

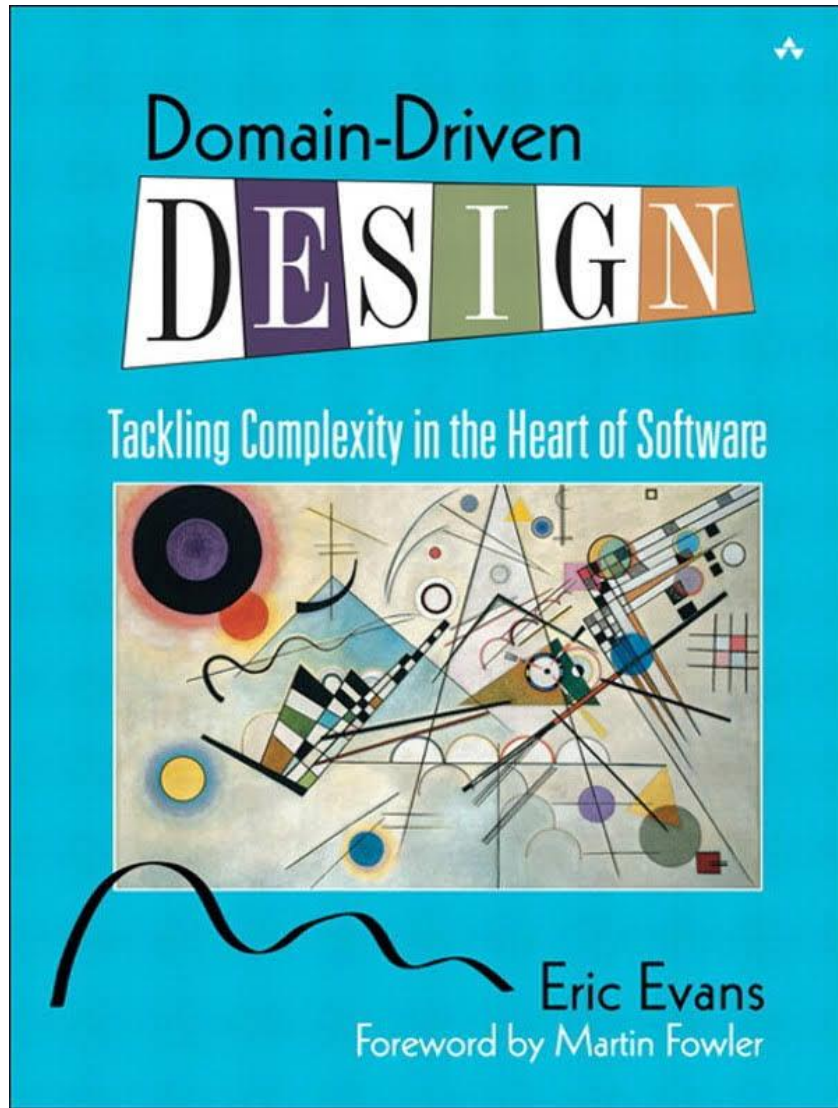
DDD

Tackling software complexity

Domain

Driven

Design



Eric Evans - 2004

DDDEurope every year

Here comes *THE* question..

What is my domain ?

**It differentiates my company
from competition**

It's a/the moneymaker.

It is risky.

What is not my domain ?



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*

Then you will have ... ?

A common language

The *Ubiquitous Language*

Why is it so important ?

Less *misunderstandings*

Less BUGS

Less tears, more trust from the users ...

@macreiben

**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 !**

**Ubiquitous language
Is a powerful tool.**

And there is more...

Liking principle

We love what looks like us.



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

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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 ?.. »**



***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 liar ?

Domain* is made of *contexts

Context = point of view*

**** On one domain.***

Contexts are *isolated*.

Teams

Contexts have boundaries.

Data sources

Language

Codebases

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

Guess what ?

A high-angle, rear-quarter view of an F-35 fighter jet in flight against a clear blue sky. The aircraft is dark grey with visible sensor pods and markings. The text "7 YEARS LATE" is overlaid in large white letters across the center of the image.

7 YEARS LATE

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

Why F35 went wrong ?



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

**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/>

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

Adapting leads you to
Mixed responsibilities

« We'll use this,
It's almost like me

LOL :D

**FOOLING OURSELF
PATTERN**

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

... 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



**OPERATION
ACCURACY**

« We are on a mission from god. »

Elwood Blues

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

Eric Evans about code sharing.

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

Eric Evans about code sharing.

One context
One point of view

Battle booking

Assistant

Laser gun availability

Book laser guns

Book a place

Repair gun

Laser gun ops

Is notified when a laser gun is broken

Analyze what went wrong

Says when a laser gun is available

Run battle

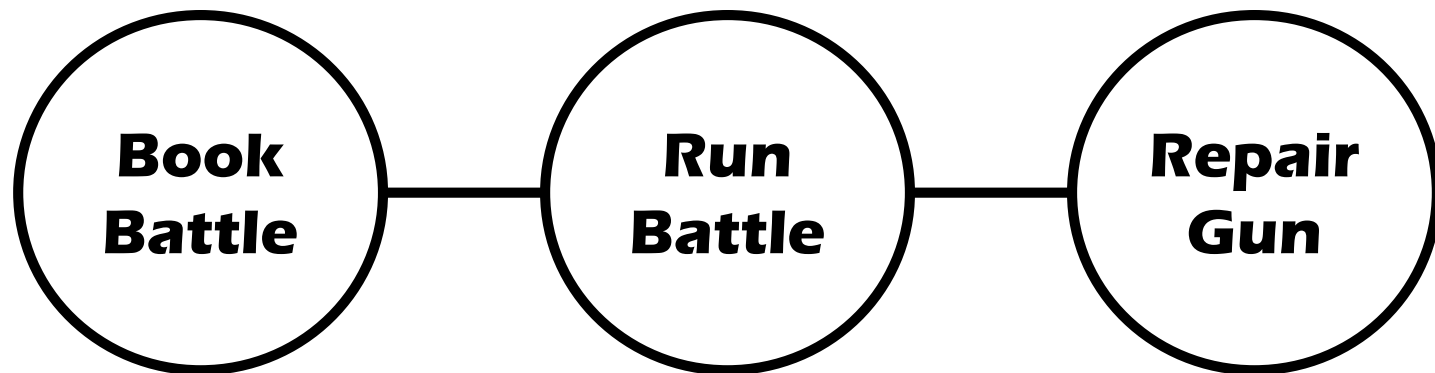
Shooter

Shoot at each others to win

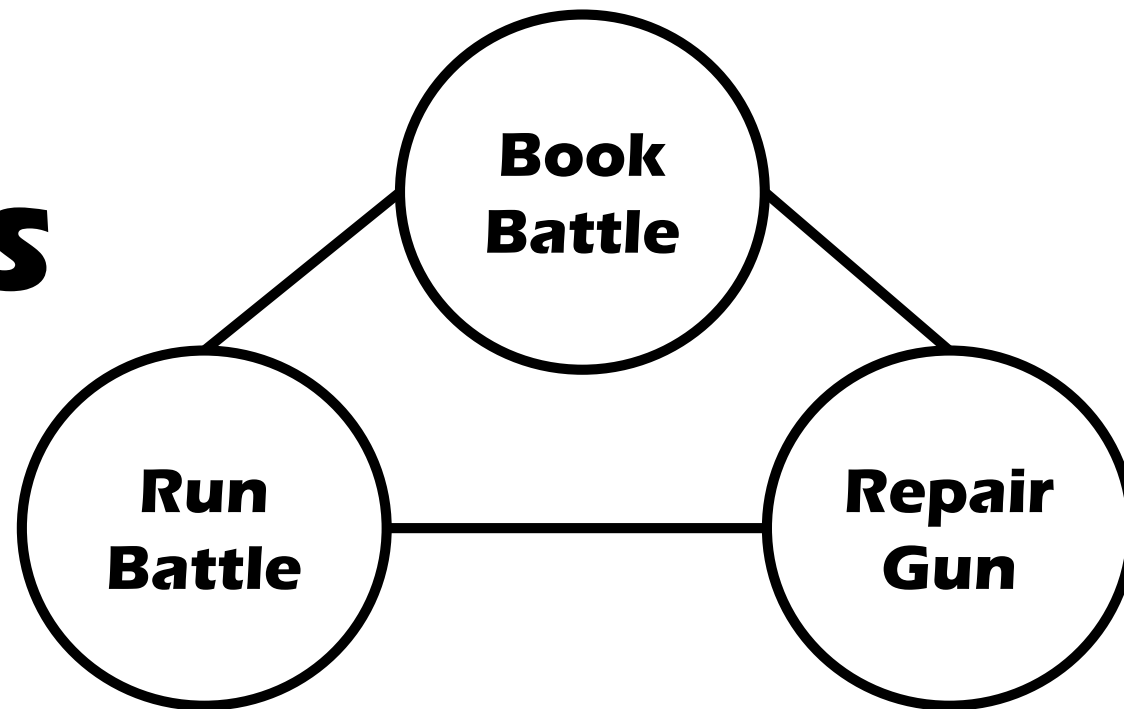
Interested in their shots statistics

Has health point

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



Domain shapes



**There is *no equality*
Among contexts**

Upstream



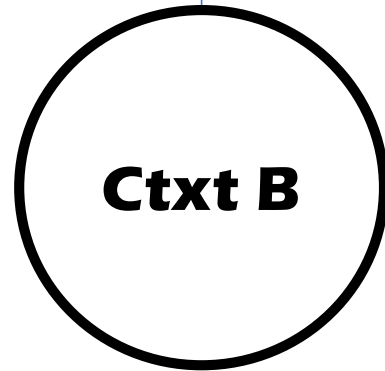
Ctxt A

Power relationship ?

Technical constraint ?

Schedule ?

Downstream



Ctxt B

Ability to deliver ?

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

William Shakespeare.

Database Usage Language Model



And ?..

Teams

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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**

Healthpoints

Value Object

Ammunition

Entities

Aggregates

Repositories



Services

Healthpoints

Value Object

Ammunition

Shooters

Entities

Aggregates

Repositories

Services

Healthpoints

Value Object

Ammunition

Shooters

Entities

Battle

Aggregates

Repositories

Services

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

You.

Healthpoints

Value Object

Ammunition

Shooters

Entities

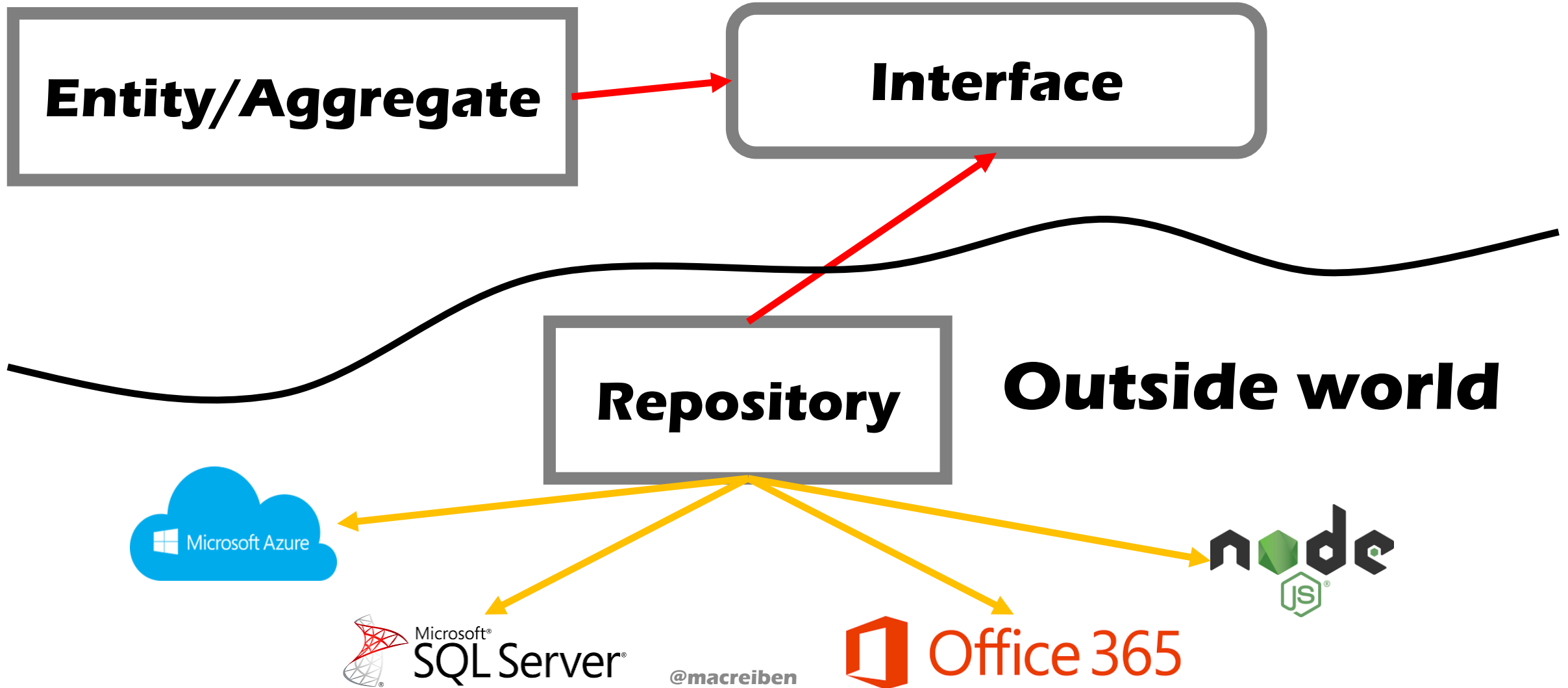
Battle

Aggregates

Repositories

Services

My Model



Healthpoints

Value Object

Ammunition

Shooters

Entities

Battle

Aggregates

AllShooters

Repositories

Services

Healthpoints

Value Object

Ammunition

Shooters

Entities

Battle

Aggregates

AllShooters

Repositories

Injectable

Services

Remotable

Bootstrap

Nice theory, right ?

Let me show you
Something you can use
Right now.

VALUE OBJECTS IN ACTION

**Now you're ready
To start you DDD journey.**

DDD Essentials

Curious about the domain
Talking the Domain Language
Focus on Core Domain
Modeling == Code
Strategic Design

(+ techniques to achieve that)

Cyrille Martaire - DDD training - @cyriux - Arolla

@macreiben

« Why would I do DDD anyway ? »

You.

VELOCITY

Clear borders

TESTABLE

KNOWLEDGE

Learn business from code

OBVIOUS

Re
HAPPYNESS
ing

Going further...

Read the Blue Book !

Ask « Why ? » !

On Twitter,

To follow:

@ericevans0,

@cyriux,

@malk_zameth,

@ziobrando

The events :

@ddd_eu,

@ncraftsconf

Thank you !