



Interviewing Domain Experts: heuristics from the trenches

Cyrille Martraire
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Osmo Wiio

*“Communications
usually fails, except
by accident.”*

Wiio’s law

*Perhaps he didn't mean
that...*

*Or perhaps he did mean
that...*

Imagine



Hi Domain Expert!



Tell us what I need
to know to build the
software

Hi kids, I
don't have time for
that. I've already sent
you what I want by
email.

#FAIL

SCARY

Could be worse



Tell us what I need
to know to build the
software

**Sure, I want a red
button to save data in
table T DEAL 2**

#FAIL

BLOOD
CURDLING

Bad News

**My brain has limited
capacity.**

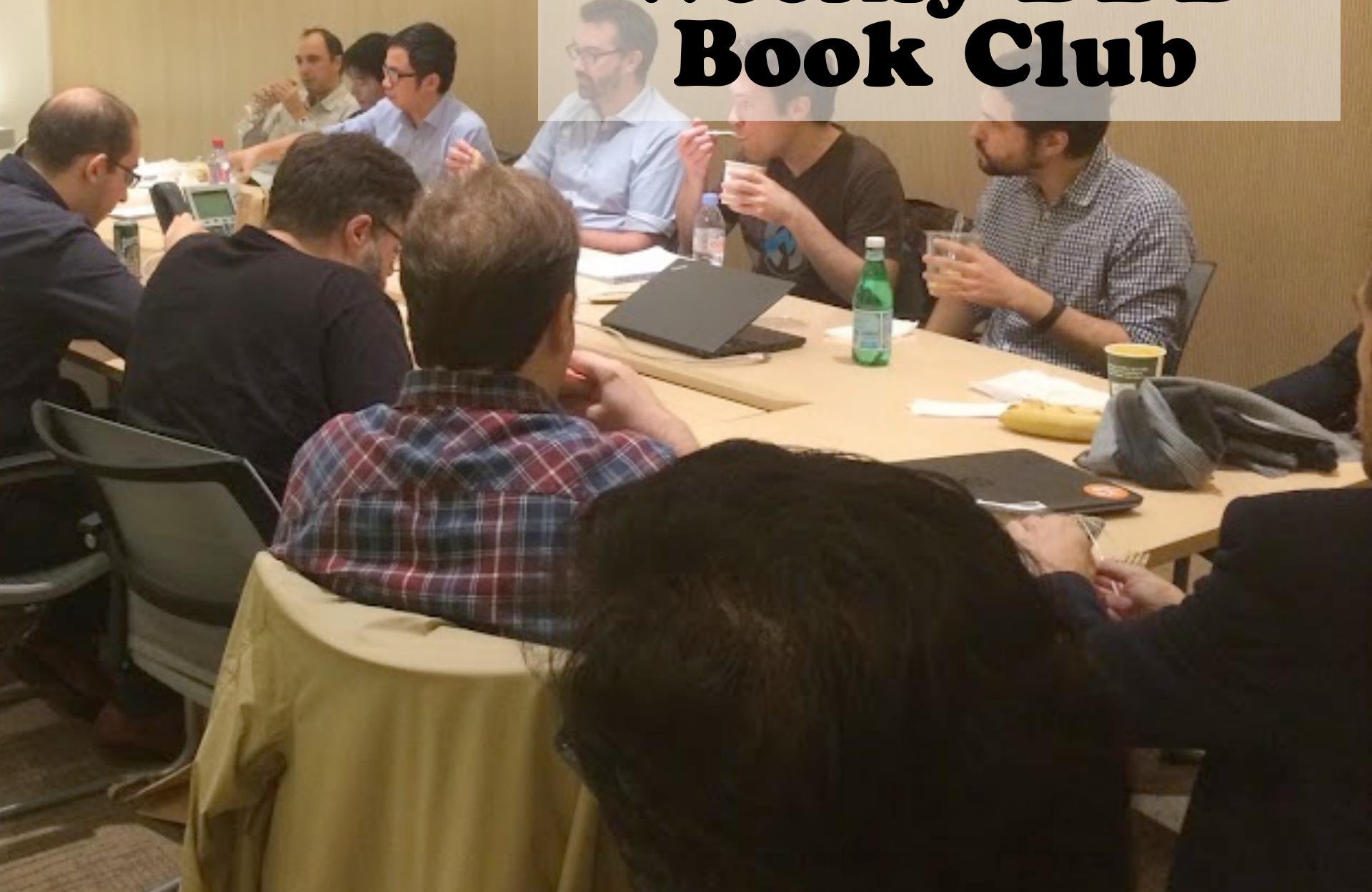
Moar Bad News

People are people.

Business domains are
complex (complicated?)

A while ago
In a large French bank

Weekly DDD Book Club



Weekly DDD Book Club

What? Talking
to experts is a
thing now?

Weekly DDD Book Club

You can learn
that?

**JOIN US AFTER THE
BREAK...**

**Domain experts hate him:
find how this guy learns
the domain faster with a
simple trick.**



Passionate developer

PARIS

Since 1999

@cyriux

Cyrille Martraire

Paris Software Craftsmanship Community



<http://www.meetup.com/paris-software-craftsmanship/>

TDD

BDD

DODD



arolla.fr
@arollafr



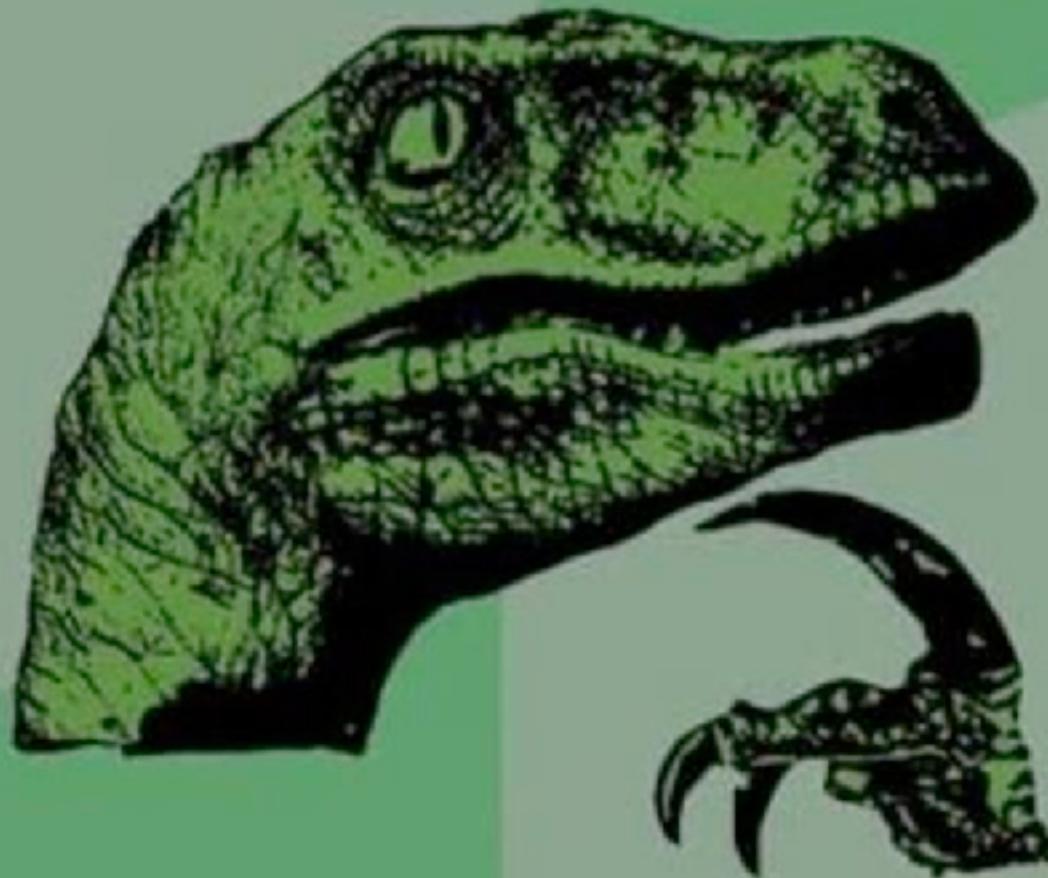
CONGRATS!

YOU WILL MEET THE
DOMAIN EXPERT

Okay



TALKING TO EXPERTS



WHY IS IT SO HARD?

*“We don’t talk the
same language.”*

*“They don’t have
time for us.”*



Haz
Expertise

Haz
Time



their time
is precious

Haz
Expertise



Haz
Time



Don't waste
their time

Haz
Expertise



Haz
Time

Don't go naked



**Teach Yourself some
Domain Knowledge!**

It all starts with curiosity

It all starts with curiosity

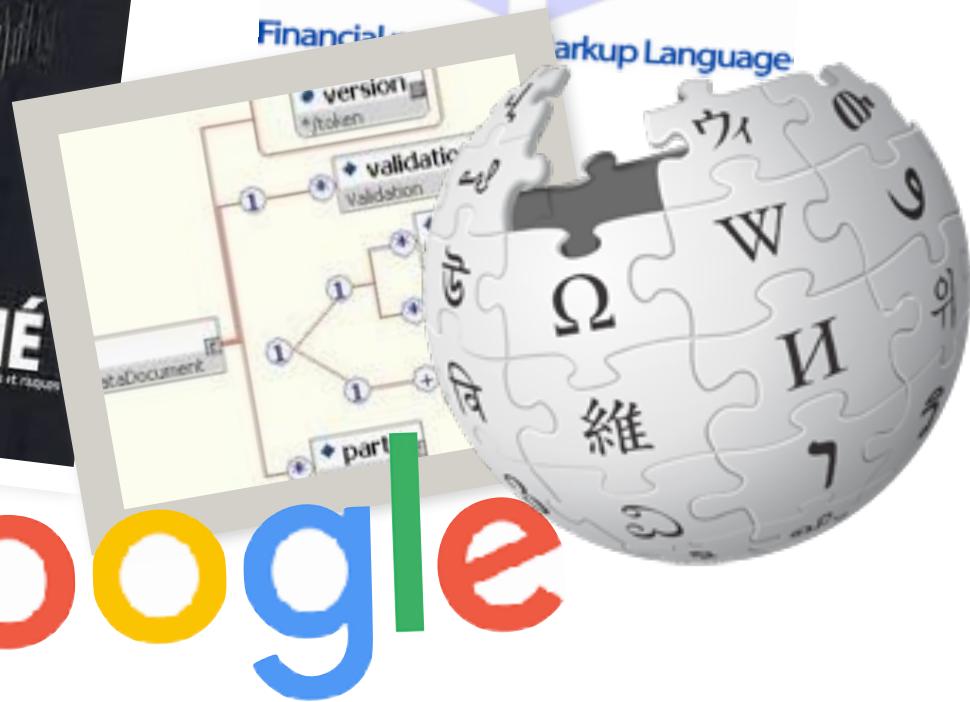
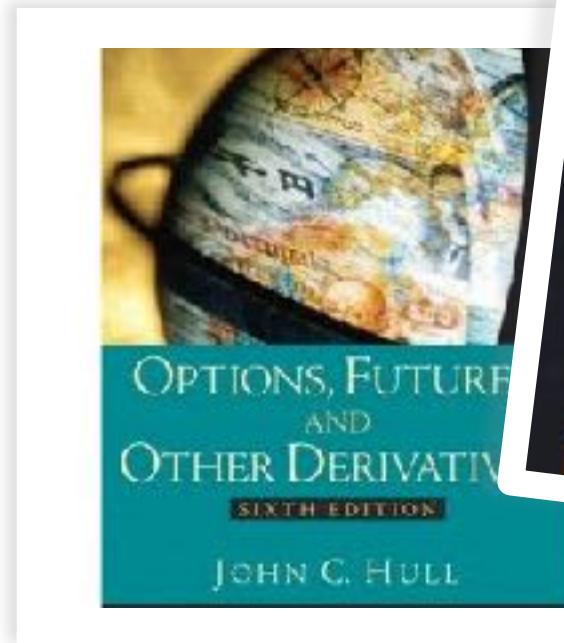
genuine

**WITHOUT CURIOSITY FOR THE
DOMAIN**

**YOU'RE GONNA HAVE A BAD
TIME**

**My brain has limited
capacity: I need some time
to learn.**

Do your homework



The *Official* Domain Bible



OPTIONS, FUTURES, AND OTHER DERIVATIVES

SIXTH EDITION

JOHN C. HULL

```
Civil Case Type
  <FiduciaryTypeCode>*
  <JurisdictionalGroundsCode>
  <ReliefTypeCode>
Domestic Case Type
  <NoContactCode>*
  <RequestToVacateCode>
Common Types
  <AliasAlternateNameTypeCode>*
  <CaseAssociationTypeCode>*
  <CaseOfficialRoleText>*
  <CaseParticipantRoleCode>*
  <CauseOfActionCode>
  <CourtEventTypeCode>
  <EntityAssociationTypeCode>
  <ErrorCode>* Juvenile Case Type
  <DelinquentActApplicabilityCode>
  <DelinquentActDegreeCode>
  <DelinquentActSeverityCode>
  <DelinquentActSpecialAllegationCode>
  <DependencyAllegationCode>
  <GuardianAssociationTypeCode>*
  <PlacementTypeCode>
...

```



Electronic Court Filing

OASIS Standard

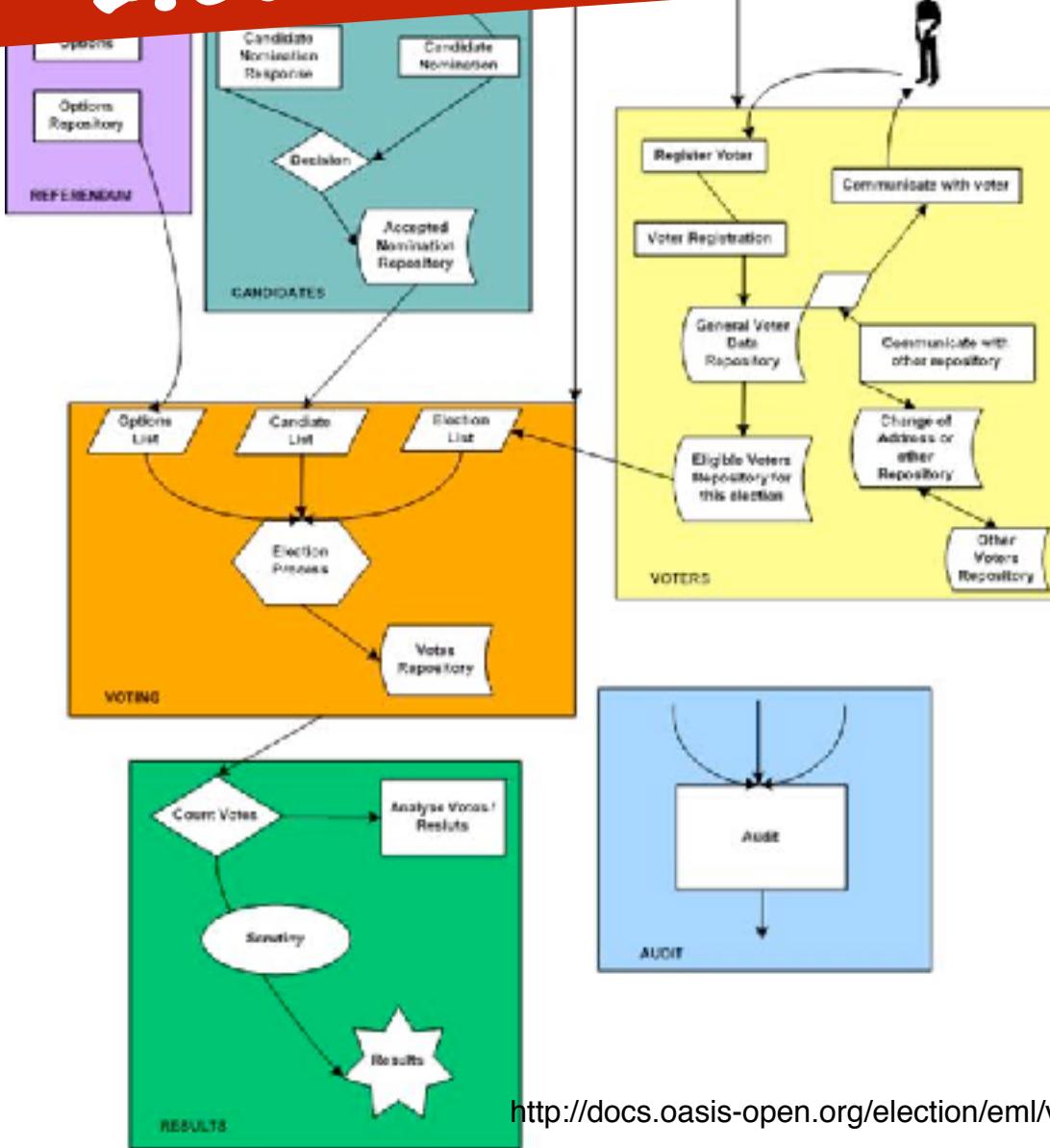
23 May 2013

Specification URIs

This version:

<http://docs.oasis-open.org/legalxml-courtfiling/specs/ecf/v4.01/ecf-v4.01-spec-os/ecf-v4.01-spec-os.pdf> (Authoritative)

Election Markup Language



experience

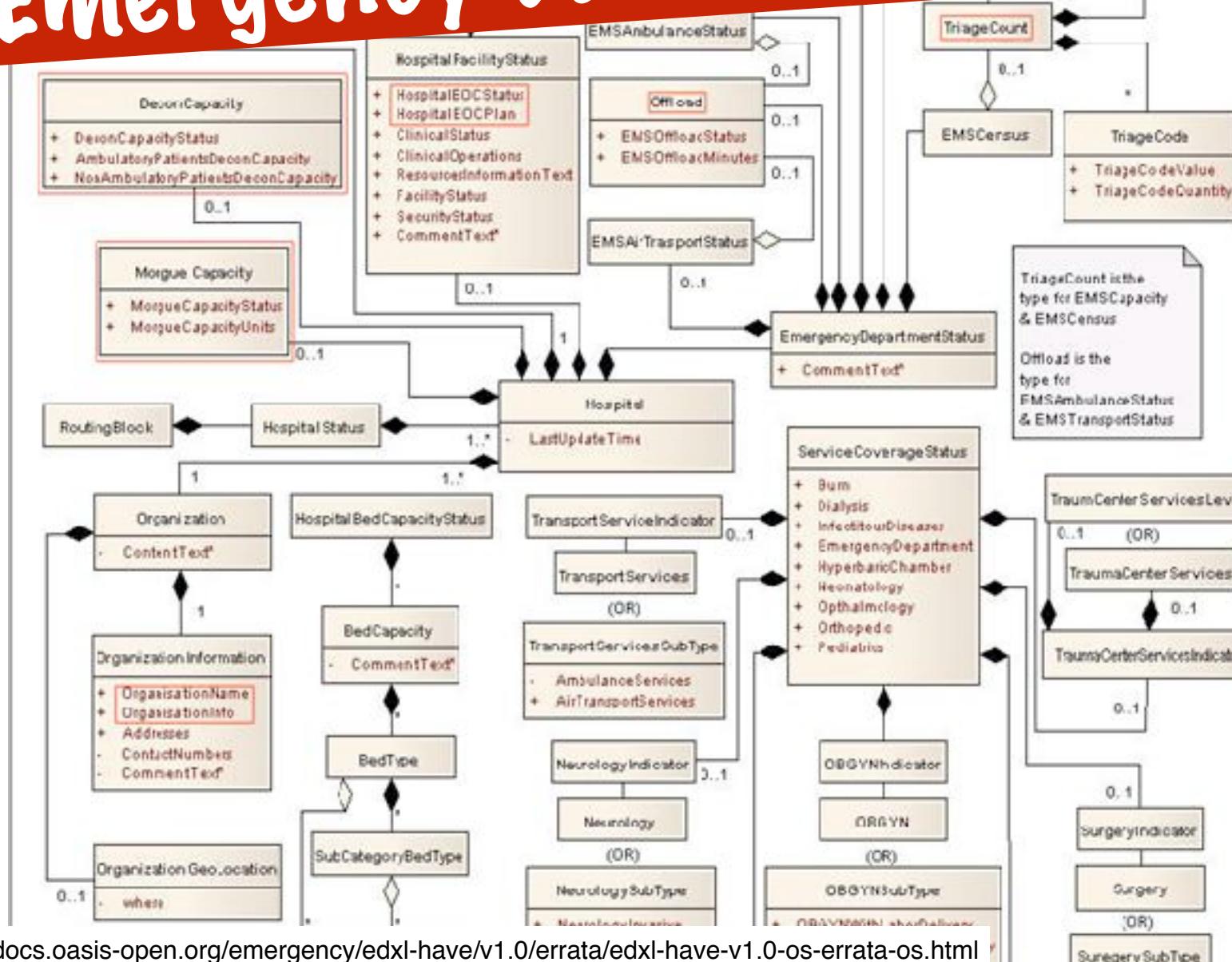
For clarity, the whole process can be divided into pre election, election, post election processes.

- Pre election
- Election (100)
- Candidates (200)
- Options (600)
- Voters (300)
- Election
- Voting (400)
- Post election
- Results (500)
- Audit
- Analysis

Some functions belong to the whole process

- Administration Interface
- Help Desk

Emergency Data Exchange



OK

Domain Overview

Checklist of potential questions

Corpus of vocabulary

NOT OK

Ready-made solutions

Features list

The Truth (TM)



Hi Domain Expert!



First I'd like to better understand how an insurance policy works

Ok, so basically
it starts with a
contract... <useful
stuff here>

**Now we have a
conversation**

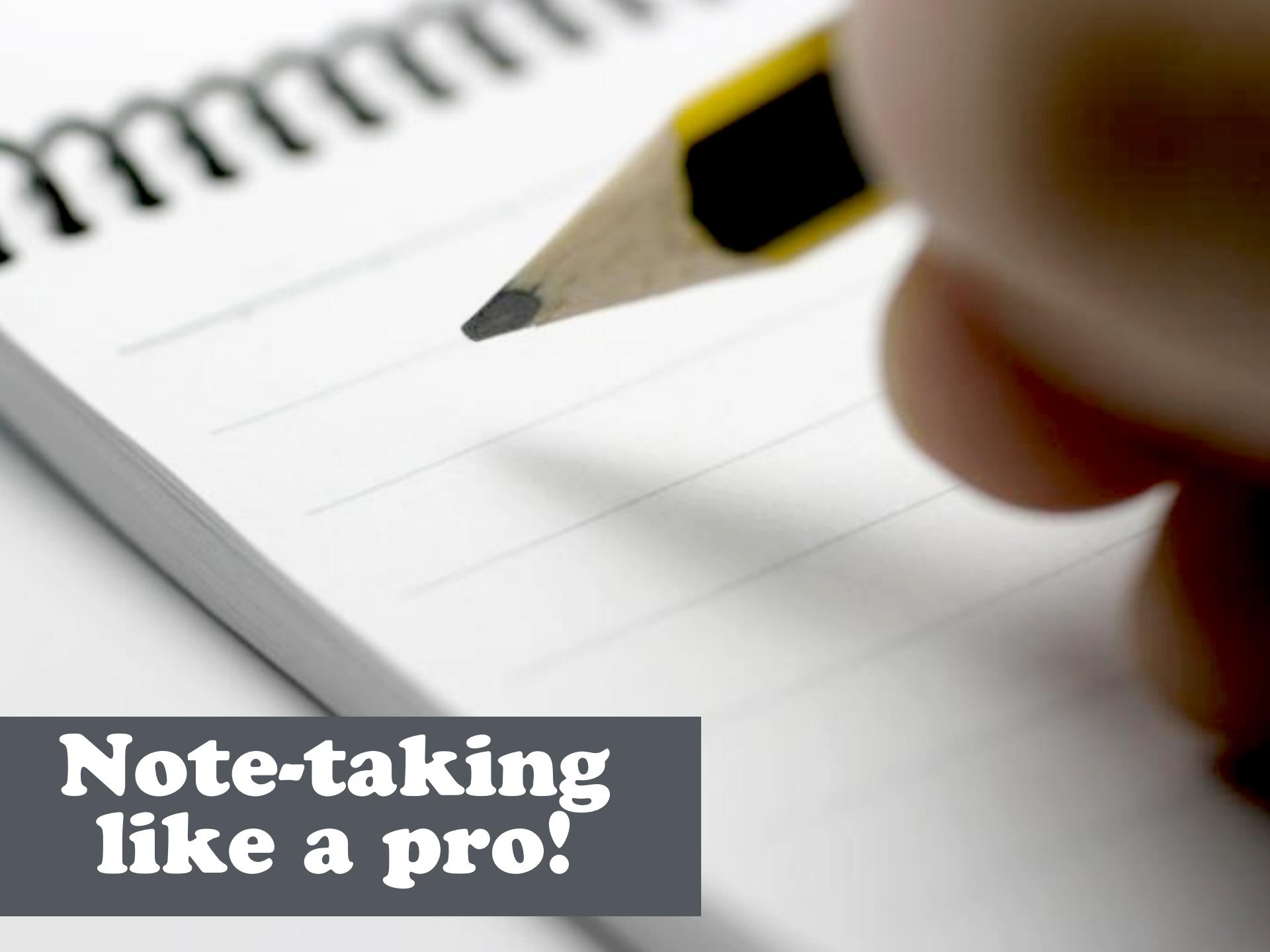
#WIN



**Successful people are
curious about their
business domains.**

**You won't believe how
this can help you too!**

**My brain has limited
capacity: I need to write to
remember.**



Note-taking
like a pro!

**"The visitor
requests an
insurance quote"**

“The user asks a quote”

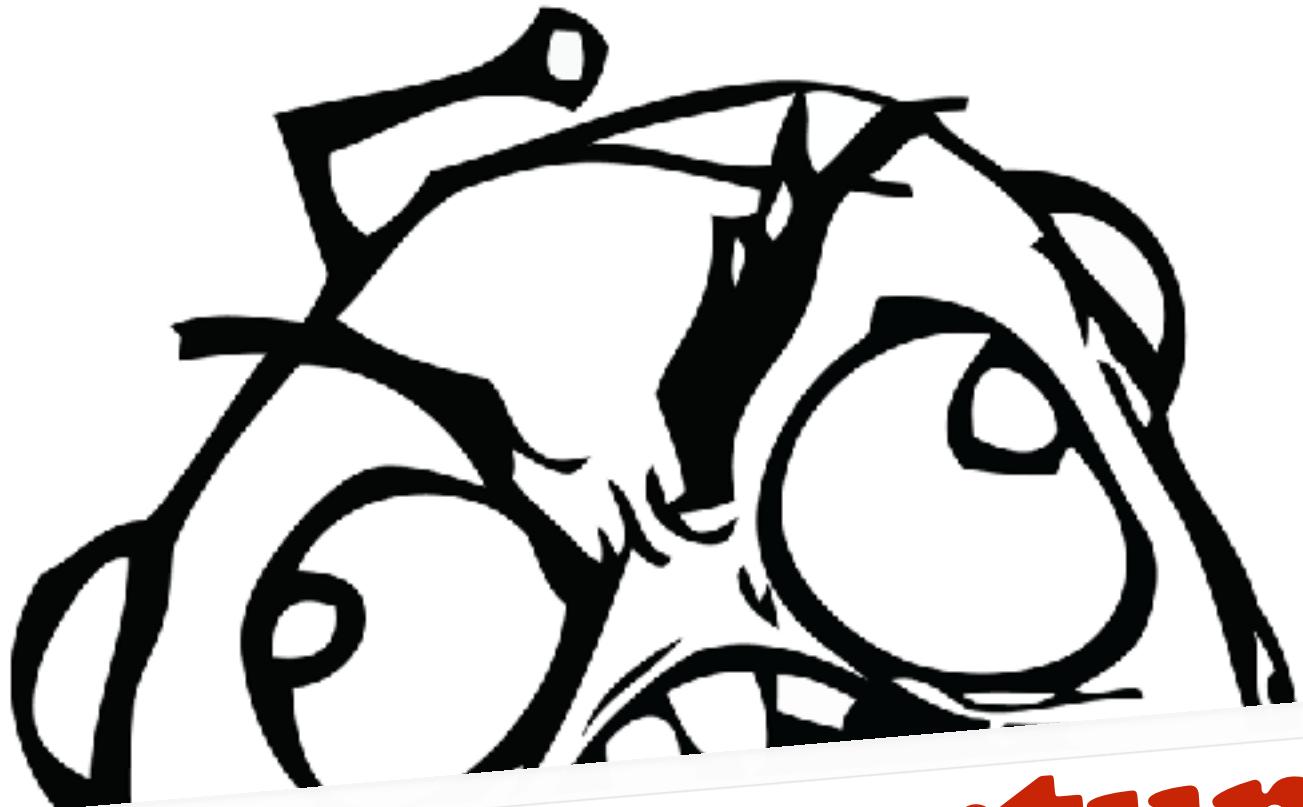




Not what he said!



LOST knowledge



**LOST opportunity
to learn**

visitor

“*The ~~user~~ asks a quote*”

requests
“*The user asks a quote*”

insurance

“*The user asks a quote*”

V E R B A T I M

W O R D F O R W O R D

**ACTIVE
LISTENING**

**Harder than you'd
think**

Turn it into a game

**WORD
SAFARI**

The trader makes a
deal ...

*the trader makes a
deal*



*the trader makes a
deal*

new word





Could you define
"Deal"?



Then the trade is
booked in a
particular
portfolio.

So the trader makes a deal. Then the trade is booked in a particular portfolio.



So the trader makes a deal. Then the trade is booked in a particular portfolio.

synonyms?





You talked
about "deal" and
"trade" as if they
were the same
thing...



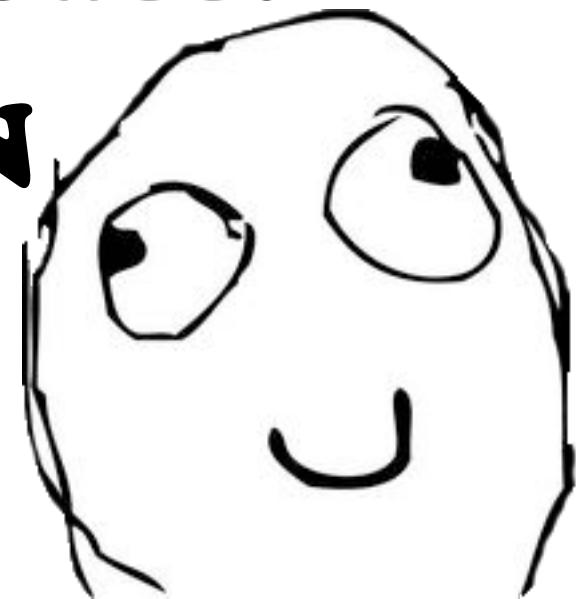
Is there any
difference?

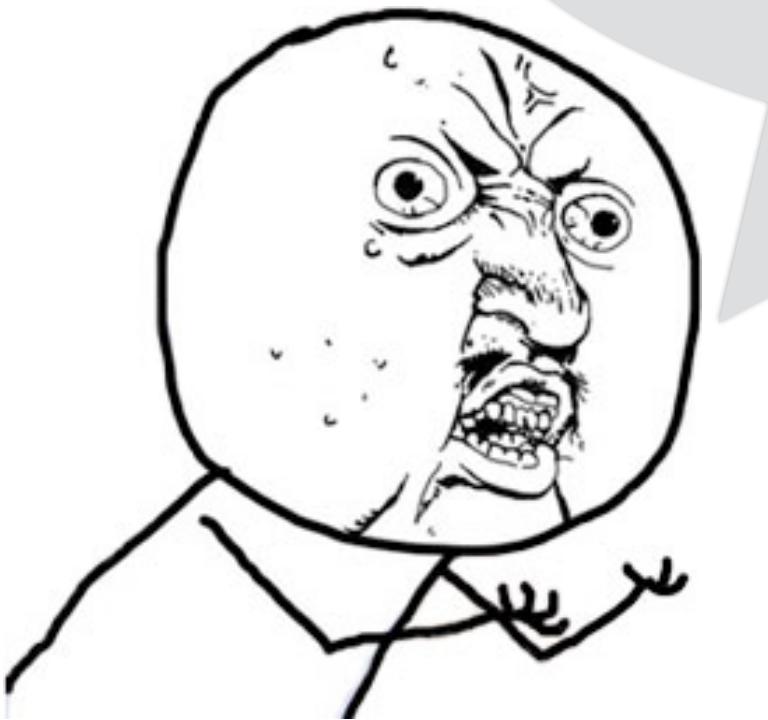


Now we're talking!

**And learning some
real useful stuff.**

#WIN



A black and white cartoon illustration of a man's head and shoulders. He has a wide-eyed, shocked expression with his mouth open. A speech bubble originates from his mouth, pointing towards the right side of the frame.

Meh.

it's just a simple
trick...



A black and white cartoon illustration of a dog's head and upper body. The dog has large, expressive eyes and is looking slightly upwards and to the right. It is holding a white rectangular sign with a thin black border in its front paws. The sign contains the text "*This* is DDD" in a bold, red, sans-serif font.

***This* is DDD**

Let's move on...

*On execution the
remaining order fill is
reduced by its size.*



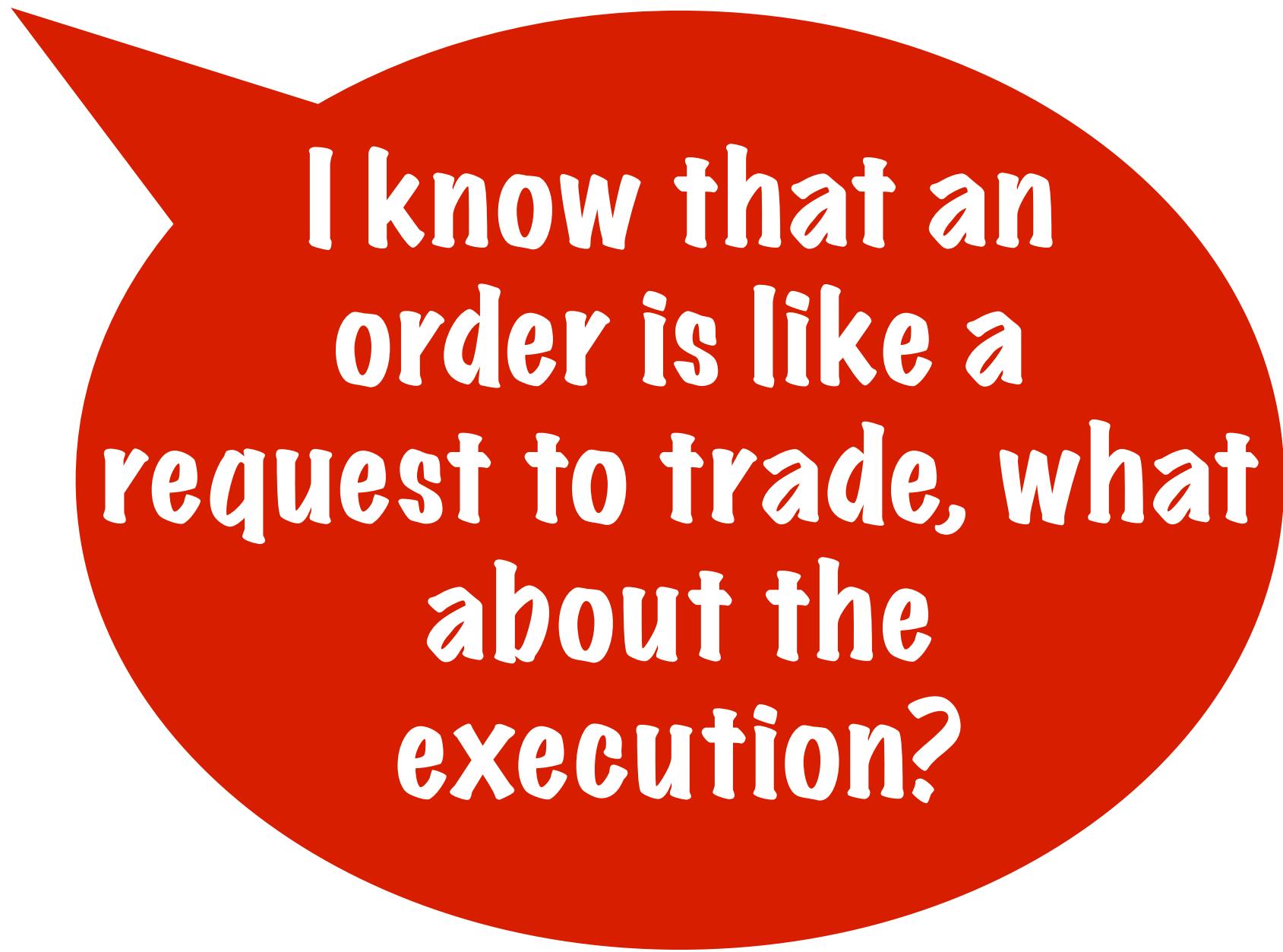
*On execution the
remaining order fill is
reduced by its size.*

new word





You're talking
about "order" and
"execution".



I know that an order is like a request to trade, what about the execution?

I know that an
order is like a
request to trade, what
about the
execution?

Showing** interest and
some amount of
knowledge here**

**ESTABLISH
CREDIBILITY**

3 Simple Ways to Establish Credibility

**Show your genuine
curiosity**

Ask better questions

Challenge respectfully

Talking to people is hard

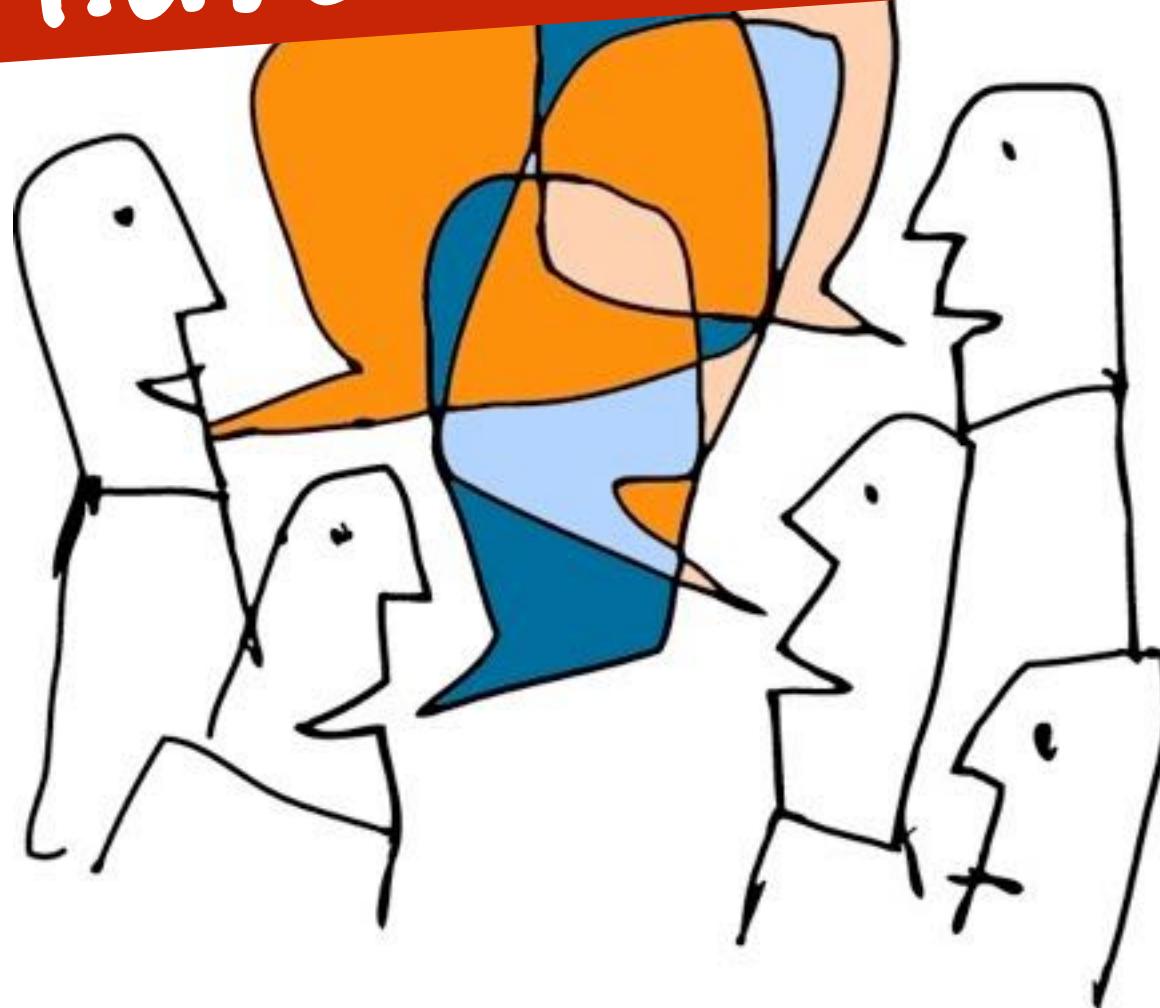
But there's an antidote...

Interactive Conversations



Interactive Conversations

You have control



**STEERING
CONVERSATIONS**

Don't interrupt.

**Write questions for
later.**

My note-taking syntax

*Then the trade is saved
in a particular
portfolio"*



new word

My note-taking syntax

*Then the trade is saved
in a particular
portfolio not clear*

[Check Wikipedia on trading]

MY remarks

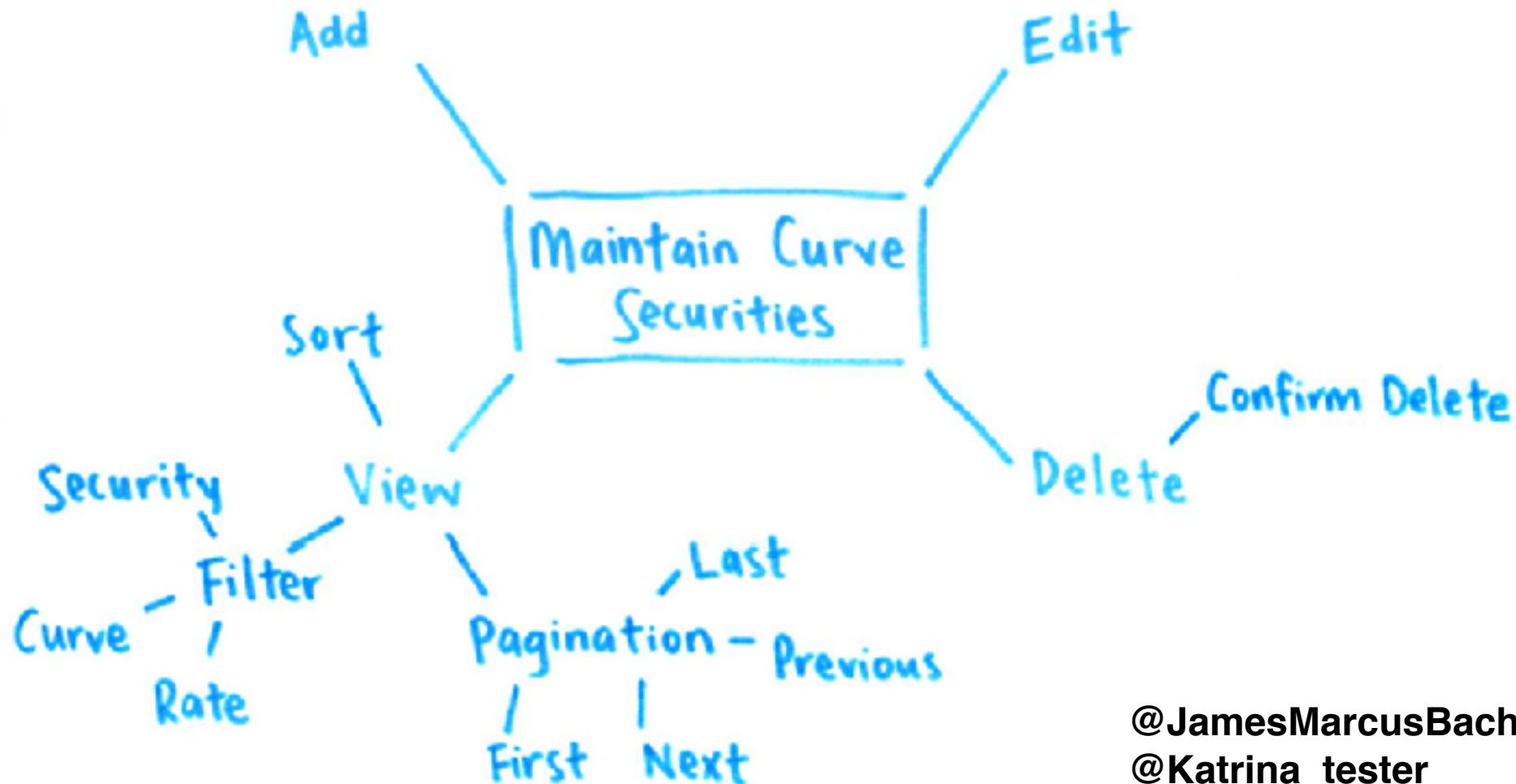
My note-taking syntax

*Then the trade is saved
in a particular
portfolio”*

question for later

Q: When is this done?

Learn from testers



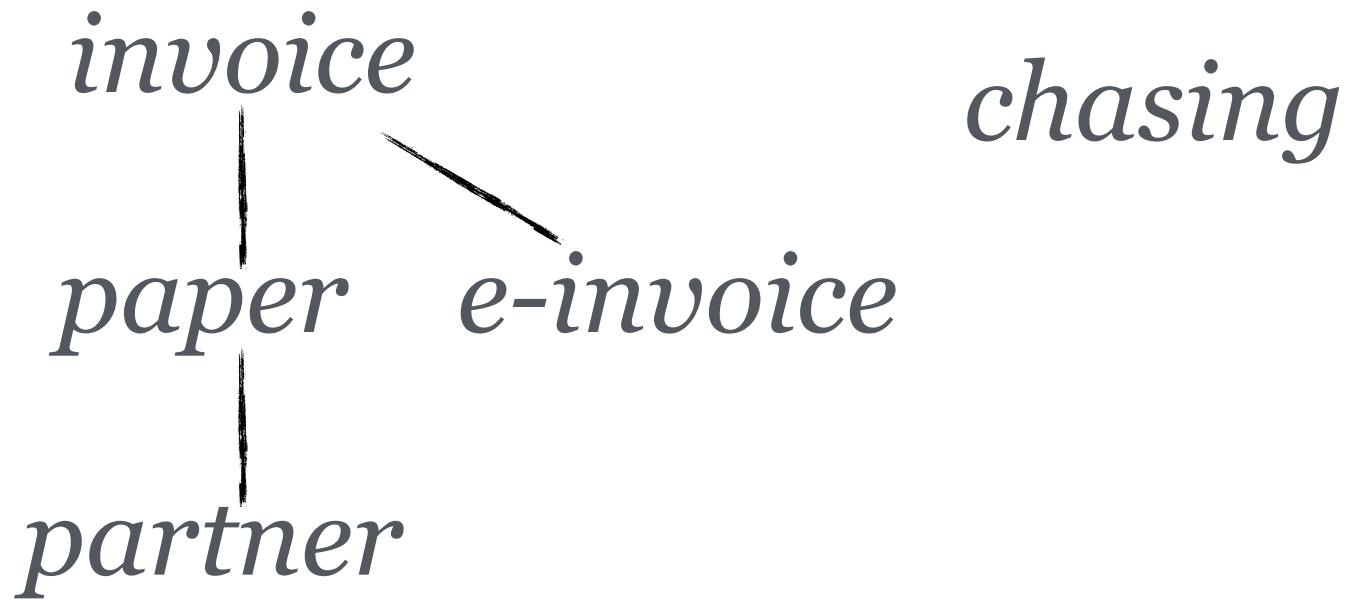
@JamesMarcusBach
@Katrina_tester

**Scan your notes while
listening to decide on
next questions.**

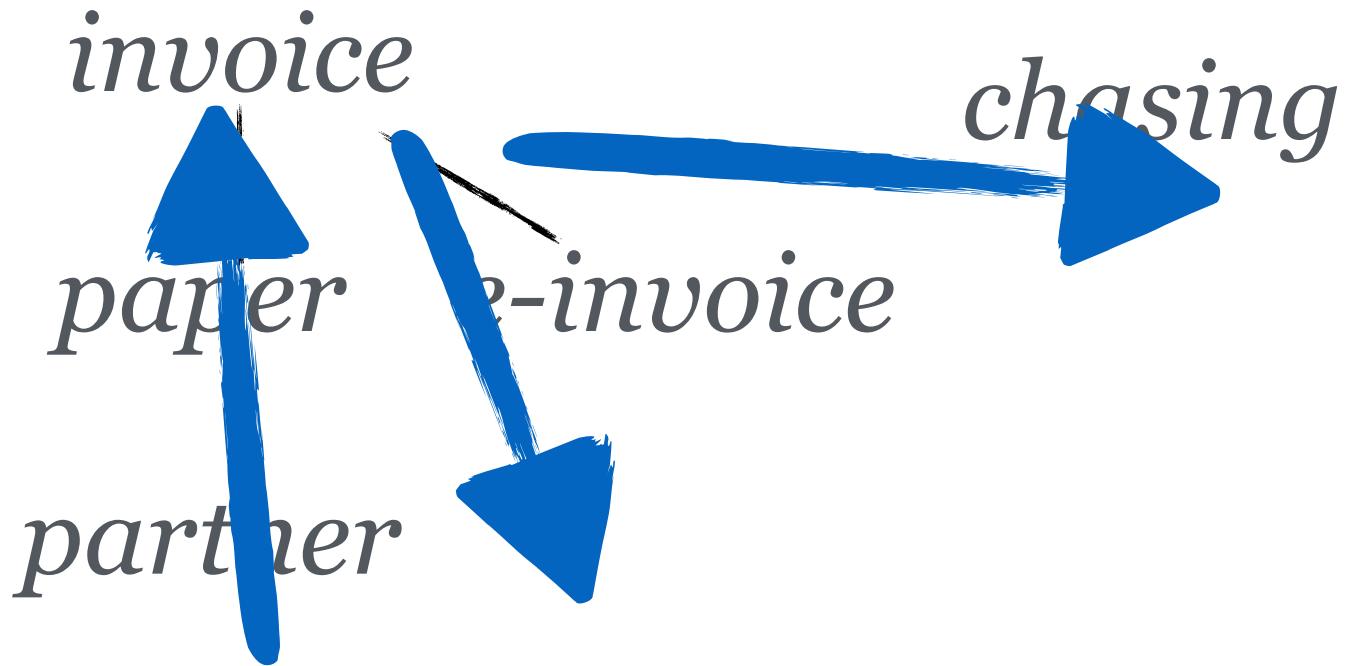
Navigating the conversation



Our map of concepts

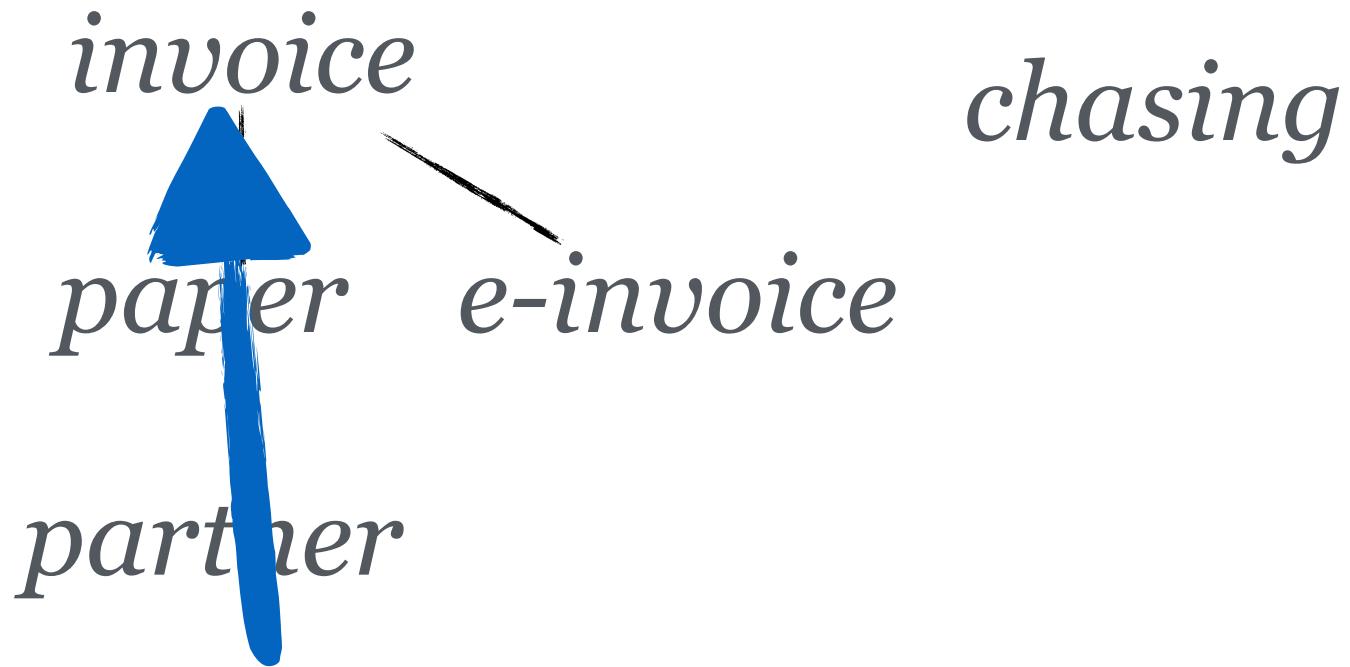


depth Vs breadth



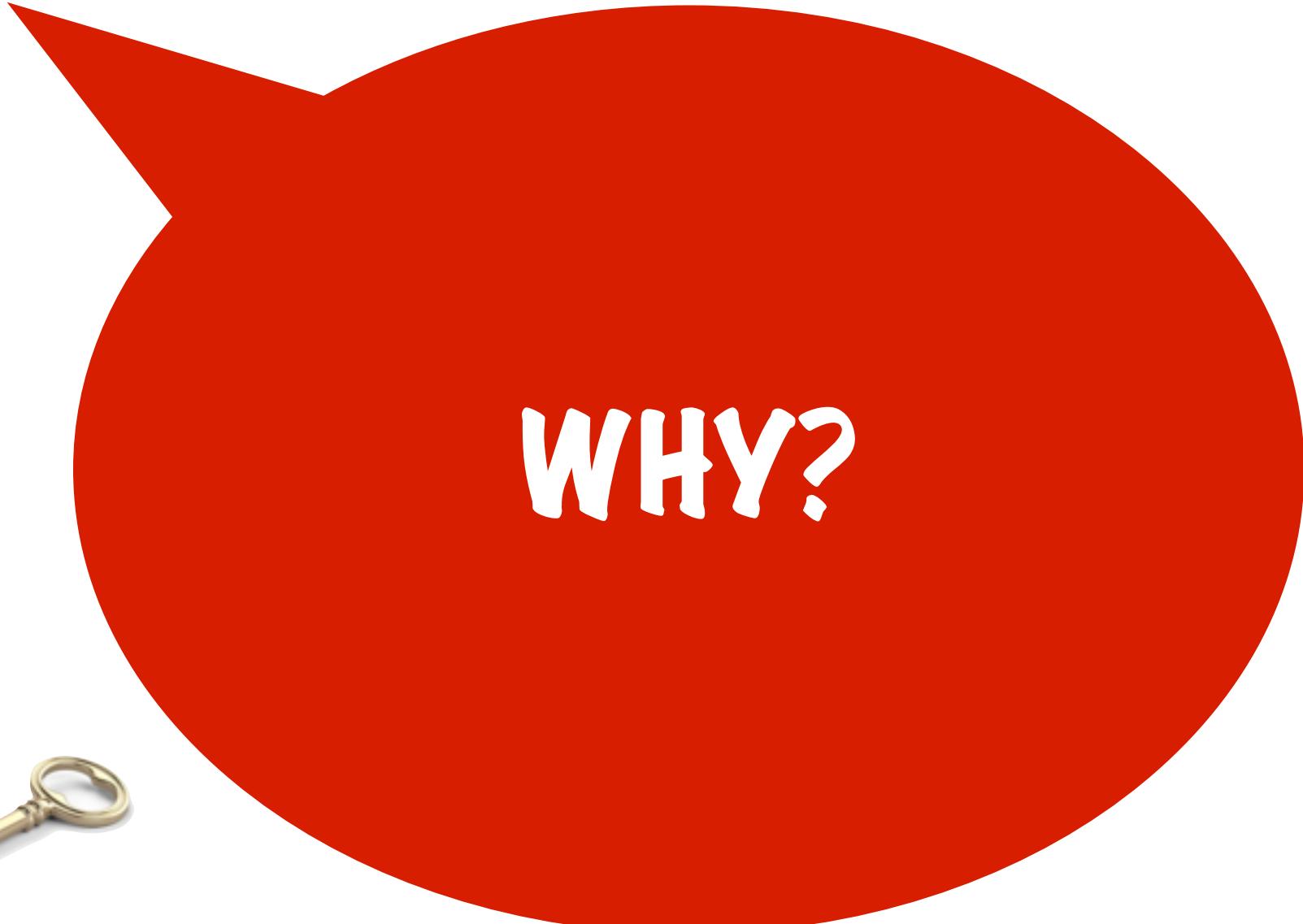
Conversation Patterns for Software Professionals
Michał Bartyzel

Summarizing + intent



Why?

We need a print
button on this
screen.



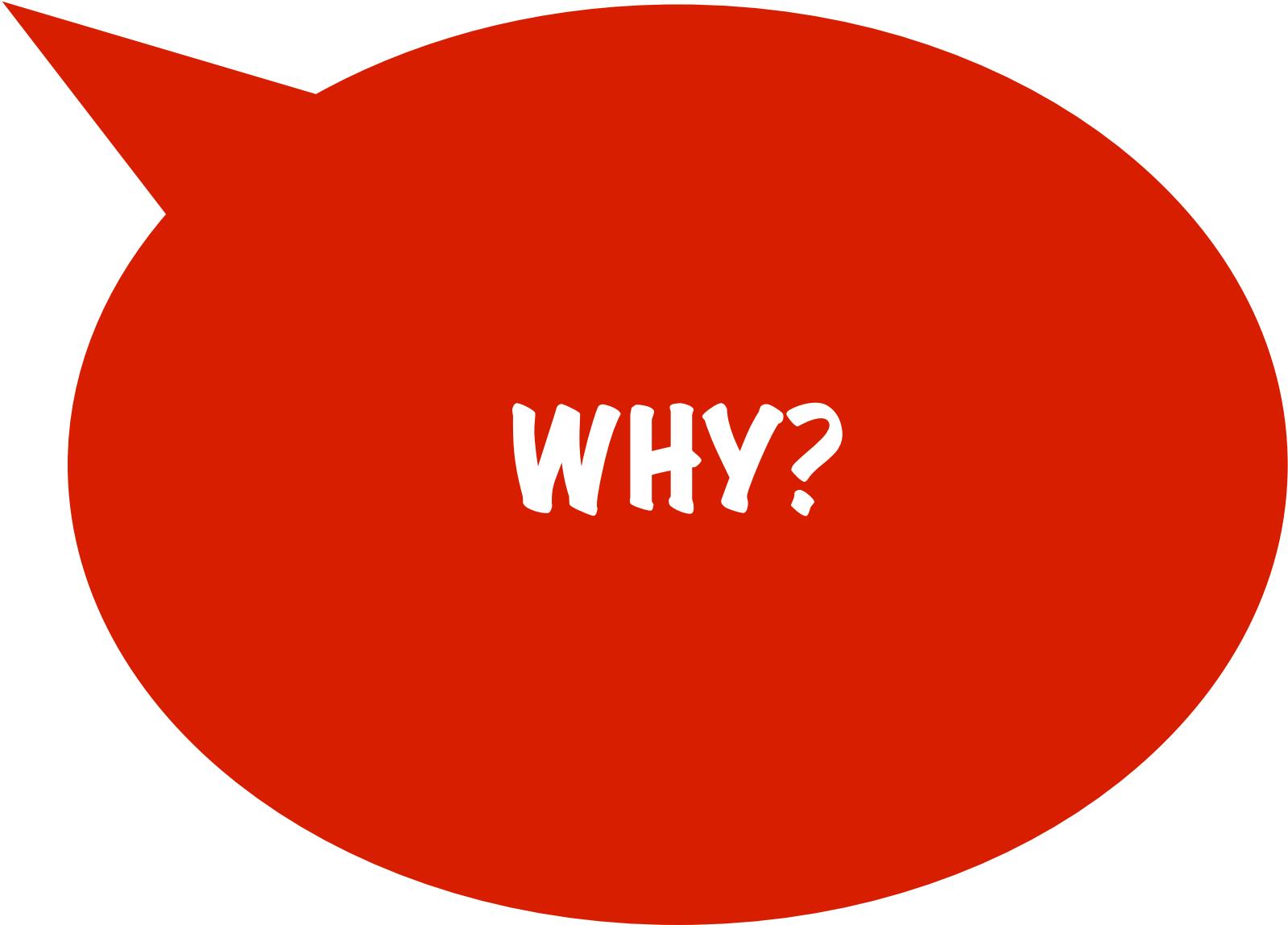
WHY?



Let me check to the
users...



They need to give
printouts to another
department.



WHY?

Because they need
to type the data into
their system.



**Start with "what's
the goal?"**

**Reverse-engineer the
true need from the
expressed solution**

AQ..

WANTED
QUESTION
EVERYTHING
WHY?

"
TENBER
TLW

But don't go too far...



The Expert Beginner

@ExpertBeginner1



Suivre

I keep developers out of conversations about the domain because they always want to know "why this" and "why that." Just write your code.

Voir la traduction

RETWEETS

15

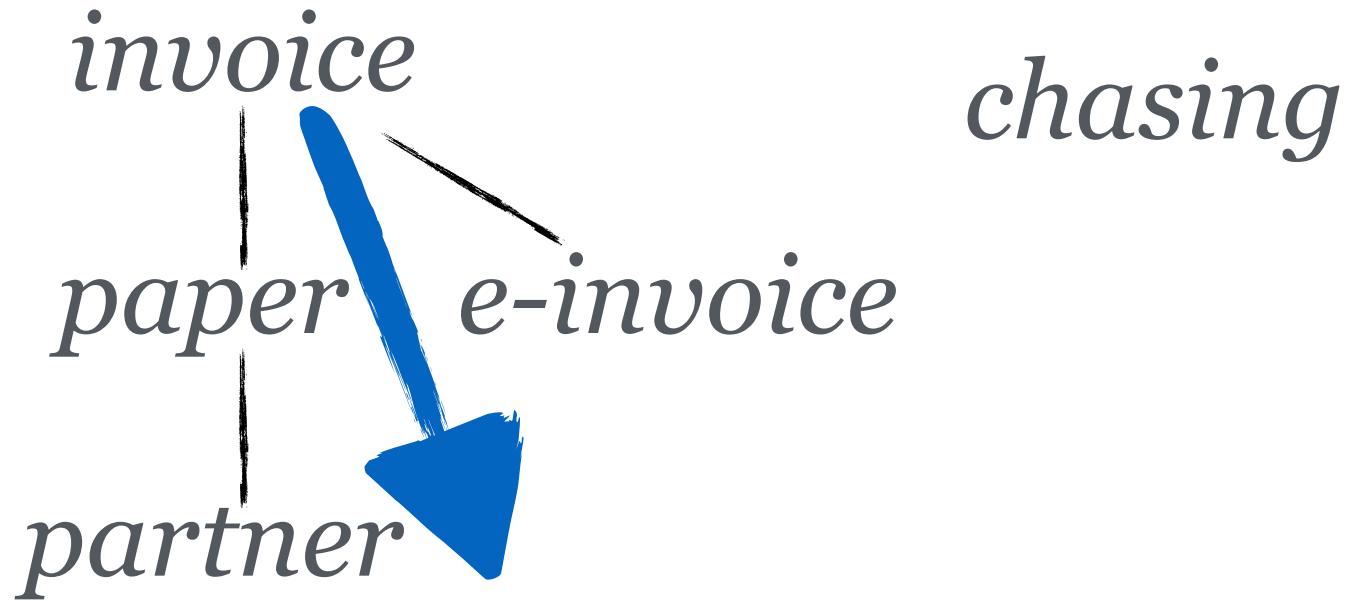
J'AIME

6



17:00 - 19 oct. 2015

Concrete Details



**an example
would be handy
right about now**

www.example.com



I think we agree,
but to be sure we
should have an
example



BDD: your best friend to interview domain experts

Feature: Fuel Card Transactions anomalies

In order to detect potential fuel card abnormal behavior by drivers

As a fleet manager

I want to automatically detect anomalies in all fuel card transactions

Description:

The monitoring detects the following anomalies:

- * Fuel leakage: whenever $\text{capacity} > 1 + \text{tolerance}$, where $\text{capacity} = \text{transaction fuel quantity} / \text{vehicle tank size}$
- * Transaction away from vehicle: whenever $\text{distance to vehicle} > \text{threshold}$,
where $\text{distance to vehicle} = \text{geo-distance}(\text{vehicle coordinates}, \text{gas station coordinates})$,
and where the vehicle coordinates are provided by the GPS Tracking by (vehicle, timestamp),
and where the gas station coordinates are provided by geocoding its post address.

Scenario: Fuel transaction with no anomaly

When a transaction is reported on the fuel card

Then no anomaly is reported

Scenario: Fuel transaction with more fuel than the vehicle tank can hold

Given that the tank size of the vehicle 23 is 48L

When a transaction is reported for 52L on the fuel card

Then an anomaly "The fuel transaction of 52L exceeds the tank size of 48L" is reported

Scenario: Vehicle too far from fuel transaction

Given that the location of the vehicle 23 is (48.8608333, 2.3516667) on 2015/04/21 15.10

And assuming that the geocoding of the address "Shell Paris Eiffel, 12 rue de Trocadéro 75008 Paris"

**Discover early
unknown unknowns**

+

misunderstanding

#WIN

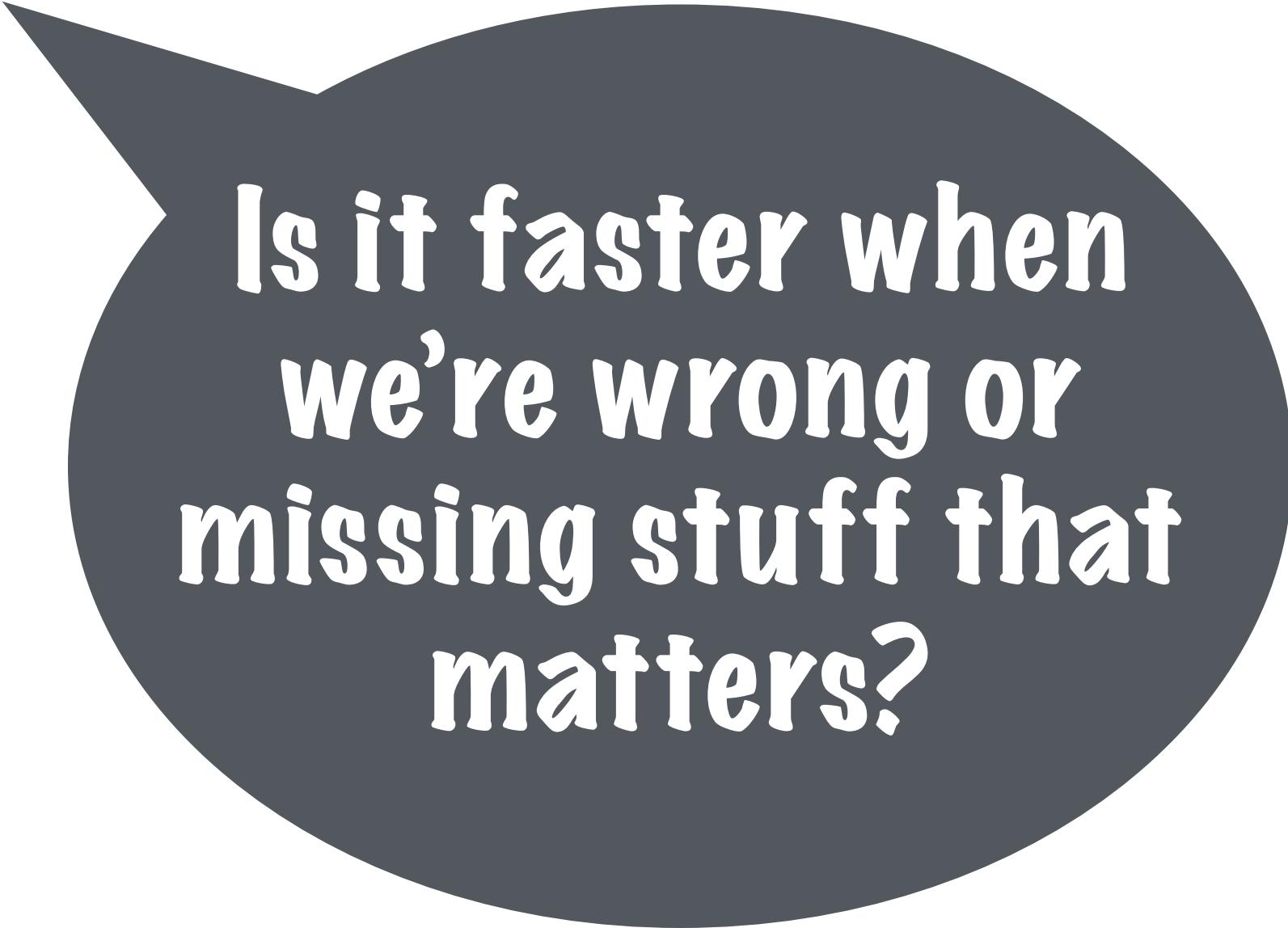


Asking for concrete examples

Why is it so hard?



Talking abstract is
faster



Is it faster when
we're wrong or
missing stuff that
matters?

CONSTRUCTION CONTRACT

This Contract made and entered into on this _____ day of _____, 200____, by and between _____, hereinafter designated as the Owner, and _____, hereinafter designated as the Contractor.

That the Contractor and the Owner agree and bind and obligate themselves as follows:

Contractor to provide the improvements/remodeling/reconstruction/rehabilitation (hereinafter "the work"), in a workmanlike manner and in accordance with the plans and specifications provided or in accordance with the attached Scope of Work exhibit, if any, to the property located at the municipal address of _____, Louisiana:

Owner agrees, binds, and obligates himself to pay Contractor for the work for the sum of \$ _____ together with any additional costs including, but not limited to, amounts for change orders, extra work, overages, and/or escalated costs of materials.

Commencement of Construction. Construction will commence on or about _____. Substantial completion of the work will be _____ days after commencement of construction. However, this time period may, at Contractor's option, be extended one day for each day of delay, if construction is delayed due to weather, fire, strikes, material shortages, or Acts of God, Owner delays, or other normal variations in the construction process including, but not limited to, the selection, ordering, manufacture, and/or installation of Owner selections. Failure of Contractor to timely complete shall not be considered default. The date of Substantial completion shall be that date when the work is completed sufficiently enough to enable the Owner to occupy, or

Ask for genuine sample documents / data

arising from the work delay including, but not limited to, wages, loss of income, start-up costs, sub-contractor charges, additional trip charges, delayed material delivery charges, and material loss charges. Owner further understands and agrees that these charges may, at Contractor's option, be deemed and considered to be extra work and be due and payable as extra work in accordance with the payment schedule below. The parties agree that Owners will only be allowed in the work area when accompanied by Contractor.

Deposit. A Deposit in the amount of \$ _____ .00 shall be paid by Owner to Contractor to secure performance of the work on the Property. Absent default of Contractor, Deposit shall be non-refundable and shall be paid upon execution of this Contract.

Payments/Draws. The Owner shall make the remaining payments upon request of the Contractor in accordance with the following schedule:

1. \$ _____ .00 due upon _____;

2. \$ _____ .00 due upon _____;

Issuer: Commerzbank AG ("Commerzbank")

COMMERZBANK AG HAS TODAY ANNOUNCED A COMPREHENSIVE RECAPITALISATION TO RAISE EUR11 BILLION AND REPAYMENT OF EUR14.3 BILLION OF THE SOFFIN SILENT PARTICIPATIONS

COMPANY DETAILS:

ISSUER: COMMERZBANK AG

SECTOR: BANKING

COUNTRY: GERMANY

SHARE TICKER: CBK.GY (BLOOMBERG); CBKG.DE (REUTERS)

EUR11 BILLION CAPITAL INCREASE IS FULLY UNDERWRITTEN AND WILL BE COMPLETED IN TWO-STEPS:

- STEP 1. EUR2.5-4.5 BILLION FULLY MARKETED PLACEMENT OF CONDITIONAL EQUITY SECURITIES (COMEN), CONDITIONAL ON AGM APPROVAL; OF WHICH, EURO0.9-1.1

Ask for genuine sample documents / data

GOVERNMENT (SOFFIN) WHO WILL PARTICIPATE IN BOTH STEPS OF THE TRANSACTION TO MAINTAIN ITS CURRENT 25% PLUS 1 SHARE SHAREHOLDING BY CONVERTING/CONTRIBUTING PARTS OF THE SILENT PARTICIPATION PROVIDED TO COMMERZBANK IN 2008 AND 2009

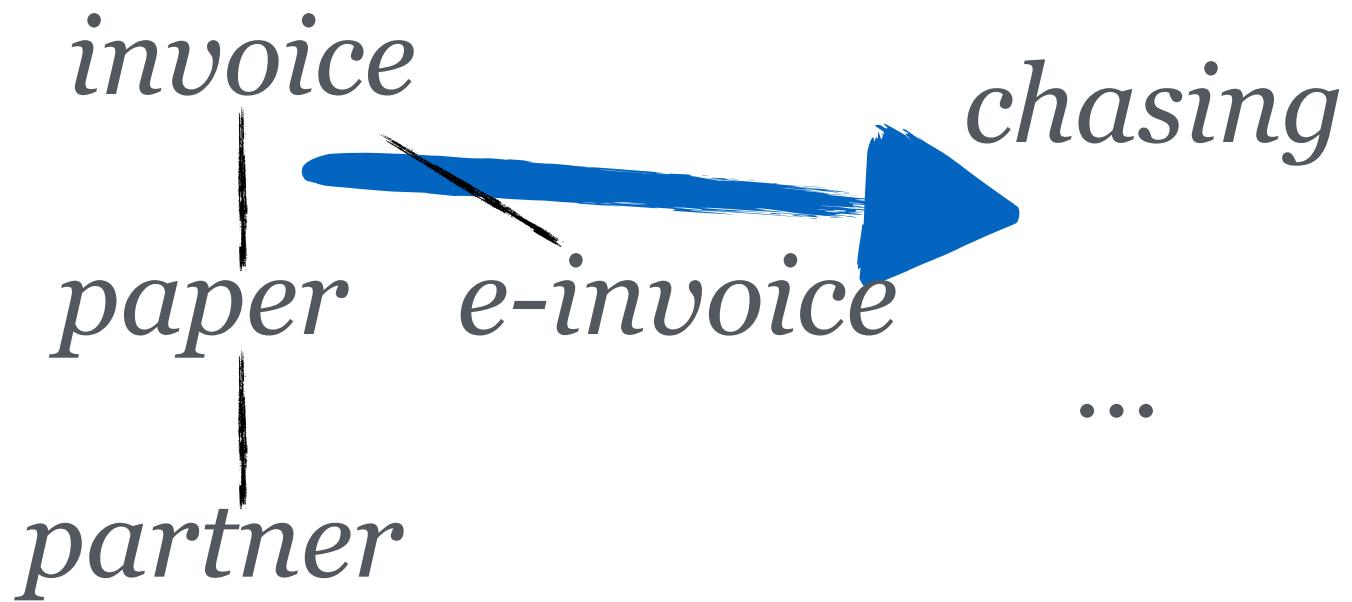
EUR8.25 BILLION TO BE PLACED IN THE MARKET WITH NEW AND EXISTING SHAREHOLDERS (EXCLUDING SOFFIN)

AN ADDITIONAL SILENT PARTICIPATION REPAYMENT OF EUR3.3 BILLION FROM EXCESS CAPITAL HAS ALSO BEEN APPROVED BY BAFIN. POST THE RECAPITALISATION, THE SILENT PARTICIPATION WILL REDUCE FROM €16.2 BILLION TO €1.9 BILLION WITH THE REMAINDER TO BE PAID DOWN BY 2014 AT LATEST

**Ask for genuine sample
documents / data**

Ask! Insist!

Exploring



bla bla bla shopping
cart...

And by the way this
is not the case for the
marketplace

And by the way this
is not the case for the
marketplace

*bla bla bla shopping
cart...*

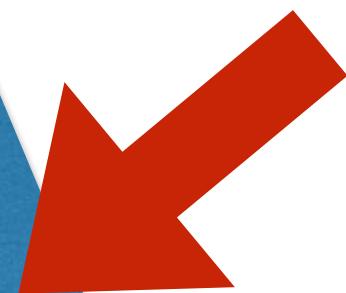
Q: marketplace???



**Take note of side
remarks**

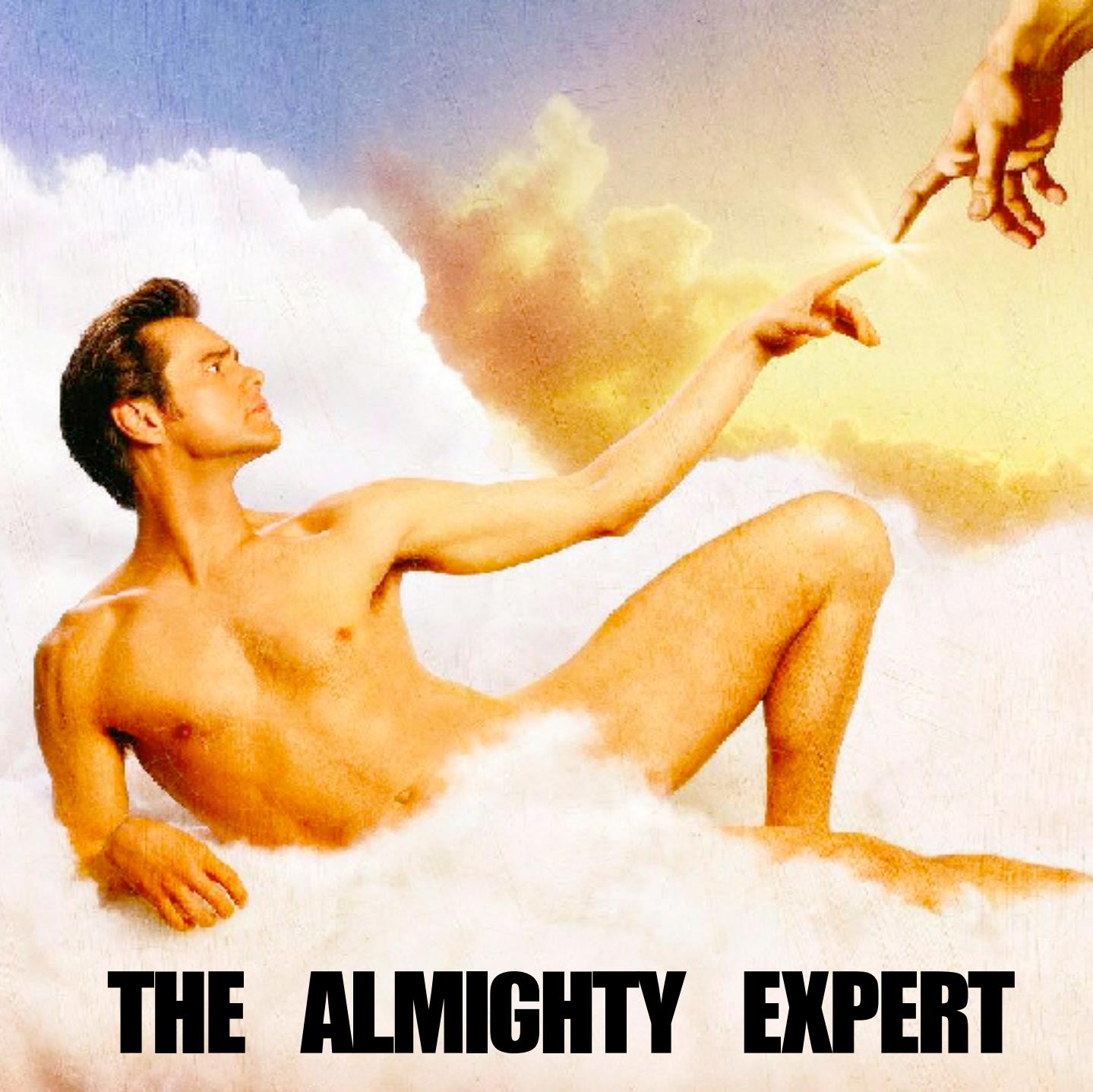
shopping cart

marketplace



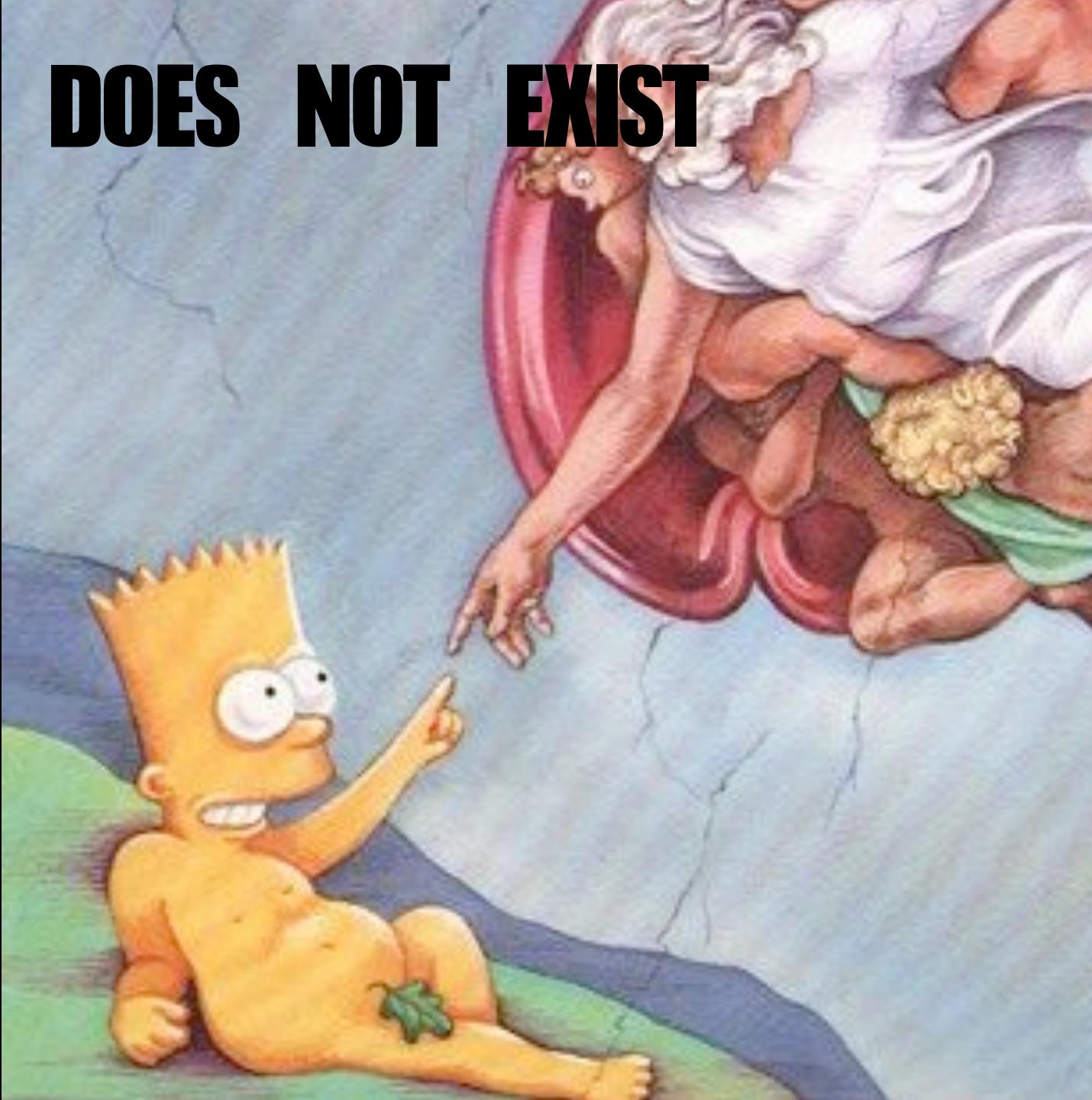
In real life...

**the
Domain
Expert
Delusion**



THE ALMIGHTY EXPERT

DOES NOT EXIST



An expert



Not an expert



Can you
spot the
difference
?



ITAL FLORIDA TRIESTE

GEOGRAPHIC

22.06.2007

**The worst domain
expert is the one whose
expertise was built from
the intricacies of the
existing systems**

**IT WAS A
TERRIBLE YEAR.
WE LOST
MONEY.**

Dave Eckberg

We can help.

EMPATHY

put yourself in their shoes

EMPATHY

put yourself in their shoes

Figuratively

EMPATHY

put yourself in their shoes

Figuratively

& Literally

PLEASE, MR EXPERT



EXPLAIN TO ME

memegenerator.net

PLEASE, MR EXPERT



EXPLAIN TO ME

memegenerator.net

PARTNERSHIP

Two-Ways Conversations



"The best way to get the right answer on the Internet is not to ask a question, it's to post the wrong answer."

— Cunningham's Law

PROPOSE

as-a-tactic

**Propose
something.**

Doesn't have to be
right / complete

Propose
something.

But do your
best anyway

"Given a shopping basket which is over the free shipping limit, when I go to checkout the basket, what should I see on the screen?"

Liz Keogh: <http://www.infoq.com/articles/pulling-power>

**“Oh... Shipping is FREE
with this order!”**

Liz Keogh: <http://www.infoq.com/articles/pulling-power>

Given a shopping basket which is over the free shipping limit

When I go to checkout the basket

Then I am notified that "shipping is FREE with this order"

Got it!

**The interview is over
for today.**

Next is tomorrow.



SPIKE

KEEP
CALM
AND
START
CODING





```
Kitten kitty = new Kitten(Attitude.ROCK_STAR);
Microphone mike = new Microphone();
kitty.sing(mike);
system.out.println(mike.playBack());
// "mew mew meeew"
```

**My brain has limited
capacity: I need executable
code & its tests to see issues.**

Code → Issues + Questions

**Perfect for better
questions for the next
interview!**

#WIN

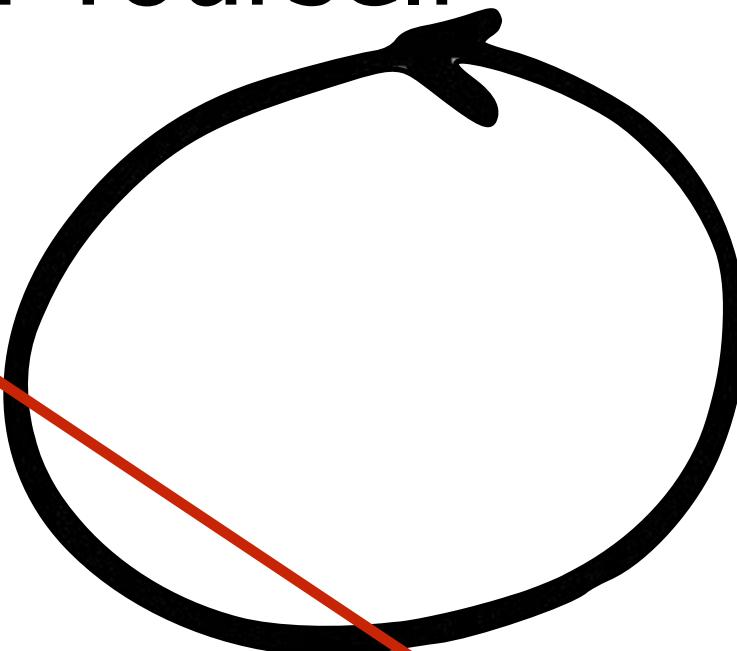


Greg Young codeanalysis

<http://skillsmatter.com/podcast/design-architecture/mystery-ddd/js-4401>

**WITHOUT
the EXPERT**

Teach Yourself



**Active
Listening**

Propose

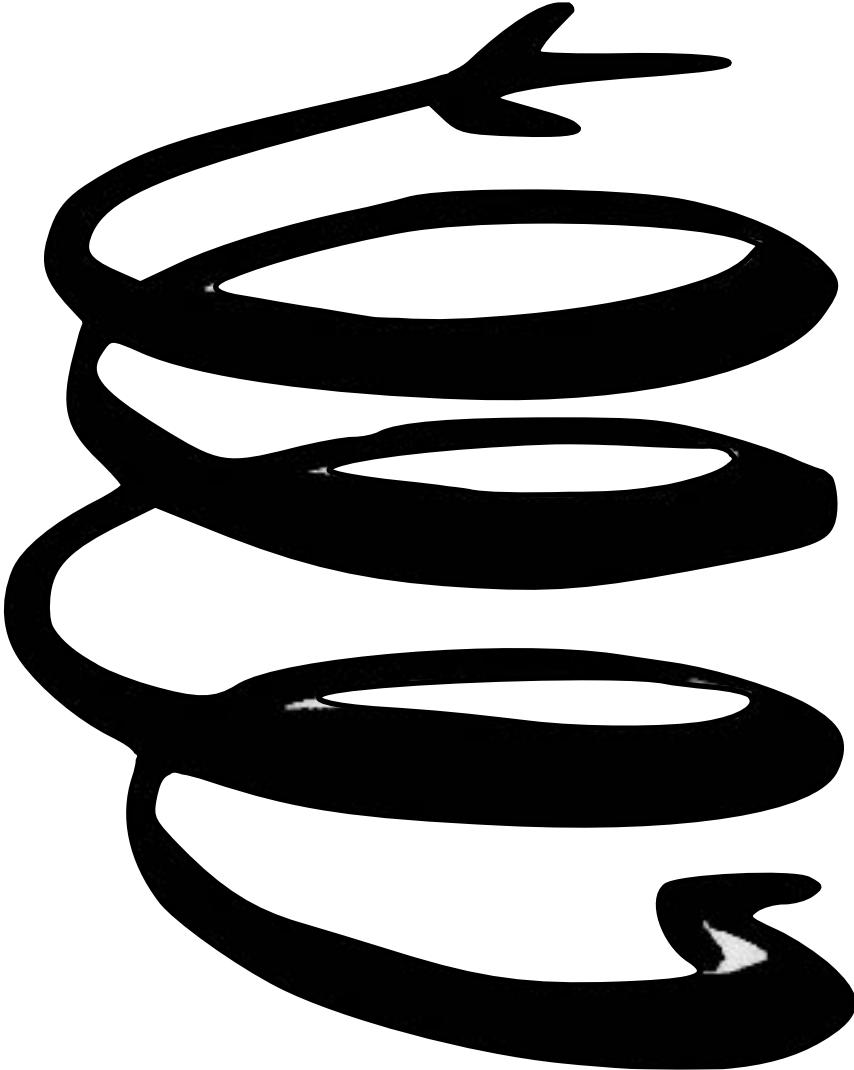
**Code
leading
to new
questions**

**Learn
Together**

**WITH the
EXPERT**

My brain has limited capacity: I need some sleep to see things more clearly.

Iterate over time

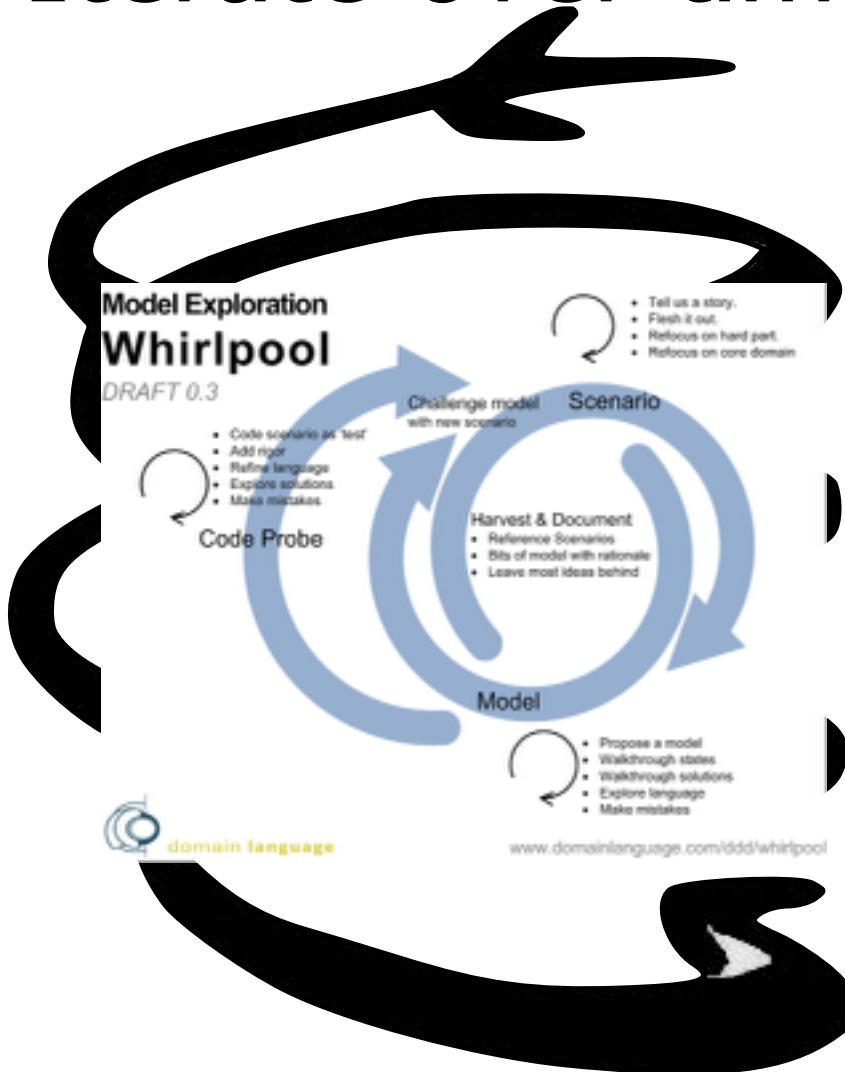


Deeper
Insights

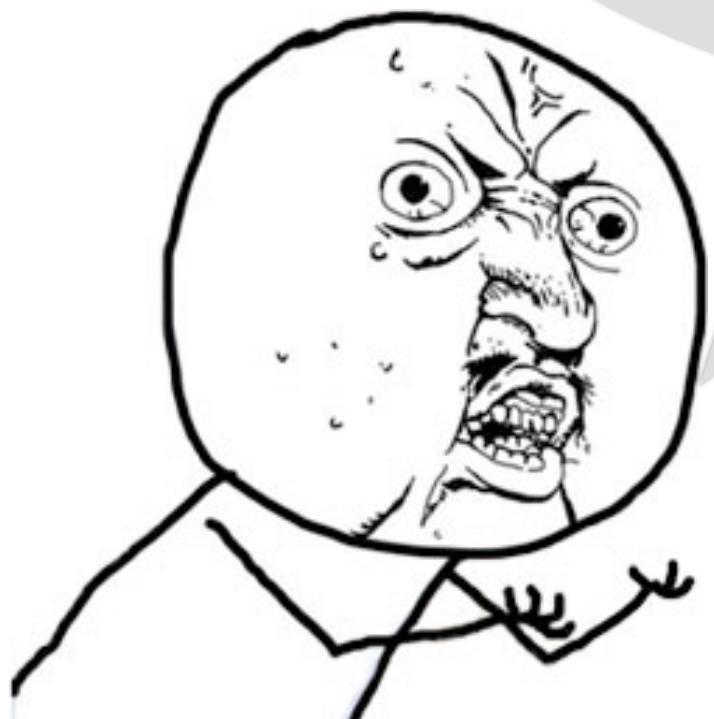


Iterate over time

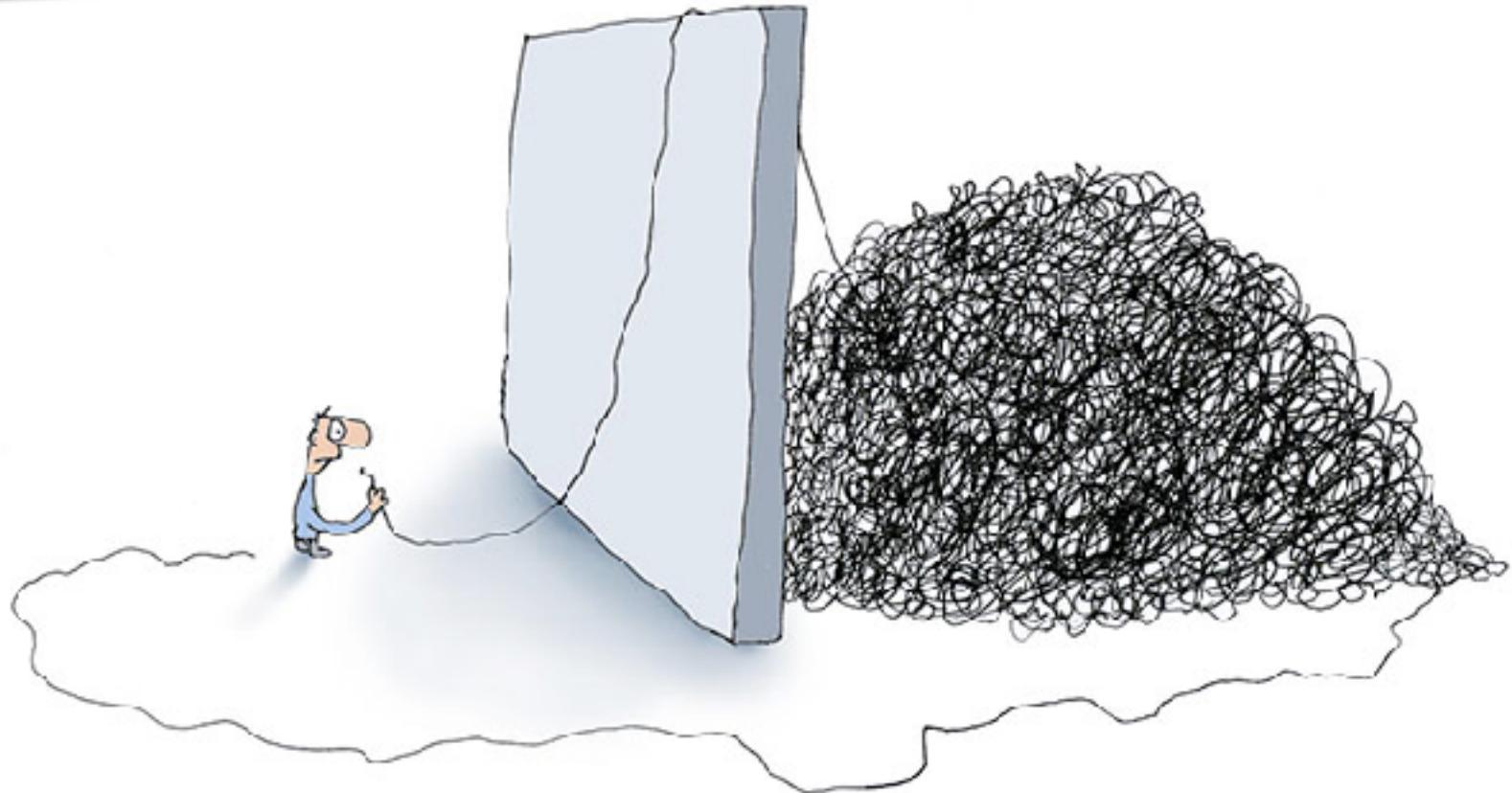
Deeper Insights



**WHY bother
so much?**



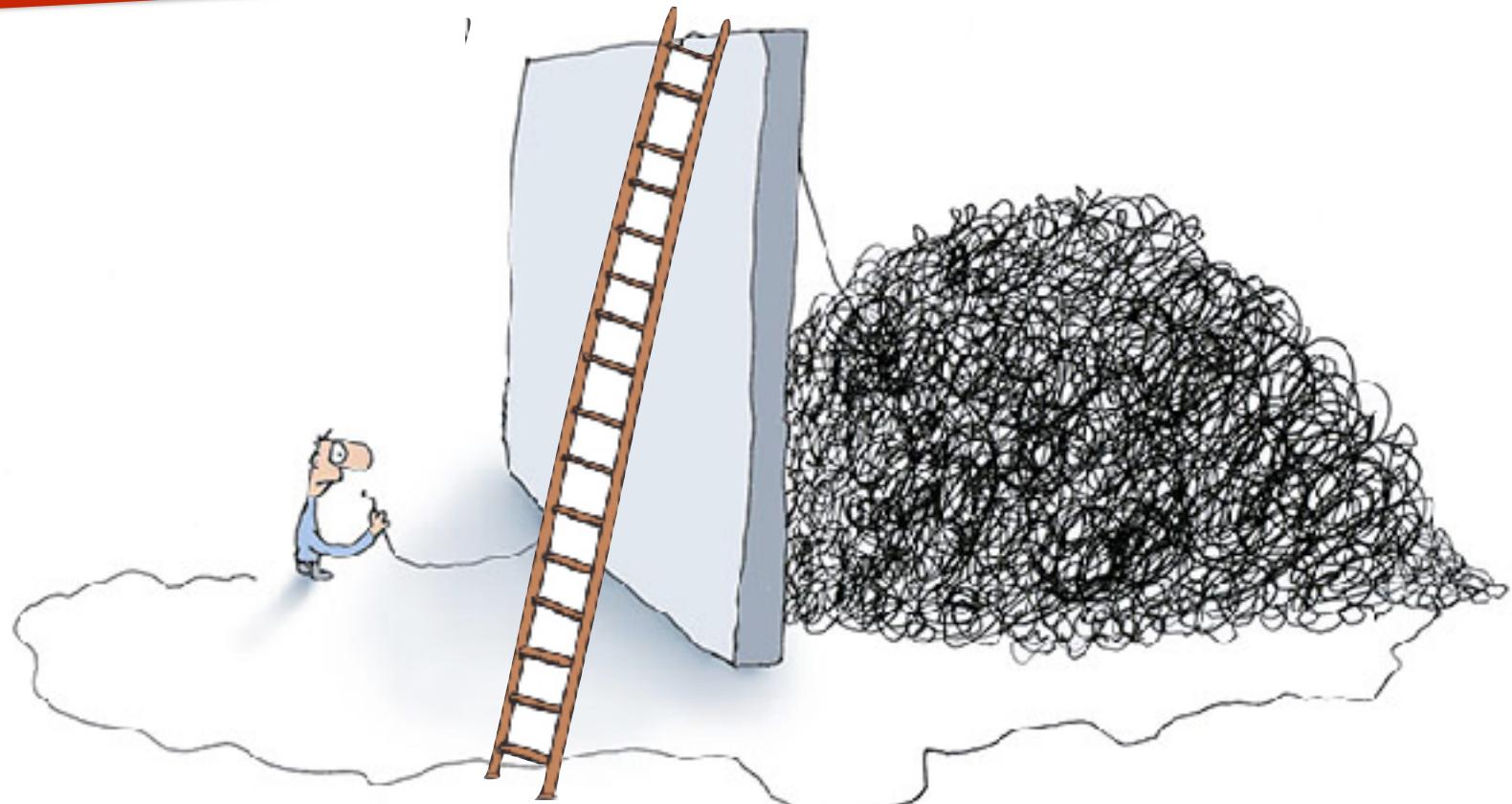
The Complexity of the Domain is there



Leunig

**You can ignore the
domain complexity,
but it won't ignore you**

DELIBERATE DISCOVERY!



Leunig



**The obligatory
exercise for the
audience**

**You're all domain
experts too!**

Pants!



Pants!



Give a clear definition
2mn

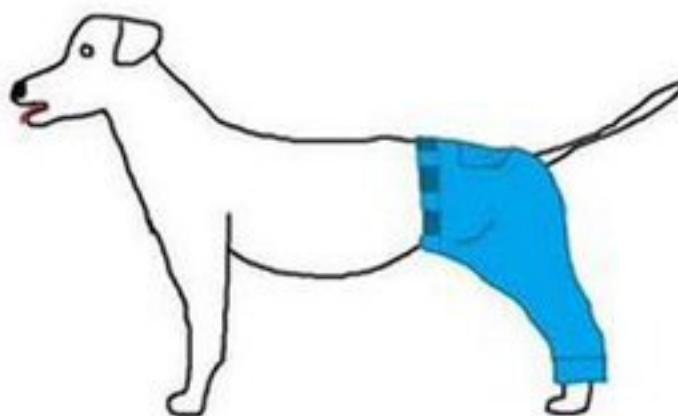
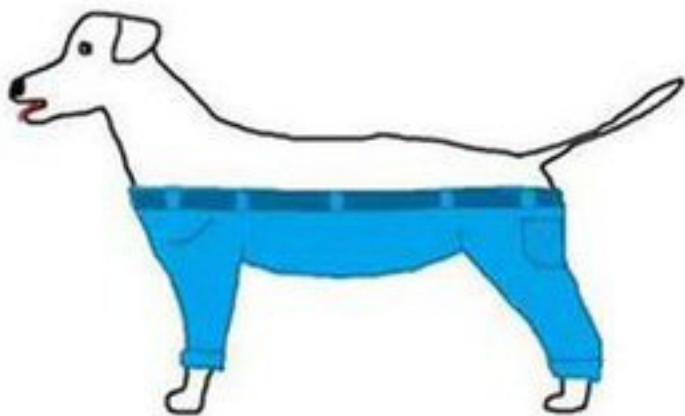
Tacit Mental Models

**What would happen if
<change something>?**



Need more examples.

If a dog wore pants would he wear them
like this or like this?



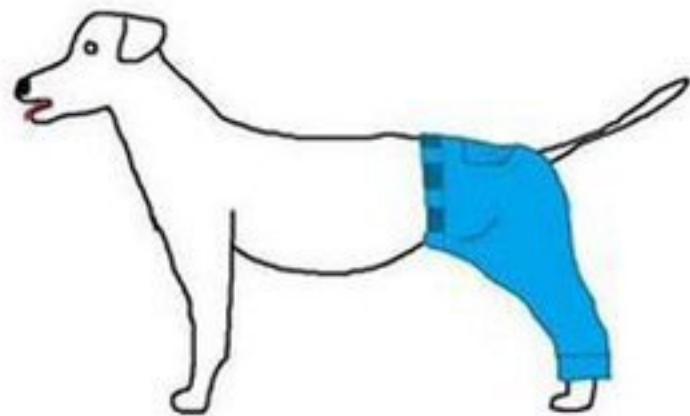
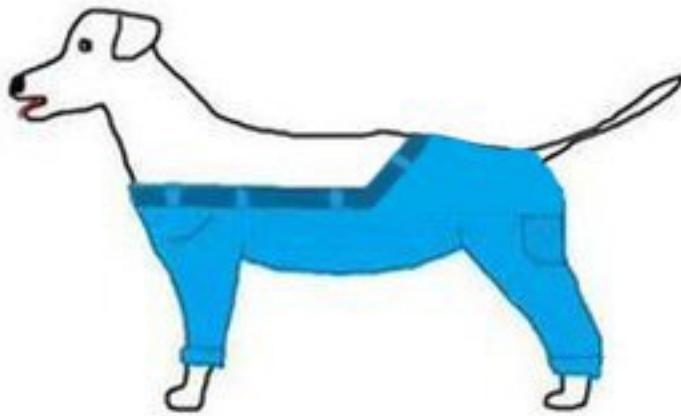
**“You idiot! It’s to cover
the ass of course!”**



Ooops!

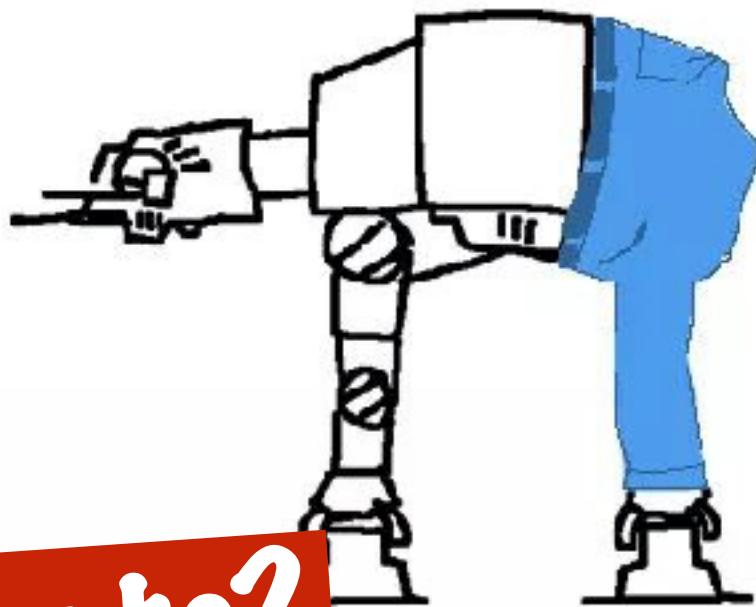
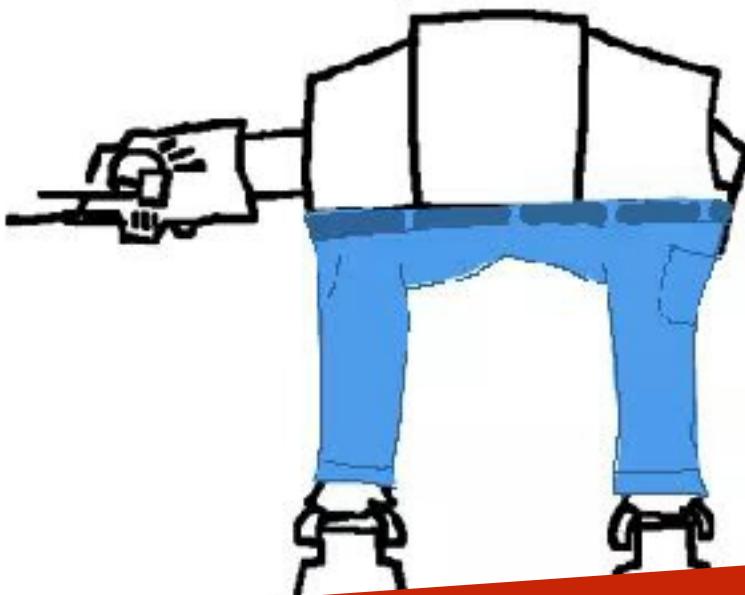
It's to cover the ass?

If a dog wore pants would he wear them
like this or like this?



Cover the ass: fixed!

If an AT-AT wore pants would it wear them
like this or like this?



No ass, no pants?

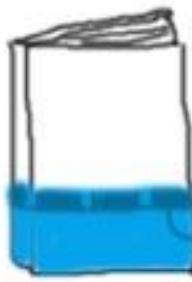
**”It’s easy! It’s to cover
the legs of course!”**

If a book wore pants would it wear them

like this

or

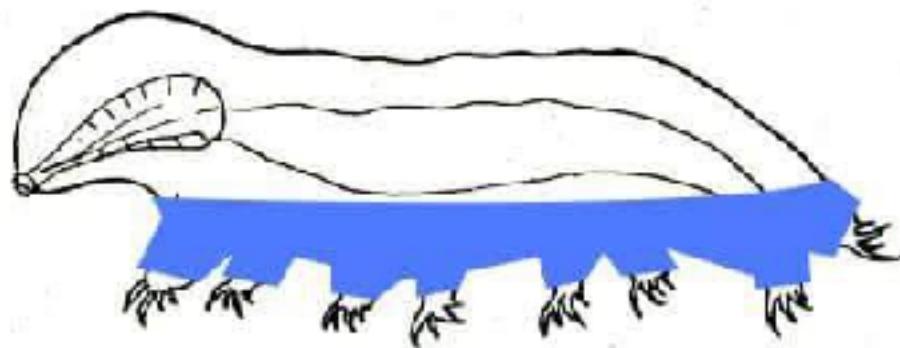
like this?



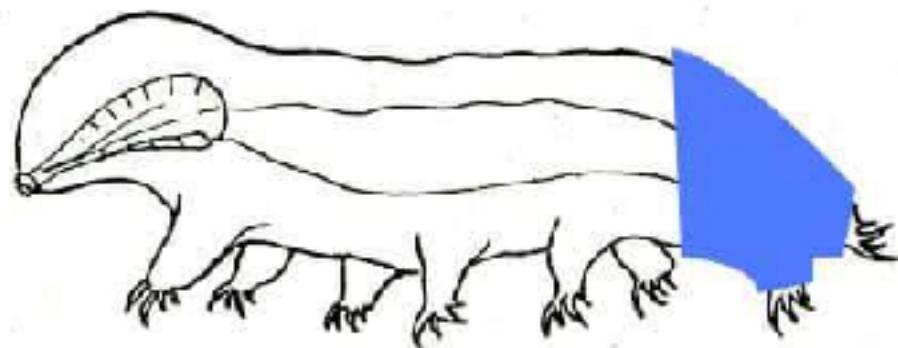
To cover legs, really?

If tardigrades wore pants, would they wear them

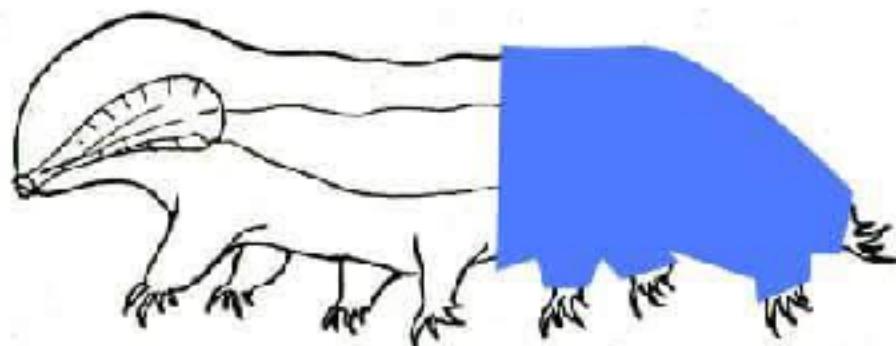
like this



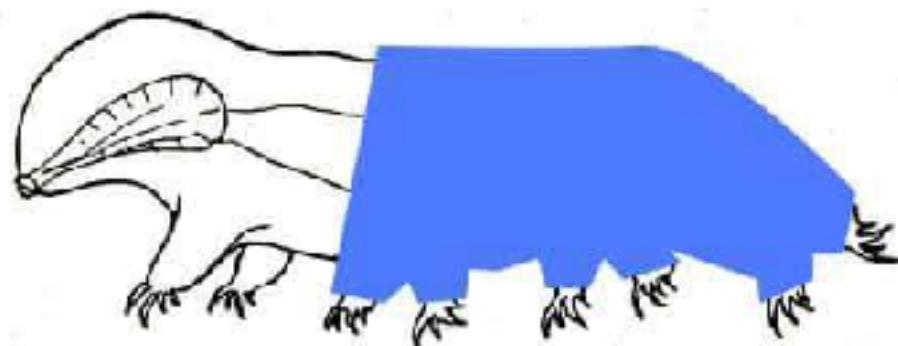
or like this



or like this

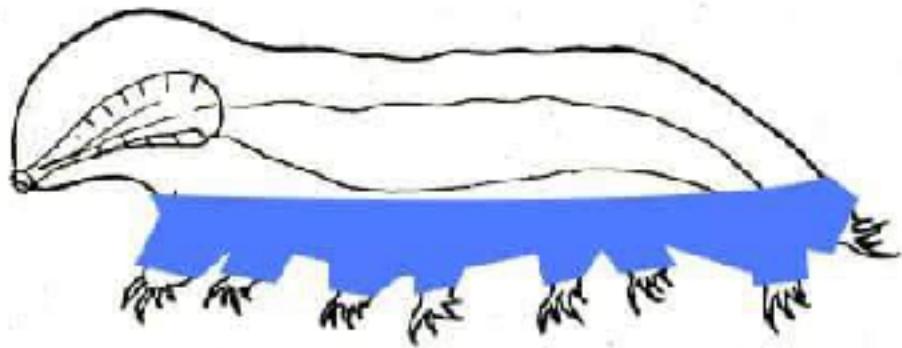


or like this

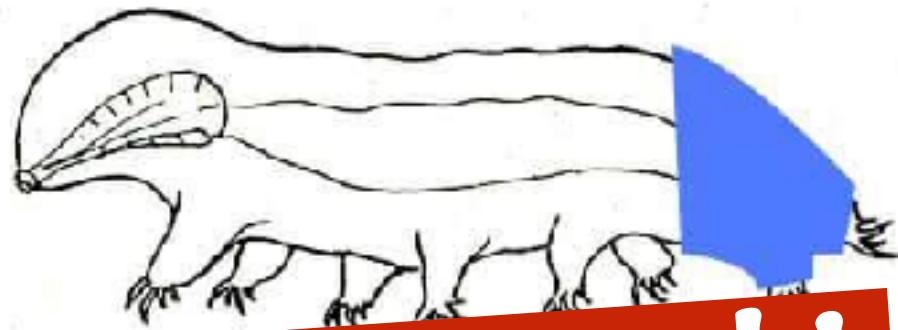


If tardigrades wore pants, would they wear them

like this

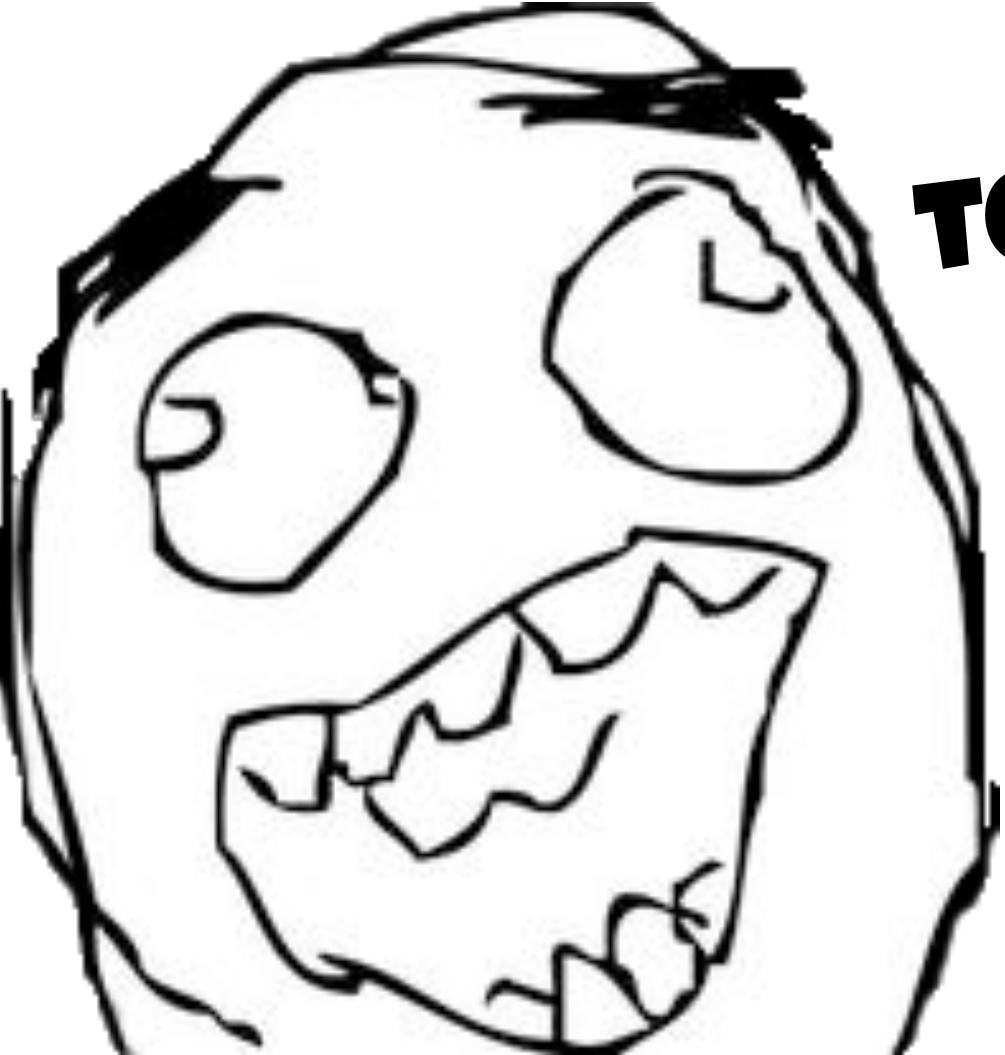


or like this



**A deep definition would
answer this question**

(I don't have the
answer)

A black and white line drawing of a dog's head facing right. The dog has large, expressive eyes and a slightly open mouth showing its teeth. A speech bubble originates from the dog's mouth, containing the text.

**GOT more
SECRET
TECHNIQUES?**

**DRAW FROM
YOUR TOOLBOX**

A NALYSIS PATTERNS

REUSABLE OBJECT MODELS

MARTIN FOWLER

Forewords by
Ward Cunningham and Ralph Johnson



Domain-Driven DESIGN

Tackling Complexity in the Heart of Software



A Good Investment

Evans
Fowler

**Learn some maths
(monoids...)**

A Good Investment

Could we say that?

Hotel Booking

Jan 26 to 27

+

Hotel Booking

Jan 27 to 29



=

Hotel Booking

Jan 26 to 29



**Past work experience,
from any domain.**

A Good Investment

Knowledge of other domains often introduces surprising insights into a project [...]

[...] things like core accounting patterns crop up in places that don't look like accounting on the surface.

- Liz Keogh

**Businesses don't want all
powers concentrated into
the same hands**

Astonishment as-a-tool

I'm surprised, I was expecting a segregation of duties here



Assume + Probe

**Oops, you're right!
My bad.**

**Businesses don't usually
like "hard delete"**

Probe

Can we ***really***
delete the entry?

No no. We add
another entry to
compensate it.

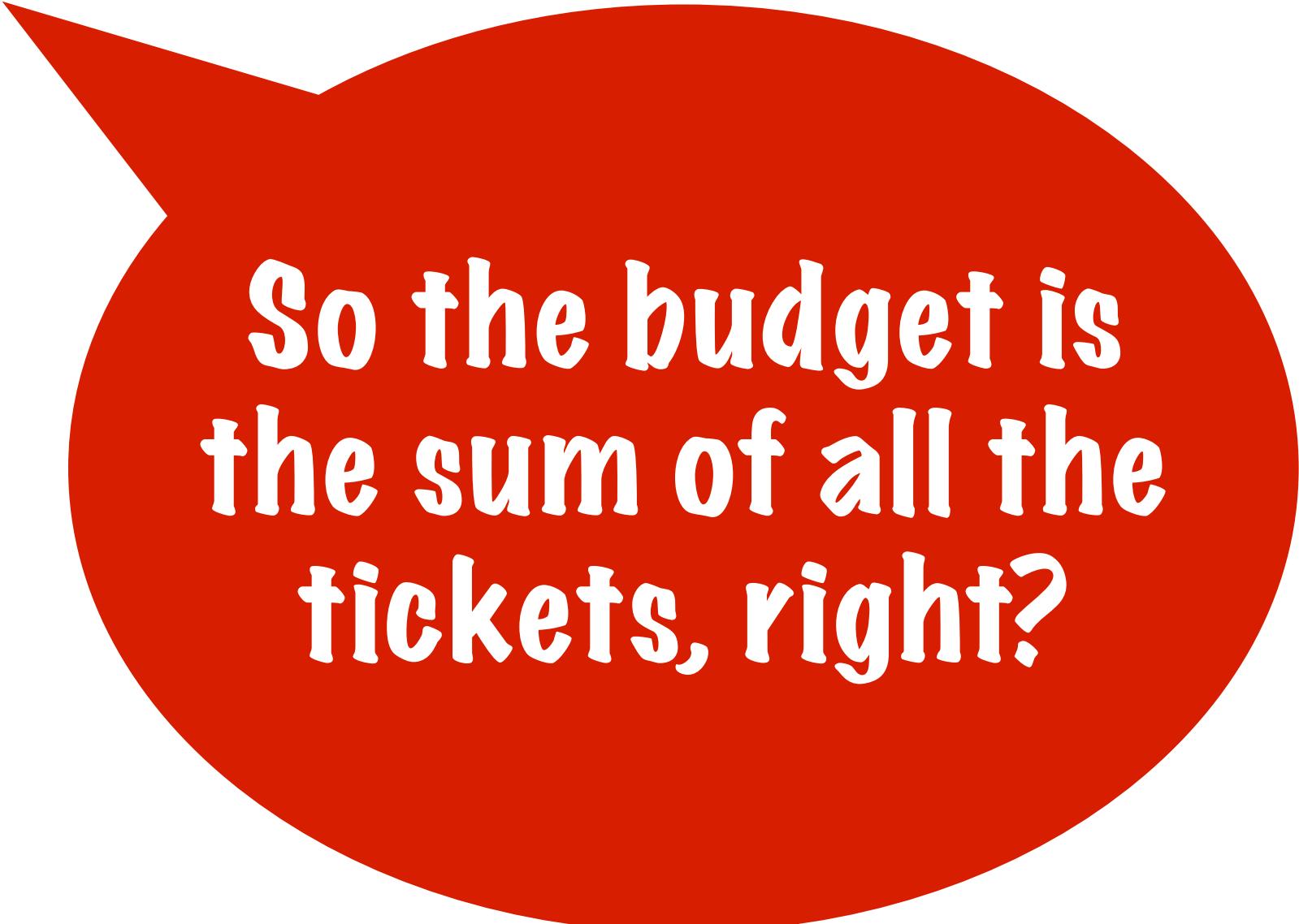
Faster Discovery

INVARIANTS

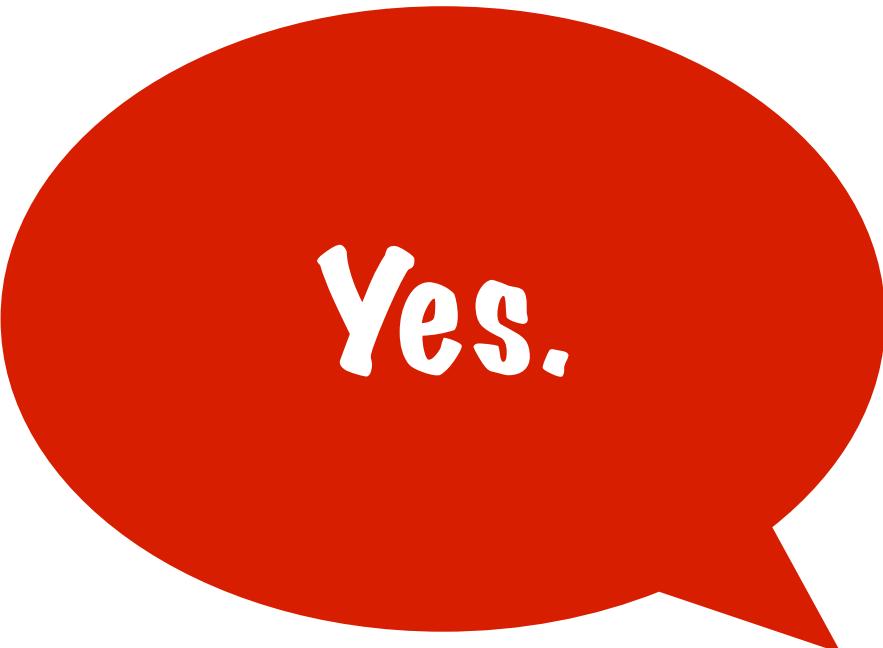
**“Is there any other
outcome that’s
important?”**



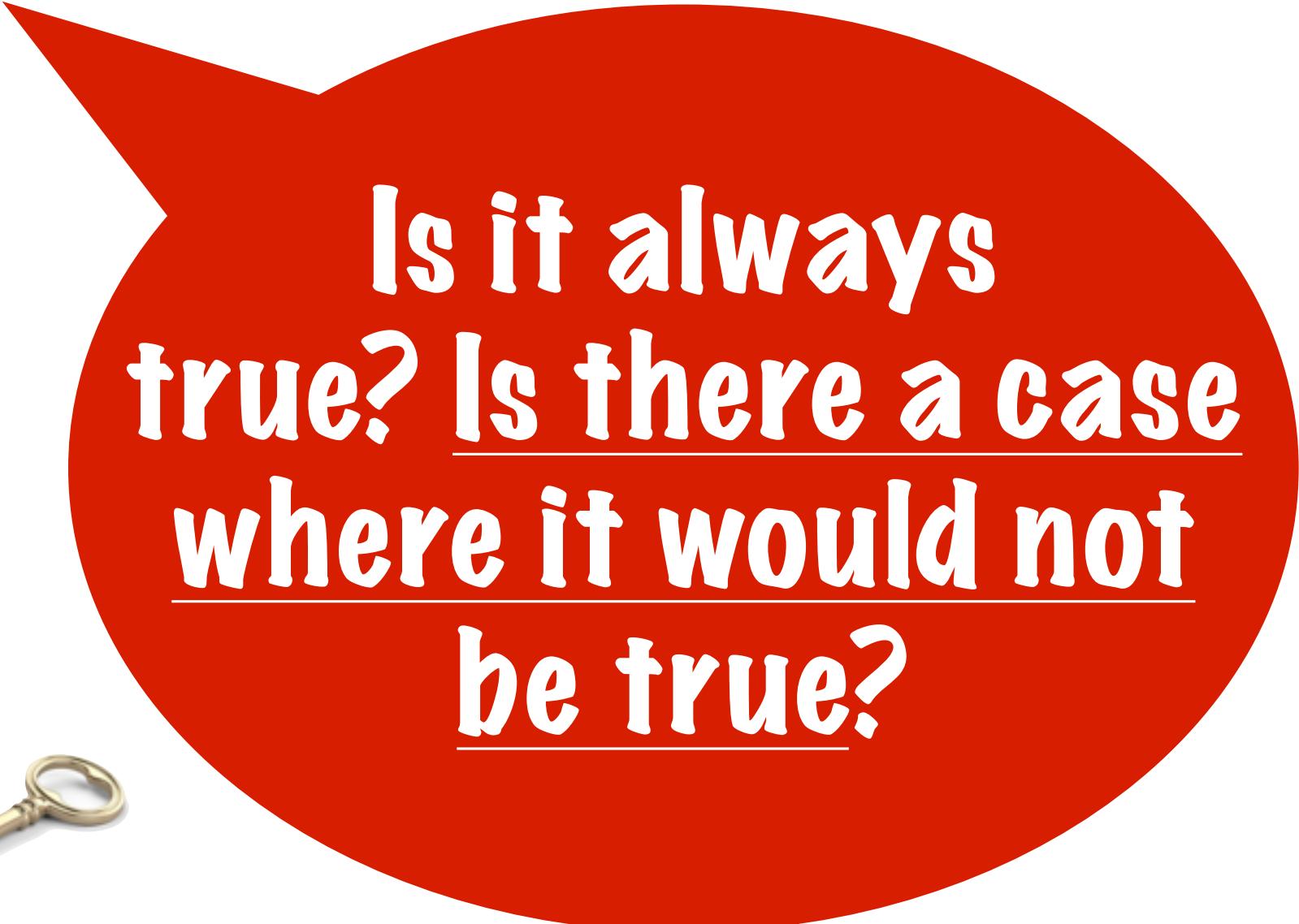
Liz Keogh



So the budget is
the sum of all the
tickets, right?



Yes.



Is it always
true? Is there a case
where it would not
be true?



Well, yes. Some attendees do not pay, and some donate more.

**And we have
sponsors too...**

Tickets: OK

Donations

Non paying attendees

Sponsors

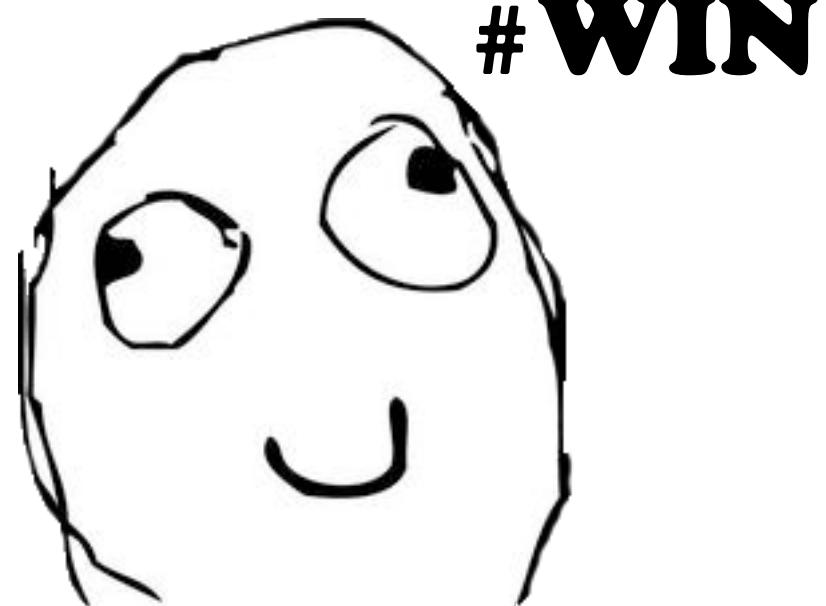
New concepts

Tickets: OK

Donations

Non paying attendees

Sponsors



**Bounded
Contexts
Heuristics**

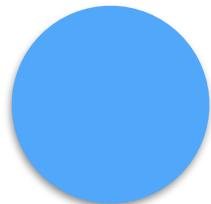
Multiple Domain Experts?

**The plural of domain
expert is "confusion"**

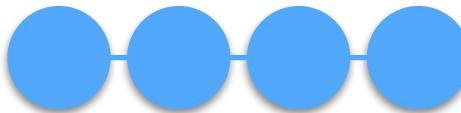
Or potential Bounded Contexts



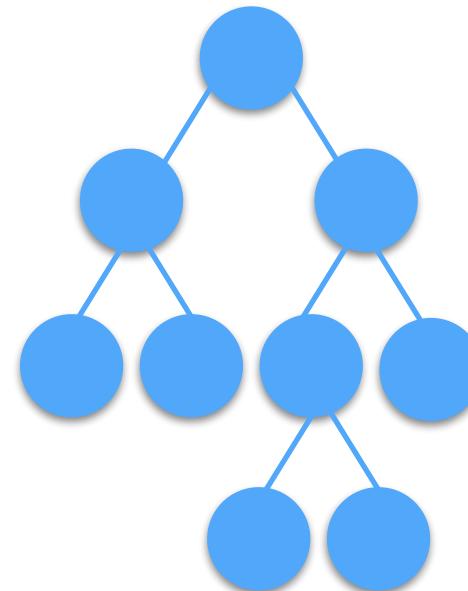
Different Shape Different Bounded Context



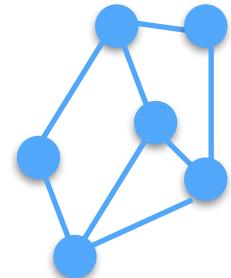
**Scalar
/ Record**



List



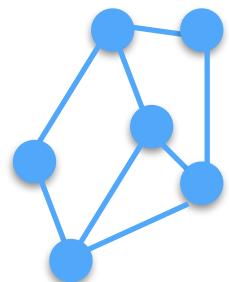
Tree

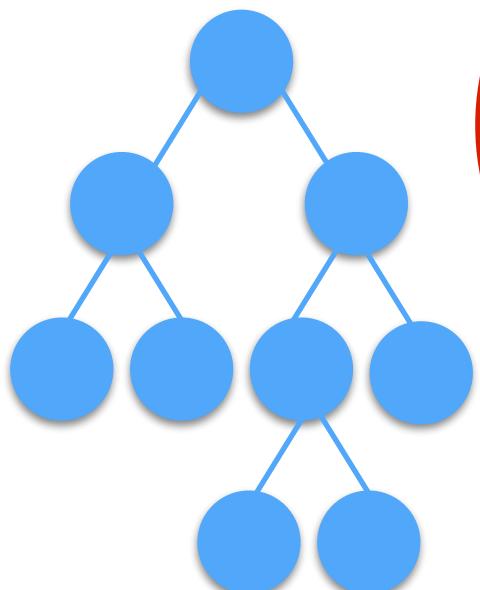


Graph



What happens if there's a cycle?

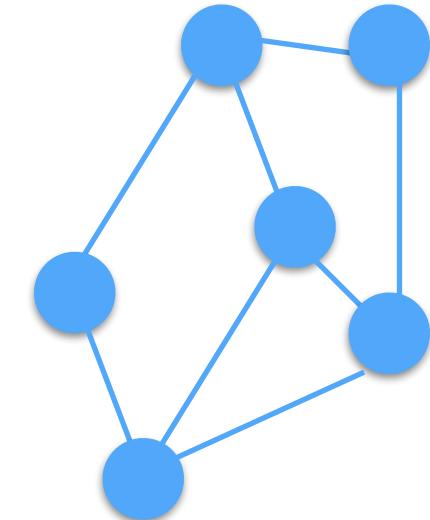
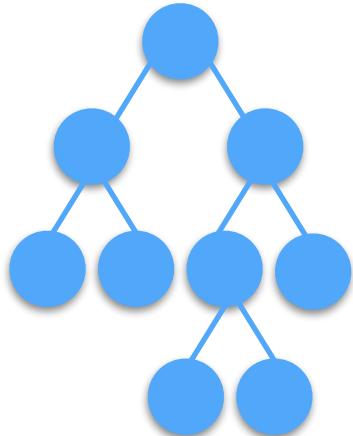




I don't get it;
there can't be any
cycle...



**Different shapes ->
Bounded Contexts**



**BONUS
TIPS**



UH... .

AH..

AH...

ERR..



Shall we sort by
date or by price?

Um... Err... I'd say by
date...

”Sort by date”
[Not convincing]



Expect change → Design with a Comparator

**Little bit of
speculation here!**

**Expect change → Design
with a Comparator**

Hesitation -> Design

**MIND THE
LOGISTICS**

Important screenshots / diagrams close to hands









This place is magic

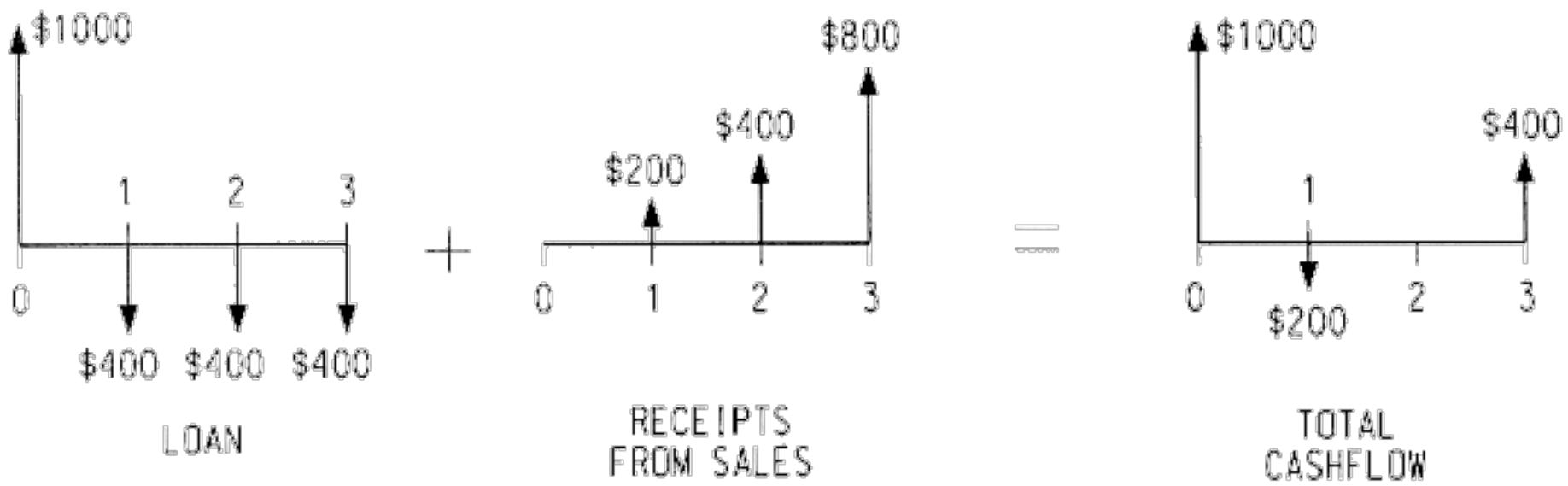
All on the same side



Can sketch together!



DOMAIN- SPECIFIC NOTATIONS



<http://cset.sp.utoledo.edu/~nkissoff/lessons/Lesson2.html>

Financial cash flows

Western notation



MML

3A:4

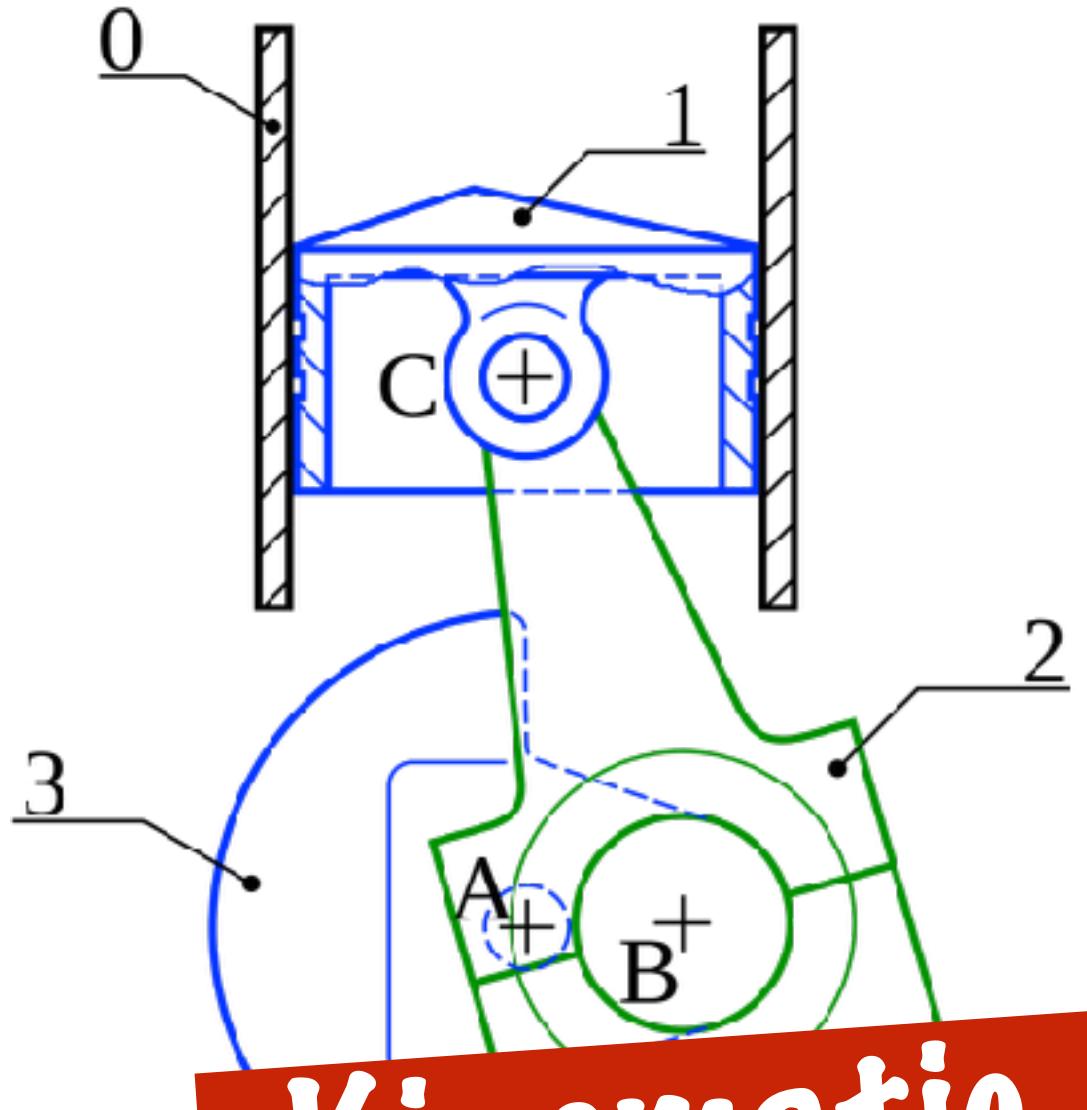
note

220 Hz
frequency

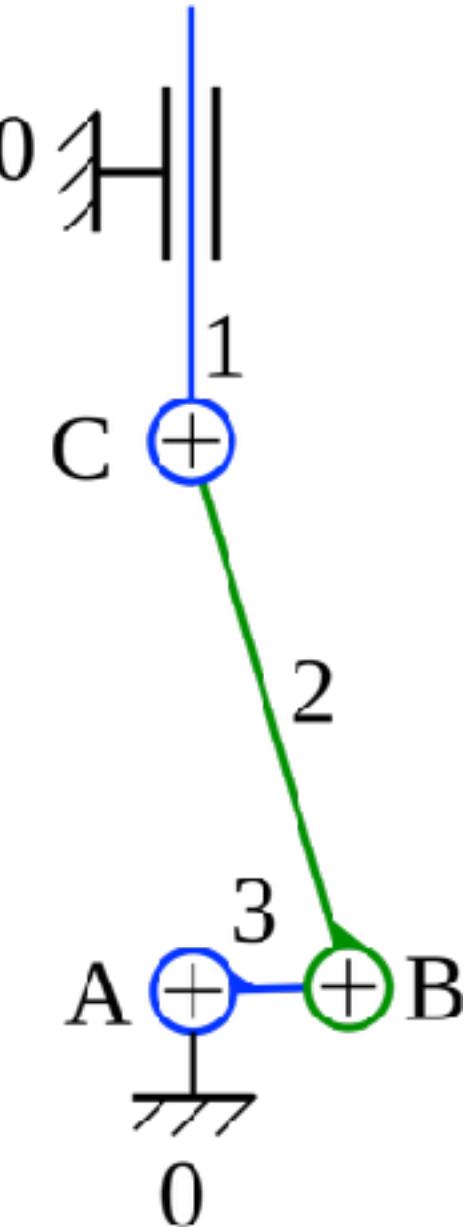
piano
roll



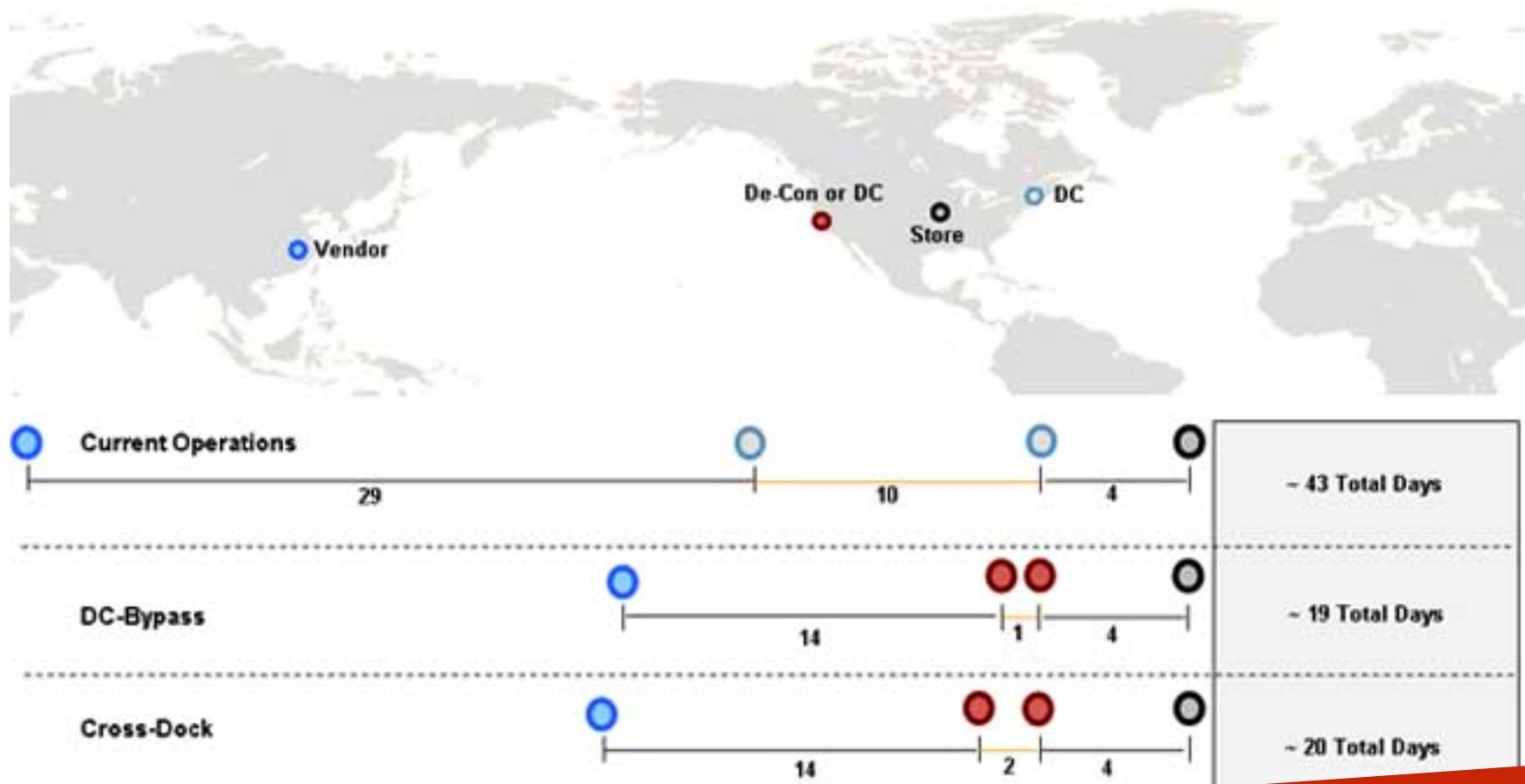
Music



https://en.wikipedia.org/wiki/Kinematic_diagram



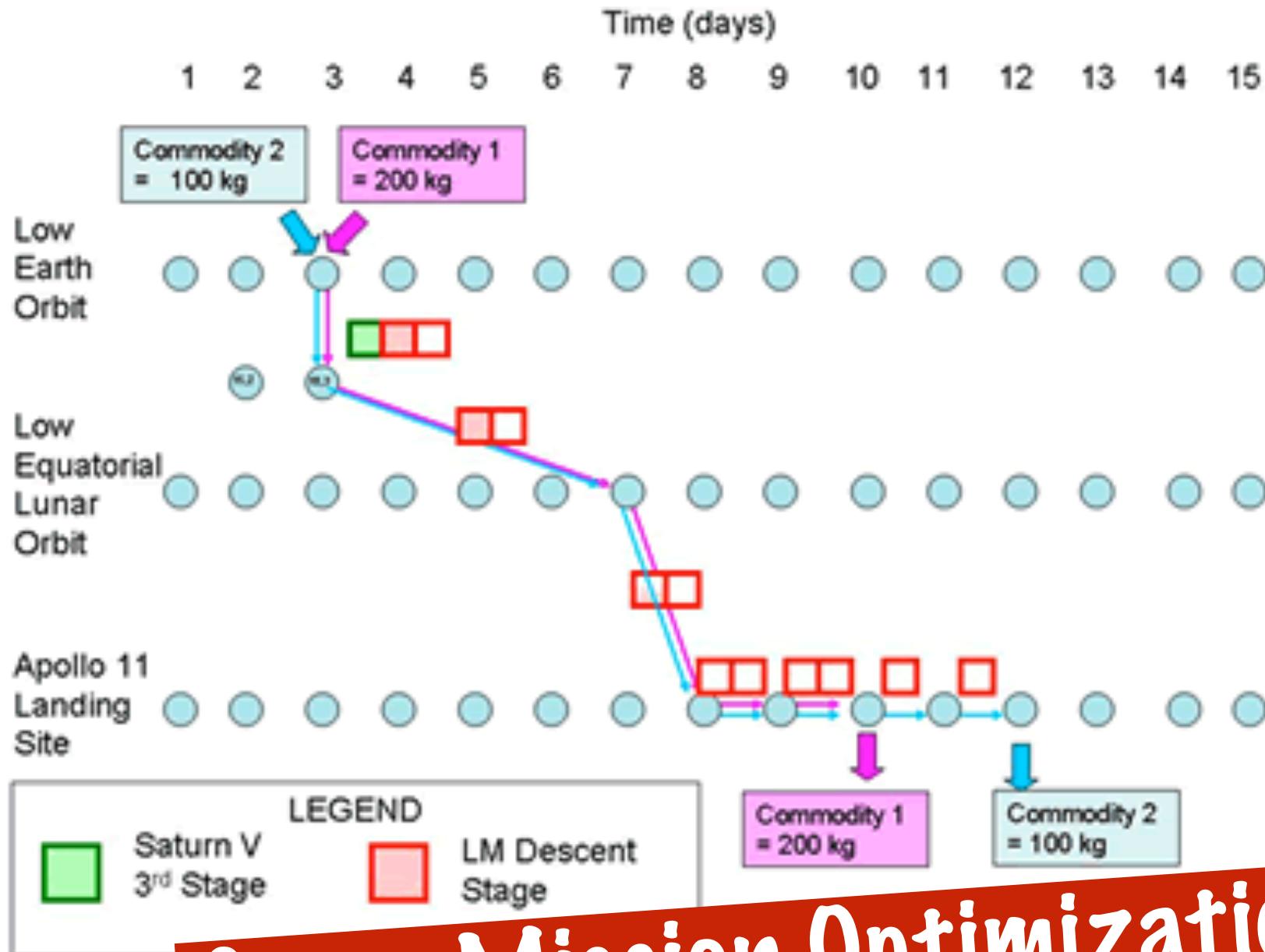
Bypassing the DC Reduces Overall Service Time



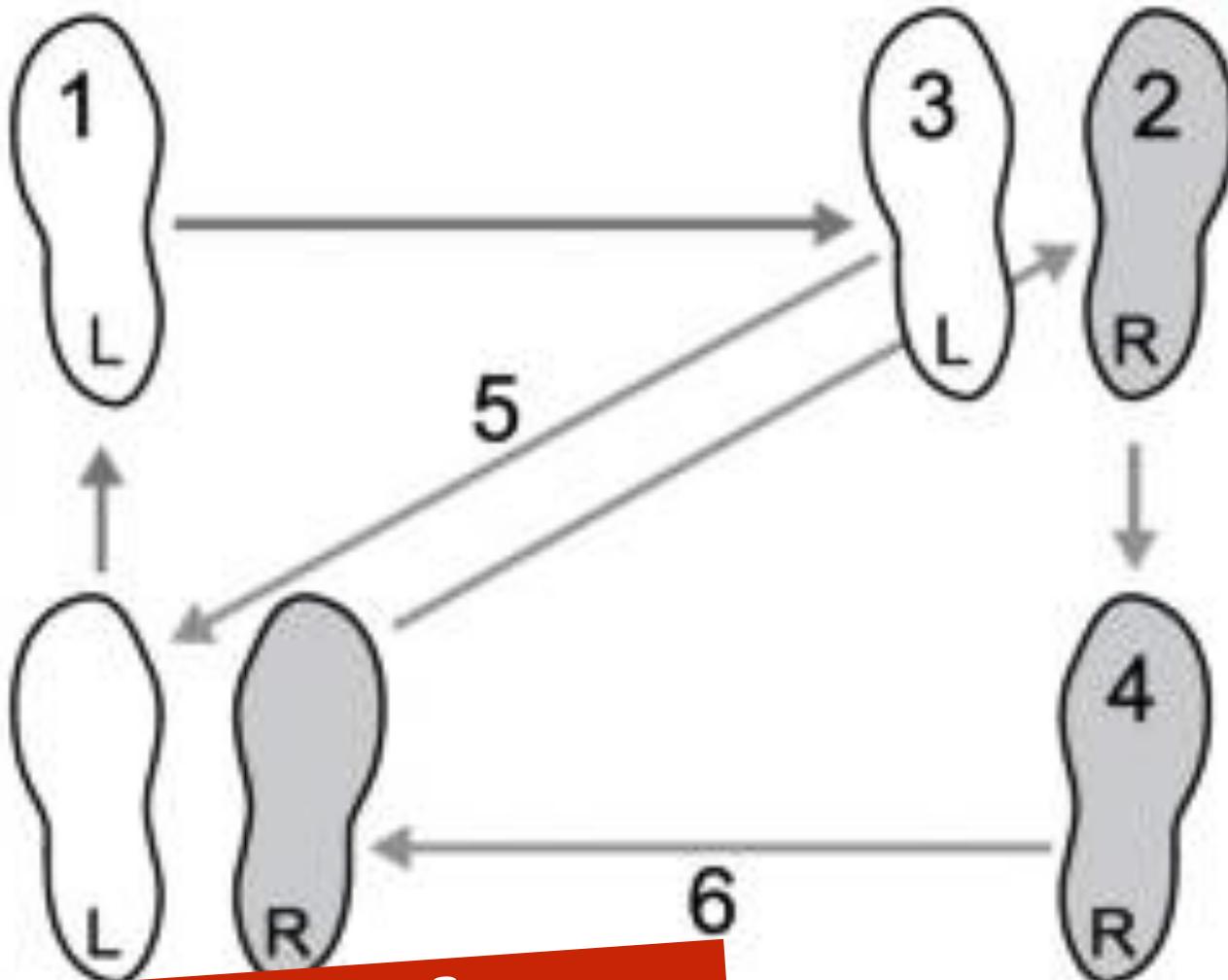
Note: Graphic depicts a retailer with a DC on the East Coast.

Key: — 1 day

Supply Chain Management



Space Mission Optimization



Dancing

In closing



Living Documentation

A low-effort approach of Documentation that is always up-to-date, inspired by Domain-Driven Design



Cyrille Martraire

BUY MY BOOK!

<https://leanpub.com/livingdocumentation>

In closing

**Just examples.
Live your own life.
Build your own toolbox.**

CLICHÉS



just tell me what I
need to code!

I'm
an architect, I
will impress you with
my technical
brilliance



I'm smarter than
the business guys!

THE RULE



**Make it clear they are safe
with you.**

**e.g. you have no plan to
steal their job.**

THE RULE



**ALWAYS ask for
validation of everything
(even if you're sure).**

A large yellow starburst shape with a black outline and a double orange border, centered on a black background.

**Talking to
Domain Experts
is a thing now!**

**I have to tell you a
secret**

I choose projects based on their potential for applying DDD

**Rich Business Domain
Software as a differentiator**

I choose projects based on the people too.

**Clear Vision
Collaborative mindset**

*"Dude, you are just a
programmer." But I don't
think that's true*

@JefClaes at #BuildStuffLT

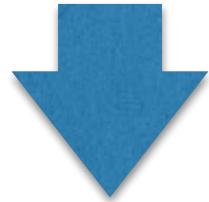
– @selketjah

**Proposing ideas
not just as a tactic,
but also suggesting genuinely
valuable business ideas**

**Good models have
Predictive Power**

**Suggest
FEATURES
from the
CODE**

**DDD: Software to
support the domain**



**DDD: Software-
augmented domain**

*“If one group of people does market research and makes product decisions, and another group that develops the software, we have **less integrated understanding**.”*

— *Symbiosis - A Provocation About Organizations*
Michael Feathers, R7K Research & Conveyance



[Home](#) > [News](#) > [IT Management](#) > IT department could disappear by the end of the decade, says Forrester

IT department could disappear by the end of the decade, says Forrester

Analysts predict life for the CIO of 2020



Matthew Finnegan

June 12, 2013

The IT department of 2020 could disappear as a separate entity and become embedded in departments throughout the entire organisation, according to analysts Forrester.

The IT department of 2020 could disappear as a separate entity
departments throughout the entire organisation, according to a



Event Storming workshops

@ziobrando

@mathiasverraes

9:00 AM

Mob-Programming



15 minute

@woodyzuill

9:00 AM

Mob-Programming

Domain
Expert



15 minute

@woodyzuill



Merci !



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