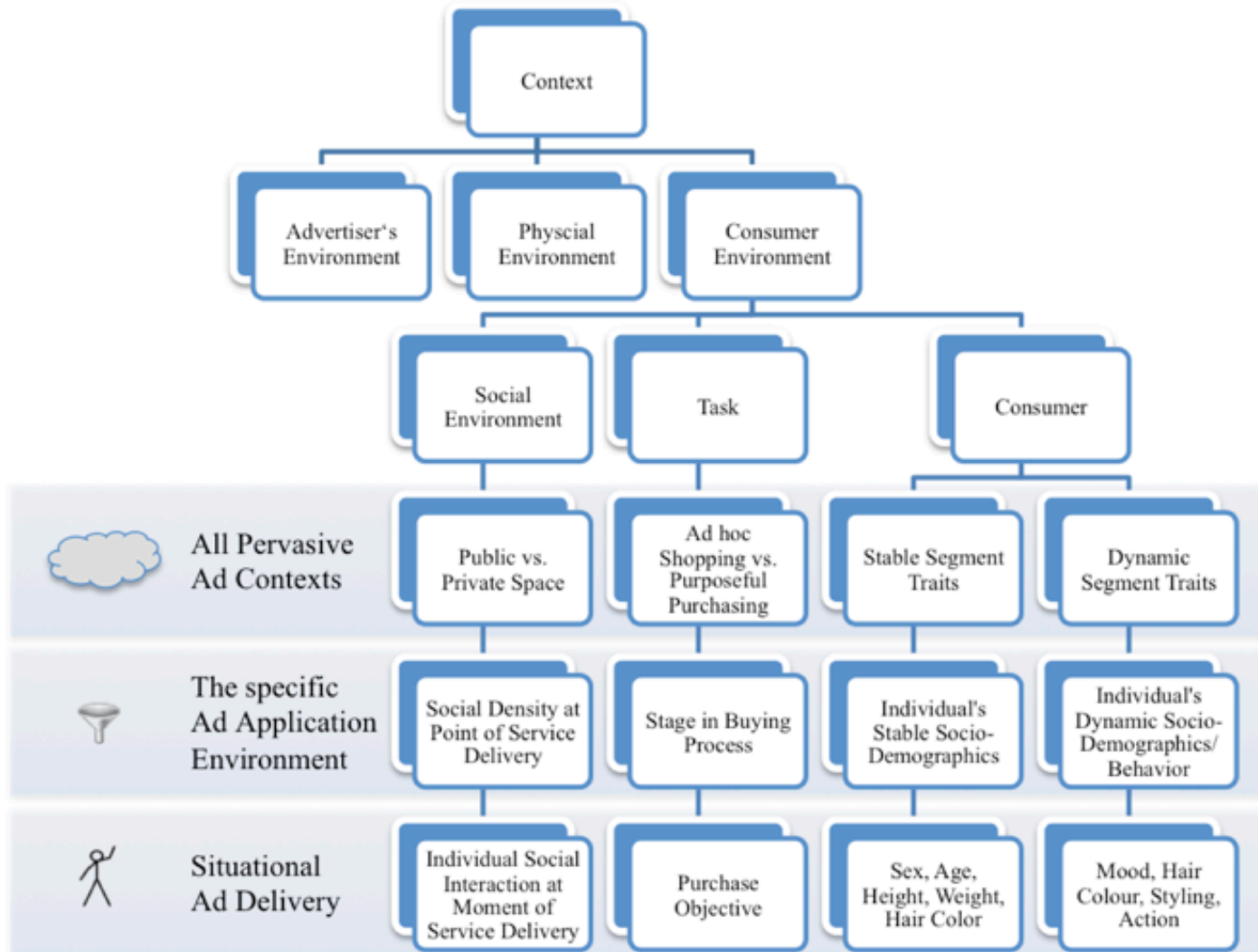
Conceptualized model of context for pervasive advertising

Advertiser's environment


```
                        ┌─────────────────┐
                        │   Advertiser's  │
                        │   Environment   │
                        └─────────────────┘
```

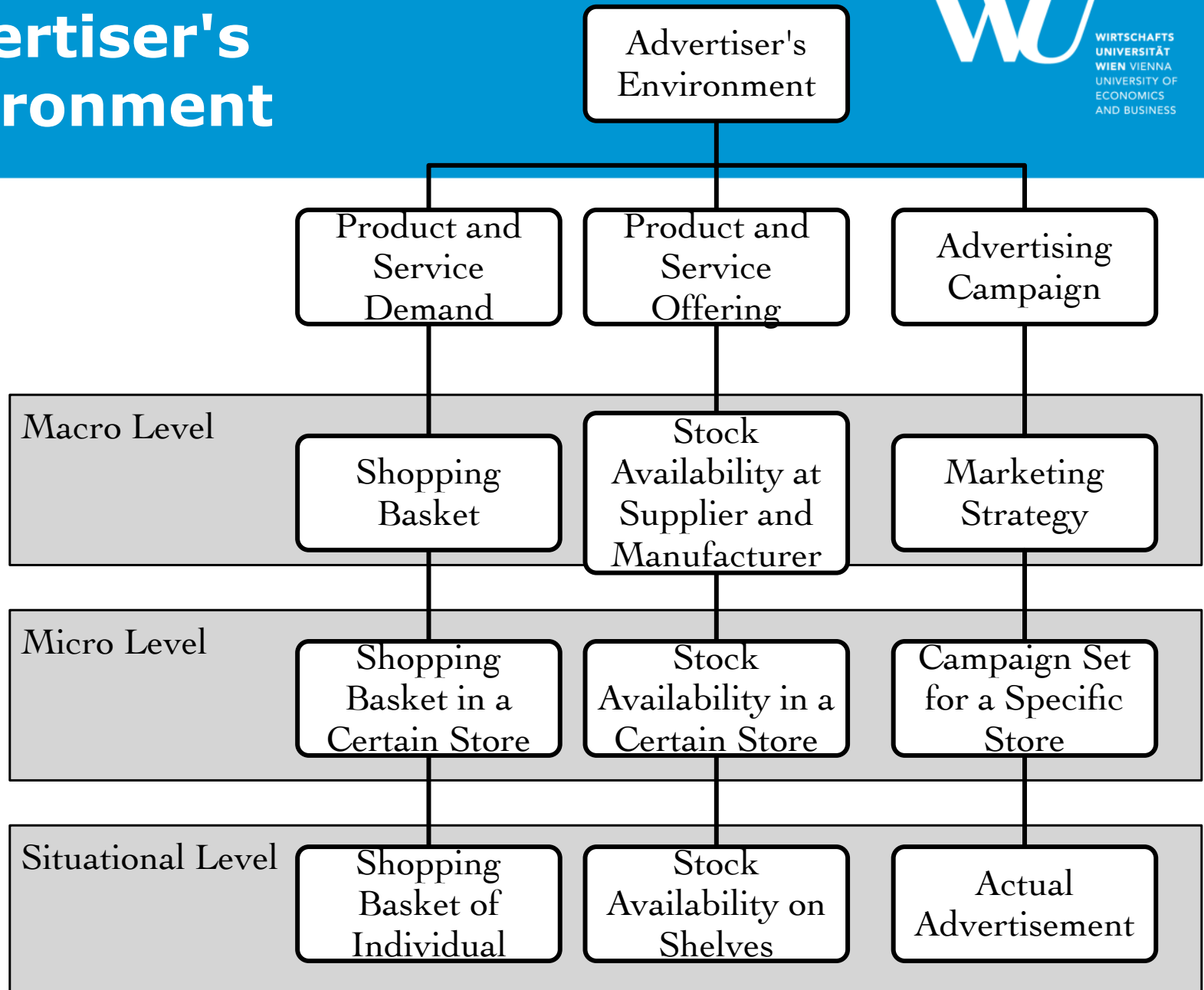|	Product and Service Demand	Product and Service Offering	Advertising Campaign
Macro Level	Shopping Basket	Stock Availability at Supplier and Manufacturer	Marketing Strategy
Micro Level	Shopping Basket in a Certain Store	Stock Availability in a Certain Store	Campaign Set for a Specific Store
Situational Level	Shopping Basket of Individual	Stock Availability on Shelves	Actual Advertisement

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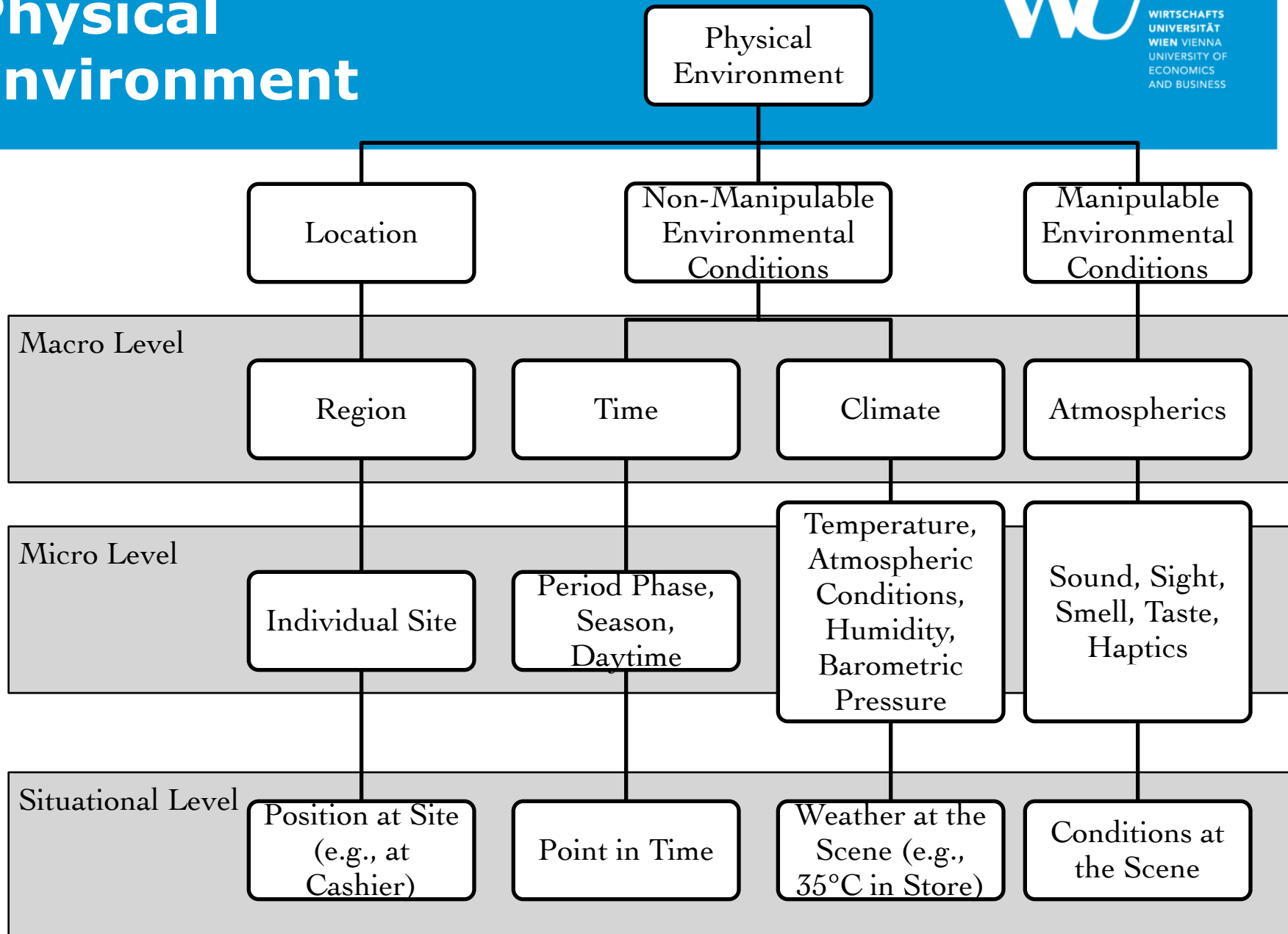
Physical environment
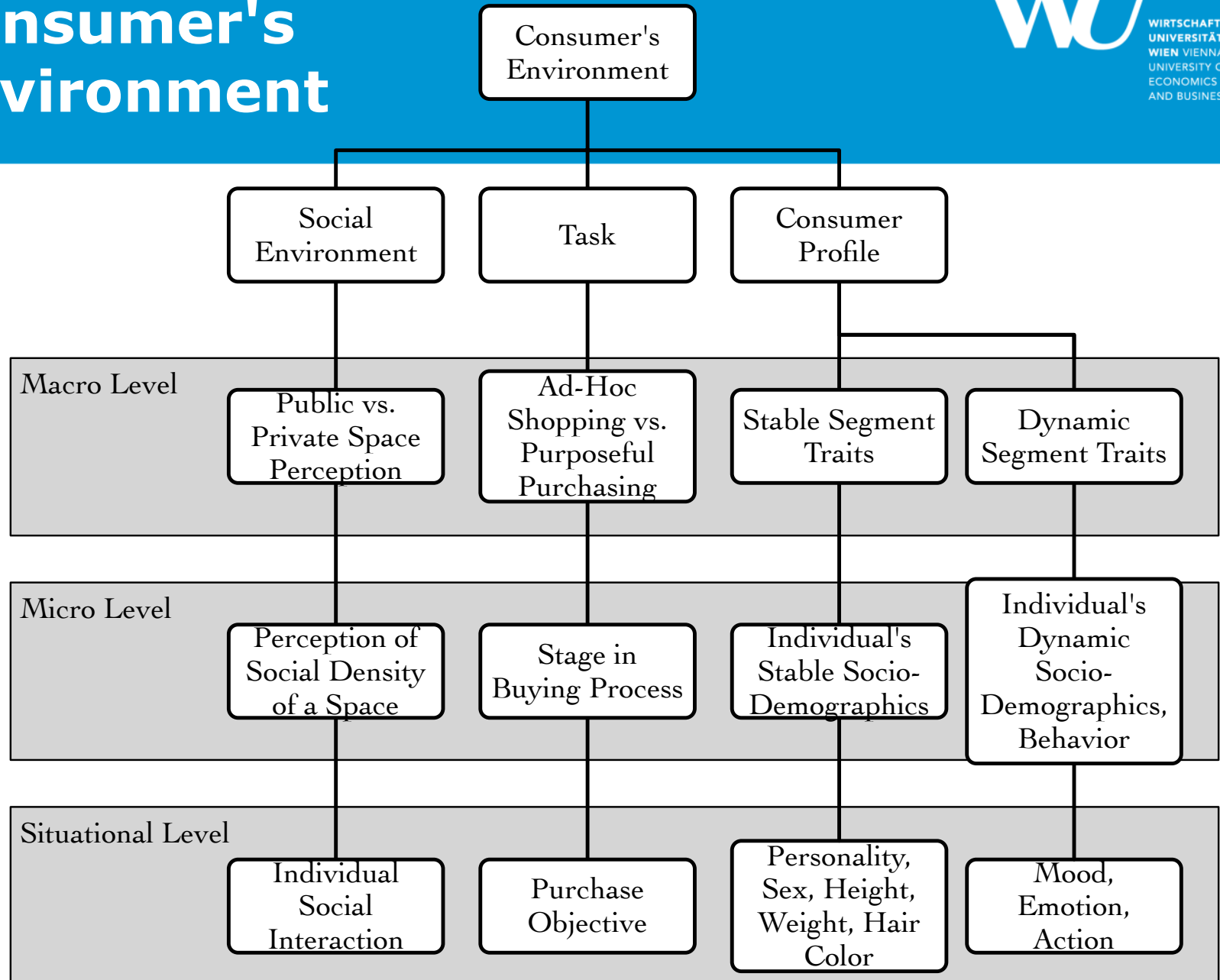
Conclusion

Considering the **big picture** instead of individual dimensions only

Viewing various kinds of context from **different angles** and integrating **stakeholders' perspectives**.

Higher **degree of precision** (macro, micro and situational level)

Capturing the situational picture from the **consumer's perspective**.

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Thank you for your attention!

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