Domain Events & Event Storming

Michael Plöd

@bitboss

innoQ

Credits

to

Eric Evans

Vaughn Vernon

Alberto Brandolini

Sources: Books by Eric Evans, Alberto Brandolini and Vaughn Vernon

„If that happens“

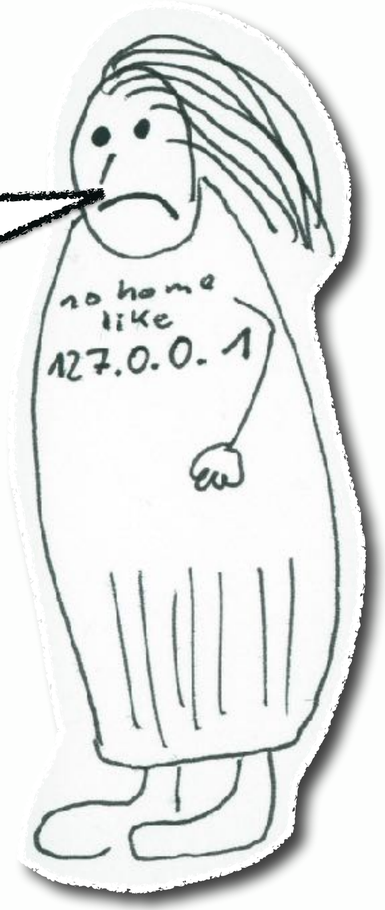
„After the customer has“

„Notify me if“

„After inserting data into“

„We need to check the status of“

„When we have called System X“



Ubiquitous Language?

Domain Events are something that happened that Domain Experts care about

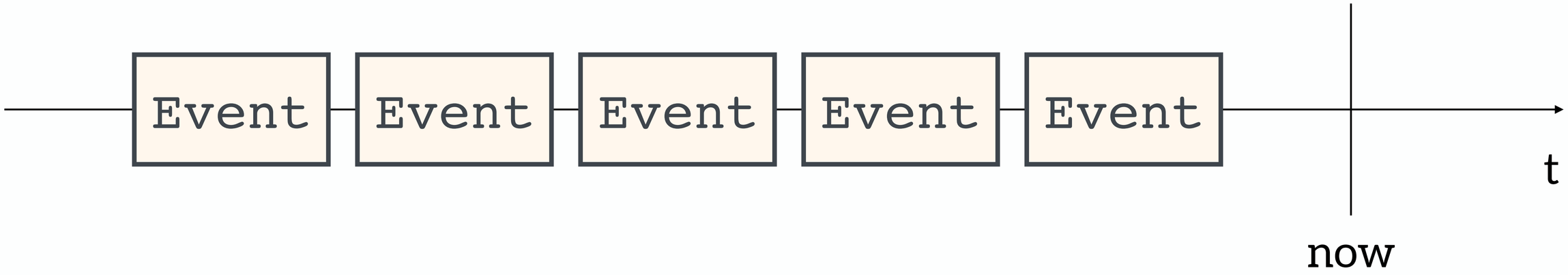
Model information about activity in the domain as a series of discrete events.

Events are easy to grasp

Events have a simple semantic

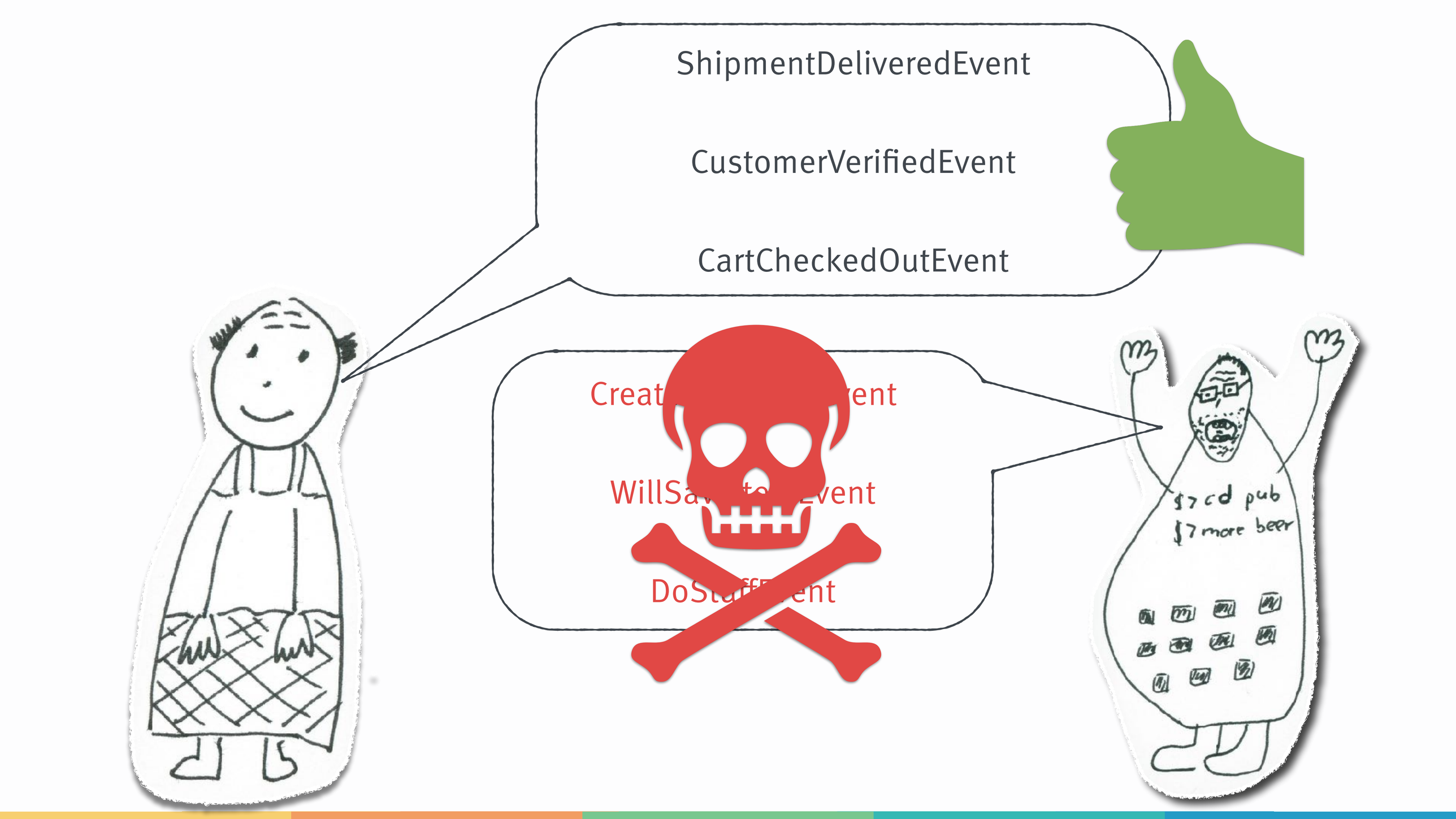
Events can be placed on a timeline

An event is something
that happened in the past



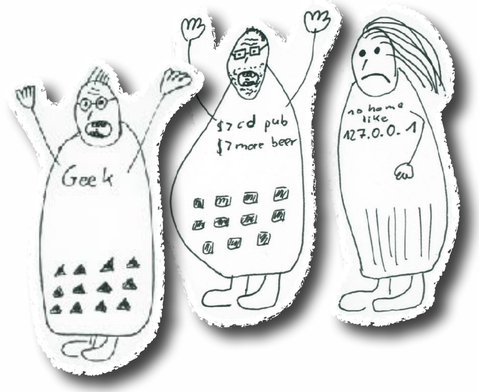
The names of the events are part of the Ubiquitous Language

D D D


ShipmentDeliveredEvent
CustomerVerifiedEvent
CartCheckedOutEvent
$7 cd pub
$7 more beer

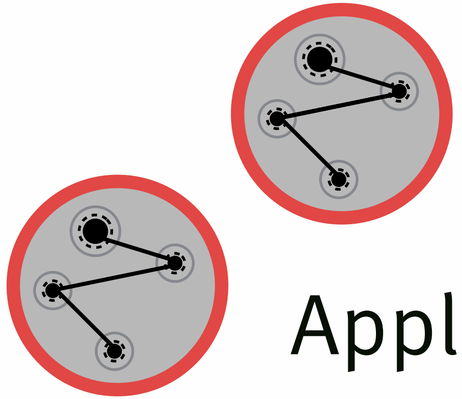
Triggers of Events

Time



User Actions

Documents



Applications

Other Events

A Domain Event is always immutable

Scope your events based on Aggregates

Commands can change business object state. Which can result in one or more Events being published

Command	Event
ShipOrderCommand	OrderShippedEvent
DecideCreditApplicationCommand	CreditDecisionPositive CreditDecisionNegative
AddCommentCommand	CommentAdded
LockCreditApplication	CreditApplicationLocked

Options for Event Payload

Options

Full Payload	The event carries complete Entitiy-Graphs or Aggregates
REST URL	The event only carries a URL to a RESTful HTTP Ressource
Empty	The event is empty or contains only minimal data and is being used to trigger pulling from a feed (eg. Atom)
Mix	The event contains data that is usually of interest to many other contexts. For special purposes there is also a URL to a RESTful HTTP Ressource

CustomerCreatedEvent

```
{
    "eventId": "4567854",
    "eventTimetamp": „12398989343",
    "eventType": "CustomerCreatedEvent",
    "customerName": "Michael",
    "customerLastName": "Plöd",
    "customerNumber": "34ed2345",
    "address" :
      {
        "street": "Kreuzstr. 16",
        "postCode": "80331",
        "city": "München"
      }
}
```

Full Payload

Events contain full object graphs

Consumers do have all the data they need

„Invitation“ to a high degree of coupling between event and consumer

CustomerCreatedEvent

```
{
    "eventId": "4567854",
    "eventTimetamp": „12398989343",
    "eventType": "CustomerCreatedEvent",
    "url": "http://123.03.24.23/event/2"
}
```

REST URL

Events only contain a URL to a REST resource for the event data

If consumers need the data they can obtain it but don’t have to

Synchronous communication, but no service discovery

CustomerCreatedEvent

```
{
    "eventId": "4567854",
    "eventTimetamp": „12398989343",
    "eventType": "CustomerCreatedEvent",
}
```

Empty

Events contain no data at all

Consumers would usually consume an (ATOM) Feed

Consumers need to know the Source of the Feed

CustomerCreatedEvent

```
{
    "eventId": "4567854",
    "eventTimetamp": „12398989343",
    "eventType": "CustomerCreatedEvent",
    "customerLastName": "Plöd",
    "customerNumber": "34ed2345",
    "url": "http://123.03.24.23/event/2"
}
```

MIX

Events contain some data

Additional data can be obtained by calling as REST Resource

Good compromise in many occasions

Case Study

https://github.com/mploed/event-driven-spring-boot

Your loan details

Term

0

Amount

Purpose

How about your financial situation?

Earnings

Income

0

Child Benefit

0

Rental Income

0

Outgoings

Rent

0

Loan Repayments

0

Cost Of Living

0

Your details

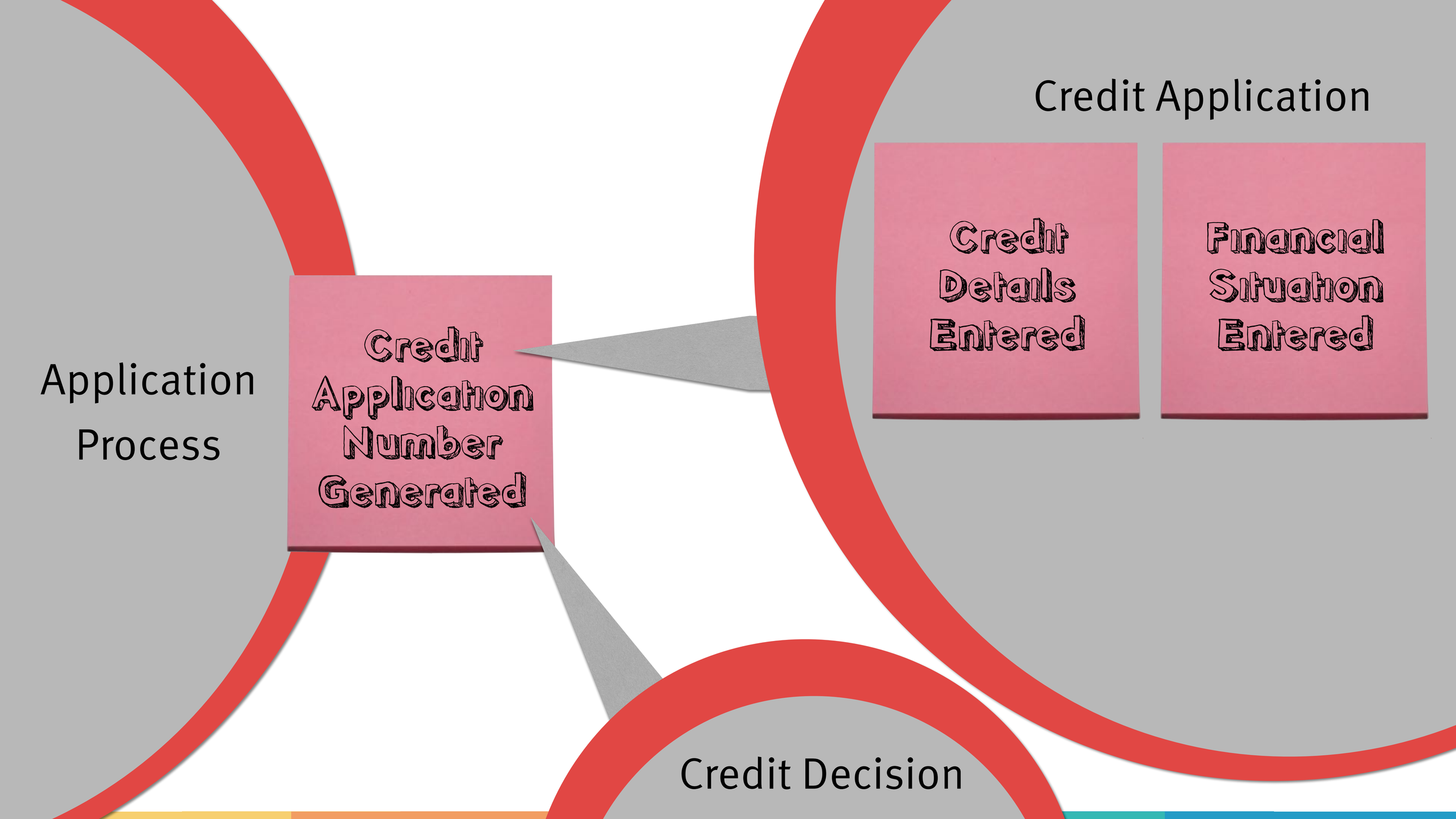
First Name

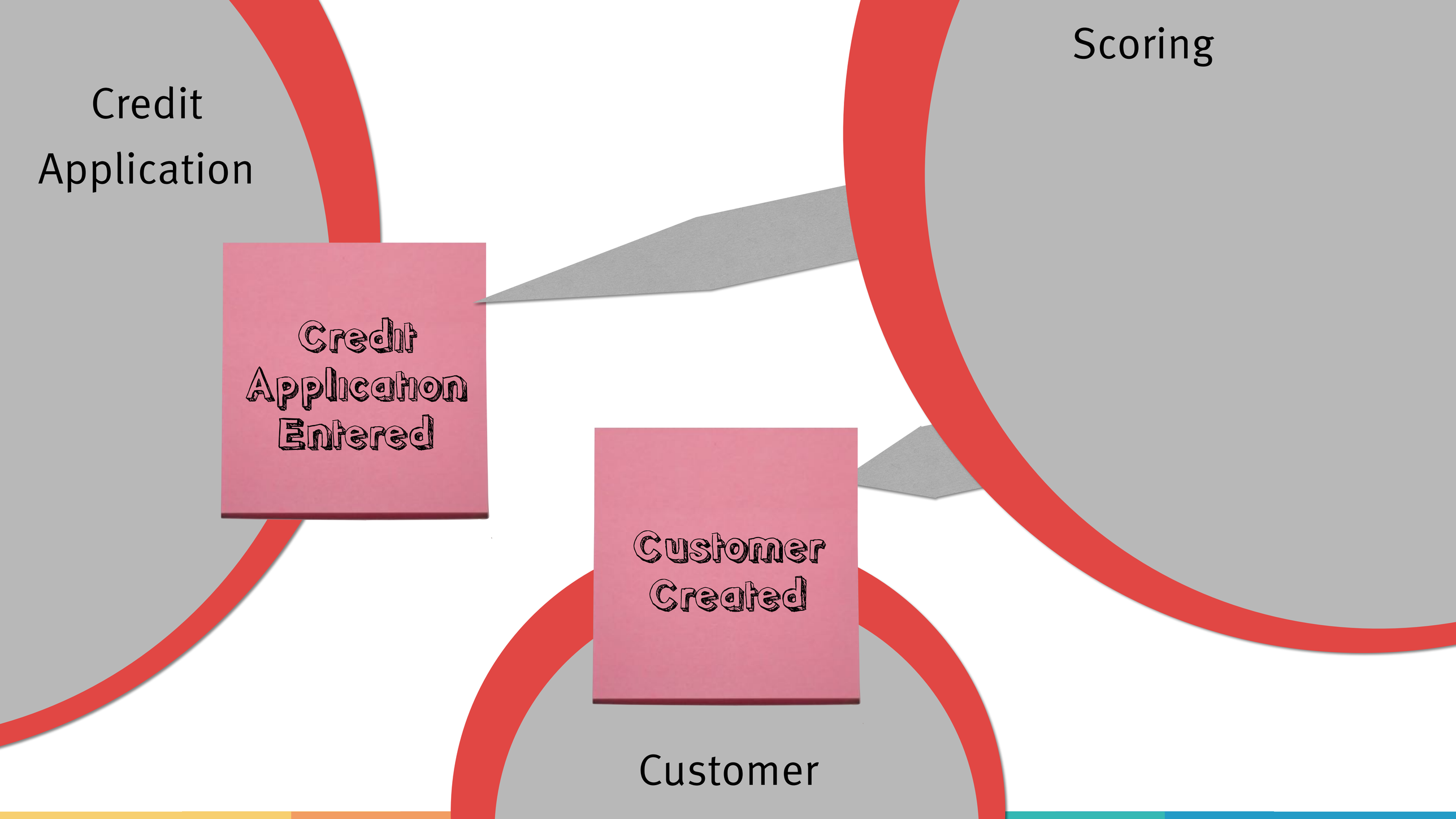
Last Name

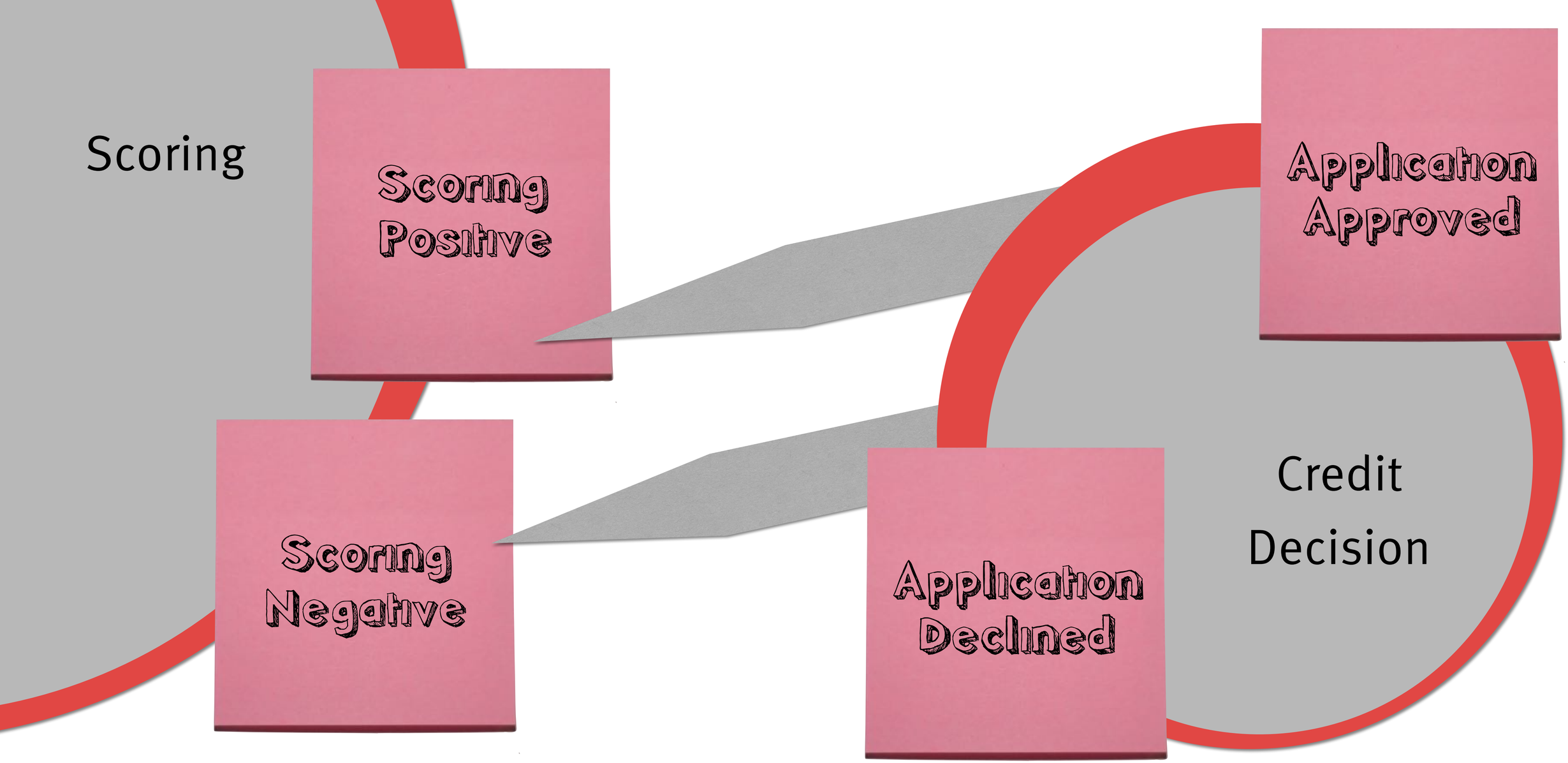
Street

Postcode

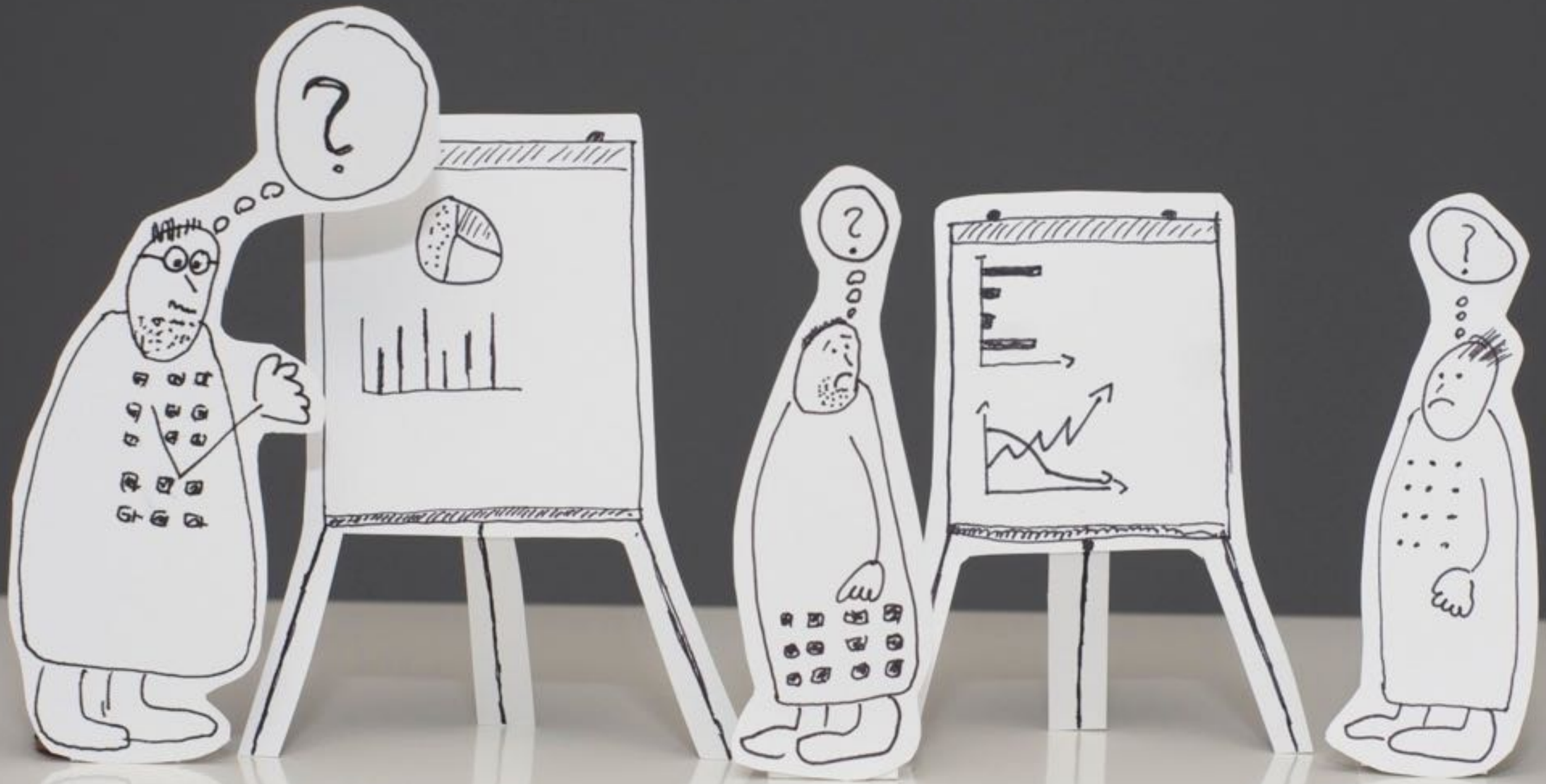
City


Application Process
Credit Application Number Generated
Credit Application
Credit Details Entered
Financial Situation Entered
Credit Decision


Credit Application
Scoring
Credit Application Entered
Customer Created
Customer


Scoring
Scoring Positive
Scoring Negative
Application Approved
Application Declined
Credit Decision

How do I identify events?



Event Storming

Overview

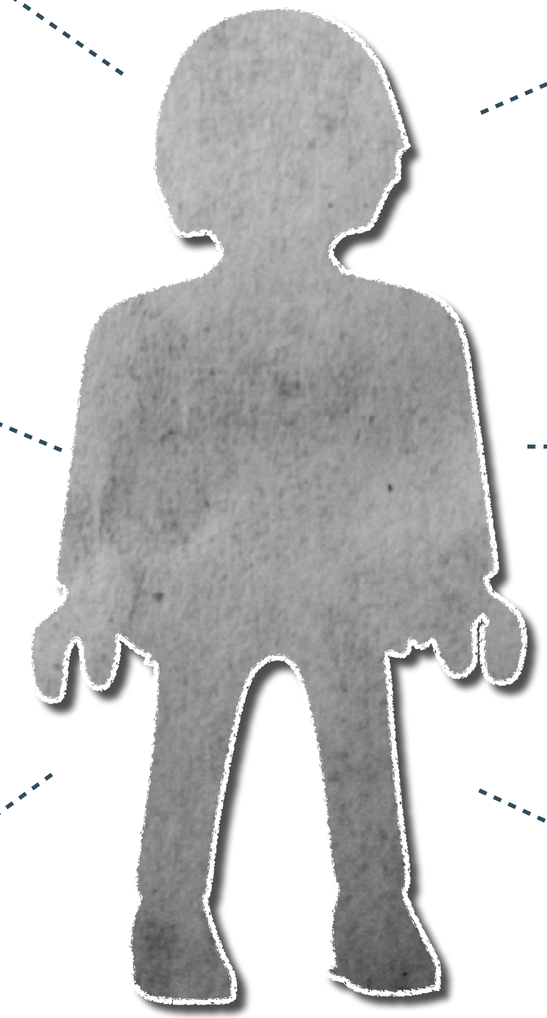
- Workshop moderation format
- Invented by Alberto Brandolini
- Analysis of requirements based on events

Source: http://ziobrando.blogspot.de/2013/11/introducing-event-storming.html

Event Storming is highly analog

Explore the domain starting from Domain Events

Invite the right people



Explore the the origins of Domain Events

Avoid tables / chairs in the room

Look for Aggregates

Provide unlimited modelling space

Source: http://ziobrando.blogspot.de/2013/11/introducing-event-storming.html

Use A LOT of sticky notes

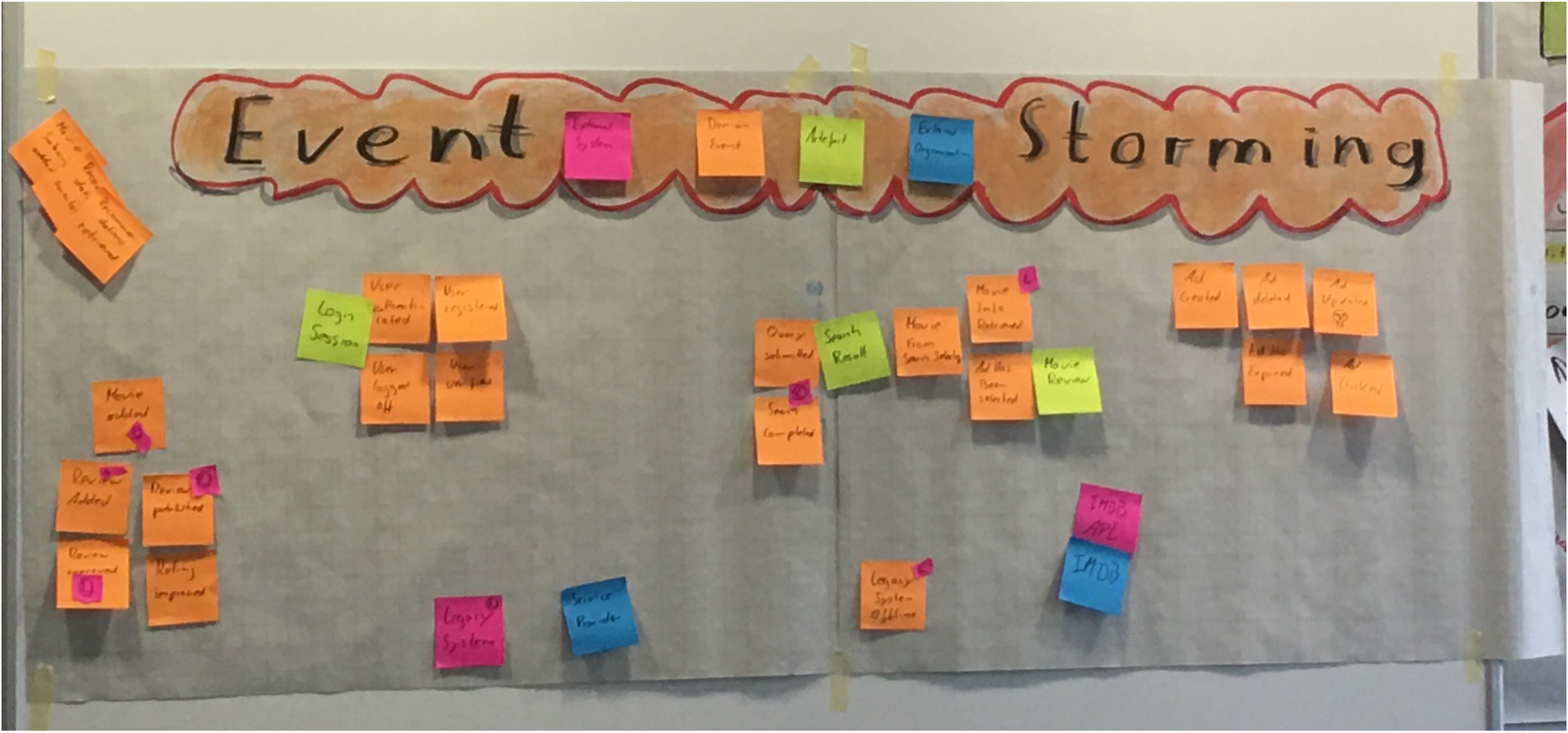
Events

External Systems

External Organizations

Artefacts

Source: http://ziobrando.blogspot.de/2013/11/introducing-event-storming.html


Event Storming
Login Session
Search Result
Movie Review
IMDB APL
IMDB

Bonus Targets

- Explore Subdomains
- Explore Bounded Contexts
- Sketch User Personas
- Sketch Key Acceptance Tests
- Sketch Key Read Model Artefacts

Source: http://ziobrando.blogspot.de/2013/11/introducing-event-storming.html

Thank you

shameless plug: we offer DDD trainings & consulting

Michael Plöd

@bitboss

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