



EXPLORE DDD
CONFERENCE

EXPLOREDDD.COM

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Denver, Colorado, USA



EVENTSTORMING

COLLABORATIVE LEARNING FOR COMPLEX DOMAINS

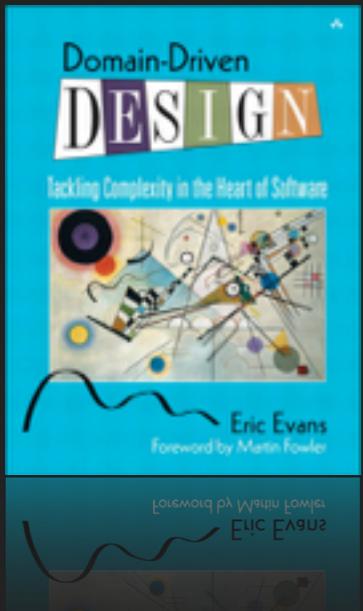
Paul Rayner
 @thepaulrayner



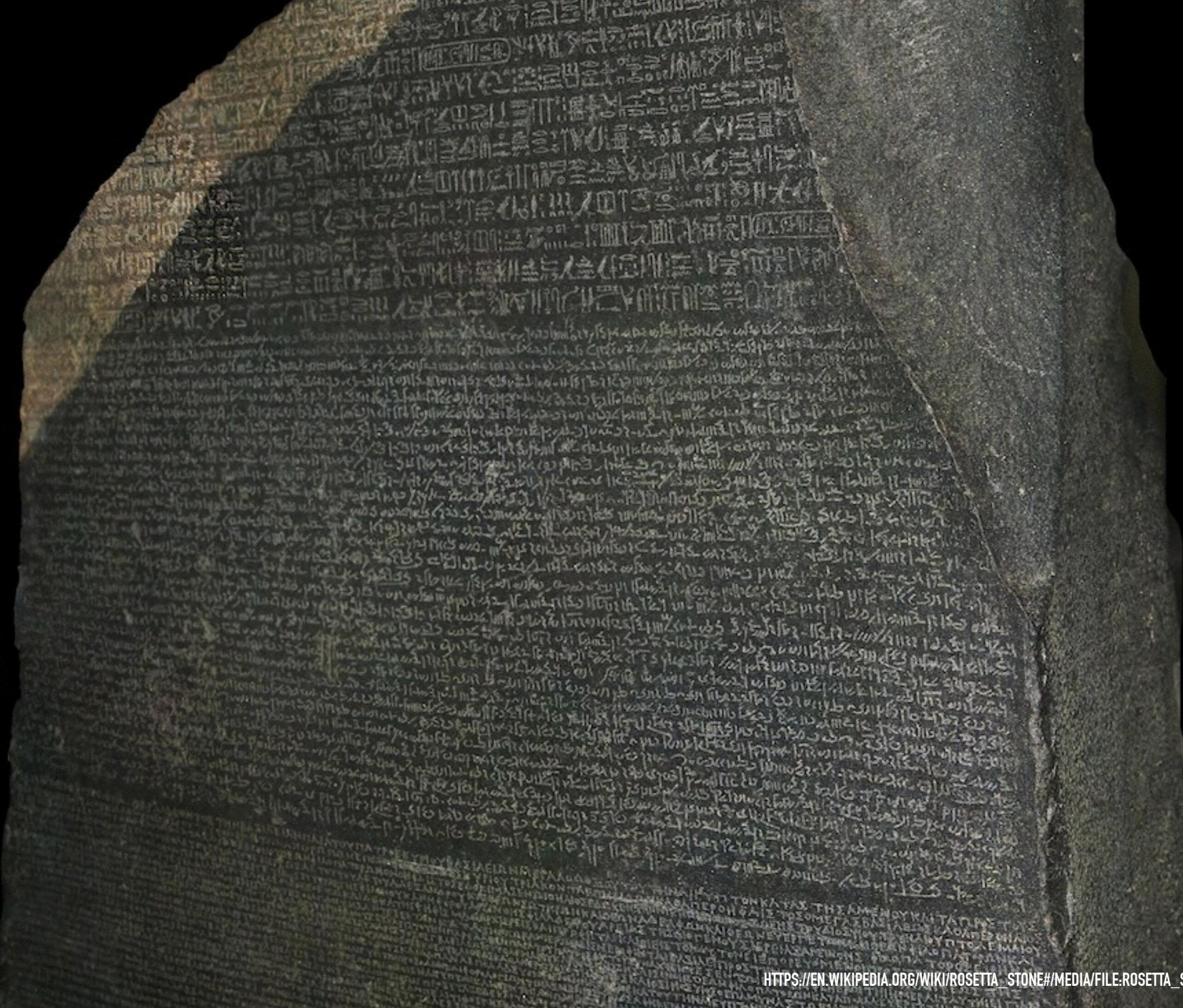
THE LANDSCAPE

- ✓ Complex business rules & processes
- ✓ Knowledge silos
- ✓ Numerous diverse (& often legacy) system interactions

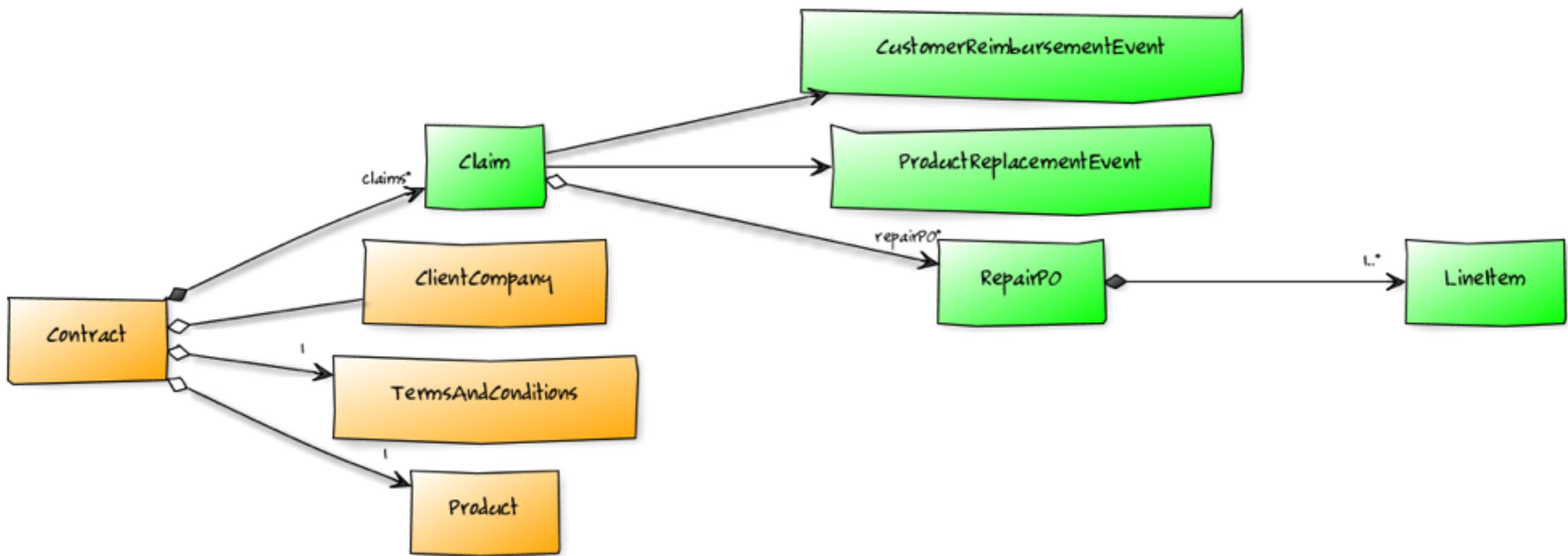
THE CRITICAL COMPLEXITY OF MOST
SOFTWARE PROJECTS IS IN
UNDERSTANDING THE DOMAIN
ITSELF

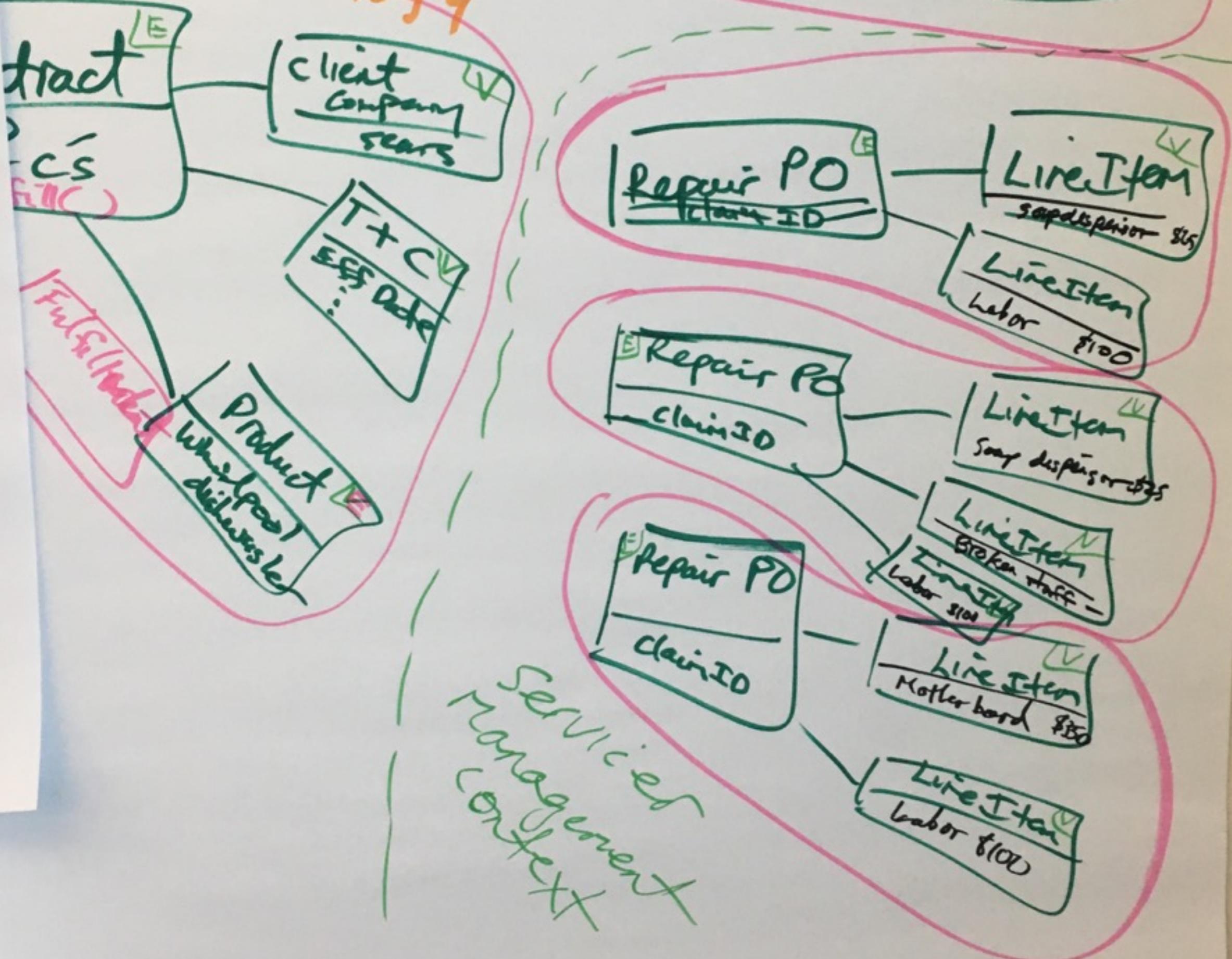


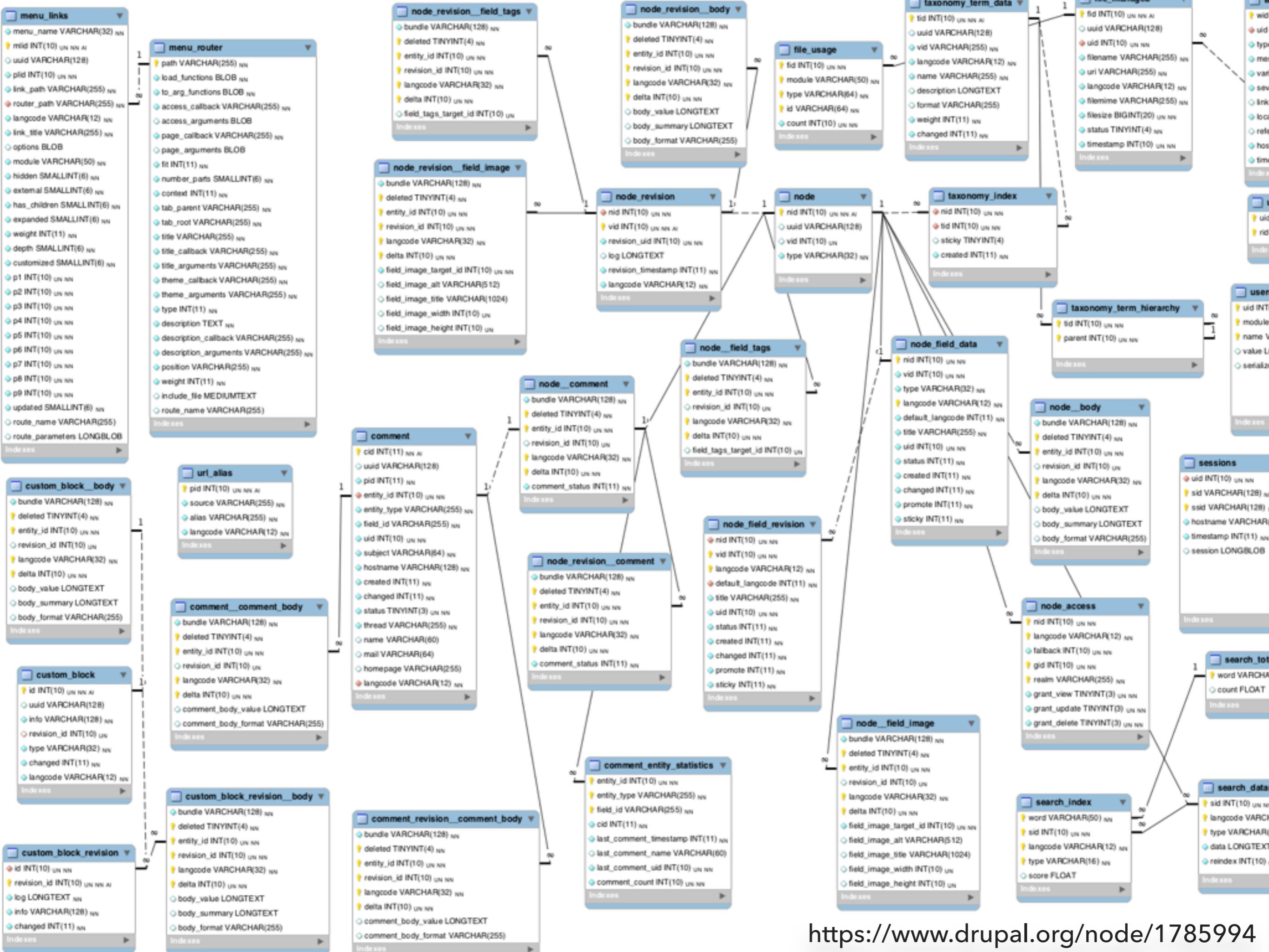
Eric Evans



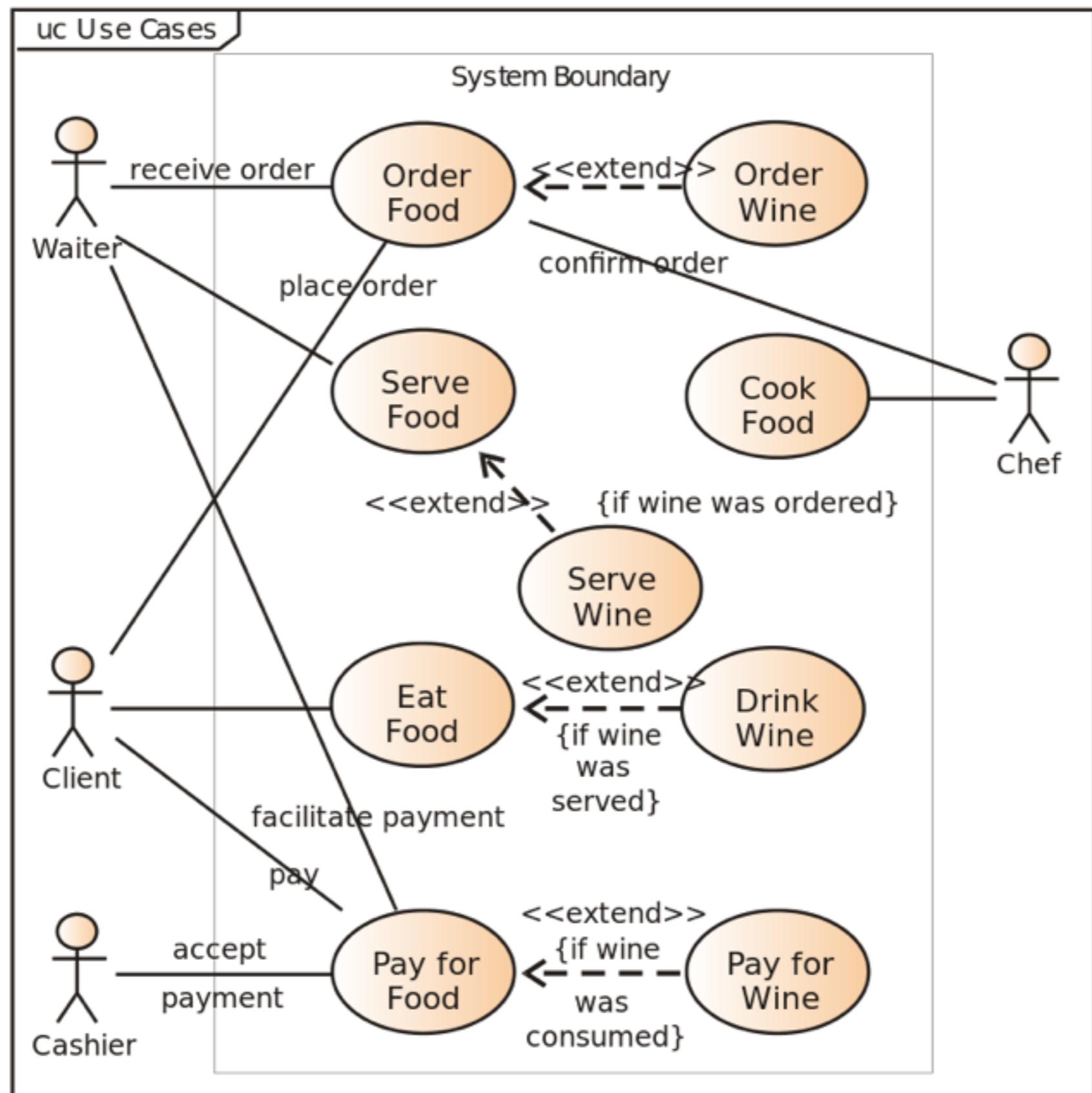
**HOW DO WE LEARN
...FAST?**

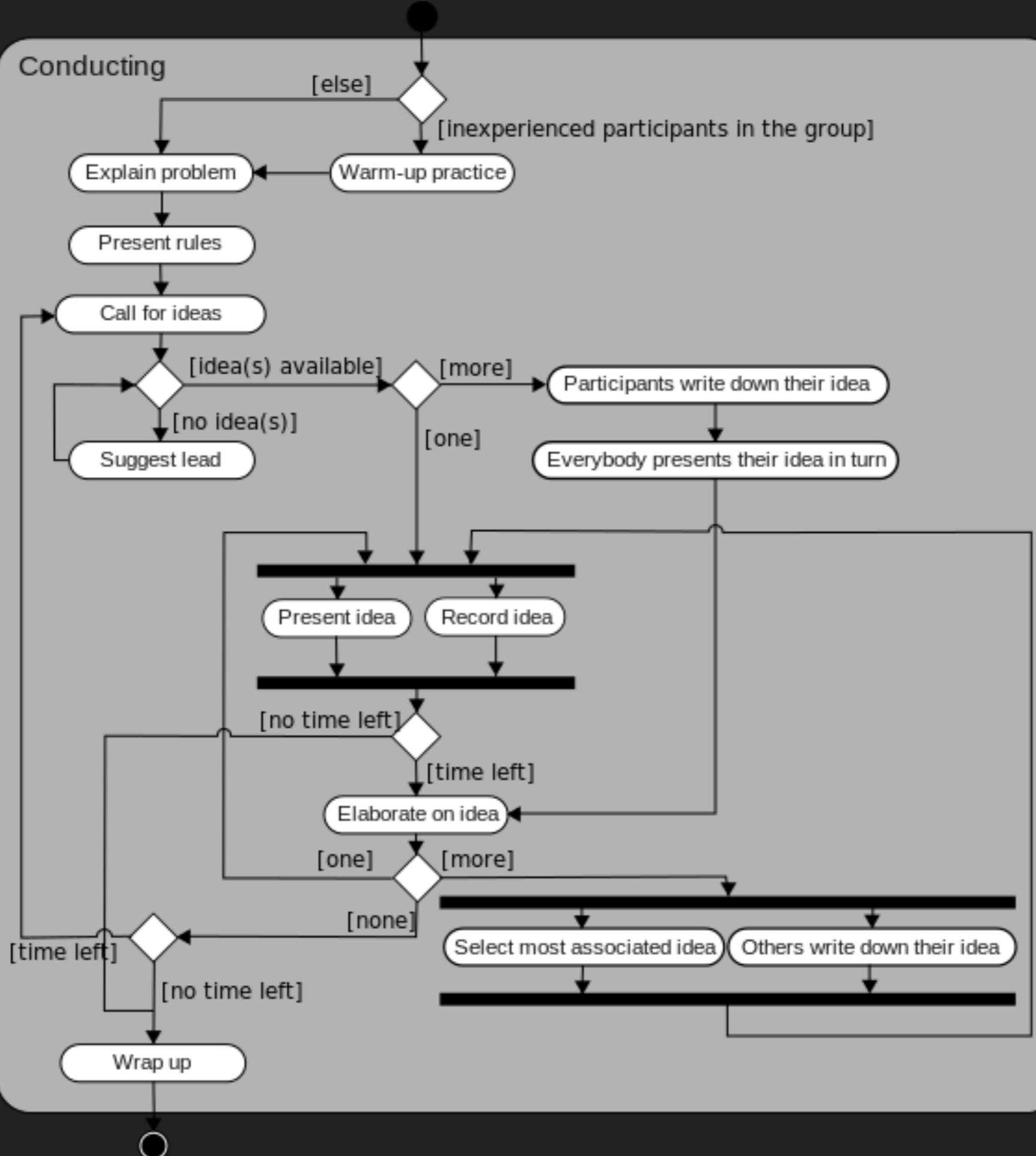


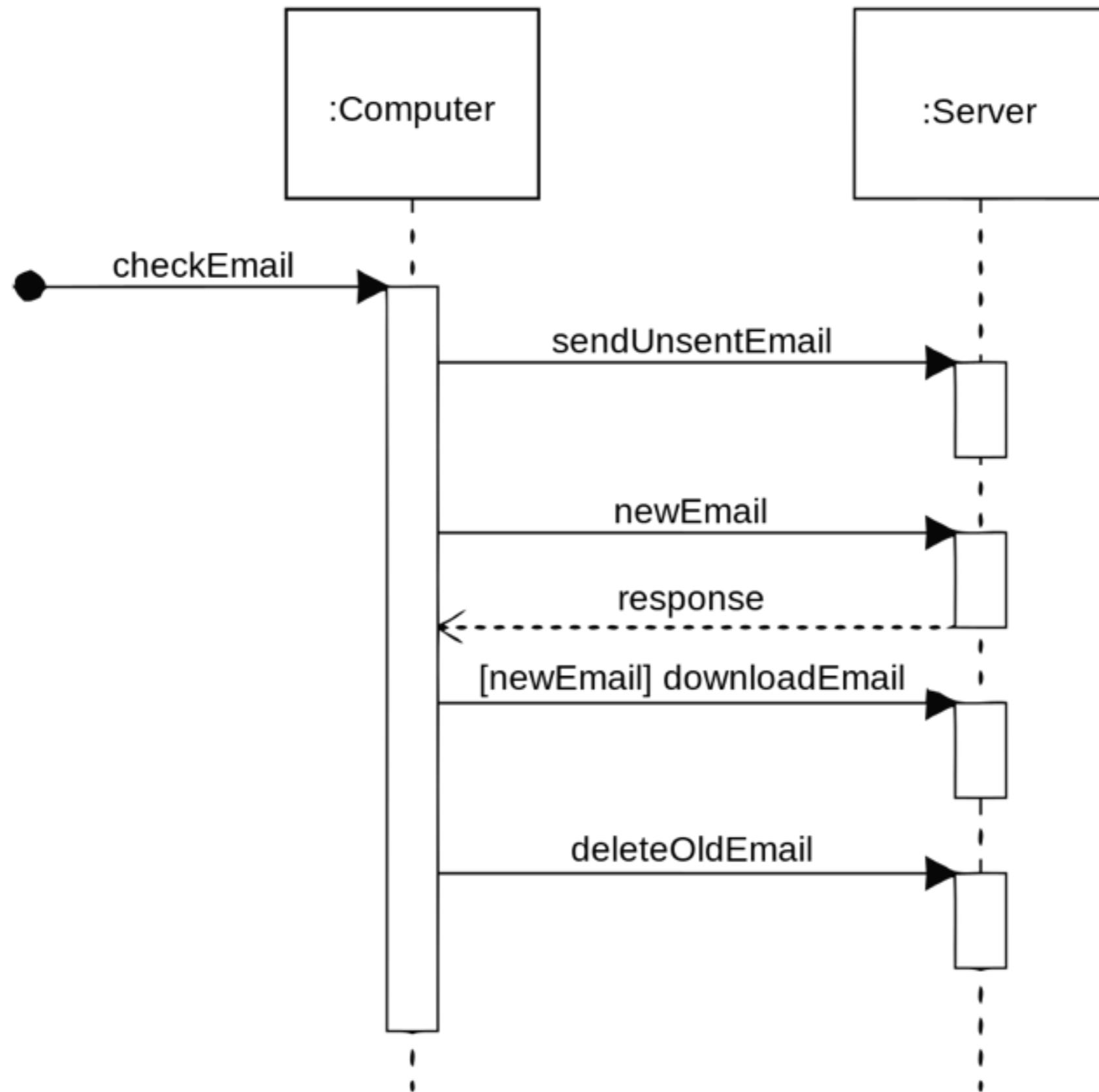




**BEHAVIOUR TRUMPS
STRUCTURE**







**OPTIMIZE FOR
SHARED LEARNING**

EVENT STORMING

Alberto Brandolini



**PLACE EVENTS ON
A TIMELINE**

ITEM
ADDED TO
CART

THIS IS A **DOMAIN EVENT**

- **ORANGE** STICKY NOTE
- VERB AT **PAST TENSE**
- RELEVANT FOR DOMAIN EXPERTS

WHAT IS A DOMAIN EVENT?

Something that happened
in the business
that your domain experts
care about



SPECIES OF DOMAIN EVENTS

- **A step in a business process**

e.g. *customer order submitted, customer paid \$100, order completed, item shipped.*

- **Something that happens on a scheduled basis**

e.g. *nightly account reconciliation completed, end of month.*

- **Something meaningful that occurs as a result of something else happening**

e.g. *customer account locked after invalid password entered 3 times*

**VISUALIZE
LEARNING
OPPORTUNITIES**

WHAT IS
THE
PRICING
STRATEGY?

CAPTURE

- QUESTIONS
- RISKS / WARNINGS
- ASSUMPTIONS
- CONVERSATION POINTS

END OF
MONTH

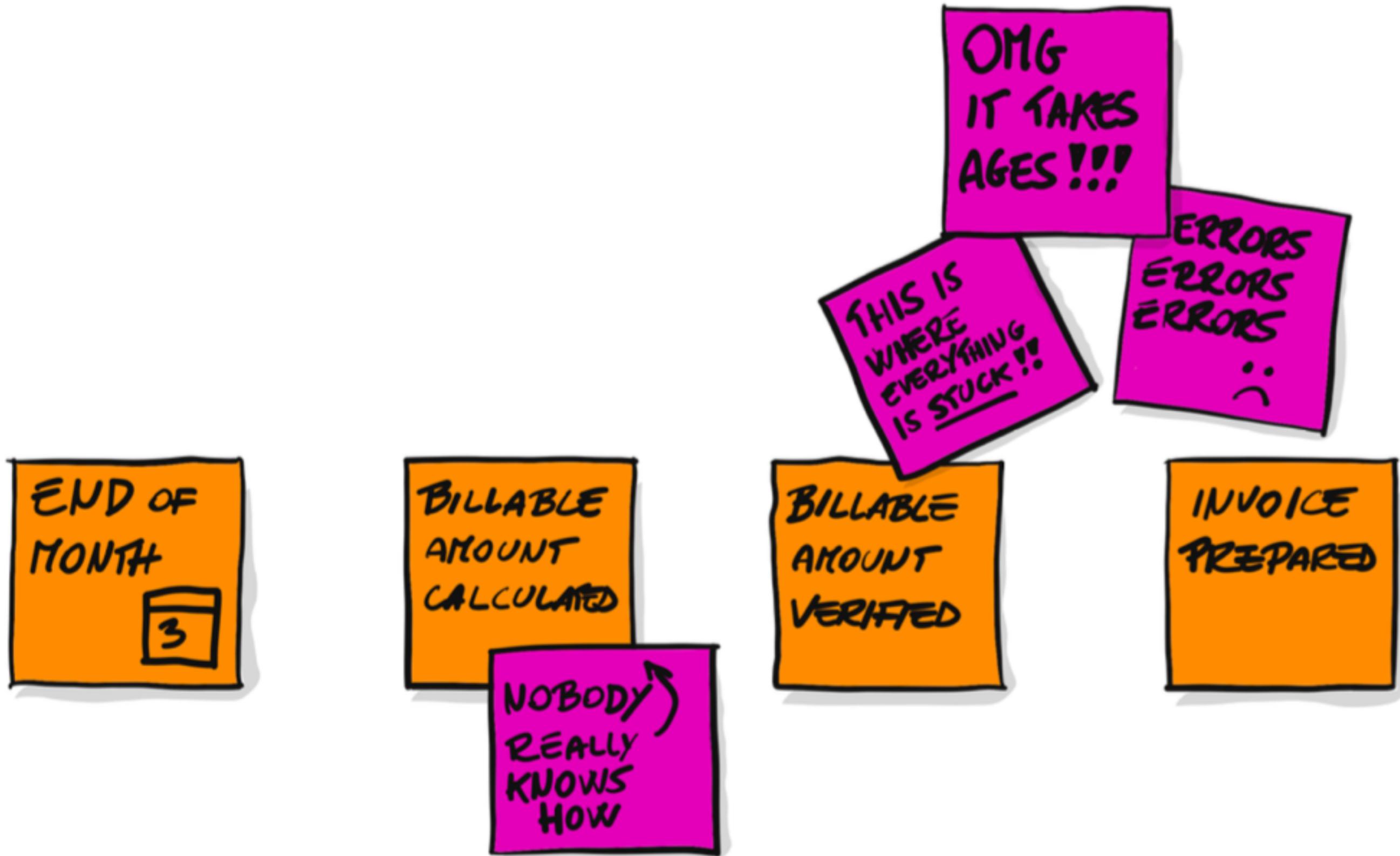
3

BILLABLE
AMOUNT
CALCULATED

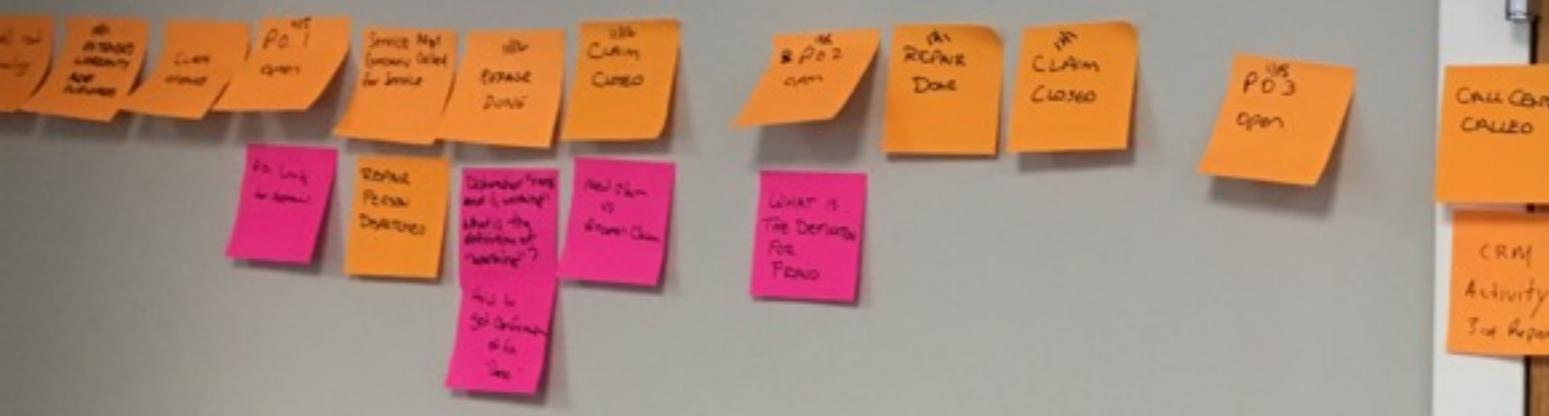
NOBODY
REALLY
KNOWS
HOW

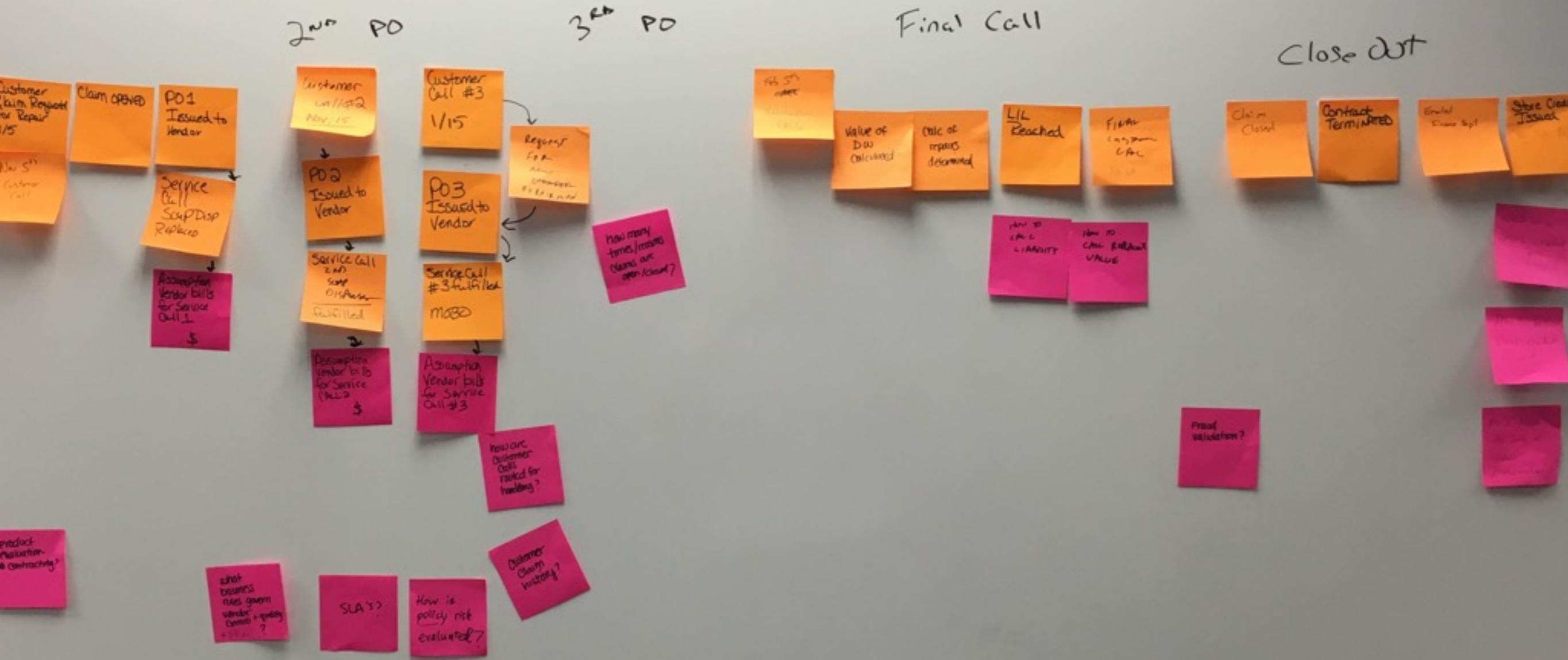
BILLABLE
AMOUNT
VERIFIED

INVOICE
PREPARED



**EVENTS &
QUESTIONS FIRST**





EVENTSTORMING

A LEGACY APPLICATION

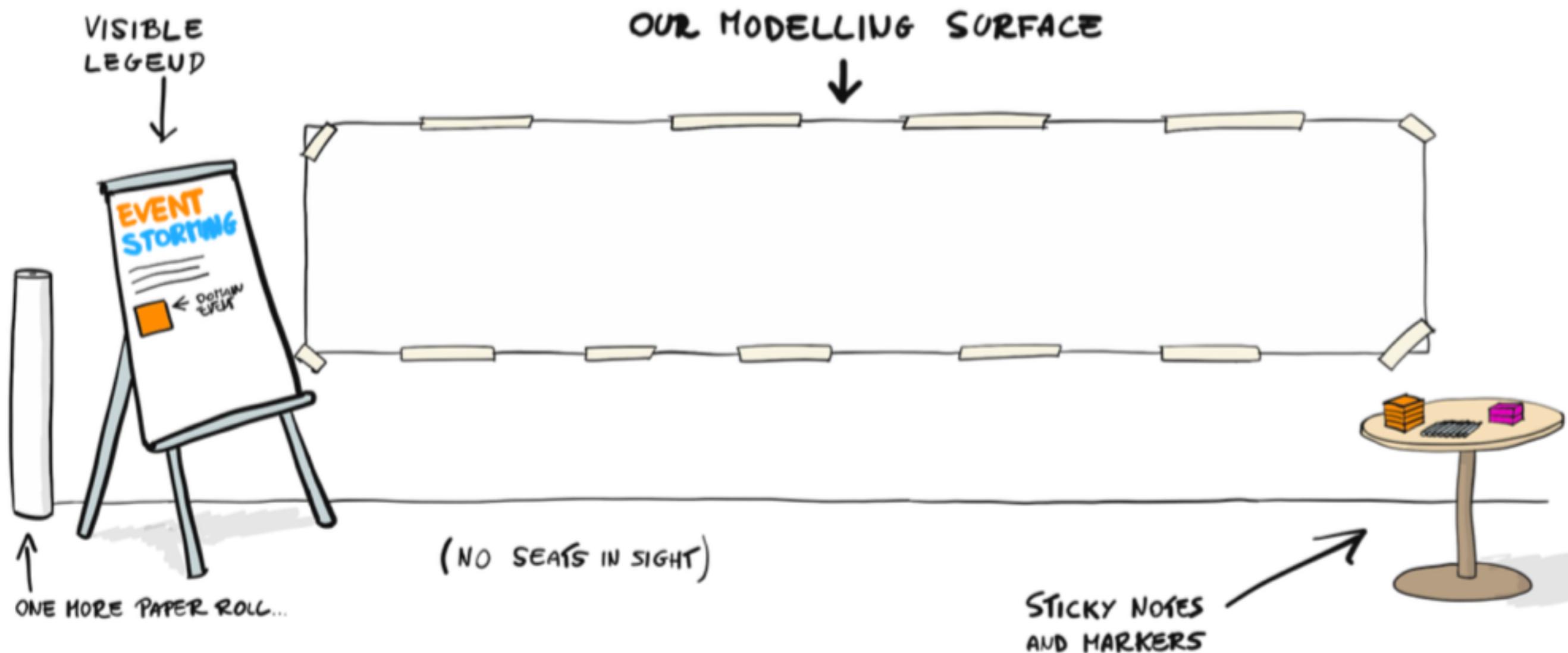


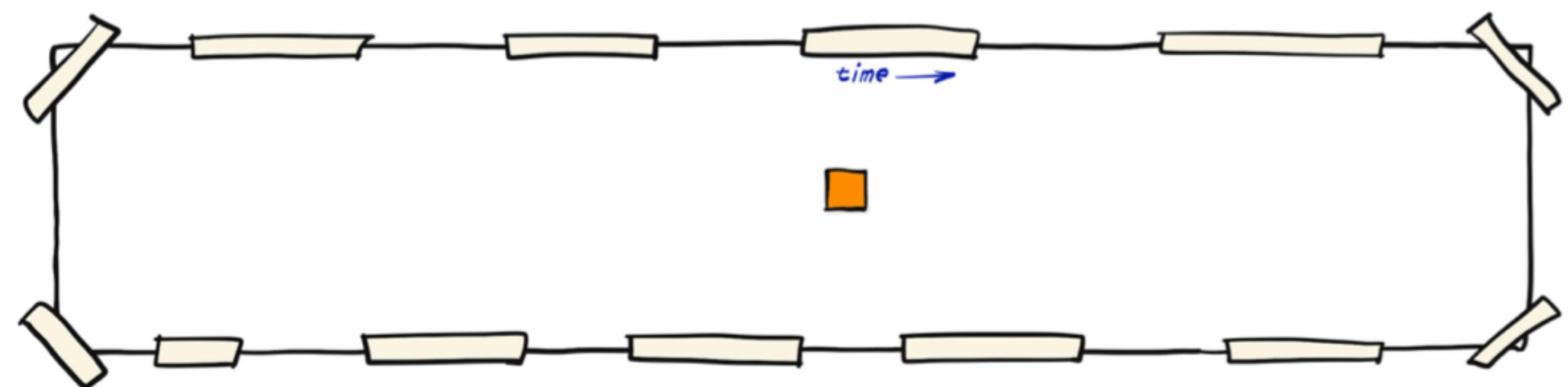


**PROVIDE UNLIMITED
MODELING SPACE**









Once
upon a
time...

They lived
happily ever
after

More modeling space than you expect

**PROVIDE A
VISIBLE LEGEND**

EVENT STORMING

DOMAIN
EVENT

- past tense
- "something that happened that the domain expert cares about"
- Immutable

?
- Assumption
- Don't know?

Actor/
persona

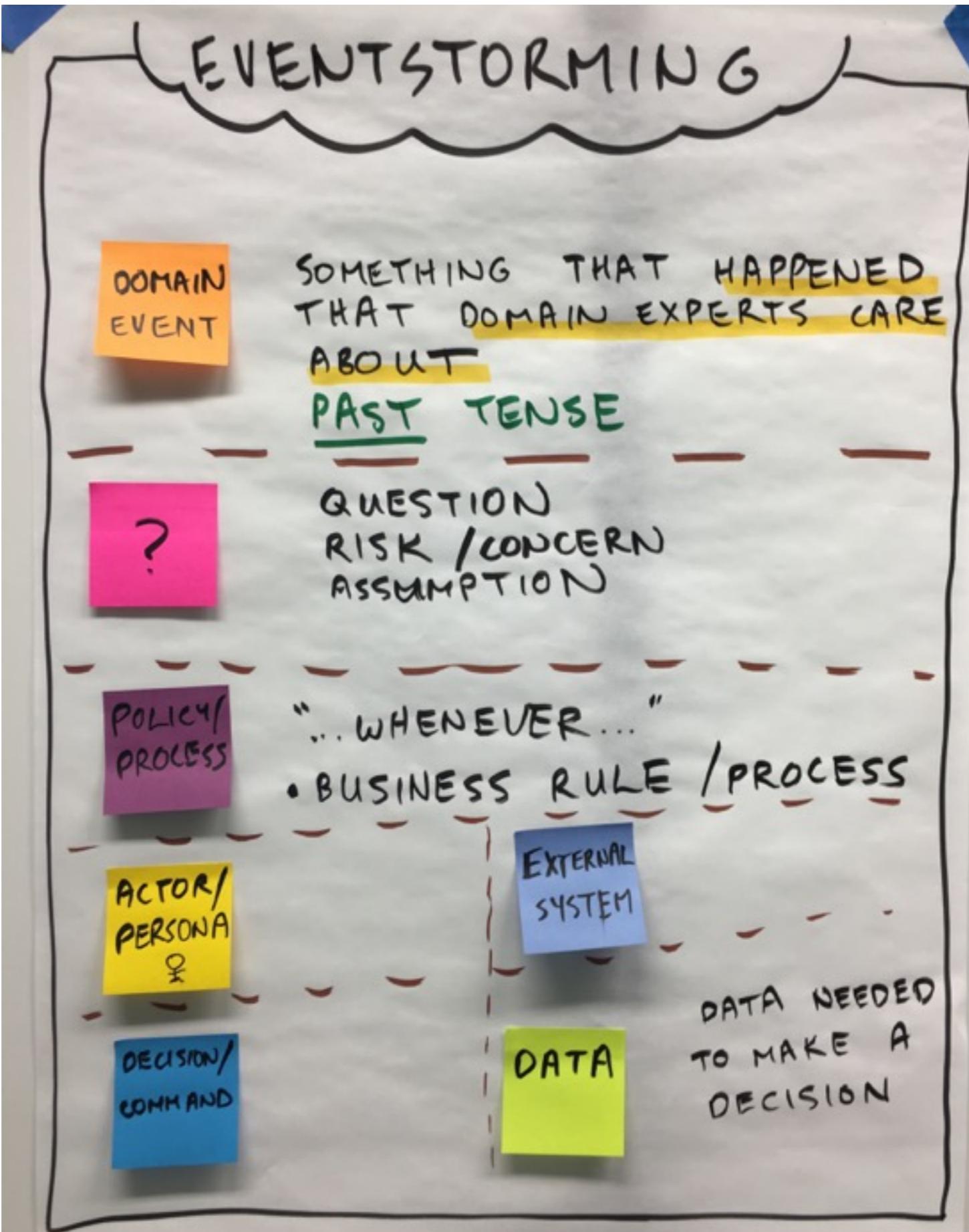
External
System

Decision
Command

Read
Model
UI, file

Sources





**INVITE THE RIGHT
PEOPLE**

Development team members and business people gather in a room and *together* we create a visual map of the flow of events



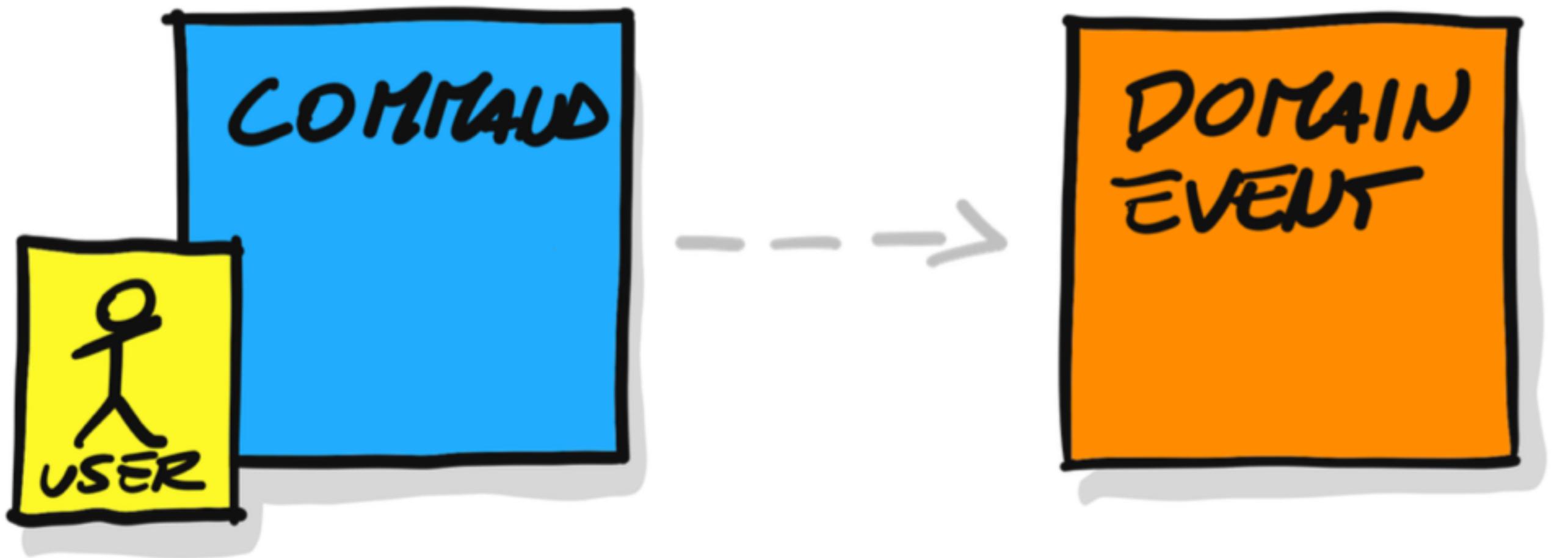
EVENTSTORMING

IN ACTION

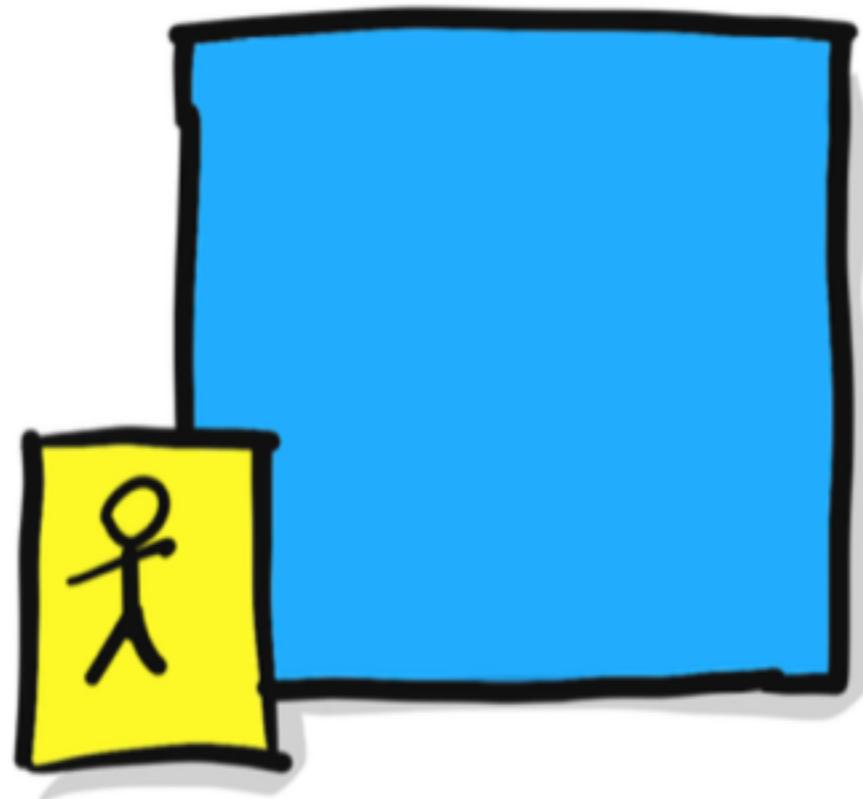




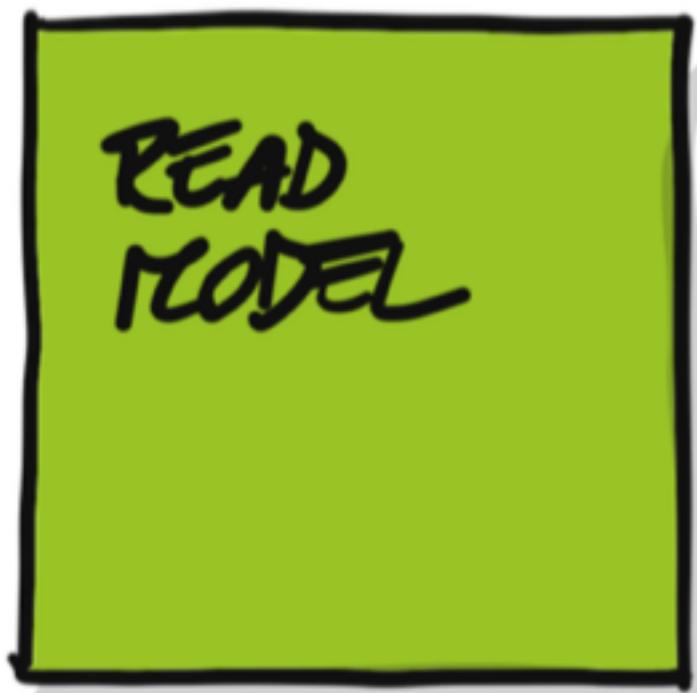
**VISUALIZE
INTERACTIONS**



USER INITIATED ACTION



← THE DECISION

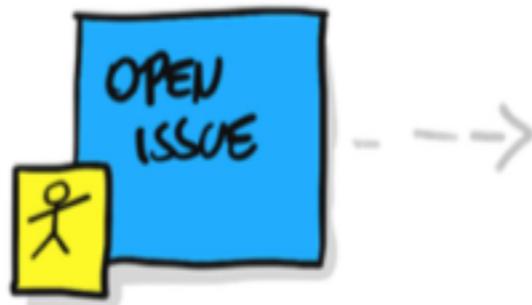


← THE DATA NEEDED
IN ORDER TO
MAKE THAT DECISION



WHERE ARE DOMAIN EVENTS COMING FROM?

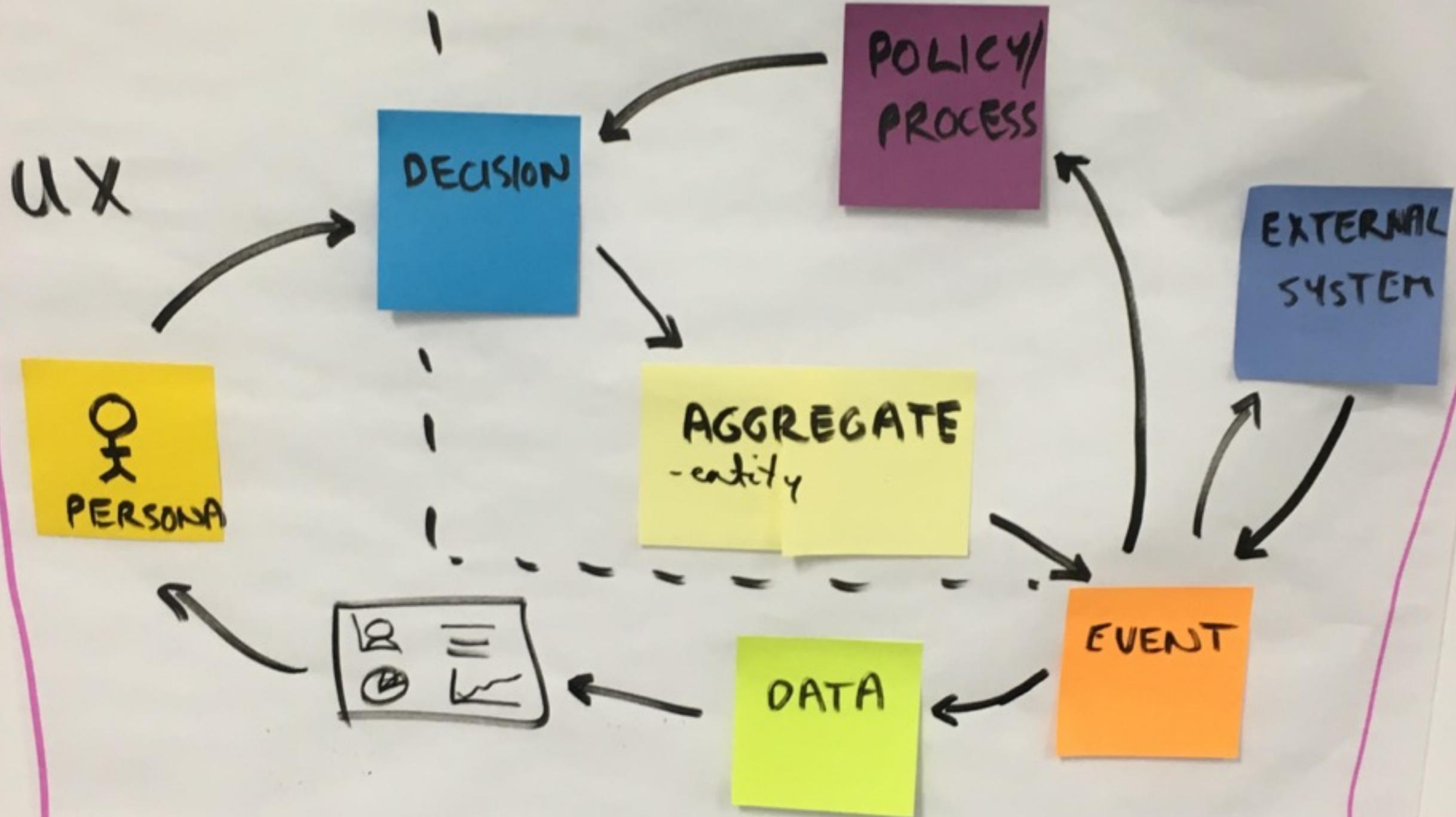
MAYBE AN ACTION
STARTED BY A USER



**VISUALIZE
BUSINESS RULES**

"WHENEVER"

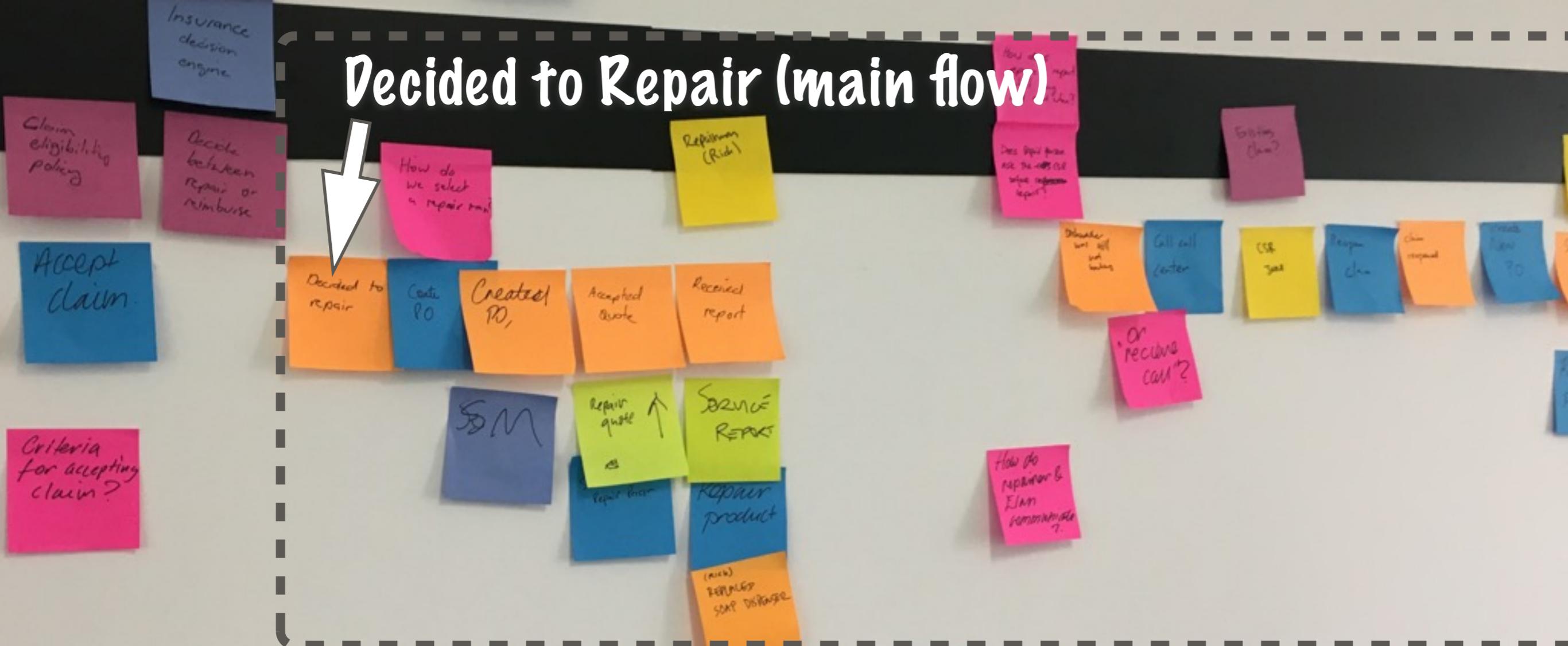
THIS IS OUR
POLICY
SOMETIMES IT'S
AUTOMATED,
SOMETIMES
PEOPLE JUST
HAVE TO REMEMBER



Adapted from leanpub.com/introducing_eventstorming

**VISUALIZE
ALTERNATE FLOWS**

Decided to Repair (main flow)



NATURAL TRANSITION TO EVENT SOURCING

EVENT SOURCING

- ▶ Don't save the current state of objects
- ▶ Save events that lead to the current state
- ▶ TDD focused on command processing generating the correct events

BillableAmountCalculated
BillableAmount
CalculationDate
AccountNumber
CustomerId

BillableAmountVerified
BillableAmount
OperatorId
VerificationDate
AccountNumber
CustomerId

InvoicePrepared
Invoiceld
TotalAmount
OperatorId
InvoiceDate
AccountNumber



Aggregate state modeled as a sequence of domain events



BILLABLE
AMOUNT
CALCULATED

BILLABLE
AMOUNT
VERIFIED

INVOICE
PREPARED

EVENT SOURCING

BILLABLE
AMOUNT
CALCULATED

BILLABLE
AMOUNT
VERIFIED

INVOICE
PREPARED

BillableAmountCalculated

BillableAmount
CalculationDate
AccountNumber
CustomerId

BillableAmountVerified

BillableAmount
OperatorId
VerificationDate
AccountNumber
CustomerId

InvoicePrepared

Invoiceld
TotalAmount
OperatorId
InvoiceDate
AccountNumber



CLARIFYING CONTEXT BOUNDARIES

Service Management Context

EN
IM
~~aim~~
~~pened~~
and ways sorted?
Claim
Management
Scrn

what
action
should
be taken?

CSR

Service
machin.

Repair
PO
Received.

Dispatch
technician

Pick.

ASSESS
Damage.

Repair

unable
to repair.

Machine
repaired

labour
or
part
cost?

Cost
incurred

Outcome
coming
back.

Outcome

Decision
on
claim
share

CSR

CLOSE
CLAIM

Repair
PO
~~date~~
~~address~~
~~description of fault~~

CREATED
PURCHASE
ORDER

Create
Purchase
order

What
(lost)
machin.
liability
reached

CSR
♂

reimburse
costs

EMAILED
FINANCE DEPT
FOR
STATE
CREDIT

FINANCE

Re
Reimburse

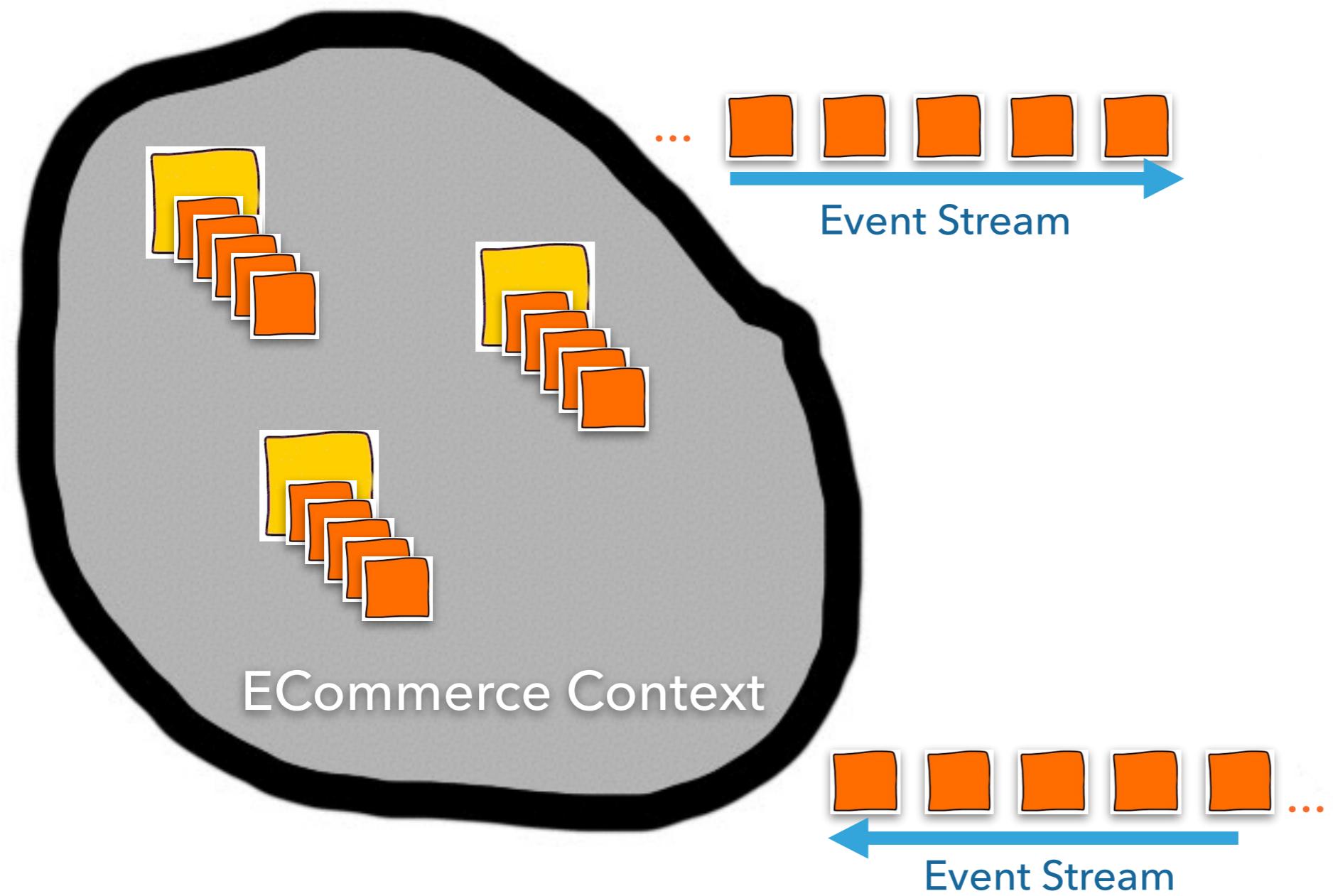
Voucher
Value \$P

Reimbursement
(for value
of deliv.
worker)

Close
claim
terminate
contract

Claims Context

**NATURAL TRANSITION TO
DISTRIBUTED SYSTEMS**



FACILITATION TIPS

EVENTSTORMING FACILITATION TIP #1

Focus first on
learning and
understanding

CLARIFYING QUESTIONS

- ▶ “What circumstances would cause ... to happen?”
- ▶ “What was the path that led us here?”
- ▶ “What is a good example of ...?”

CLARIFYING QUESTIONS

- ▶ "What do you mean by ...?"
- ▶ "What might lead someone to do/need ...?"
- ▶ "What else might happen...?"

EVENTSTORMING FACILITATION TIP #2

Anchor to a
concrete business
example

Clarify fuzzy
concepts and
language

nty
#

ased
aled
ty
Oct.

DISHWASHER
FAILED
#1-4

MFR
WARR'TY
EXPIRED

CSR
(JANE)

how to
ID the
customer?

OPEN
CLAIM

Customer
called
call center

Claim
~~opened~~
opened

Is
claim
always
created?

CUSTOMER
SEARCH
- Policy #?
- Name, postcode

Claim
Management
Scrn

Command is "Open Claim"

What should associated
event be called?

Conversations
and examples are
primary

EVENTSTORMING FACILITATION TIP #6

Post first,
Ask questions
later

EVENTSTORMING FACILITATION TIP #4

Timebox

"Everybody knows the problem: We need to be more innovative. Now we've got the solution: *Gamestorming*. This smart, fun, hands-on book will energize your brain and mobilize your creativity—and do it using stuff you already have in your supply closet!"

—Daniel H. Pink, author of *Drive* and *A Whole New Mind*

Game storming

A Playbook for Innovators,
Rulebreakers, and Changemakers



Dave Gray
Sunni Brown
James Macanufo

O'REILLY®

O'REILLY®

סםאי מכאנווּדוֹ
סֻנְנִי בָּרוּן
דָּבָר צַרְאָל

POSSIBLE LIMITATIONS

- ▶ Simple business domains (e.g. CRUD) and/or systems
- ▶ Distributed teams
- ▶ Larger group/greater complexity = better facilitation
- ▶ ???

**WHY
EVENTSTORMING?**



every one
gets to
understand

encourages
complexity
seeking

visualize
business
process

Imagery
details

encourages
asking
questions

visual
cues for
different
parts of the
systems

over (idea)

faster than
drawing

A
GET DE BETTER
UNDERSTANDING
OF THE PROCESS

Exploration,
communication

WHY EVENTSTORMING?

Collaborative learning

*Cultivate mutual shared
understanding*

*Uncover misunderstandings & missing
concepts*

Avoid rework

WHY EVENTSTORMING?

Model & explore complex domains

Visual, tactile representation of system behaviour & outcomes

Smoother transition to a rich domain model, design and coding

QUESTIONS?

Paul Rayner
 @thepaulrayner



THANKS!

Paul Rayner
 @thepaulrayner





EXPLORE DDD
CONFERENCE

ANNOUNCEMENT



We are delighted to
announce **ERIC EVANS**
as our first keynote
speaker!