ThinkDDD

A Practical Guide To Domain Driven Design

Jak Charlton
jak@thinkddd.com
www.thinkddd.com

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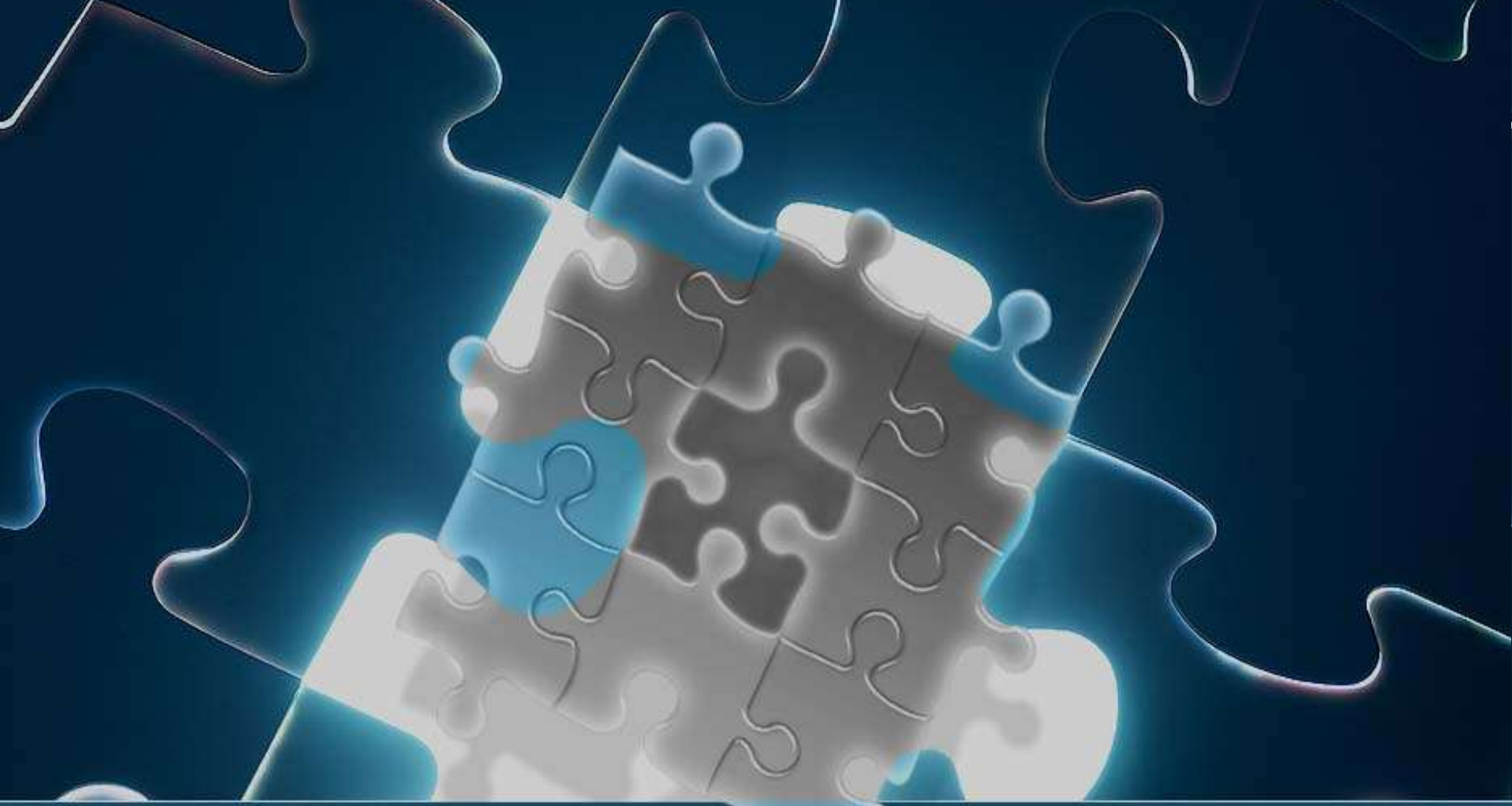
www.readify.net



Practical Domain Driven Design

Message Based Architecture and CQRS

Domain Driven Design IS

An architectural methodology
for evolving a software system
that closely aligns
to business requirements

Domain Driven Design IS NOT

- A silver bullet
- A panacea for all your troubles
- An easy path to follow
- Always the best solution

- And most importantly, it is not focused on the How, but the What and Why


Where Are We Going?

The Domain Vision Statement

- A shared understanding of what it is you are actually trying to create
- Should be brief, written in clear English and understood by business and tech people alike
- Should be factual, realistic, honest
- Should avoid superlatives and marketing speak
- Should avoid technical and implementation details


Domain = Sphere of Activity?

Domain

- A Domain is a Sphere of Knowledge, Influence or Activity
- A Domain is represented by the Ubiquitous Language
- A Domain encapsulates a Domain Model
- A Domain lives within a Bounded Context


EVE, THAT'S NOT WHAT I MEANT!
ADAM, THAT'S WHAT YOU SAID!!
SOMETIMES I THINK YOU SPEAK A TOTALLY DIFFERENT LANGUAGE !

The Ubiquitous Language

- A major reason for failure of software projects is a failure of people, the failure to communicate
- The Ubiquitous Language is a shared language between the business and the development teams
- The UL comes from the business, and is enriched by the development teams


Ask the Experts

Domain Experts

- Domain Experts are the primary point of contact the development teams have with the business
- They are the Experts on their part of the business, not just users of the system
- They should have deep knowledge of the subject Domain

Looks Pretty Unique To Me

Entities

- Entities are the “things” within your Model
- An Entity is defined by being unique, and uniquely identifiable


You Can’t Tell One From Another

Value Objects

- Value Objects are the “things” within your model that have no uniqueness
- They are equal in all ways to another Value Object if all their properties match
- Value Objects are interchangeable

How Can We Make Sense?

Domain Model

- A Domain Model is a representation of the relationships between the Entities and Value Objects in your Domain
- It may look similar to UML or a class relationship diagram, but it is not one
- The Domain Model should be recognisable and understandable by the business

That's a Lot of Bits

Aggregates

- "An aggregate is a collection of items that are gathered together to form a total quantity" - Wikipedia
- An Aggregate Root is the root item containing a number of parts that form a whole
- An AR is more likely to match a Use Case than any model structure

One man's fish

is another man's "POISSON"

Bounded Contexts

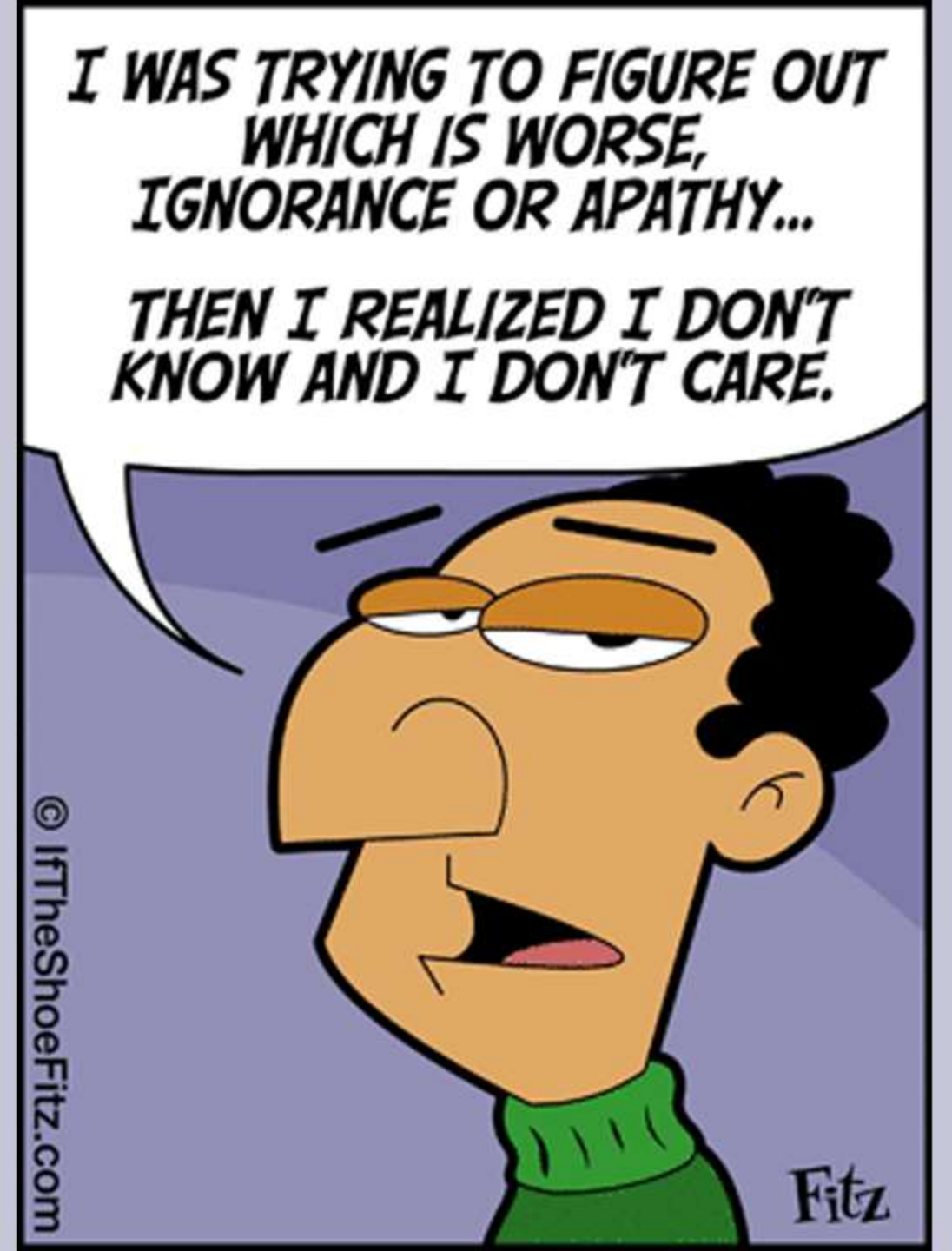
- When you have multiple models you should consider Bounded Contexts
- Each BC is a self contained “mini application” containing it’s own model, persistence and code base
- To map between BCs you use a Context Map

"Power tends to corrupt, and absolute power corrupts absolutely."

~John Emerich Edward Dalberg, Lord Acton (1834–1902)

Anti-Corruption Layers

- An Anti-Corruption Layer is a method to isolate two systems, allowing systems to be integrated without knowledge of each other
- An ACL presents a Facade to both systems, defined in terms of their specific models
- ACLs maintain the integrity of a Domain


I WAS TRYING TO FIGURE OUT WHICH IS WORSE, IGNORANCE OR APATHY...
THEN I REALIZED I DON'T KNOW AND I DON'T CARE.
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Persistence Ignorance

- Subtitled "There Is No Database" ☺
- DDD uses the Repository pattern to create Persistence Ignorance
- A Repository represents itself as an in-memory list of items
- Repositories are specific to Aggregate Roots, not to Entities


SUCCESS
FAILURE

Factors For Success of DDD

- Your domain is not trivial
- You have access to Domain Experts
- You have an iterative process
- You have a skilled and motivated team

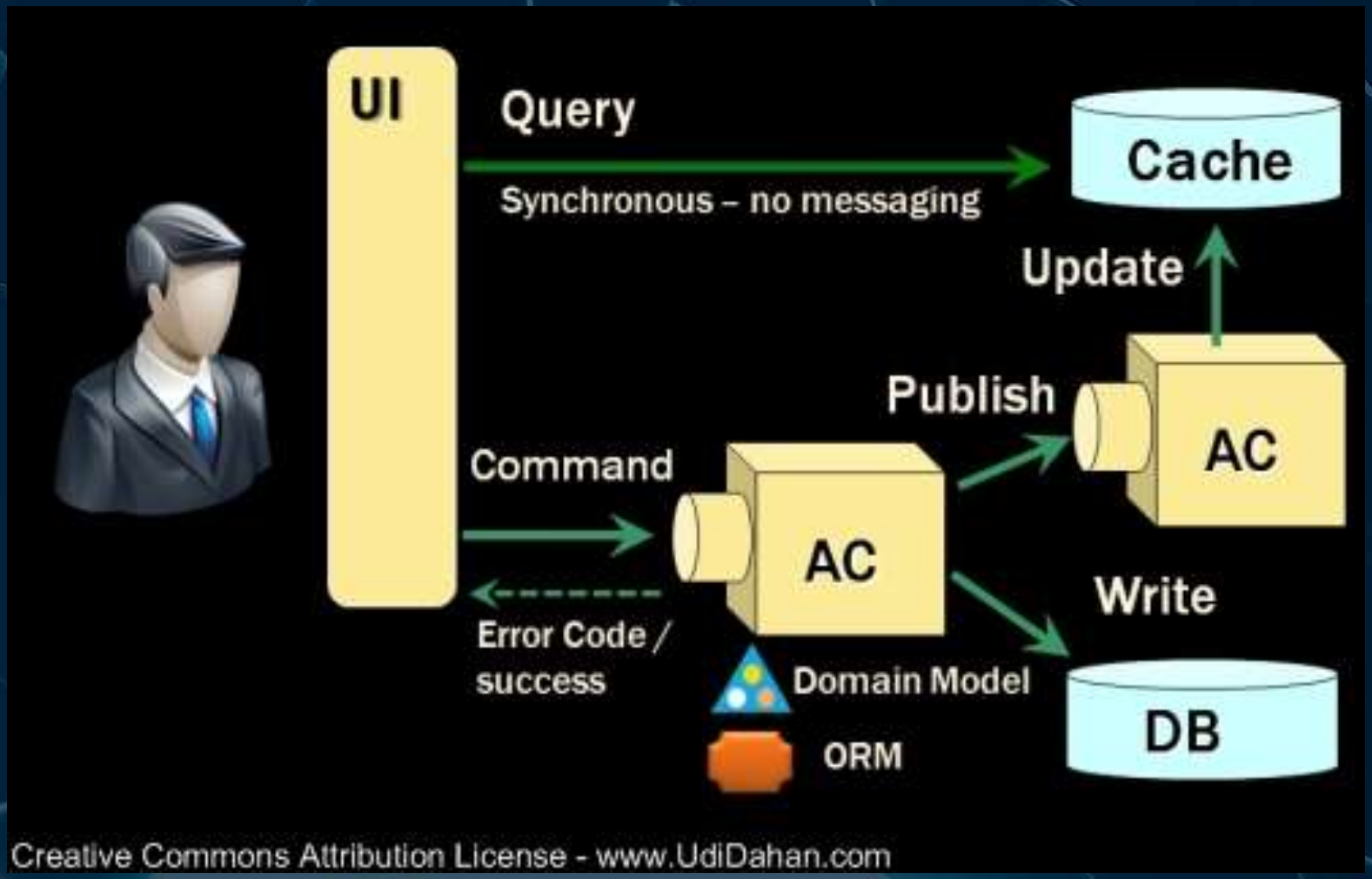
Messaging Architectures

- DDD is ideally suited to Message Based Architectures
- DDD is ideally suited to Commands and Events
- DDD is ideally suited to providing multiple autonomous systems that are loosely coupled

Command Query Responsibility Separation (CQRS)

- Bertrand Meyer principle of CQS:
  every method should either be a command that performs an action, or a query that returns data to the caller
- At an architectural level this means: either issue commands, or issue queries, but never both
- And, query from a separate source from your domain commands

CQRS in a Picture




QUESTIONS

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