DDD

Tackling software complexity

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Domain

Driven

Design

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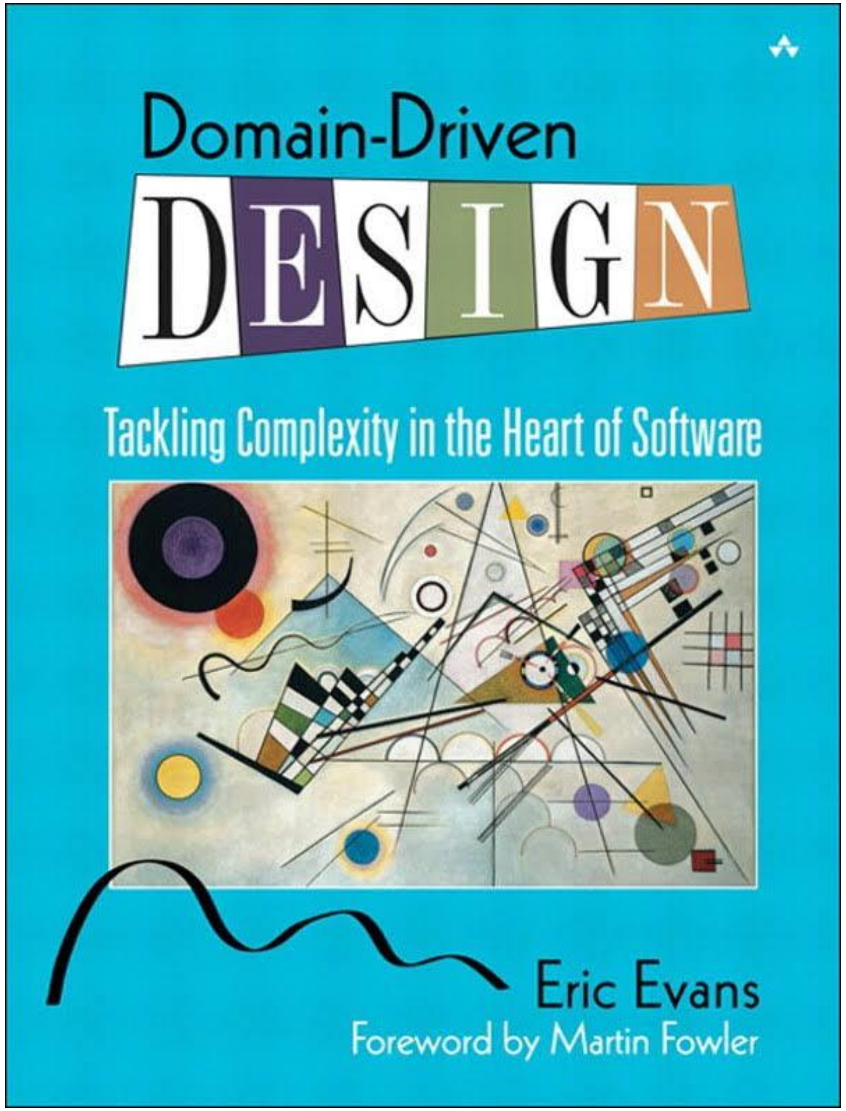
Domain-Driven
DESIGN
Tackling Complexity in the Heart of Software
Eric Evans
Foreword by Martin Fowler

Eric Evans - 2004

DDDEurope every year

Here comes THE question..

What is my domain ?

It differenciates my company from competition

It’s a/the moneymaker.

It is risky.

What is **not my domain** ?

HIBERNATE

.NET Framework

ANGULAR

Microsoft® SQL Server® ™

Azure

node JS ™

Java

Microsoft® .NET ™ Entity Framework

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Technical expertise,

Serves the **domain**.

DDD is a **tool**

To (re)**focus** on **domain**

How does it work ?

3 competences required

Learning

Communicating

Modeling

Learning what ?

We have to **learn**
How **things work**
From **business expert(s)**.

Learning, why ?

Understanding,

Becomes code and tests

Misunderstanding leads to …

BUGS

Plus tears, trust issues ...

You have to communicate With business people

You have to use

The **same vocabulary**

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Then you will have … ?

A common language

The Ubiquitous Language

Why is it so important ?

Less misunderstandings

<u>Less</u> BUGS

Less tears, more trust from the users ...

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The **language artifacts** are used **in the model***.

*« Model.. I know that.. it’s the classes that holds my data.. I’m know modeling. »

You.

No.

A model is a

Mental representation of something complex.

In a book,

« The model is the story in the author's head. »

Avraham Poupko.

The model

Supports the language.

Language changes become canari tests.

« Once connected, the client can download the file. »

« Once we know him, the client can download the file. »

« Once connected, the client can download the file. »

« Once we know him, the client can download the file. »

« Connected » ?

« We know him » ?

« Client » ?

MODEL CHANGE ALERT

Better ask business expert !

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Ubiquitous language Is a powerful tool.

And there is more…

Sympathy principle

We love what looks like us.

http://cdn.earthporm.com/wp-content/uploads/2014/11/camouflage-animals-pets-funny-9__880.jpg

You become

A collaborator

The business guy
That codes

« Great !! Let’s do DDD ! »

Can you ?..

You need
Complexity

Good at complex business

Bad at trivial business

« Where do I find rich business ?.. »

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LEGACY CODE

*DDD is NOT a
« legacy code killer »,
You are :).

Two modeling levels

Strategical

Organize to achieve a goal

Context

Context Mapping

Tactical

Supports strategical design

Aggregates

Value Objects

Entities

Repository

Let’s talk about « context »

« What I told you was true, from a certain point of view. »

O. Kenobi

Is this man a lier ?

Domain is made of contexts

Context = point of view*

* On one domain.

Contexts are isolated.

Teams

Contexts have boundaries.

Data sources

Language

Codebases

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Why boundaries ?

Why isolation ?

Consensus

Modeling all domain at once,

Difficult and/or impossible

« But why ? Sounds great.. ».

Interdiction

Close air support

12 countries

Stealth

Vertical Takeoff

Naval fighter

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Guess what ?

7 YEARS LATE

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The JSF is a IRL **canonical model**.

Why JSF went wrong ?

One Model to rule them all,
One Model to find them,
One Model to bring them all
And in Complexity bind them

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The more people involved,
The harder to get agreements.

One model for all creates **behavioural coupling**.

http://iansrobinson.com/2009/04/27/temporal-and-behavioural-coupling/

« We’ll reuse this,
so we save money,
It’s almost the same.»

Adapting leads you to
Mixed responsabilities

« We'll euse this,

ave me

It's almo

LOL :D

FOOLING OURSELF PATTERN

The more sharing,
The more side effects,
The more Fear,
The more IMMOBILISM.

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… DDD allows « duplication »

NEVER !!

WTF ??

WHAAT ?!

NO WAY !!

Same guy, right ?

Sith lord

Masters the force

Bad with lightsaber

Has a heavy suit

Interested in power

Switchability ?

Not a jedi

No light saber

Lives with mummy

Interested in fixing

Padawan

Good with light saber

Interested in woman

Bad at acting

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« We are on a mission from god. »

ELWOOD BLUES

Elwood Blues

« Yet when code base on distinct model is combined, software becomes buggy, unreliable, and difficult to understand. »

Eric Evans about code sharing.

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Eric Evans about code sharing.

One context
One point of view

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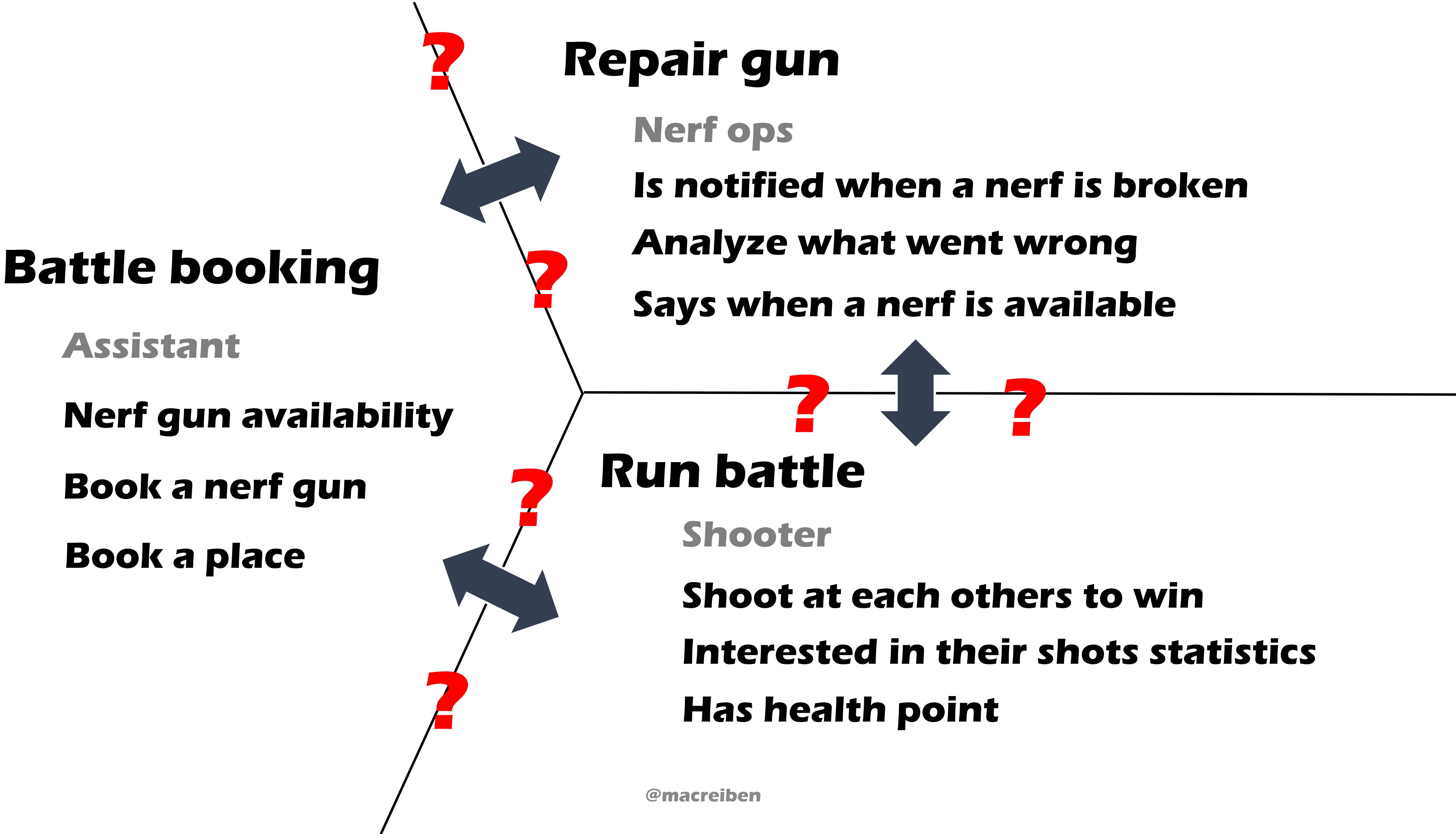

Repair gun

Nerf ops

Is notified when a nerf is broken

Analyze what went wrong

Says when a nerf is available

Battle booking

Assistant

Nerf gun availability

Book a nerf gun

Book a place

Run battle

Shooter

Shoot at each others to win

Interested in their shots statistics

Has health point

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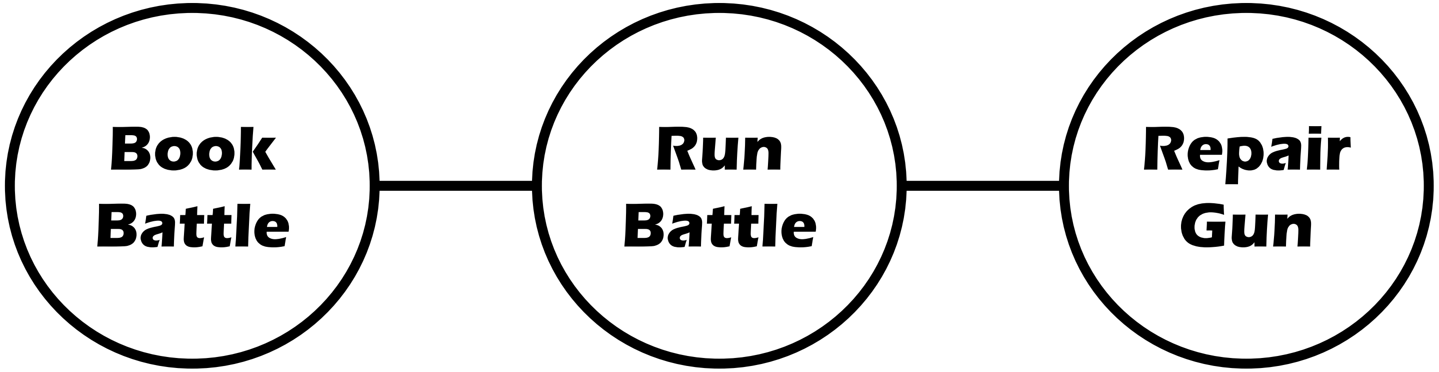
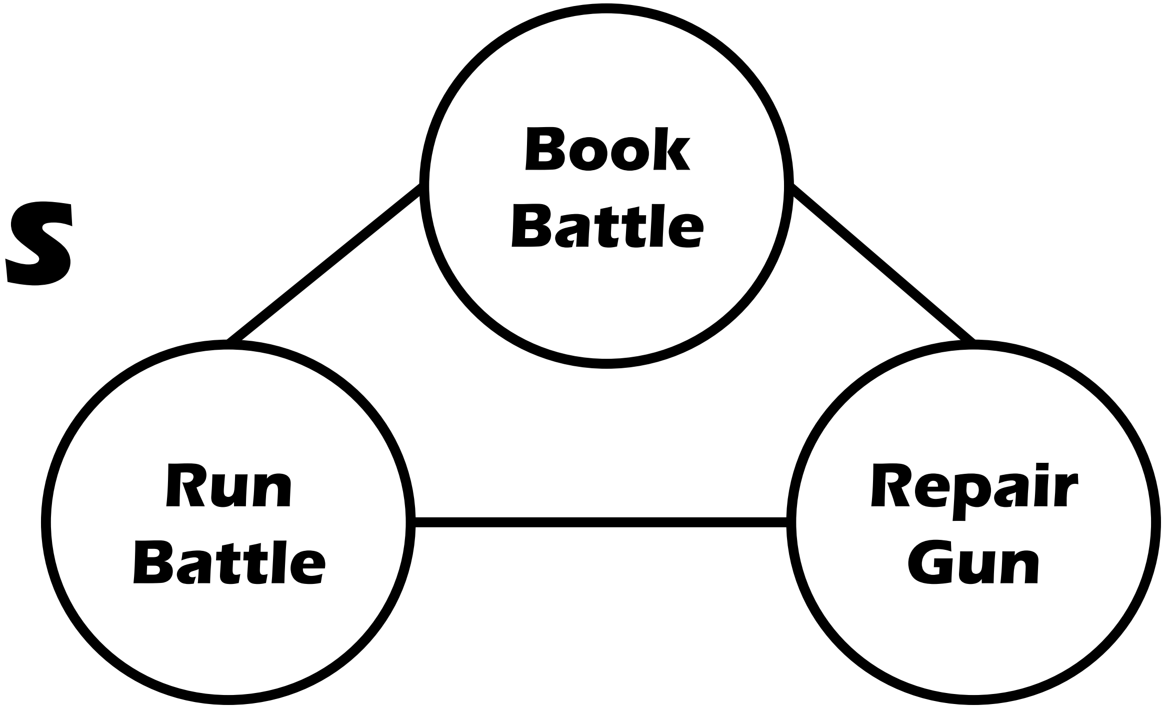
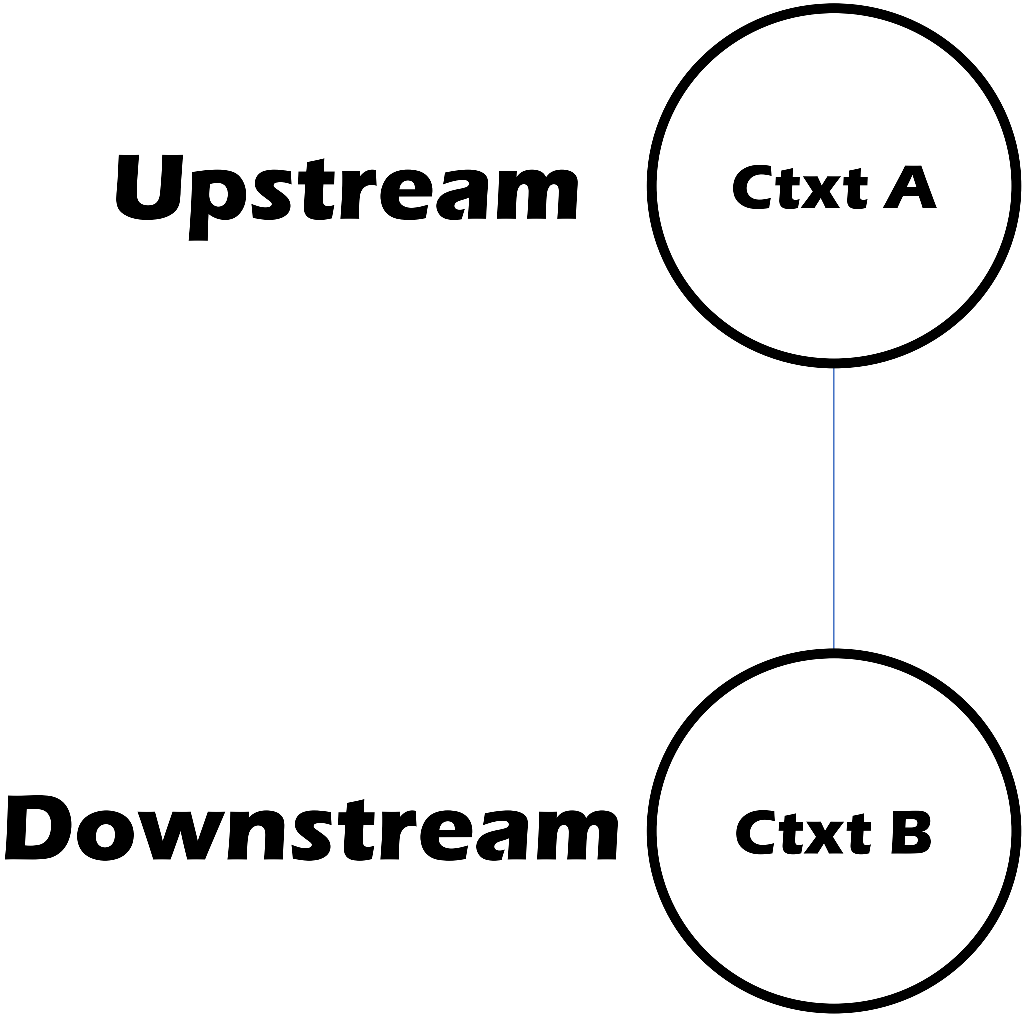
One domain is made of **contexts** that **interact**



Domain shapes



There is no equality
Among contexts



Upstream

Ctxt A

Downstream

Ctxt B

Power relationship ?

Technical constraint ?

Schedule ?

Ability to deliver ?

« To be conformist or not to be conformist, that’s the question. »

William Shakespeare.

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Database
Usage
Language
Model

And ?..

Teams

This makes a **Bounded Context**

Now we understand contexts,
Let’s model with code.

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One can learn the business
By reading the code.

DDD proposes
Modeling patterns

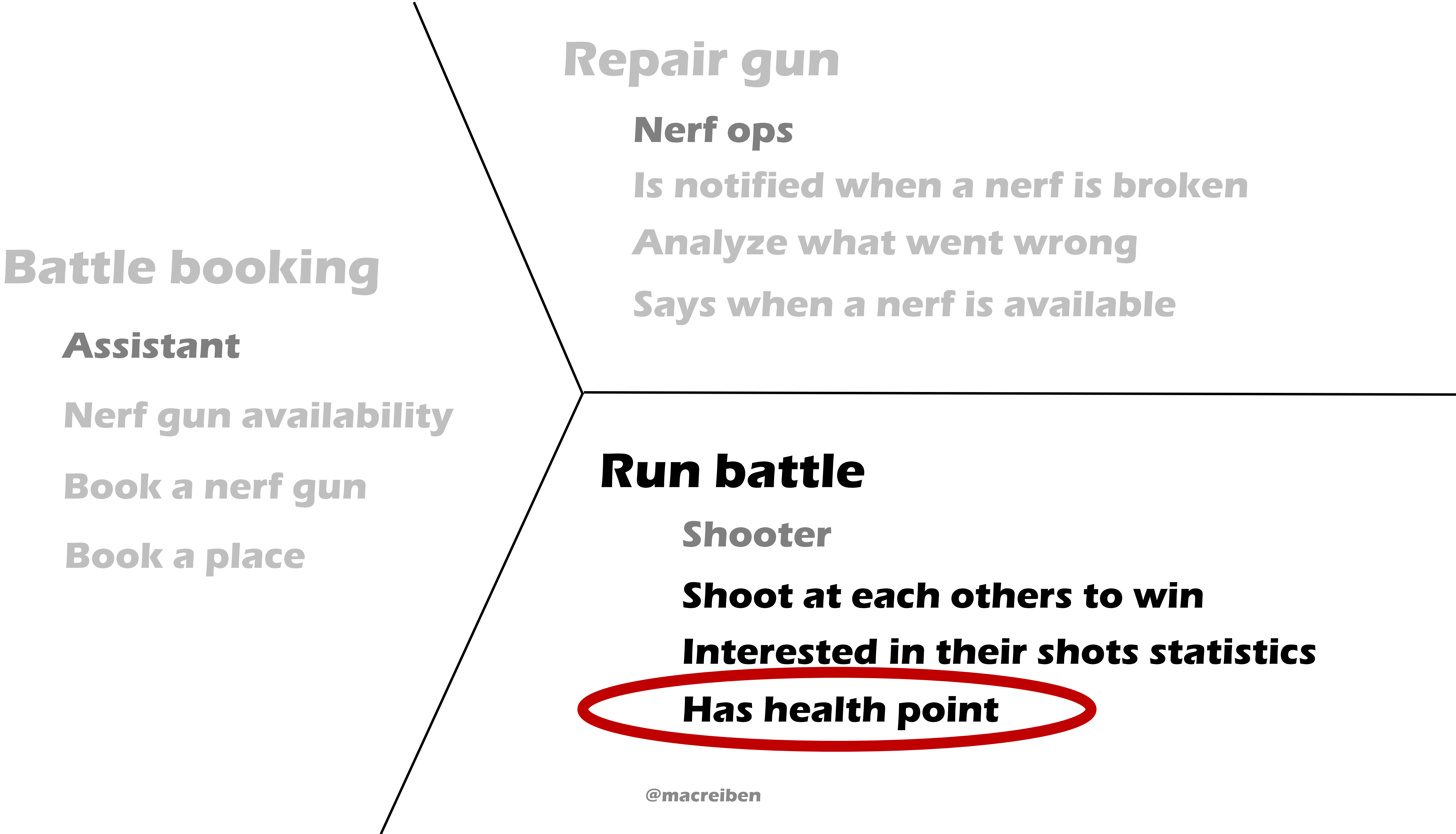
Meet the Value Object

No Identity

Immutable

Side-effect Free

Has behaviour



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« The value is in the object, rather than the identity of the object. »

Philip Brown.

https://www.culttt.com/2014/04/30/difference-entities-value-objects/

Meet the Entity

Identity

Continuity

Side-effects

Has behaviour

Battle booking

Assistant

Nerf gun availability

Book a nerf gun

Book a place

Repair gun

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Meet the Aggregates

Identity

Continuity

Side-effects

Has behaviour

<u>Composed</u>

Battle booking

Assistant

Nerf gun availability

Book a nerf gun

Book a place

Repair gun

Nerf ops

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« Ok that's nice, but in the real world, I need to persist stuff, send messages and all that stuff… »

You.

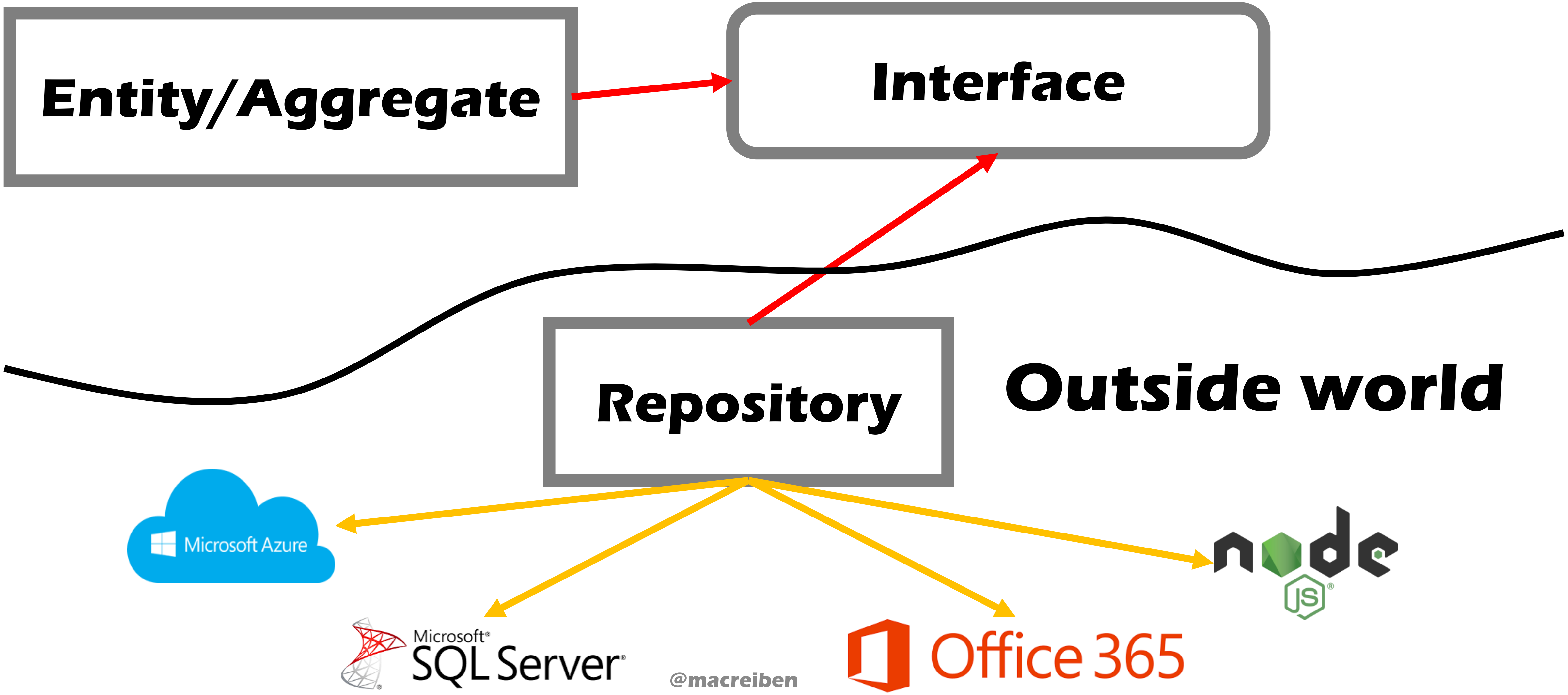
Meet the Repository

Keep the model ignorant of the storage

Looks like an in memory collection

Choose the technology, later.
(but not too late)

My Model



Entity/Aggregate

Interface

Repository

Outside world

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Where are the services ?

Services are joker cards

Services are **remotable**

Services are **injectable**

Now you’re ready.

DDD Essentials

Curious about the domain

Talking the Domain Language

Focus on Core Domain

Modeling == Code

Strategic Design

(+ techniques to achieve that)

« Why would I do DDD anyway ? »

You.

VELOCITY

Clear borders

TESTABLE

KNOWLEDGE

Learn business from code

OBVIOUS

Re

HAPPYNESS

ng

Going further…

Read the Blue Book !

Ask « Why ? » !

On Twitter,

To follow:

@ericevans0,

@cyriux,

@malk_zameth,

@ziobrando

The events :

@ddd_eu,

@ncraftsconf

Thank you !

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