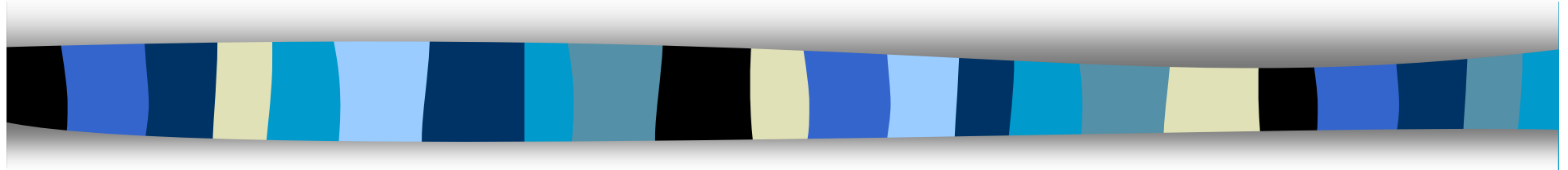


# Classifying Context Classifications: An Activity Theory Perspective



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# Introduction

## *Aim:*

*Provide an operational context classification and use it to build context aware system that is easy to use by reducing explicit input from user*

## *Objectives:*

- Provide operational context classification
- Provide context aware system that reduces explicit input
- Provide better usability for mobile and ubiquitous computing users



# Context Awareness

*The concept of taking advantage of changes in information relating to users, devices and environments to improve user interaction*

# Past Context Classification Systems

	Location	Conditions	Infrastructure (Computing Environment)	Information on User	Social	User Activity	Time	Device Characteristics
[Benerecetti <i>et al.</i> '01]	Physical Environment			Cultural Context				
[Schmidt <i>et al.</i> '99]	Physical Environment			Human Factor			X	
[Lieberman and Selker'00]	User Environment	Physical Environment	X	User Environment			X	
[Hull <i>et al.</i> '97]		Physical Environment		X				X
[Chalmers and Sloman'99]	X		X		X	X		X
[Lucas'01]	Physical Environment		Information context					X
[Schilit <i>et al.</i> '94]	Physical Environment		X	User environment				
[Abowd and Dey'99]	X			Identity		X	X	Identity
[Chen & Kotz'00]	Active/Passive							

# Common Themes

	Location	Conditions	Infrastructure (Computing Environment)	Information on User	Social	User Activity	Time	Device Characteristics
[Benerecetti <i>et al.</i> '01]	Physical Environment			Cultural Context				
[Schmidt <i>et al.</i> '99]	Physical Environment			Human Factor			X	
[Lieberman and Selker'00]	User Environment	Physical Environment						
[Hull <i>et al.</i> '97]		Physical Environment						
[Chalmers and Sloman'99]	X							
[Lucas'01]	Physical Environment							
[Schilit <i>et al.</i> '94]	Physical Environment							
[Abowd and Dey'99]	X							
[Chen & Kotz'00]								

**So we have...**

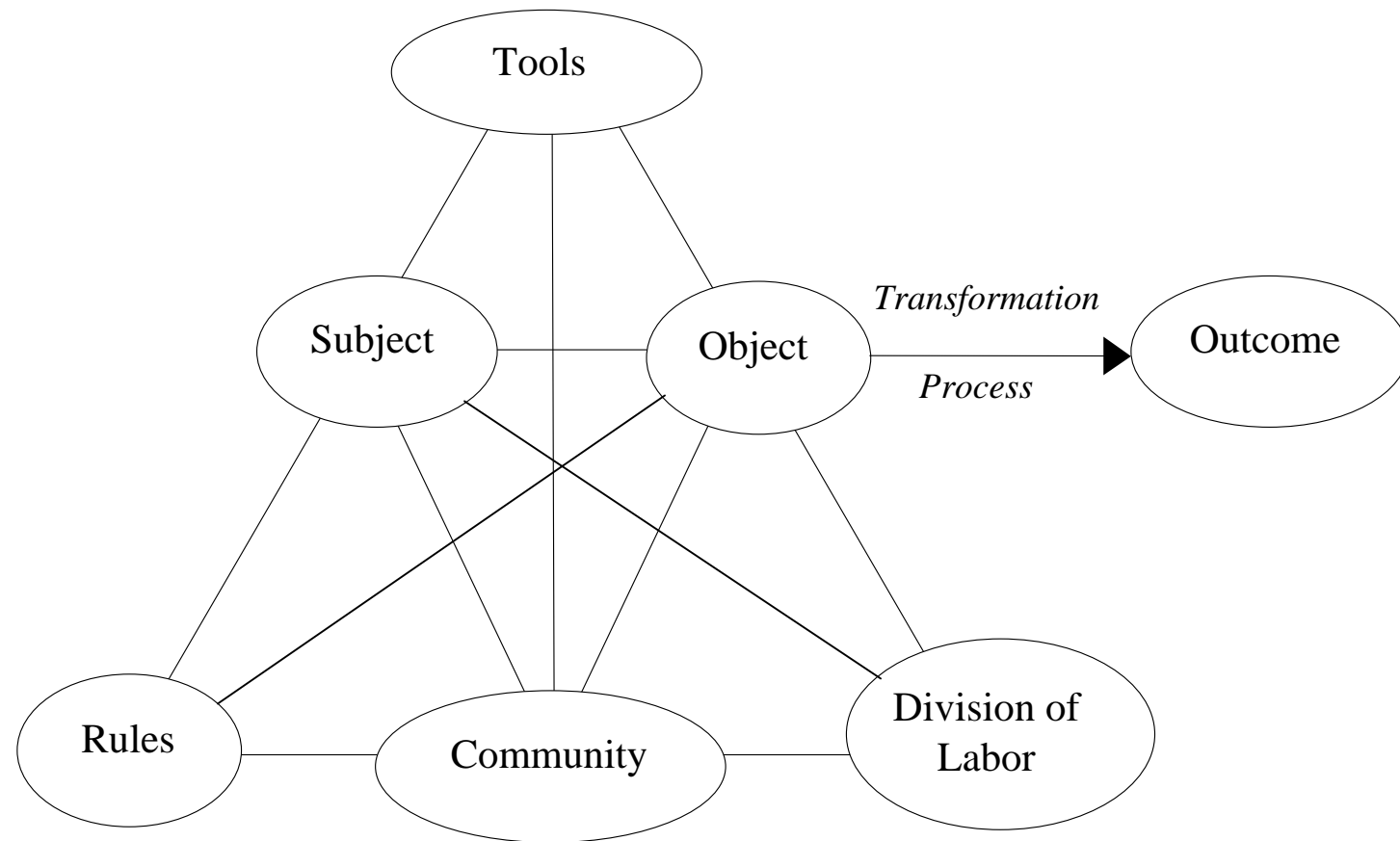
- *User*
- *Physical Environment*
- *Technology*
- *Social*
- *Time*



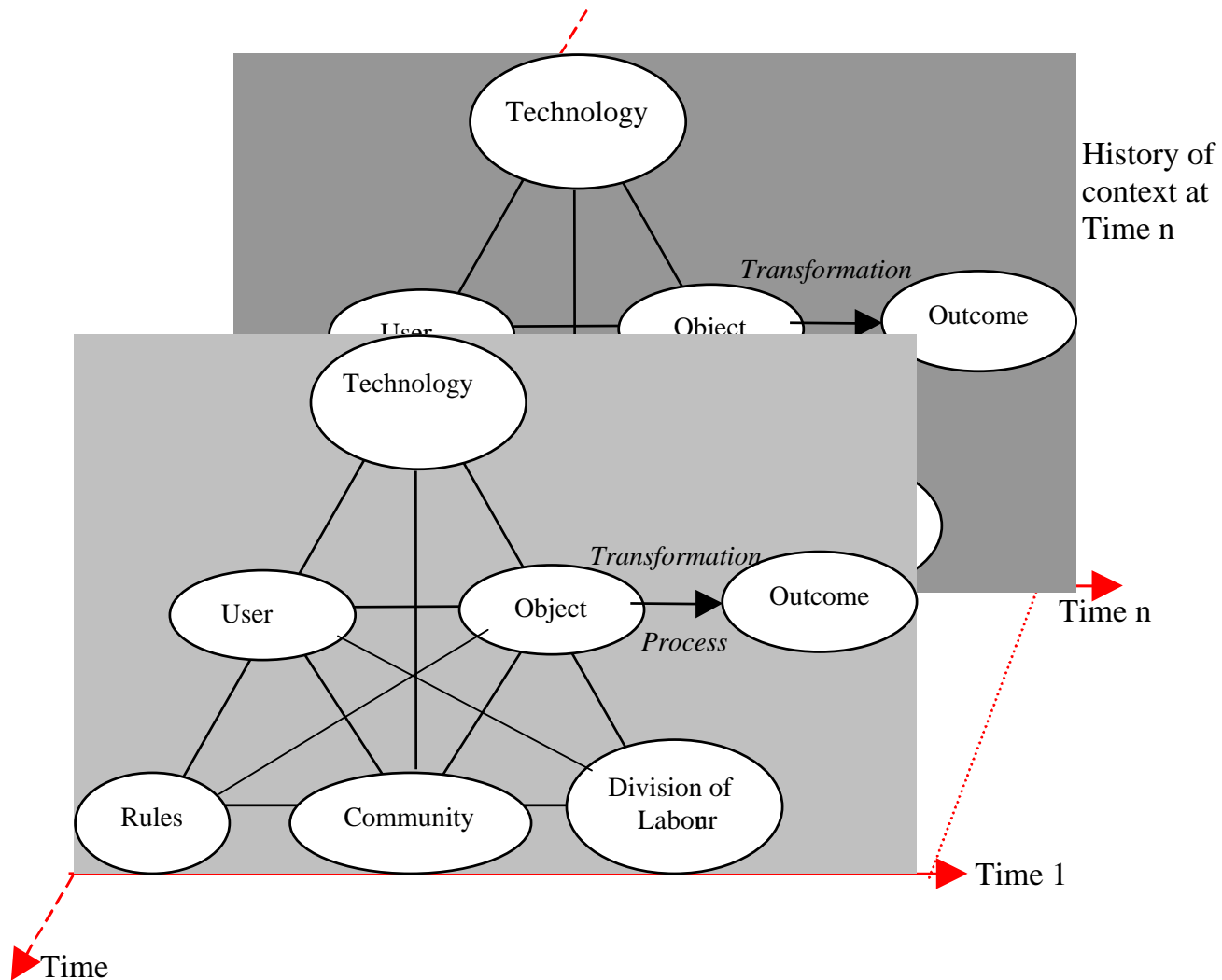
# Ongoing work

- Using Activity Theory [Vygotsky 62, Leont'ev 81, Engeström 99] to identify model elements and relate them together
  - AT provides a standard form for describing human activity
  - AT incorporates strong notions of tool mediation and the social environment which is important in a mobile and ubiquitous computing world
  - AT maps the relationships amongst each element of a human activity model

# Activity Theory



# Context Model





# Future Work

- Further investigation of scenarios and theories for refining the context classification system and the relationships between elements
- Design and implement a context aware system
  - Knowledge representation design
  - System architecture design
  - Finding the domain
  - Scenario based design
- Evaluate the system
  - Using context, reduce explicit input
  - Reduced explicit input, improve usability