

Course: Domain Driven Design & Microservices for Architects

Section: Event Storming

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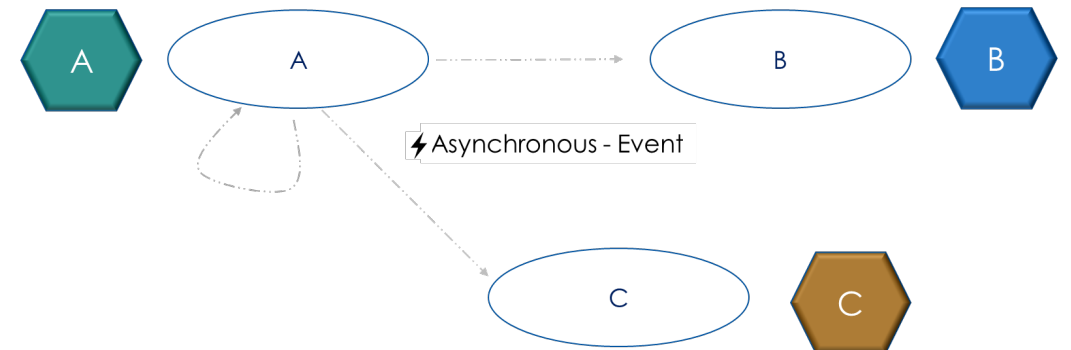
Discount Link to course:

<https://www.udemy.com/course/domain-driven-design-and-microservices/?referralCode=C5DCD3C4CC0F0298EC1A>

Event Storming

Events occur naturally in Domains

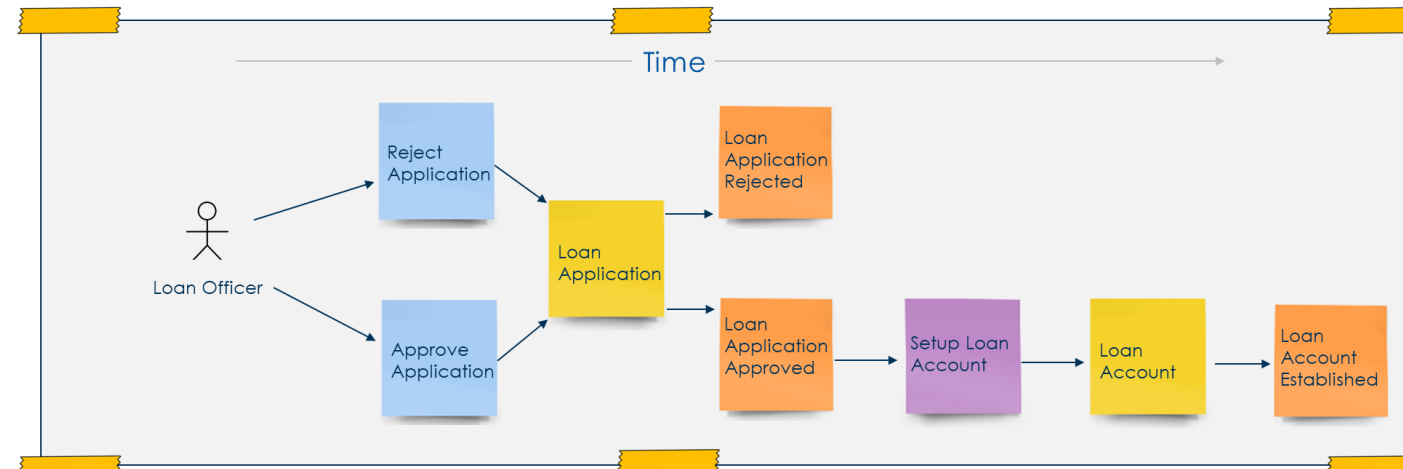
To understand the domain, one *MUST* understand the events produced and consumed in the domain



Event Storming

Collaborative Exercise

Objective is to identify the Events, Producers & Consumers in a given scope, to create a shared understanding of the domain



Workshop

The diagram is a swimlane model titled "Time" at the top, indicating a horizontal timeline. It is divided into three swimlanes: User, System, and Admin. The process flow is as follows:

- User Swimlane:**
 - Starts with a stick figure icon and the question: "Is this the first thing a person sees?"
 - Searches a Topic (Topic Searched)
 - Is there just one Product and multiple types of them? (Videos Found, Courses Found)
 - Are all types of videos all together in the search results? (Is a Course just a Group of Videos?, Are individual Videos from a Course Purchasable?)
 - Should every Video just be part of a Course? (Watch Free Video, Free Video Watched, Watch Purchased Video, Video Watched)
 - Would regular new Content be needed to justify Subscription? (Rate Video, Video Rated)
 - Ends with a stick figure icon and the question: "Would Subscription-based make this easier?"
- System Swimlane:**
 - Add New Video (New Video Added)
 - Video Updated for Course (Free Video Watched)
 - Add Course to Cart (Video to Cart, Video Added to Cart)
 - Order Submitted (Order Confirmation on Sent)
 - Credit Card Changed (Credit Card Declined)
 - Log In (User Logged In)
- Admin Swimlane:**
 - New Video Released (Do they really need to be separated?, Are these just one type of Product?)
 - Add New Video (Does Adding also mean Relinquishing to the public?, Should there be some kind of "Open Beta" for a release?, How do we set the Price of a Video or Course?, Set Price for Video, Price set for Video)
 - Review Cart (Cart Revised, Cart Reviewed)
 - Order Confirmation on Sent (Send Order Confirmation on Sent, Order Confirmation on Sent)
 - Watch Purchased Video (Access Given to Video, Access Given to Course, Access Given to All Videos)

The diagram uses a timeline format with a "Time" axis at the top and swimlanes at the bottom. The process flow is as follows:


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Conducting the workshop

MUST be carefully planned and conducted to realize value

- 1 Setup the room | tools
- 2 What is event storming?
- 3 What is the scope?
- 4 What is the expected outcome?
- 5 Dive in 😊

- 
- 1 Objective | Outcome of Event Storming
 - 2 Process of Knowledge Model creation
 - 3 Preparing & Conducting the Workshop
 - 4 Case Study : ACME Travel Event Storming Workshop

Introduction to Event Storming

What is it?



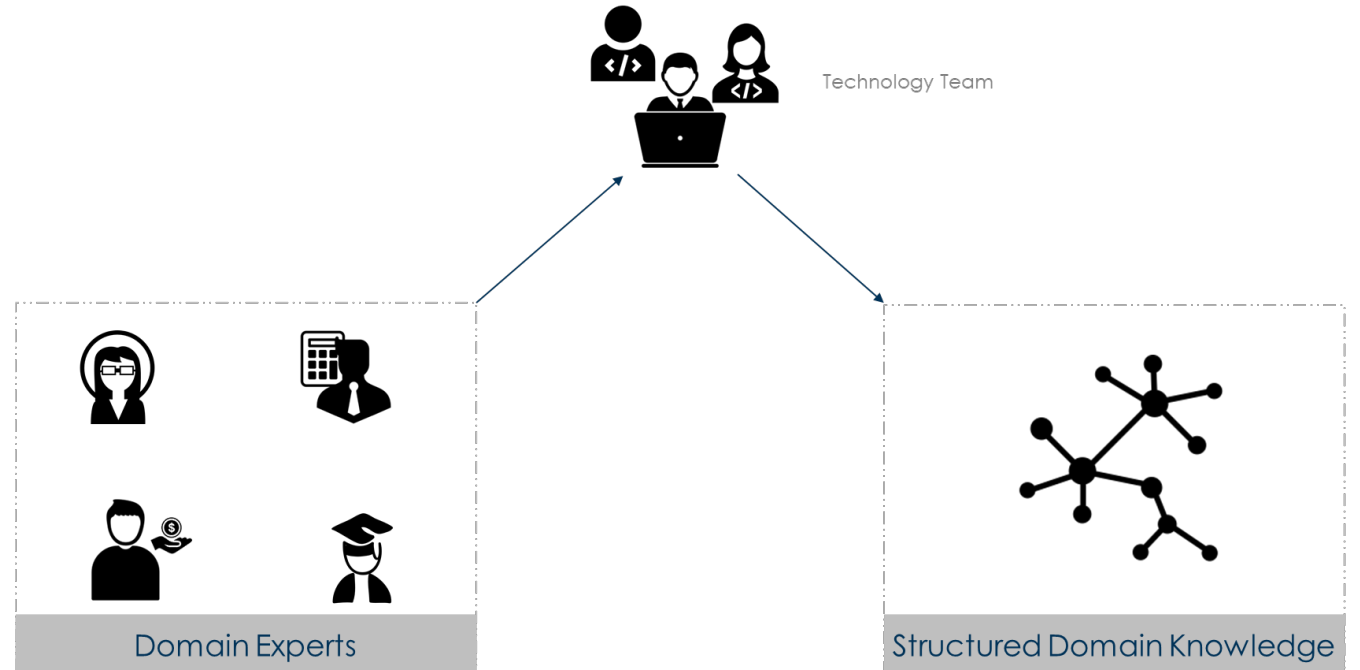
- 1 Knowledge Crunching
- 2 Event Storming Workshop
- 3 Resources needed for the workshop

Knowledge Crunching



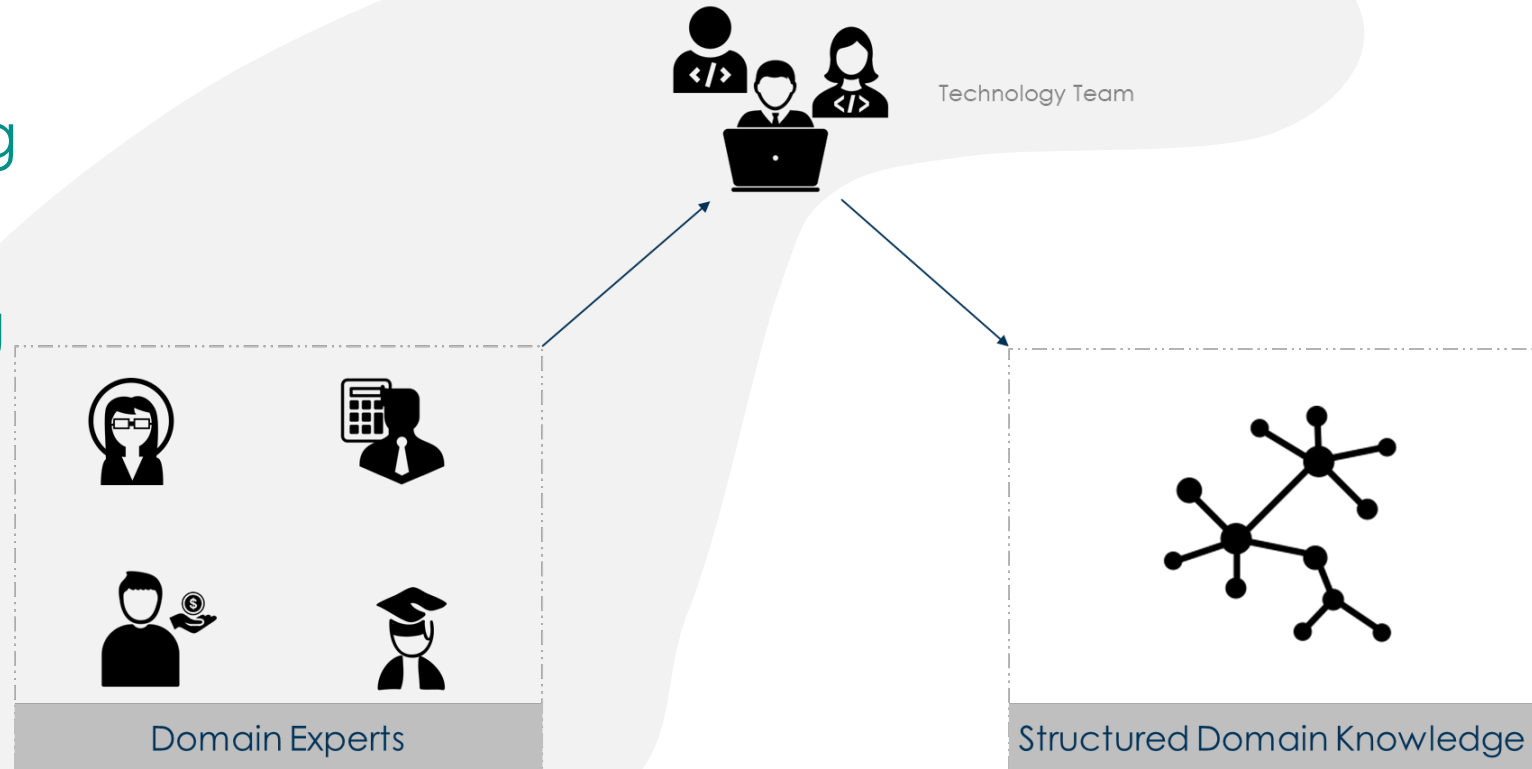
Teams process the knowledge received from the Domain Experts into domain models

This process is referred to as Knowledge Crunching



How do you receive the knowledge?

- Business SME Interviews
- Design Thinking
- Event Storming



Event Storming



A collaborative workshop-based technique for creating a shared understanding of complex business domains | processes



- Big Picture View



- Focused on a part

Identify & Understand the business events (Cause - Effect)

History

Originally created by Alberto Brandolini in 2012

- A very well accepted practice in the DDD community
- Accelerates development

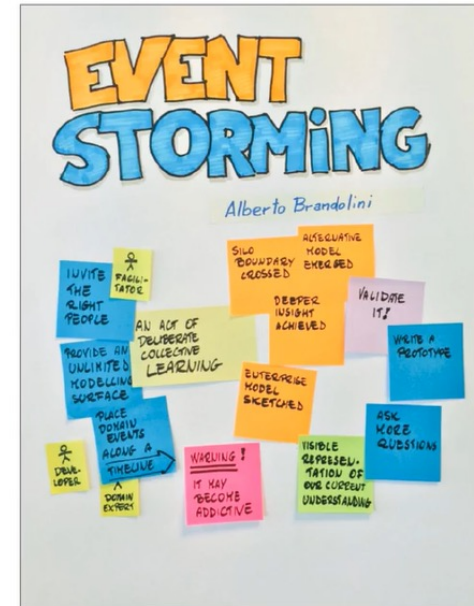
Introducing EventStorming

An act of Deliberate Collective Learning



Alberto Brandolini

The deepest tutorial and explanation about EventStorming, straight from the inventor.



- Not a replacement for UML

Workshop

Invite the right set of domain & IT experts



Loan Officer



Bank Products

- Dedicated facilitator with prior experience with Event Storming
- Number of participants between 4 & 8 (for process level)

Workshop duration

Depends on the scope

- Couple of hours



- Couple of days

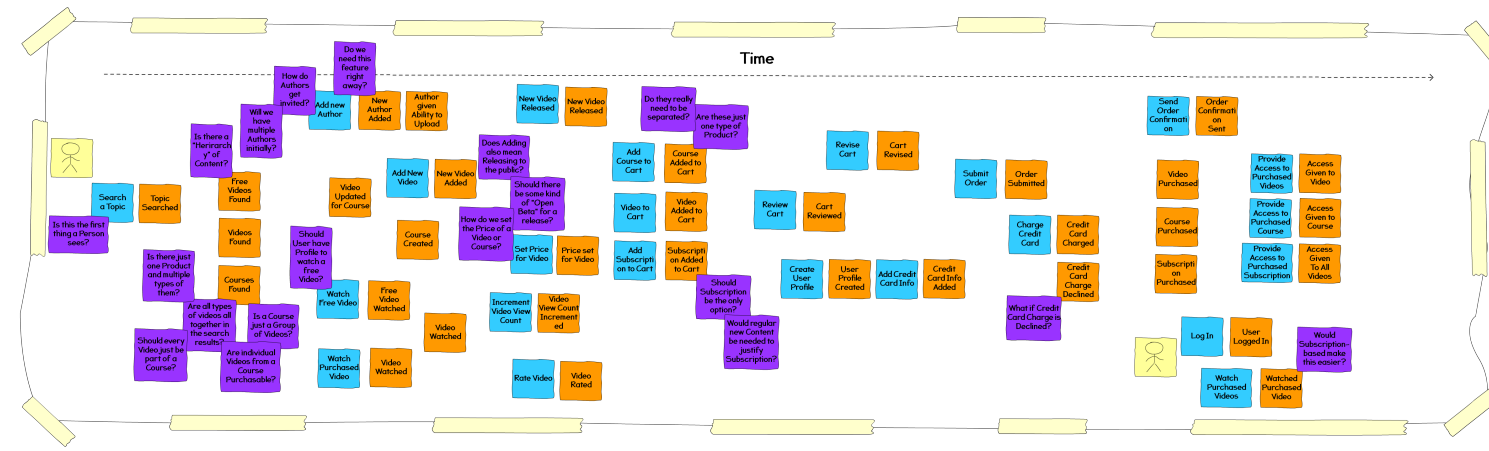
Where to conduct the Workshop

In person workshop preferred over online

- Online has become more common & acceptable

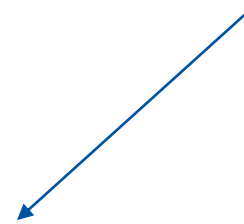
A workspace with walls to hang the plotter paper

- Unlimited modeling space
- Stickies of multiple colors



Tools for Remote teams

Participants join over a video call & use a collaboration platform



- Participants can make changes to common virtual board



<https://www.miro.com>



<https://www.mural.co>

Expected output

Create a shared understanding of the business process

- Objective is NOT to design the system
- Objective is NOT to be able to answer all questions
- Objective is NOT to produce DDD models

Gathered knowledge is used for Modeling



Quick Review

- Event Storming = Shared Understanding of the domain
- Facilitated workshop
- Conducted in-person or online

Fundamentals of Event Storming

Elements of Event Storming modelling



- 1 Cause-Effect
- 2 Elements of Event Storming
- 3 Relationship between elements

NOTE

Lesson provides high-level introduction

- Please do your own Research
- Consider training

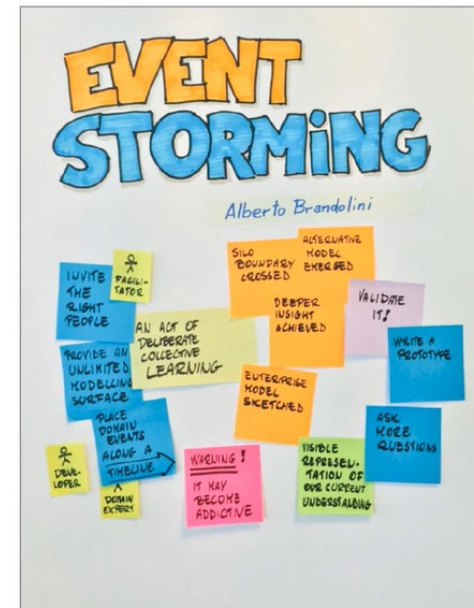
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Building blocks

Used for depicting the knowledge | flow

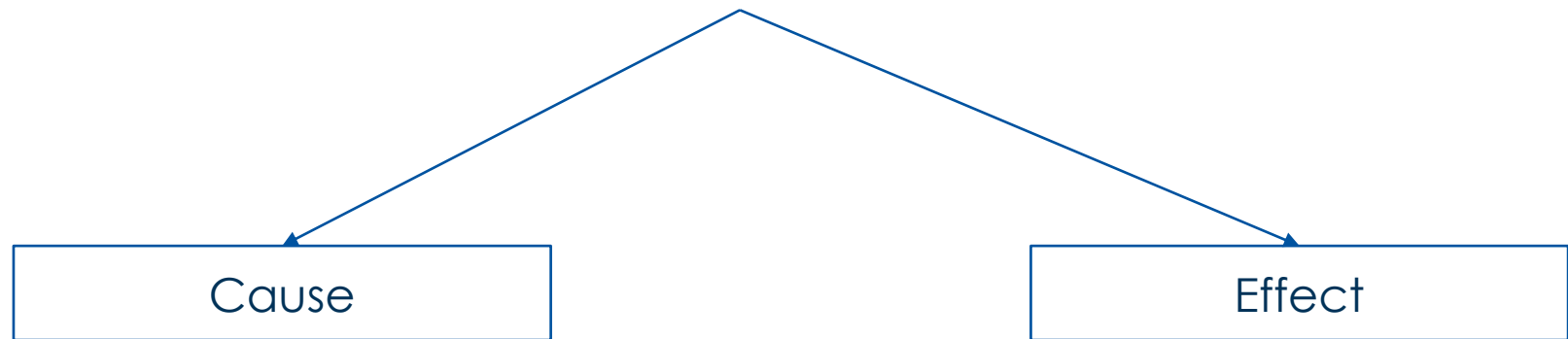
- 6 basic elements
- Color coded sticky(s) are used to represent each of the element

Suggested colors are just a de-facto; just be consistent 😊

Business Events are natural in all domains

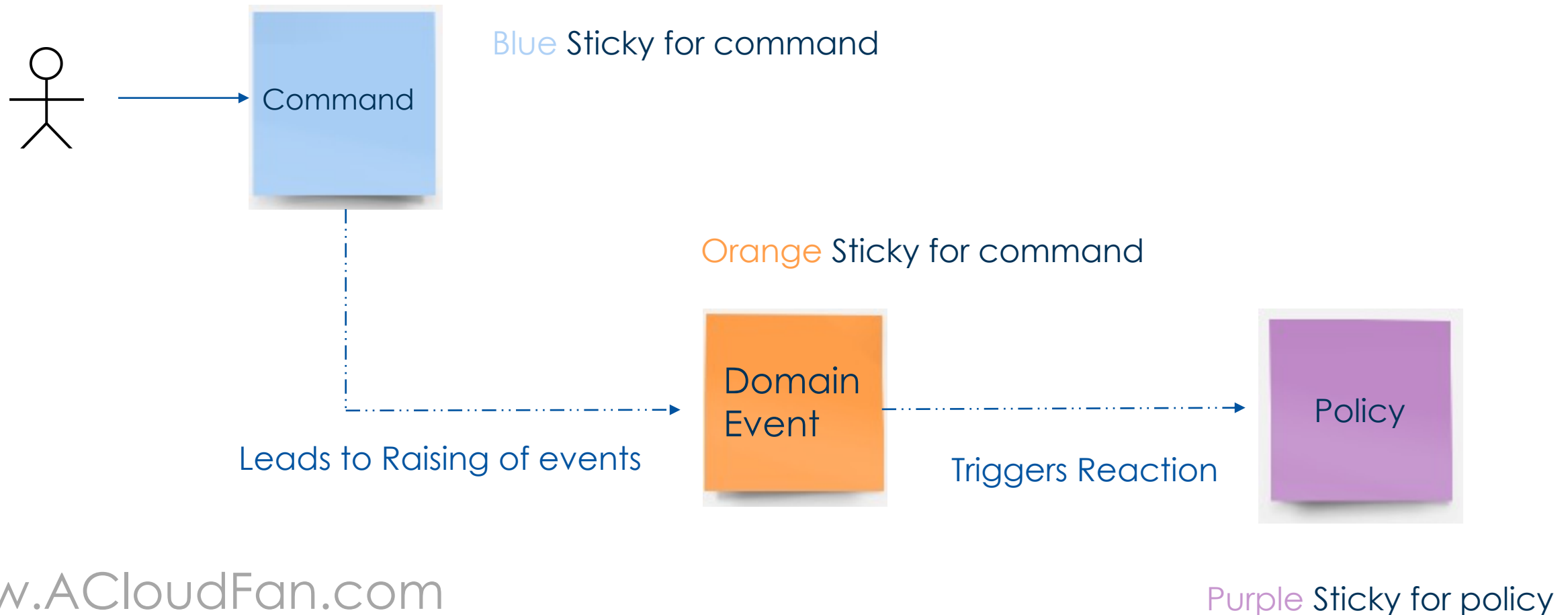
They are the starting point of the conversation

- All business events referred to as "Domain Events"
- Objective is to understand the Causation



Cause & Effect

A domain actor causes a state change in the domain



Naming the domain event

A domain event should be named in past tense

Loan
Approved

Loan
Approval

X

Account
Cancelled

Cancel
Account

X

Funds
Withdrawn

Withdraw
Funds

X

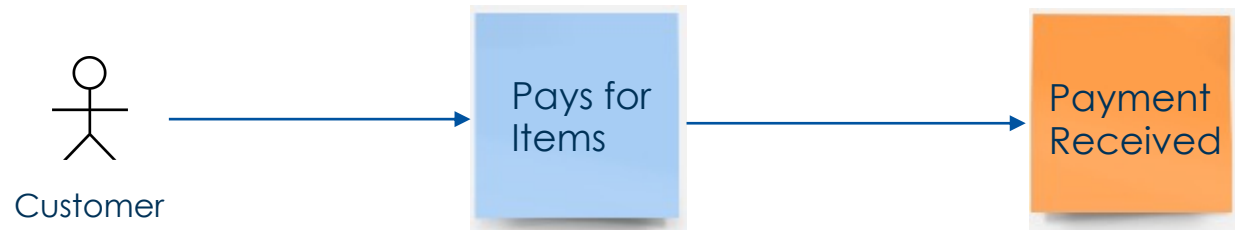
Examples: Cause & Effect

A Cause creates an Effect

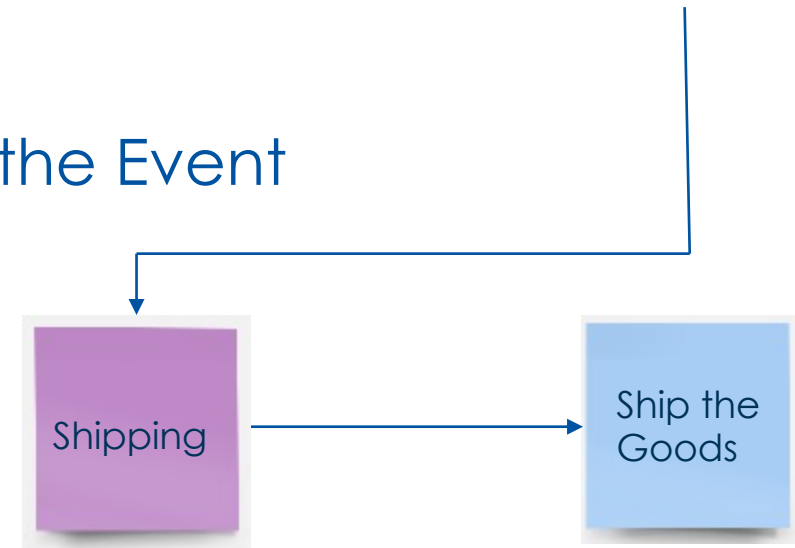
Cause

Effect

An Action that produces an Event



Reaction to the Event

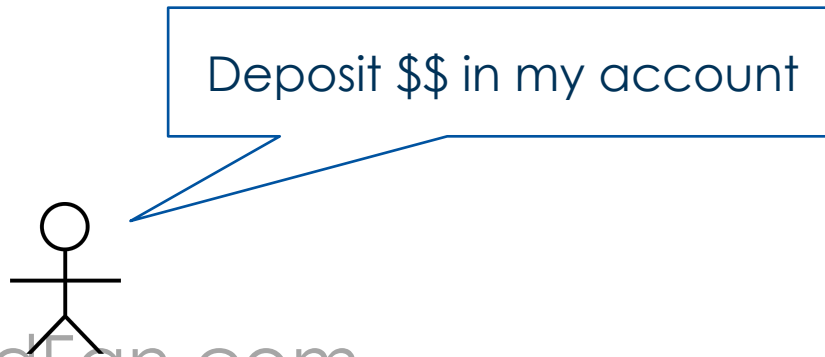


Command

Command

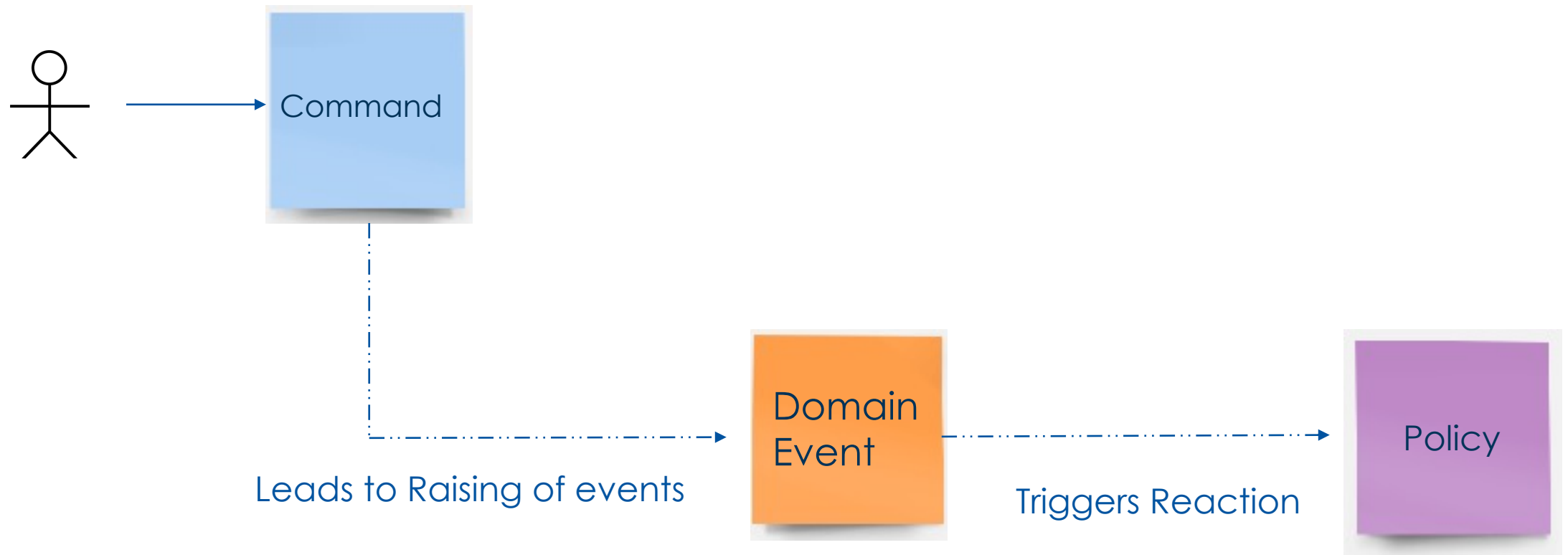
A Command is abstract

- Represents the intent of an actor
- That *MUST* be carried out by the domain



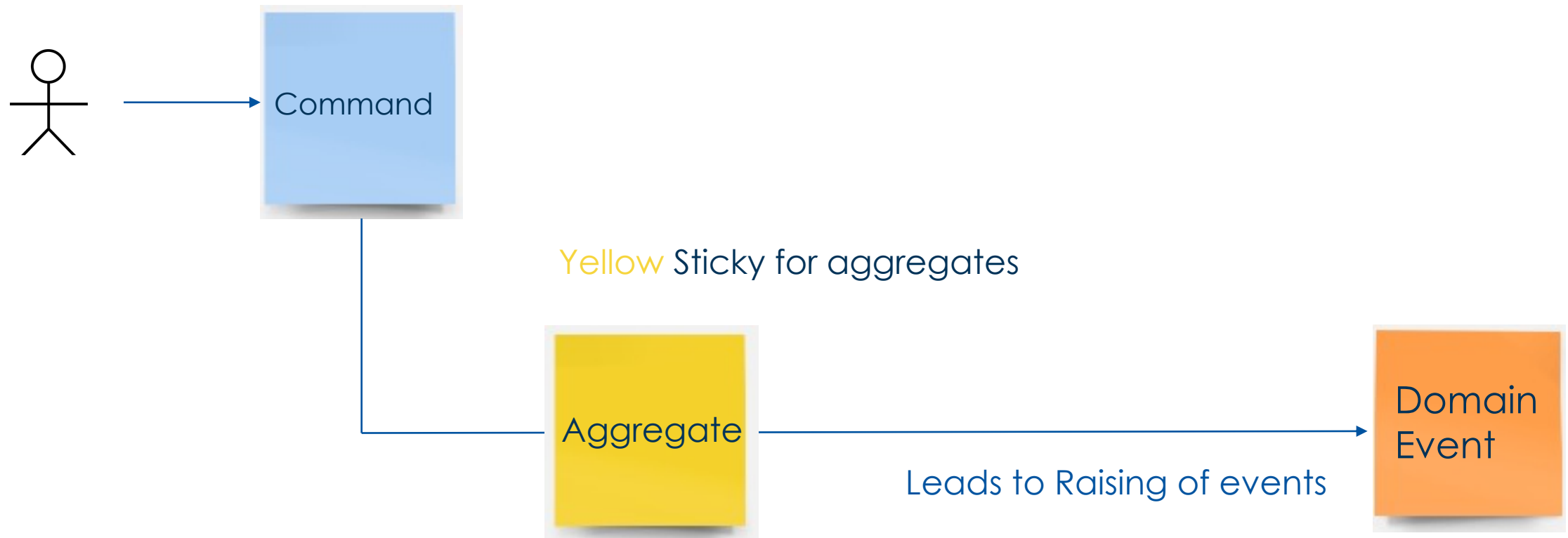
Command Processor

An Aggregate processes the command



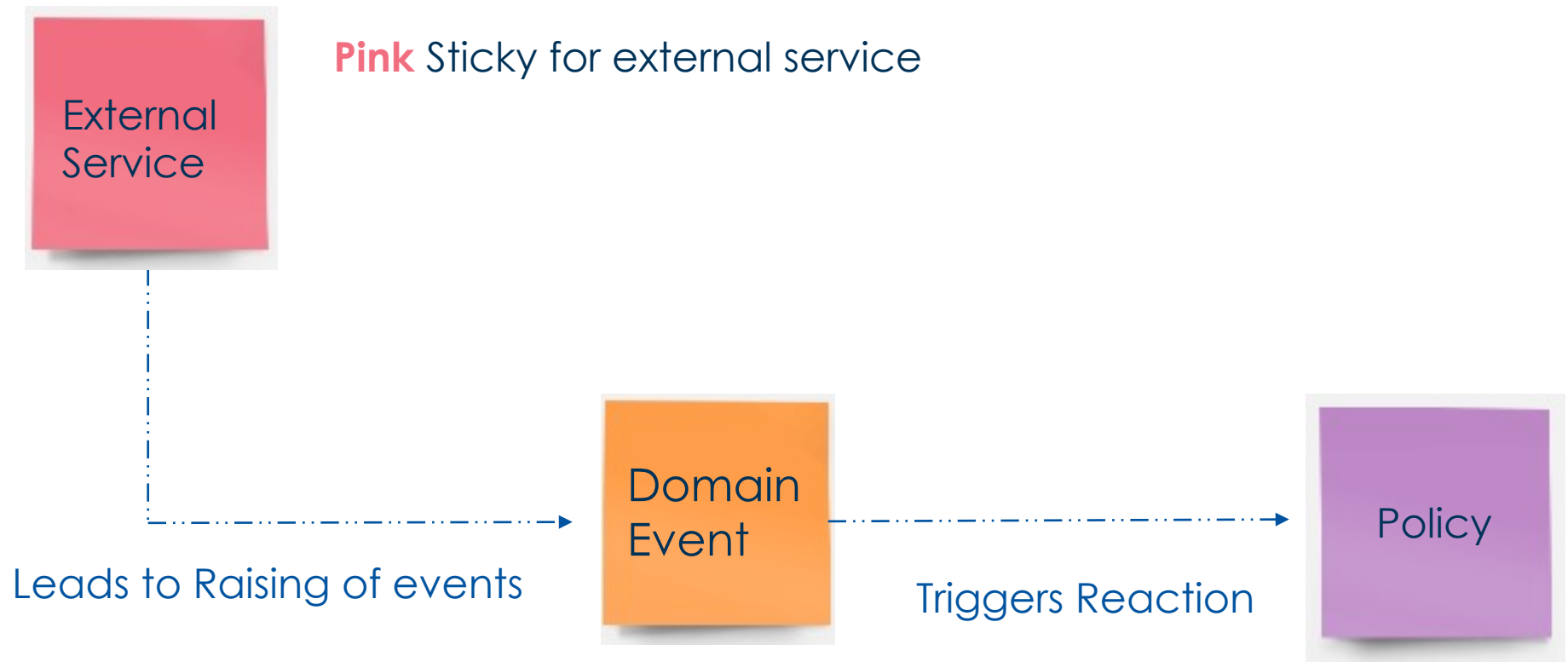
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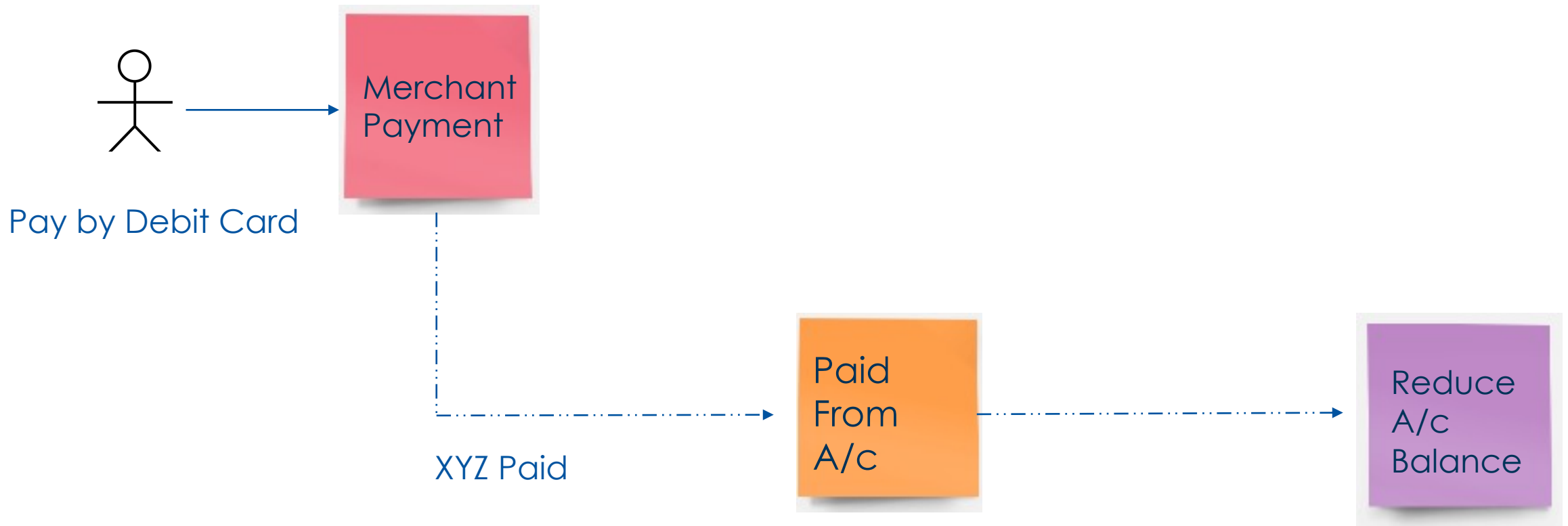
Source of events

An external system can also be a source of event



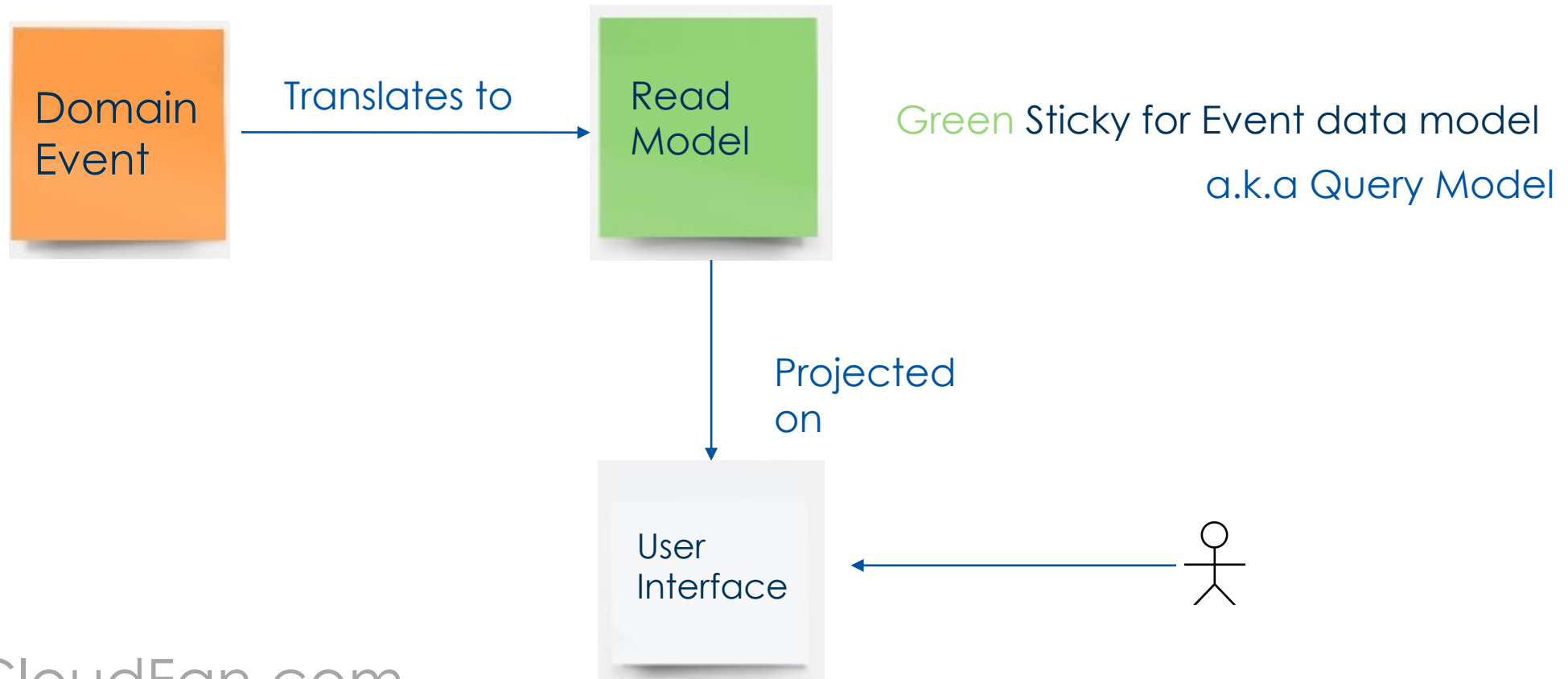
Example : External Source of event

An external system can also be a source of event



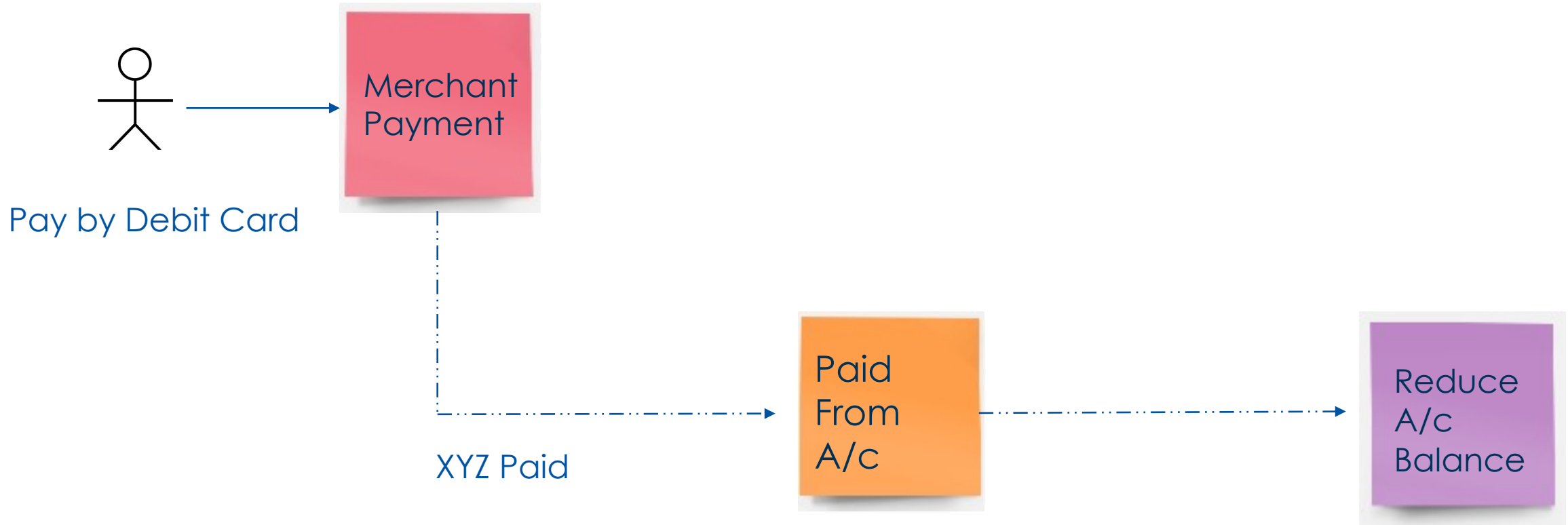
Event data

Event is directly or indirectly associated with state change



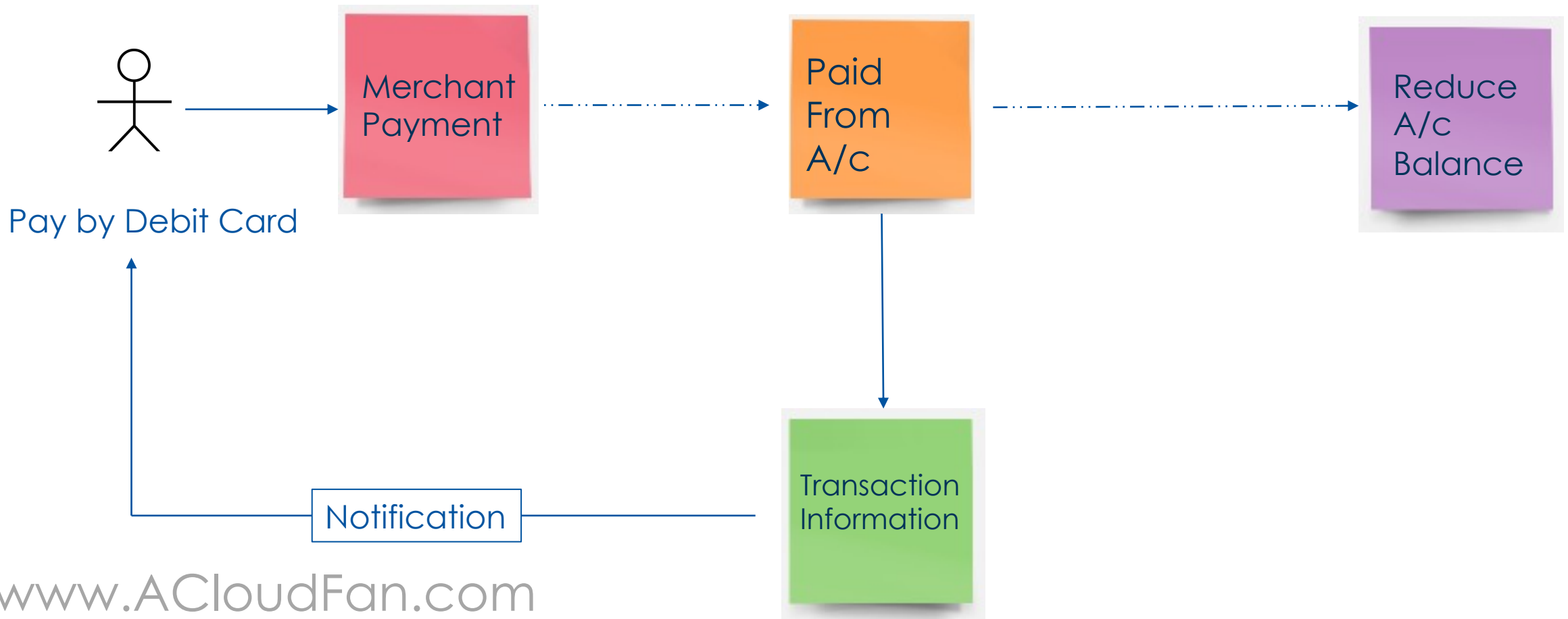
Example: Event data

Event is directly or indirectly associated with state change

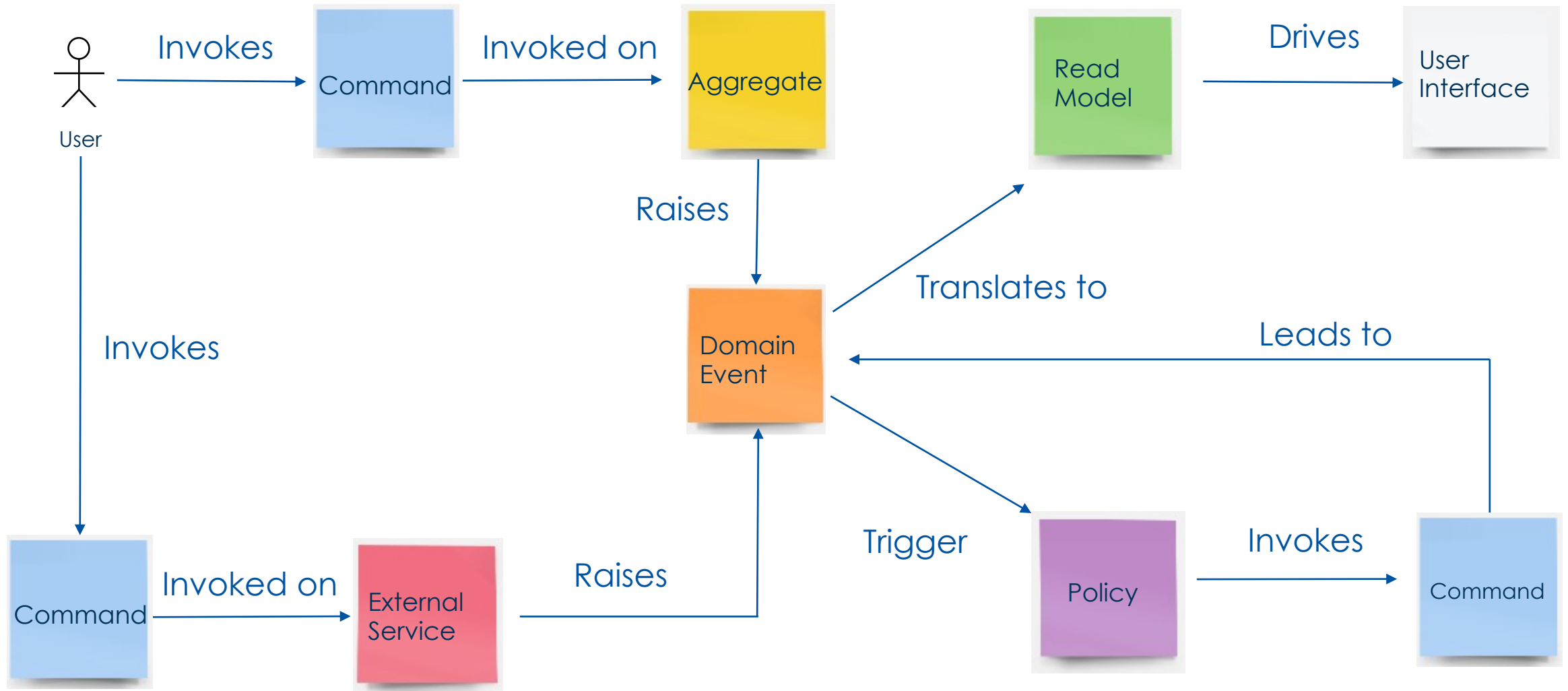


Example: Event data

Event is directly or indirectly associated with state change



Relationships



Preparing for the workshop

Tasks to be carried out prior to the workshop



- 1 Who facilitates?
- 2 Preparatory tasks

Who facilitates?

Large organizations hire outside consultants; you don't need to 😊

- Train the internal teams to become facilitators
- IT experts are taking up this role in many organizations

Anyone can do it - Learn by Observing & Practicing 😊

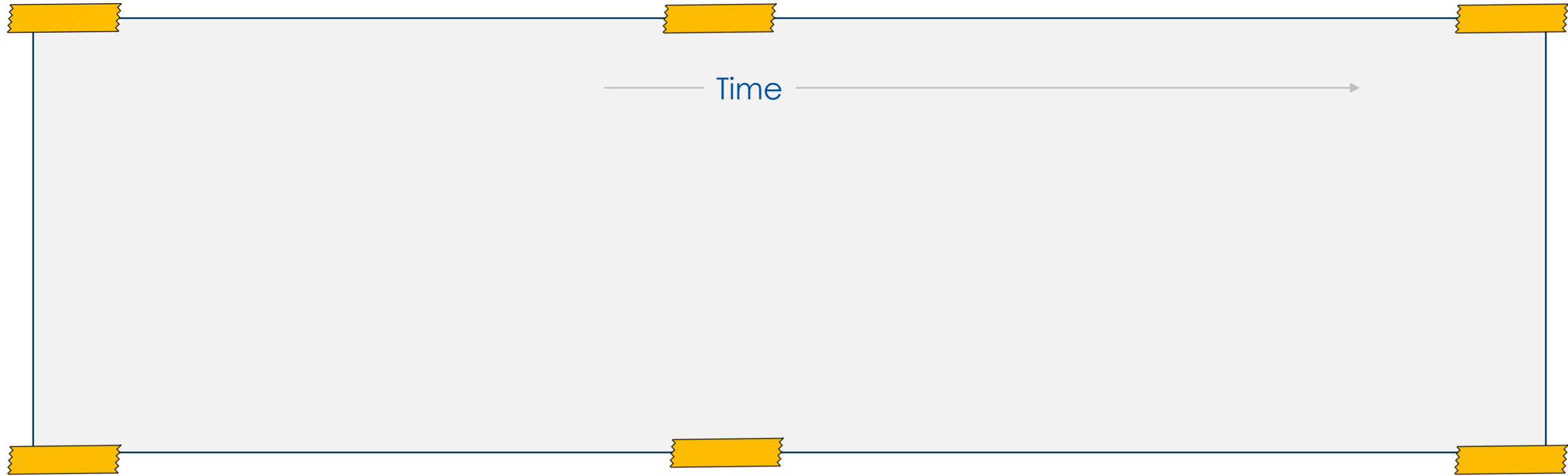
Preparatory tasks

- 1 Setup the room | tools
- 2 What is event storming?
- 3 What is the scope?
- 4 What is the expected outcome?
- 5 Dive in 😊

Set the stage - in person

1

Prepares the room for the workshop



Set the stage - remote

1

Ensure all tools are ready to go at least 2 days prior to workshop

- Setup the video conference; setup the collaboration board
- Ask participants to ensure they can connect

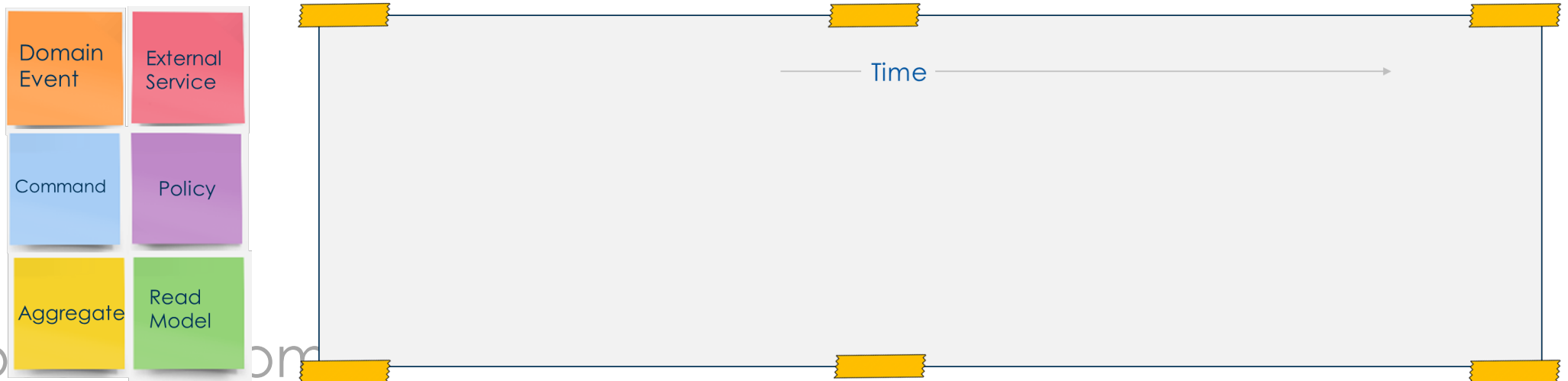
Purpose is to avoid spending time on solving technical challenges 😞

Educate the participants

2

Do NOT assume your participants know what event storming is

- DO NOT use any technical terms
- Discuss purpose of colored sticky's; participants will learn on the go

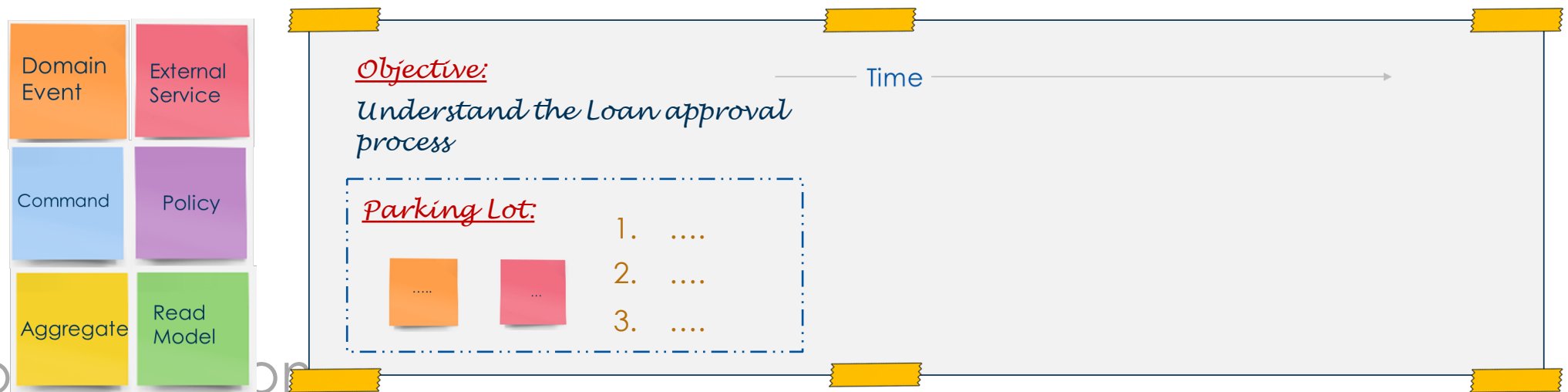


On board the participants

3

Define the scope so that everyone can stay on track

- Place the high-level objective so that they are visible at all time
- Have a dedicated space for out-of-scope items



Set the expectations

Provide a real experience with participants; share pictures

- Idea is to ensure everyone has realistic expectations
- Everyone is excited to be part of the workshop
- Look forward to learning & teaching

Remember to have FUN and keep everyone energized !!!

Conducting the workshop

How to carry out the workshop



- 1 Steps for creating the knowledge model
- 2 Tips for facilitators

Note

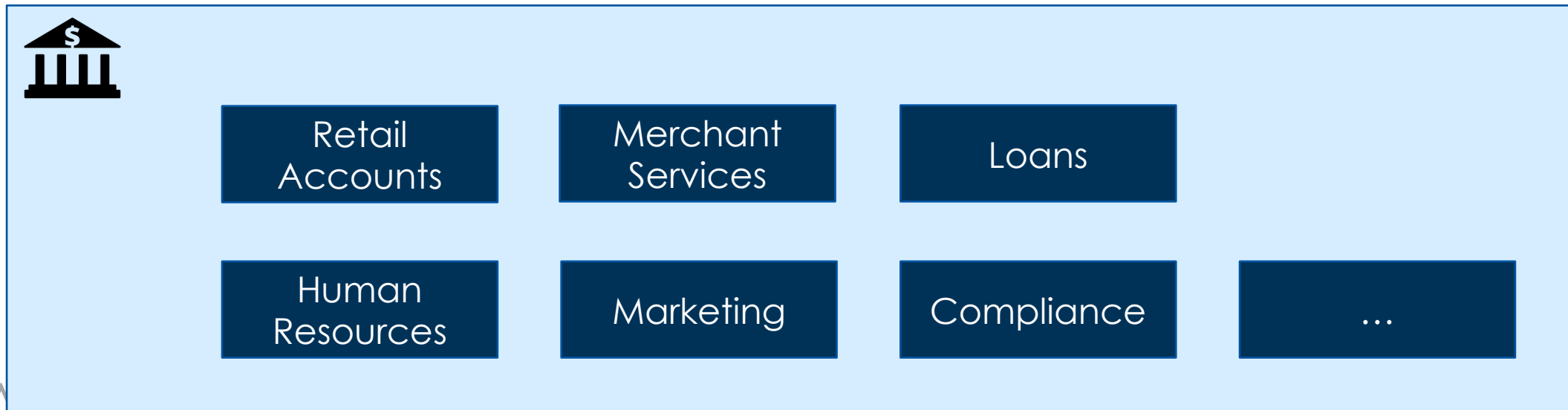
Event Storming does NOT require you to use ALL elements



Not part of ES elements

Demo Case Study

Bank's loan approval process



Demo Case Study

Bank's loan approval process



Facilitator



IT Architect



Loan Officer



Developer



Bank Products



Financial Advisor

General Steps

Facilitator may adjust the steps | flow | pace as needed

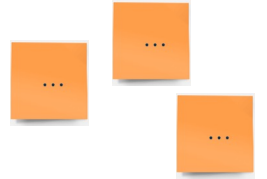
- Facilitator's / Participant's past experience
- Complexity
- Granularity of the model (high level -- detailed)
- ...



Flexibility is the key

General Steps

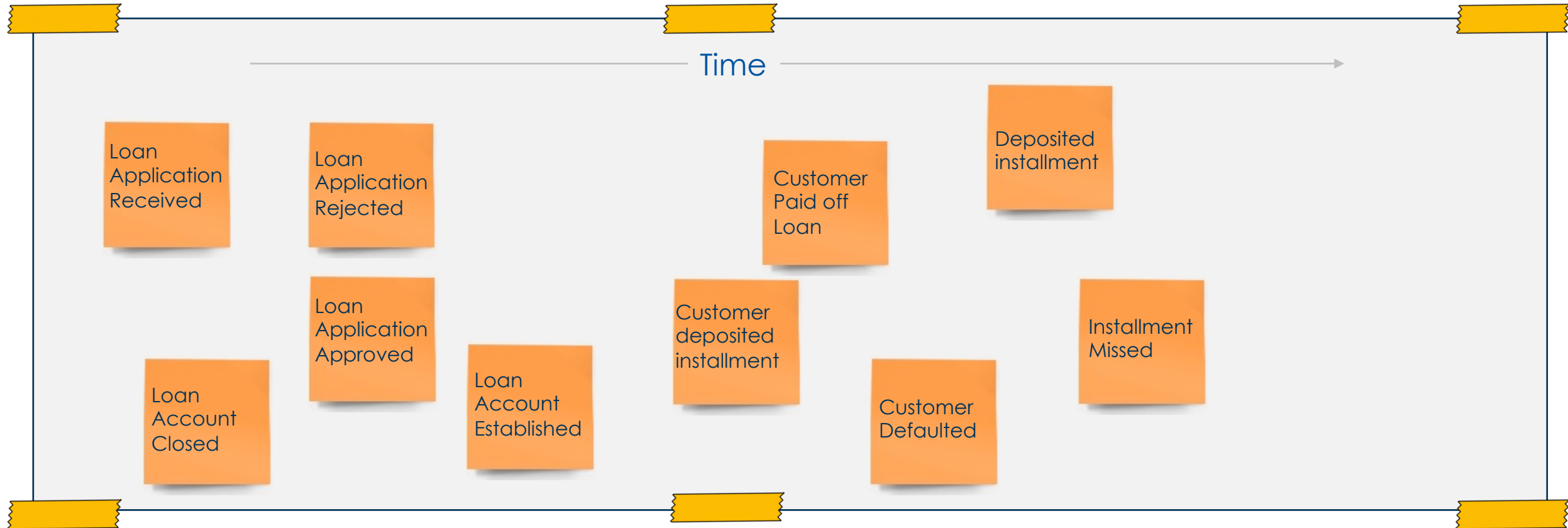
- 1 Identify the Domain Events
- 2 Order the events across the timeline
- 3 Identify the cause & effects of events
- 4 Associate the commands with Aggregate(s)



Flexibility is the key; adjust based on your own experience !!!

1. Identify the Domain Events

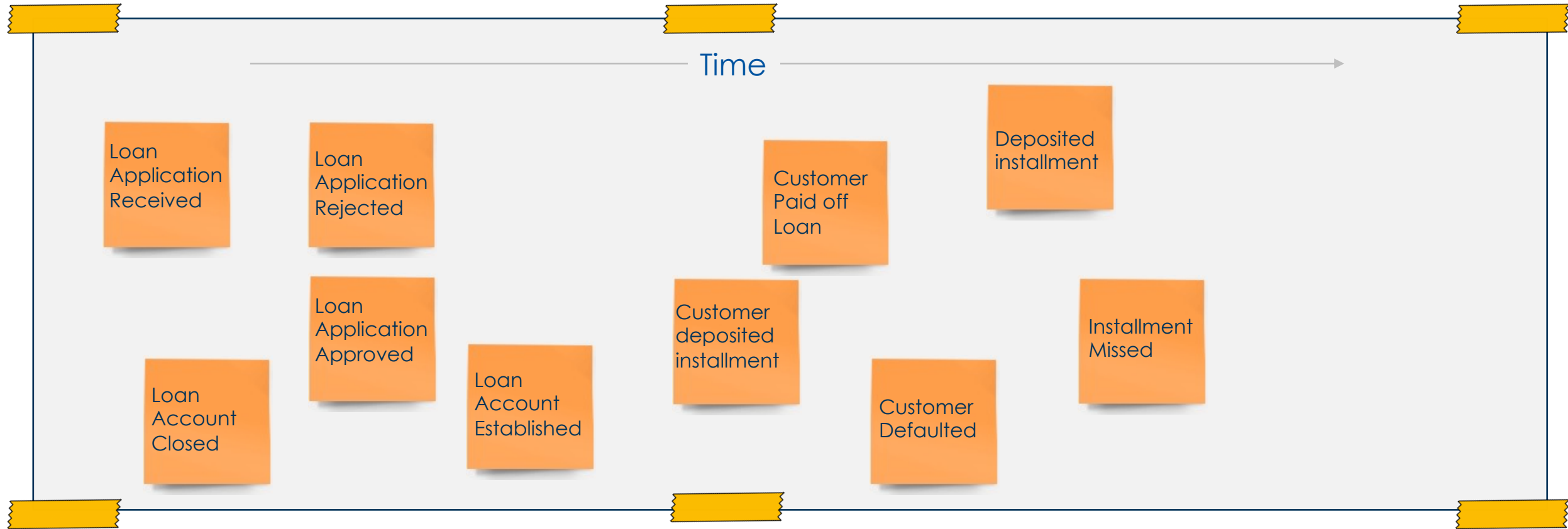
Facilitator asks participants to brainstorm



Facilitator is the first one to place the event !!!

2. Order the Events across the Timeline

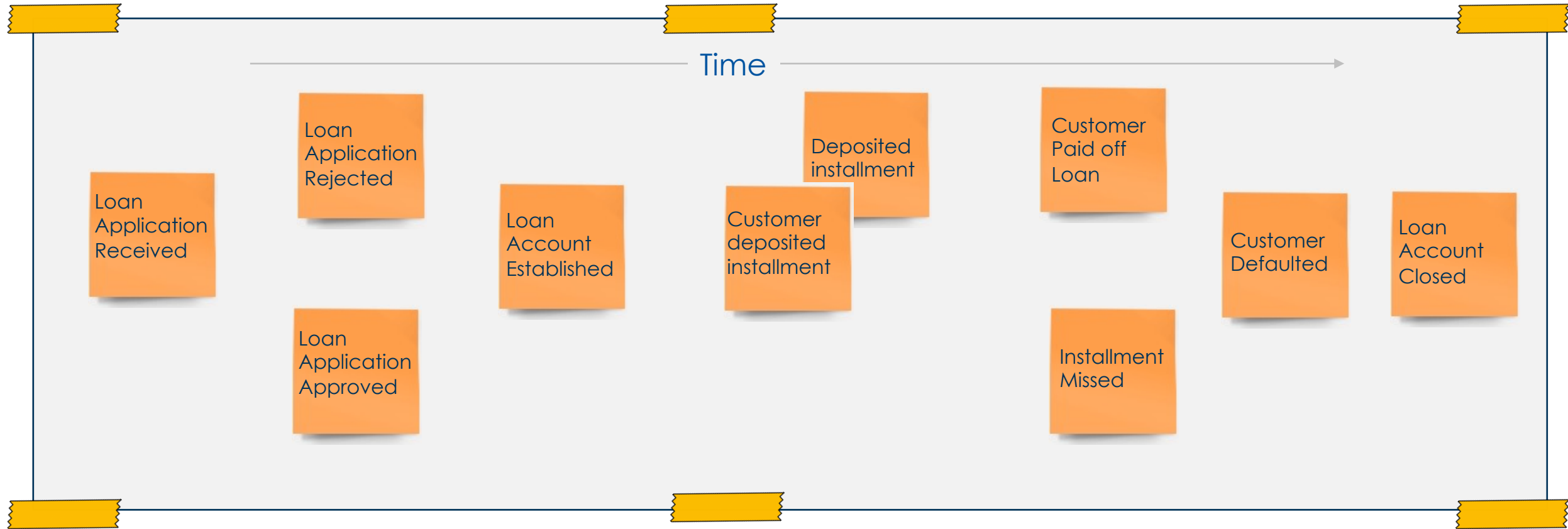
Participants discuss when the event occurs



Facilitator facilitates and lets participants do the modeling

2. Order the Events across the Timeline

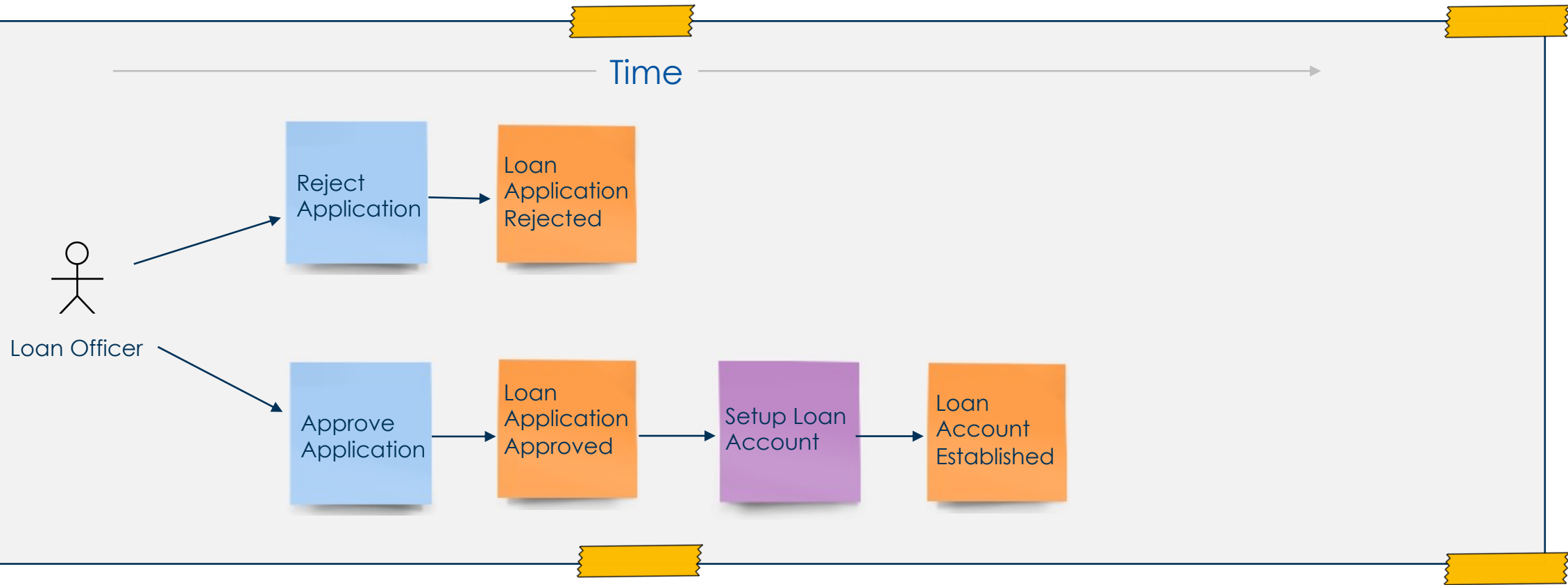
Look for duplicates and remove as needed



Facilitator facilitates and lets participants do the modeling

3. Identify the Cause | Effect

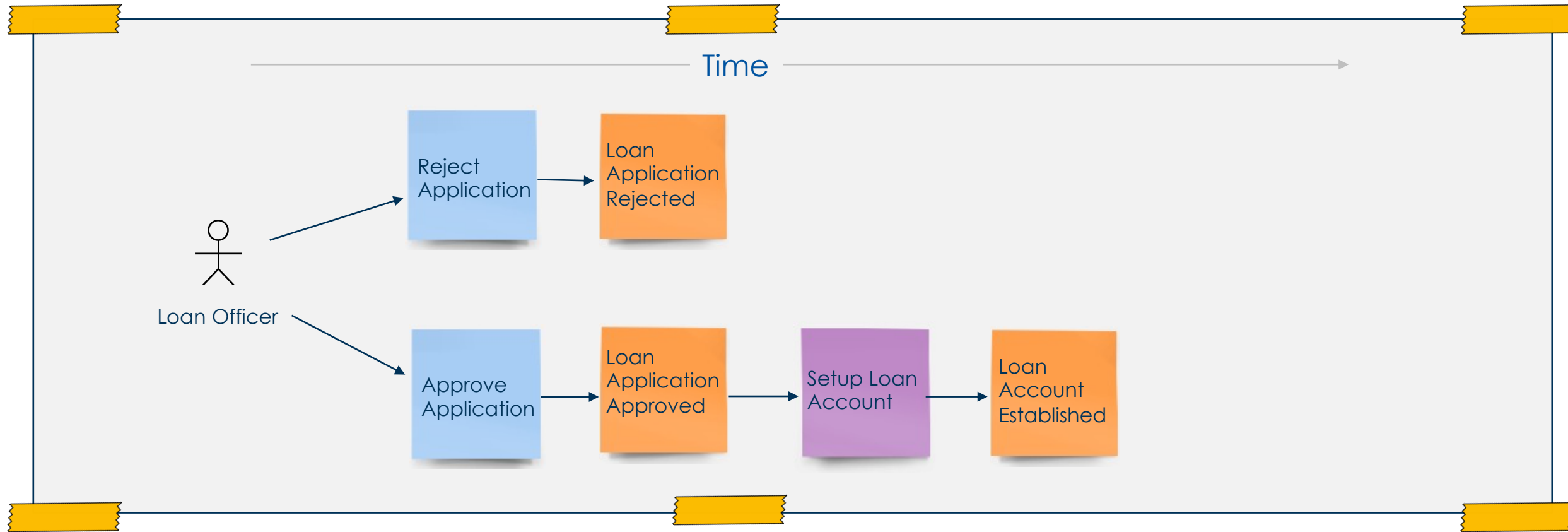
Think of Commands, Policies & Actors



Facilitator asks questions to help the participants !!!

4. Associate Aggregates with commands

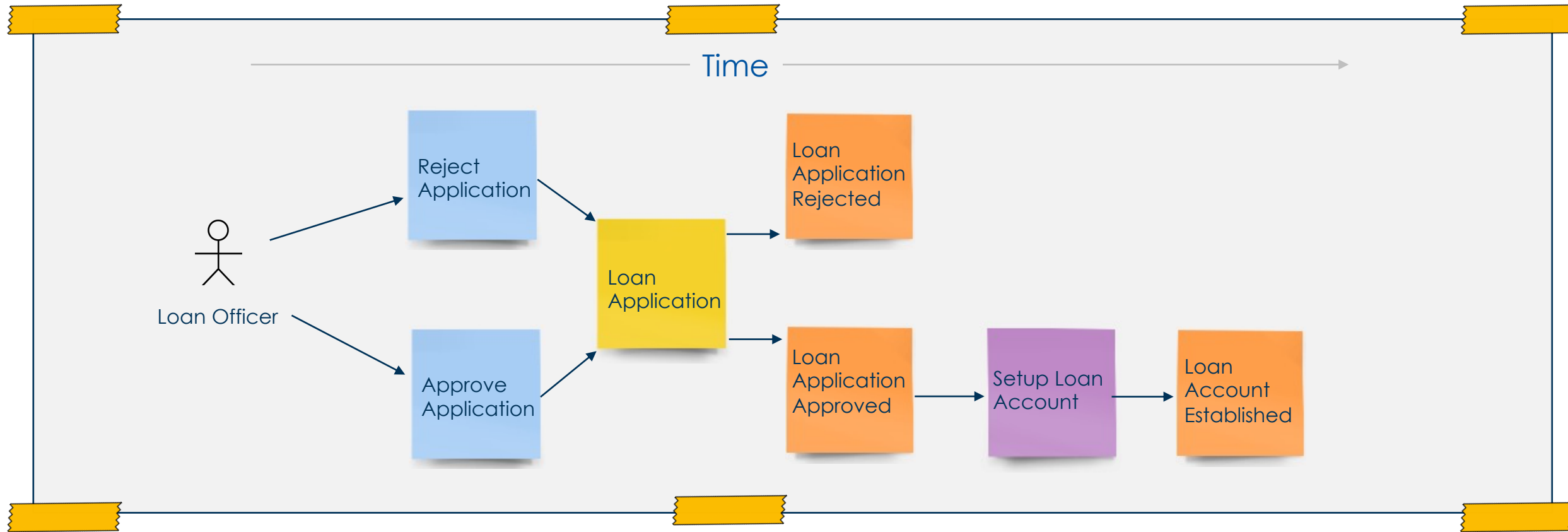
Think business logic



Keep track of time; every 30 minutes review progress & adjust

4. Associate Aggregates with commands

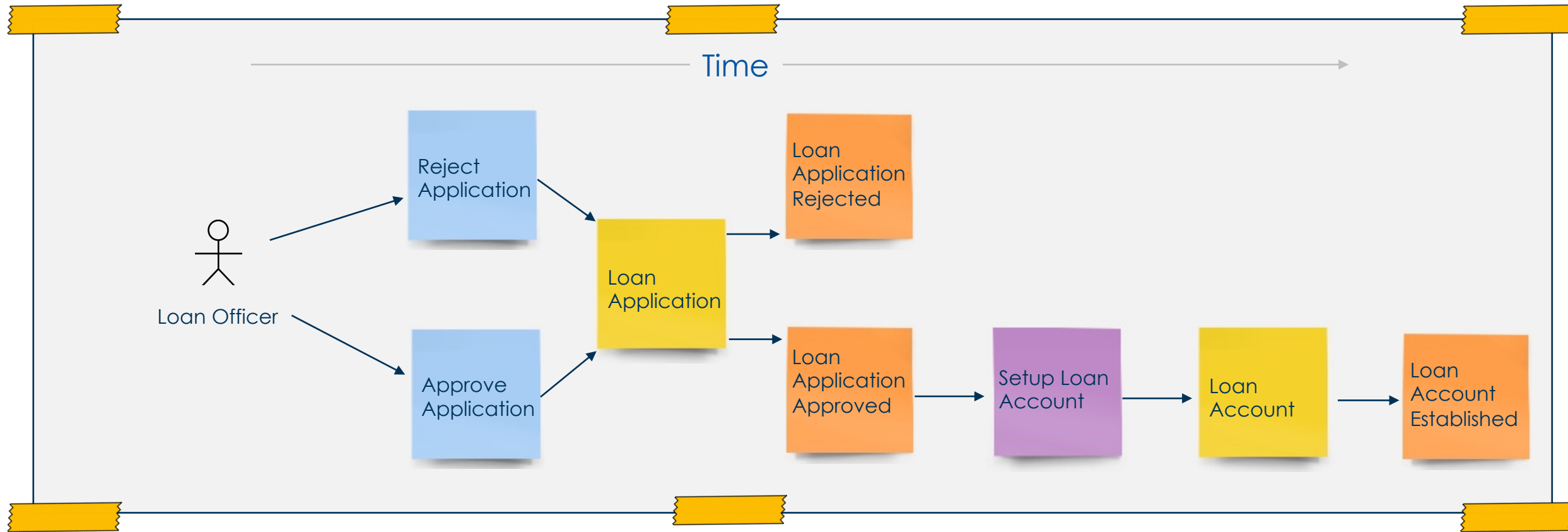
Think business logic



Keep track of time; every 30 minutes review progress & adjust

4. Associate Aggregates with commands

Think business logic



Keep track of time; every 30 minutes review progress & adjust

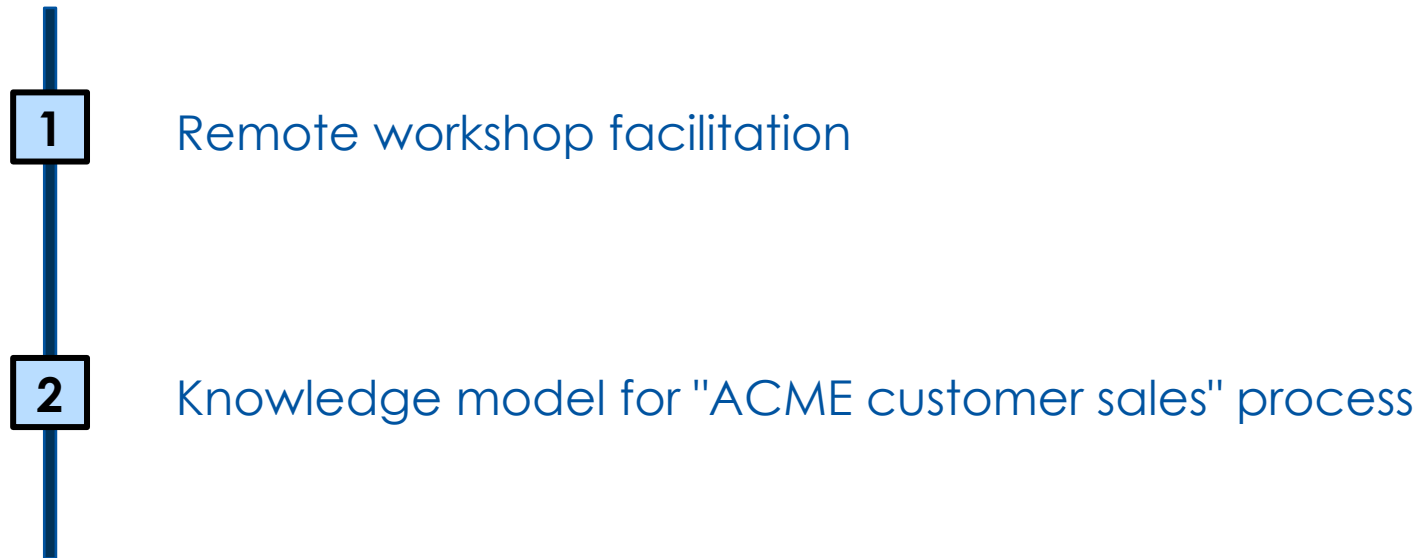
Post workshop activities

Do not forget to take pictures of the workspace

- Ask participants for their feedback
 - What worked out well?
 - What needs to be changed?
- Consolidate the knowledge and share it with ALL participants
- Follow up on next steps & don't forget the parking lot items ☺

ACME Sales Event Storming Workshop

Customer Sales Process - Knowledge Model



Workshop Scope

ACME's direct sales process



Facilitator



IT Architect



John, Travel Advisor



Developer



Brianna, Sales Manager

Prepare for the workshop

Setup the Video call & Collaboration tool



Setup the shared board

Divide the board into multiple sections

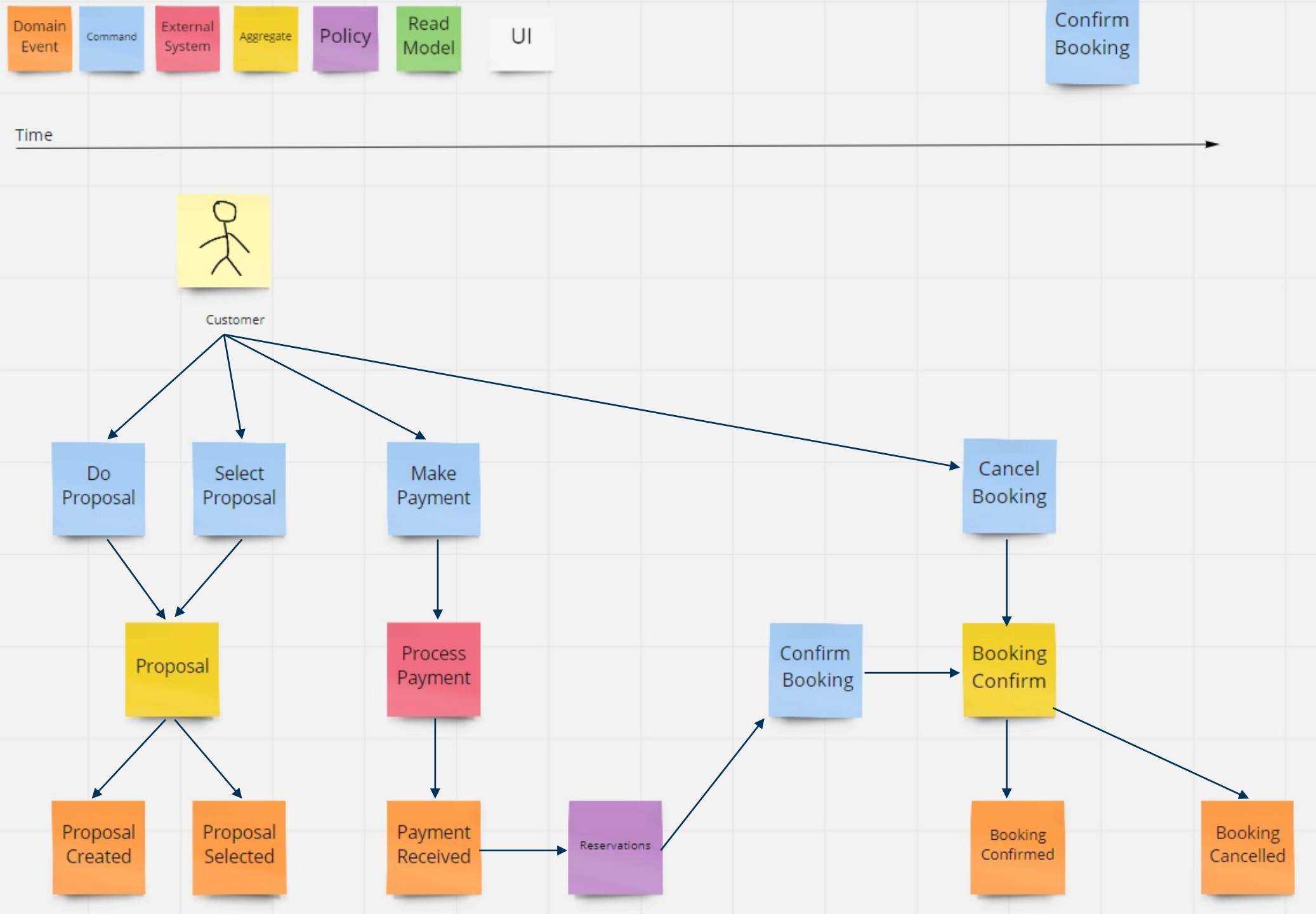
- Put all helpful information on the board
- Send an invite to the participants to join the Board



miro

Focus is on demonstrating tasks involved in Event Storming

Please checkout miro.com to learn about features in use





Quick Review

Domain
Event

- A Fact happened in the past

Command

- An Action initiated by user/system/service/time
- This action **MUST** be carried out

Aggregate

- Processor for the command



Quick Review

External
Service

- An Outside component that raises the domain event

Policy

- A Component inside the domain that reacts to events

Read
Model

- The Data model for the event