MAN202T: Sociology of Design

Session 6

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN AND MANUFACTURING, KANCHEEPURAM
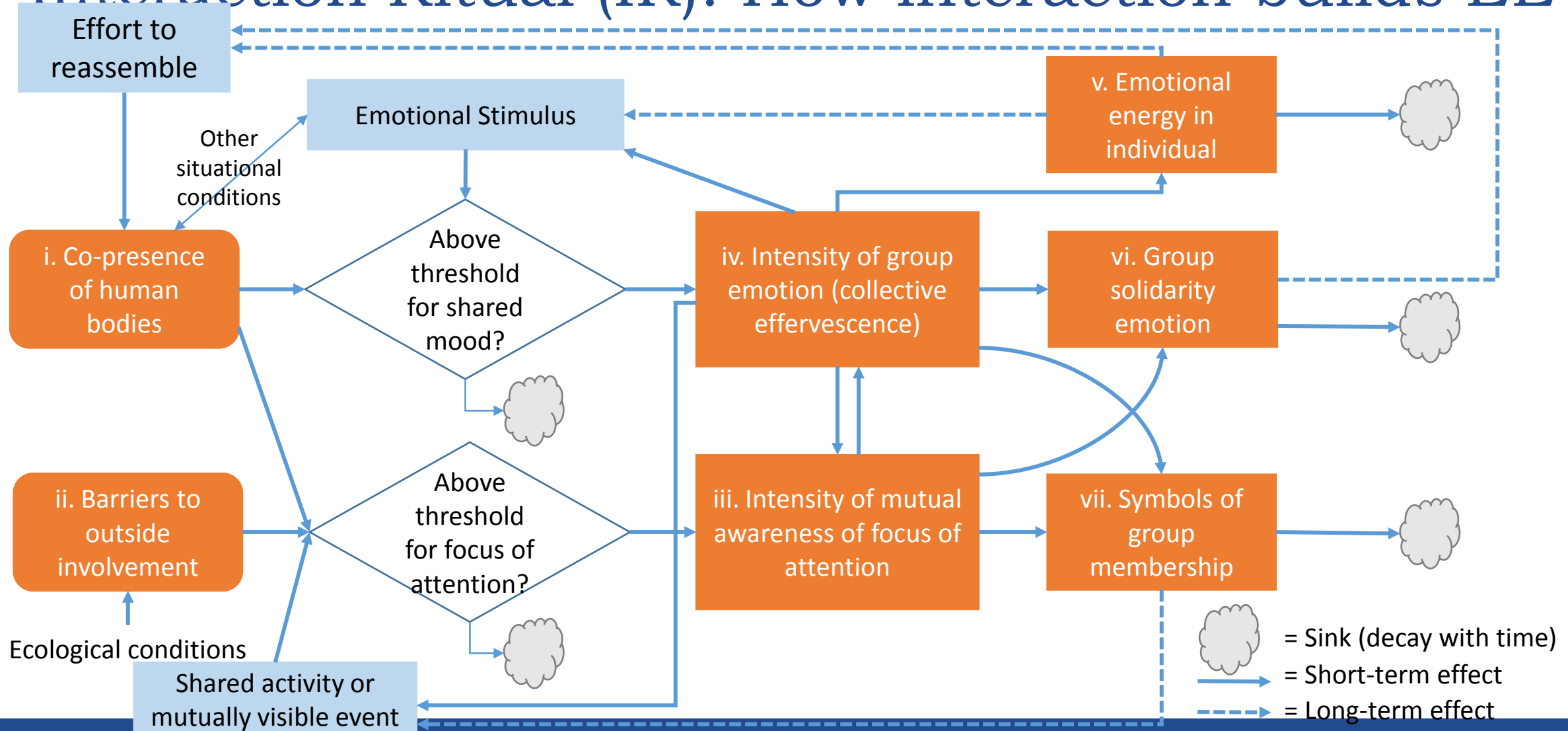
- Dr. Sudhir Varadarajan

SESSION OUTLINE

- Interaction Ritual Chains and the Emergence of macro order

- Social Construction of Technology: Actor Network Theory of Electric Car
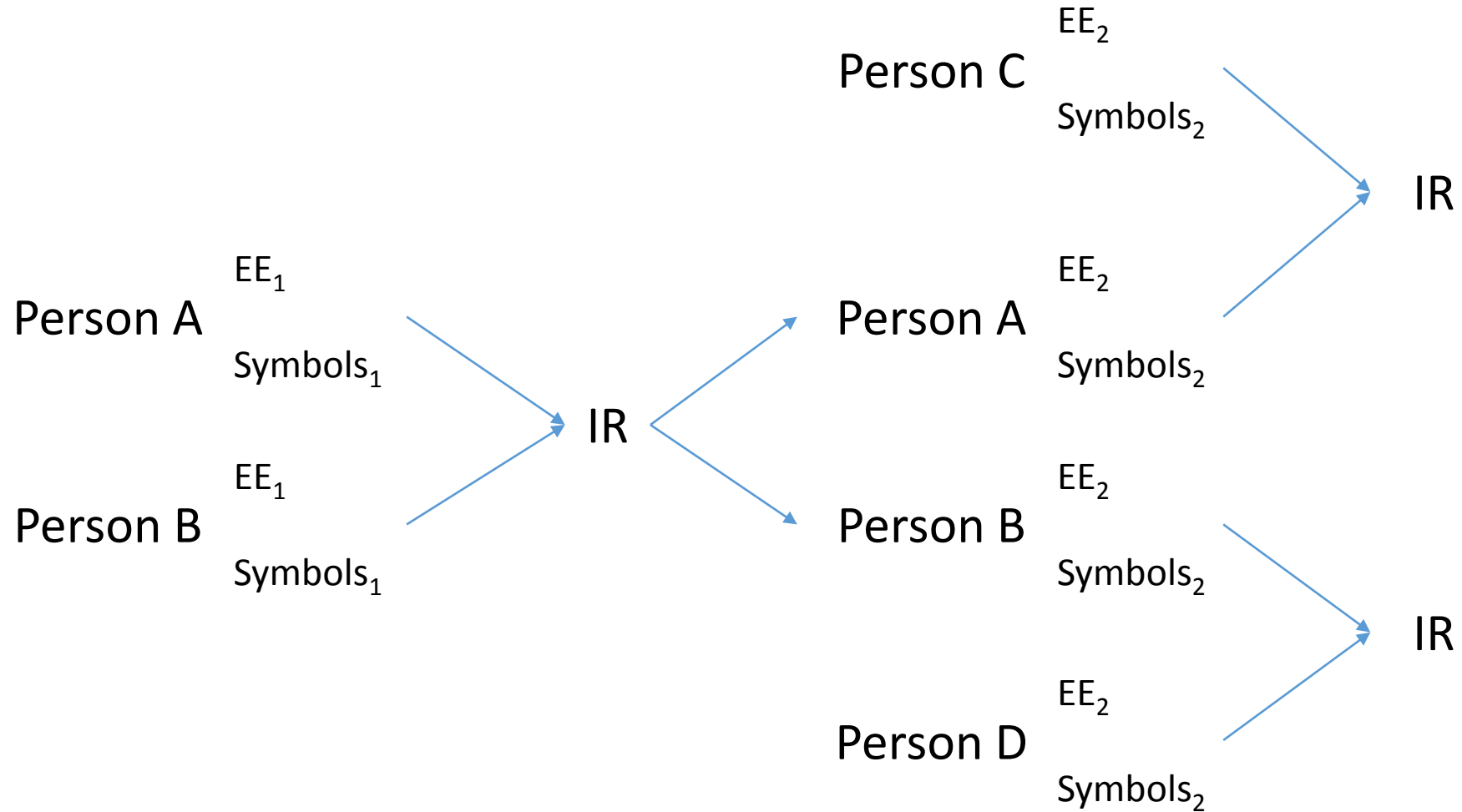
Some questions to ponder

- Why did you feel "emotionally charged" after the three games?

- Why do we get excited when we go to a theatre or watch a cricket match in stadium?

- Why do we carry flags, wear caps / T-shirts with team logos etc.?

- Why this excitement dies down after we get back to the routine?

- Can we build excitement through routine everyday activities?

Interaction Ritual (IR): How interaction builds EE

IR Chains lead to shared symbols (macro level) and change energy levels

Person C EE_2 Symbols$_2$

Person A EE_1 Symbols$_1$

Person B EE_1 Symbols$_1$

IR

Person A EE_2 Symbols$_2$

Person B EE_2 Symbols$_2$

Person D EE_2 Symbols$_2$

IR

IR

Exercise 6a: Experiment ... 10 min

- First, 6-8 people join to form a circle. Establish a rhythm, by saying, all together the *selfie anthem of the youth or any other*. Keep repeating this.
- One person starts making a gesture to this rhythm, say, *clicking a selfie*. Get the most spontaneous boy/girl in this role
- When the sentence is repeated, the player next to her takes over this gesture, while the first one starts a completely different new gesture
- Third time the sentence is done, player three does the first gesture, player two does the second gesture and player one invents a new one again
- Debrief: Are you able to concentrate and connect with your immediate neighbor or getting lost in the overall pattern of the crowd? What else was happening?

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Repeated interactions & Shared symbols among actors (objects, people) leads to network formation
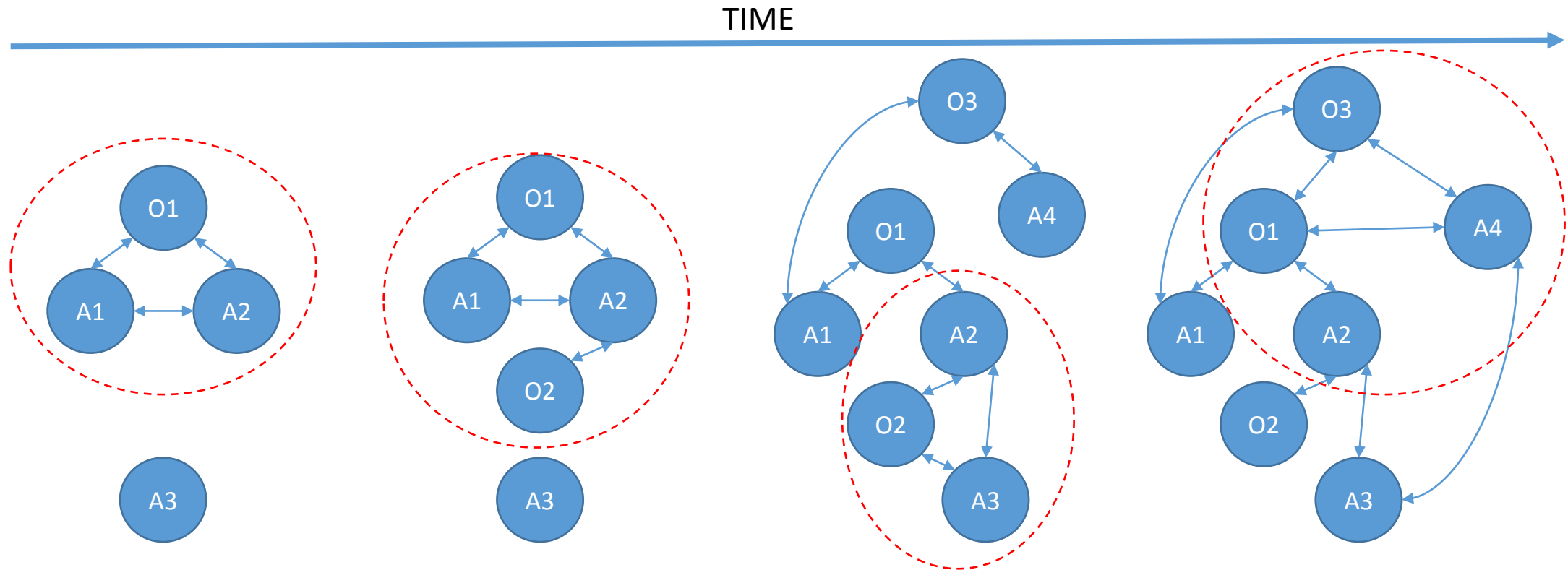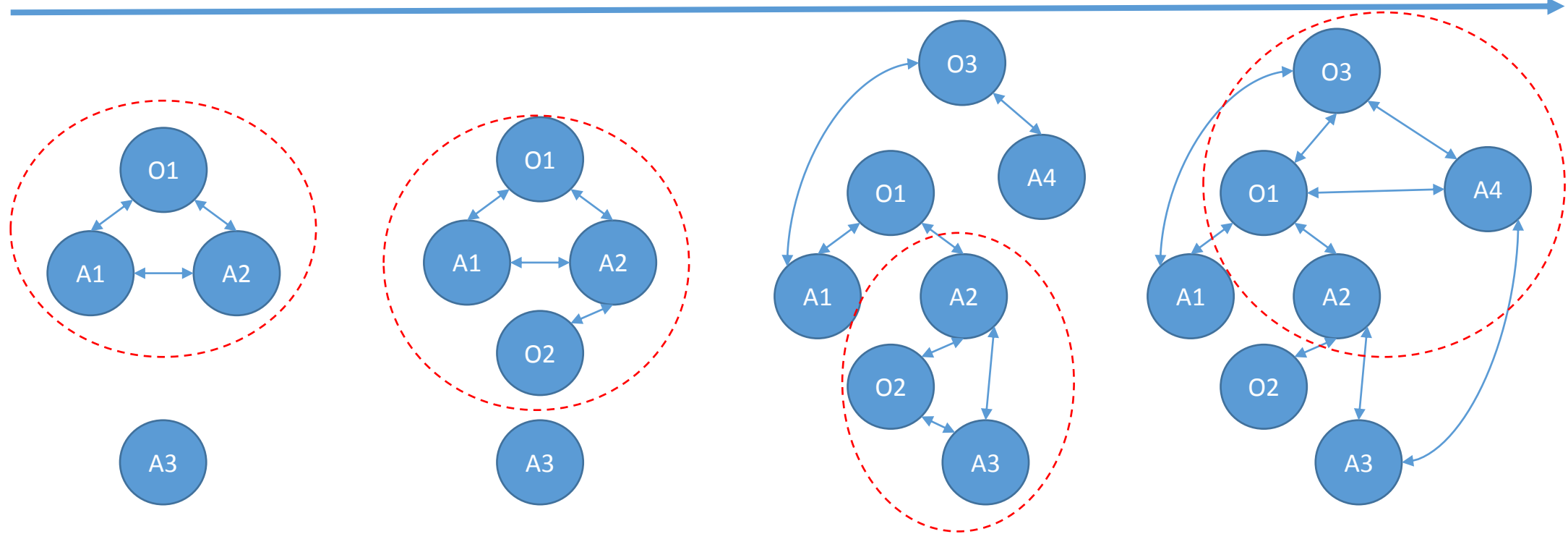

A product/technology is one or more objects in this evolving network

Products are subject to the dynamics of the actor network and layers of meanings

TIME

Technology is not objective, it is also Socially Constructed ... It explains why some technologies are more successful than others, even though they may be technically inferior

Engineers / Innovators are partly Sociologists

- "Engineers who elaborate a new technology as well as all those who participate at one time or another in its design, development, and diffusion …

- … Constantly construct hypotheses and forms of argument that pull these participants into the field of sociological analysis …

- … Whether they want to or not, they are transformed into sociologists, or what I call engineer-sociologists." – Michael Callon

Engineers / Innovators would be better off taking an Actor Network Perspective

- "The engineers involved in the design and development of a technological system, particularly when radical innovations are involved, …. must permanently combine scientific and technical analyses with sociological analyses.

- The proposed associations are heterogeneous from the start of the process.

- The concept of actor network can be used to explain both the first stages of the invention and the gradual institutionalization of the market sometimes created as a result without distinguishing between successive phases".

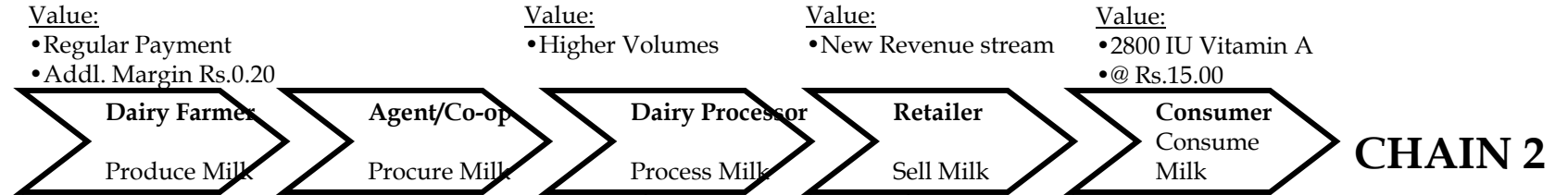# ANT helps Understand the Heterogeneous Actors and History of Interactions

- Technology is not neutral or objective … it is shaped by actors and open to debate … especially the normative questions ("WHAT - Objectives?")
  - Actor worlds … includes heterogeneous elements (people, artefacts)
  - Translation … spokesman/enrollment, displacement, points of passage
  - Actor Networks … network position of key actors
- Instead of understanding "social" or "economic" or "technical" in isolation, it is important to participate and understand how the nature of interactions and network positions of actors shape network formation over time and the direction of technologies … History matters

Understanding the Dynamics of Actor Networks in the Case of Electric Car

- Each group may identify with one actor-world… EDF, CGE, Fuel Cells (components, researchers), towns, public transport, consumers, Renault, Oil Lobby, …

- Role Play: Enact the nature of interactions among actors and the social construction of reality

- Debrief: Did you see how actor-worlds emerge, how translation happens and how networks shape the situation
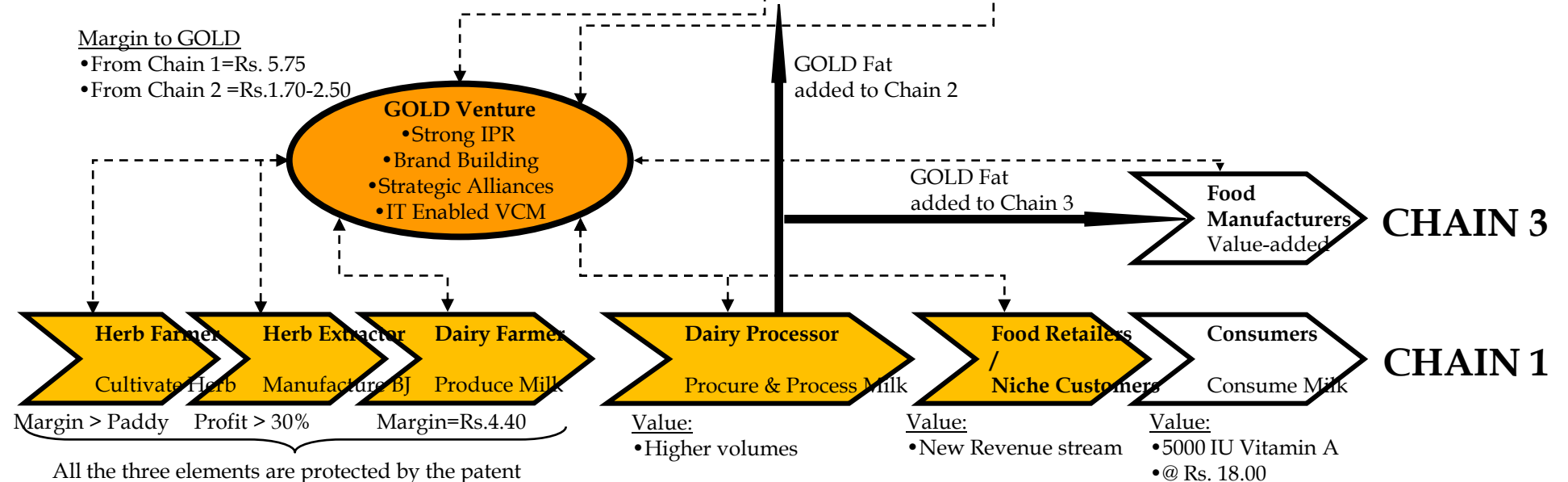
Examples from my experience (1/2)

CHAIN 2 - Current Organized Liquid Milk Chain - High Volume, Low Value

- A biotech innovation that failed to transform an existing network ...
  similar to the EDF case

Value:
- Regular Payment
- Addl. Margin Rs.0.20

Value:
- Higher Volumes

Value:
- New Revenue stream

Value:
- 2800 IU Vitamin A
- @ Rs.15.00

Dairy Farmer — Produce Milk
Agent/Co-op — Procure Milk
Dairy Processor — Process Milk
Retailer — Sell Milk
Consumer Consume Milk

CHAIN 2

Margin to GOLD
- From Chain 1=Rs. 5.75
- From Chain 2 =Rs.1.70-2.50

GOLD Venture
- Strong IPR
- Brand Building
- Strategic Alliances
- IT Enabled VCM

GOLD Fat added to Chain 2

GOLD Fat added to Chain 3

Food Manufacturers Value-added

CHAIN 3

Herb Farmer — Cultivate Herb
Herb Extractor — Manufacture BJ
Dairy Farmer — Produce Milk
Dairy Processor — Procure & Process Milk
Food Retailers / Niche Customers
Consumers — Consume Milk

CHAIN 1

Margin > Paddy   Profit > 30%   Margin=Rs.4.40

All the three elements are protected by the patent

Value:
- Higher volumes

Value:
- New Revenue stream

Value:
- 5000 IU Vitamin A
- @ Rs. 18.00

CHAIN 1: Controlled GOLD Milk Chain - Low Volume, High Value

Note: All margins are per liter of milk   Indicates Information flows
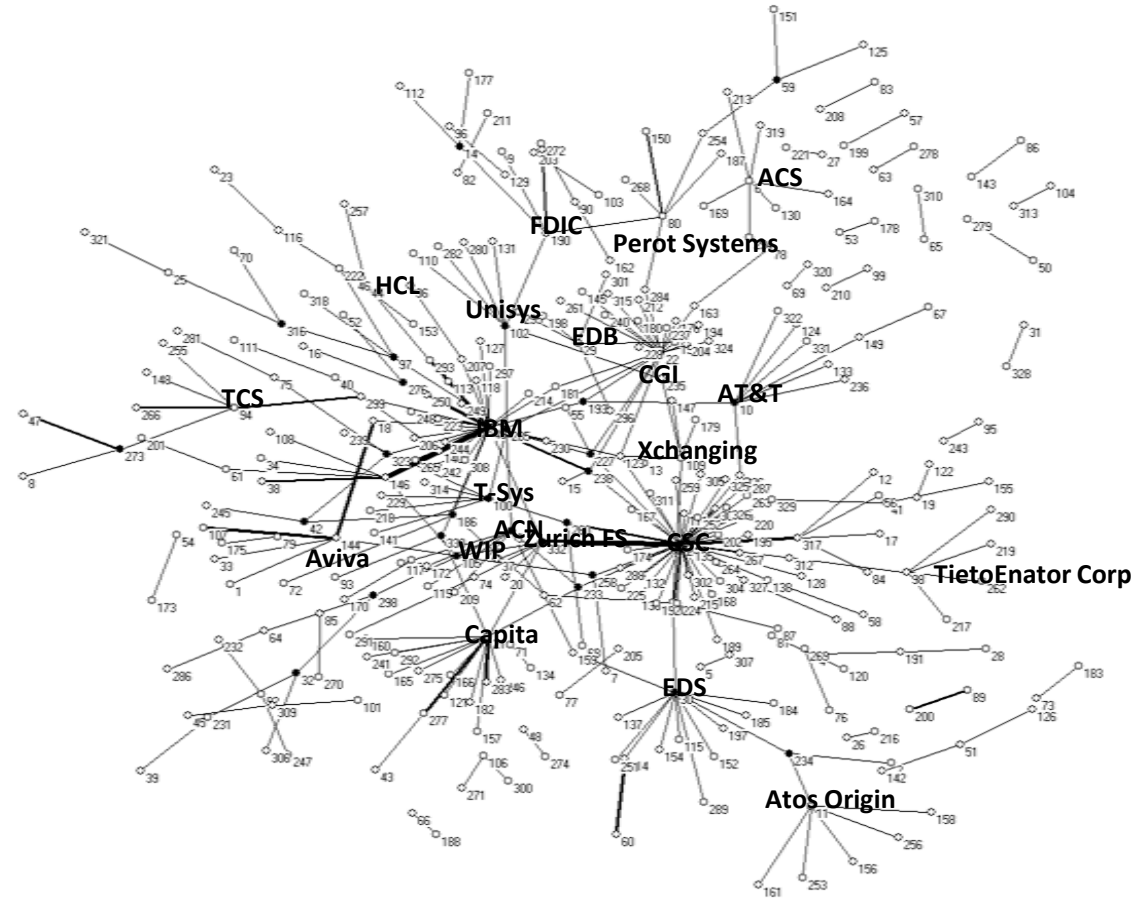- - -

Examples from my experience (2/2)

- Rebuilding confidence among actors in a broken network

- Global financial crisis, compan financial crisis, customer attrition, merger integration

- Discovery of an emergent technology pattern to re-conne internal and external actors

Exercise 6b: Create your actor-world & attempt a translation (20 min)

- List down the top 2 things that you think a student should do to improve design-oriented engineering culture in IIITDM
- Interact with 1 person (from a different team) and share/discuss your ideas. At the end of the interaction, list down your top 2 priorities (could be same, 1 could change, 2 could change or both)
- Repeat the above step with another 3 students

- What do you think is the outcome of this interaction? How do new interpretations / distortions emerge? … Reflect

Interaction	Roll No.	1st Choice	2nd Choice	EE?	Notes (Accepted / Rejected / Combined / New)
INITIAL				☺ ☺ ☹	
1				☺ ☺ ☹	

Rule #1: 50% of interactions should be outside your discipline
Rule #2: You can meet a max of 6 people

Reflect on the actor-network of driverless car, electric car & space travel

Read about the history of Portuguese expansion before the next class