codecentric

WAVESTONE

Crafting Great APIs with Domain-Driven Design

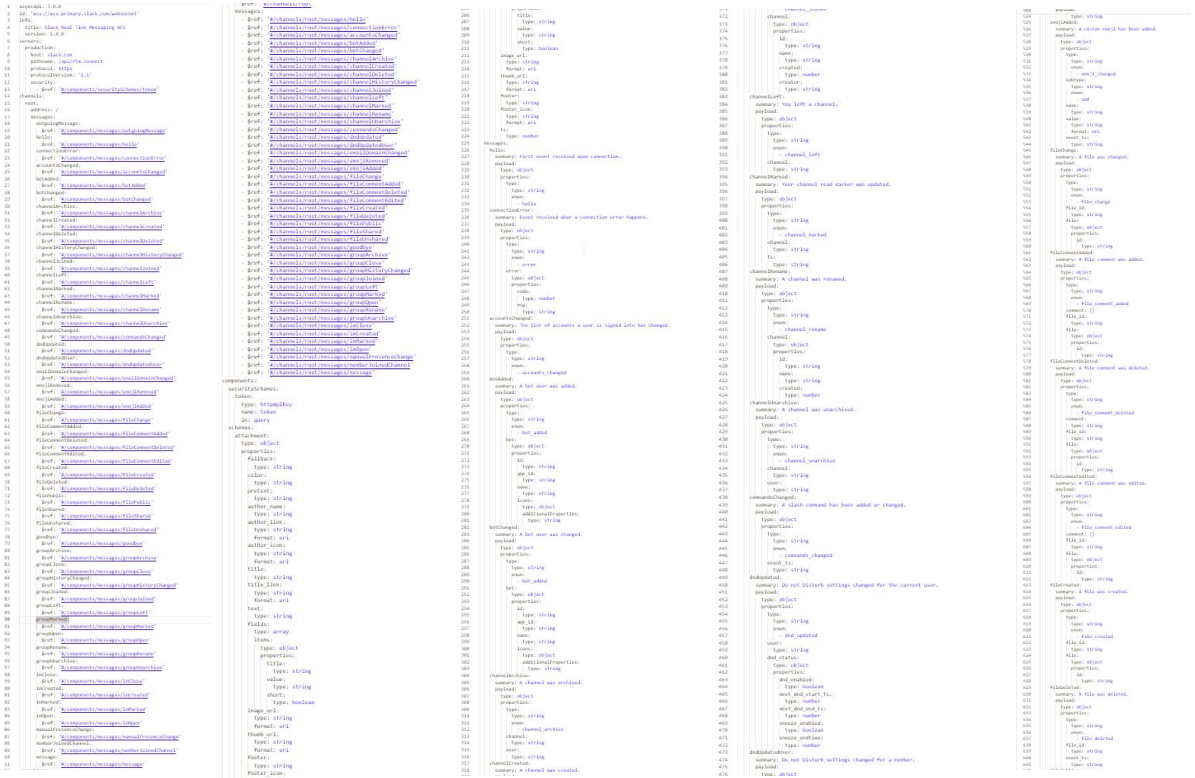
Architect at Wavestone

Interested in API Design, Event Design, Microservices and how to make a developer's life easier

Architect at codecentric

Interested in Microservices, DDD, API Design, Event Design and how to get faster from specification to code

Your API is lying to you



Slack Real Time Messaging API 1.0.0

Problem

BUSINESS

Business people don’t like YAML

- Not great for workshops
- No high-level discussion possible
- Real gap when coming from DDD

DEVELOPER

Developers look at the details

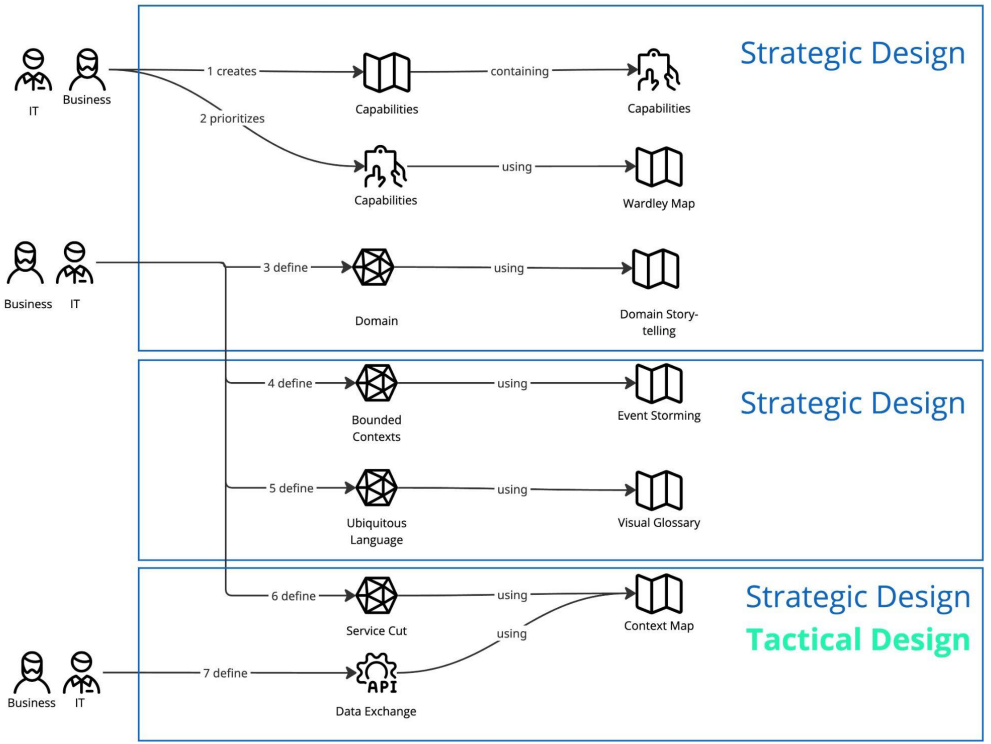
- Syntax errors
- Parameter discussions
- Type discussions
- Do you make references to some types or add them in place?
- ….

Our Design Approach

Collaboration Is the Key

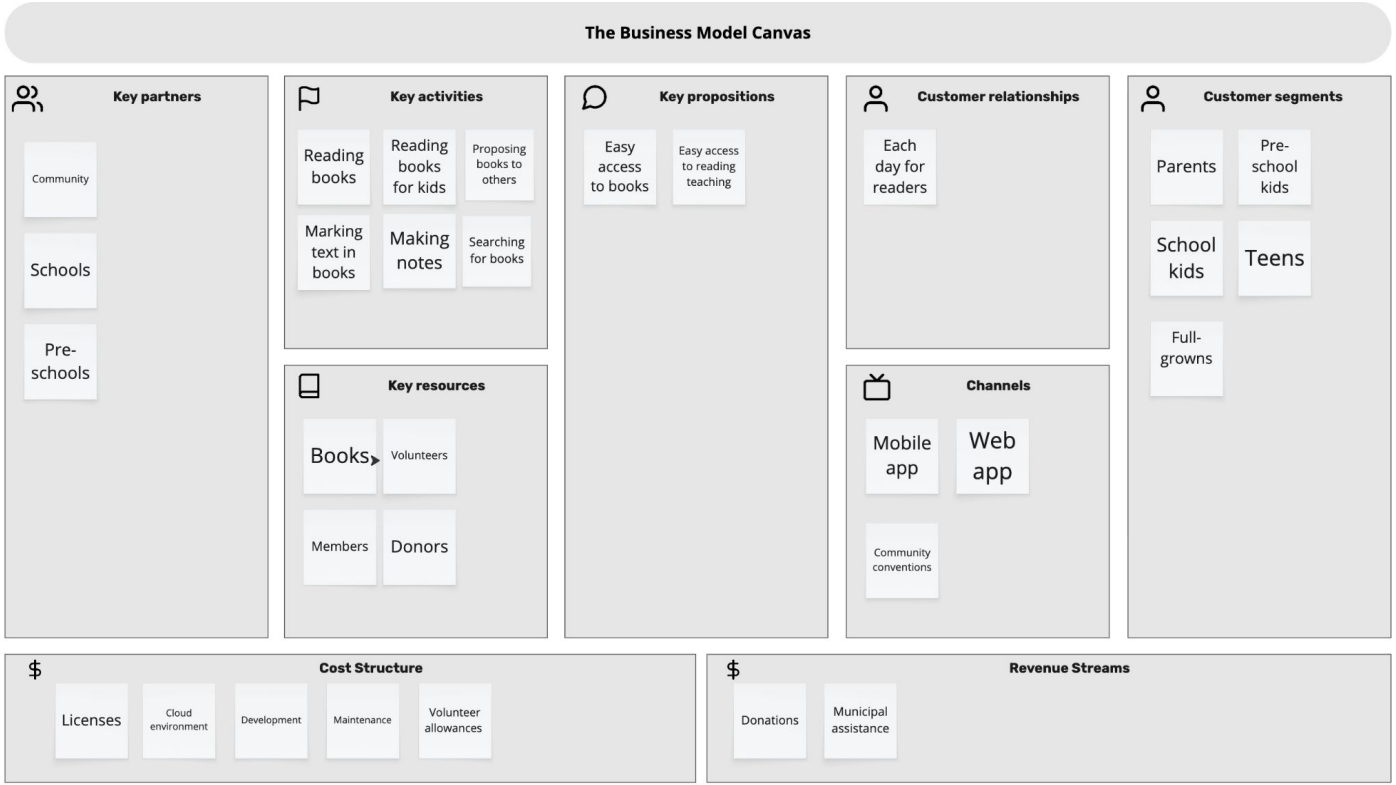
1. Create Capabilities
2. Map Capabilities
3. Domain Storytelling
4. Event Storming
5. Visual Glossary
6. Context mapping and servic cut
7. Define APIs and their communication pattern
8. Implementation

…and iteration at all levels



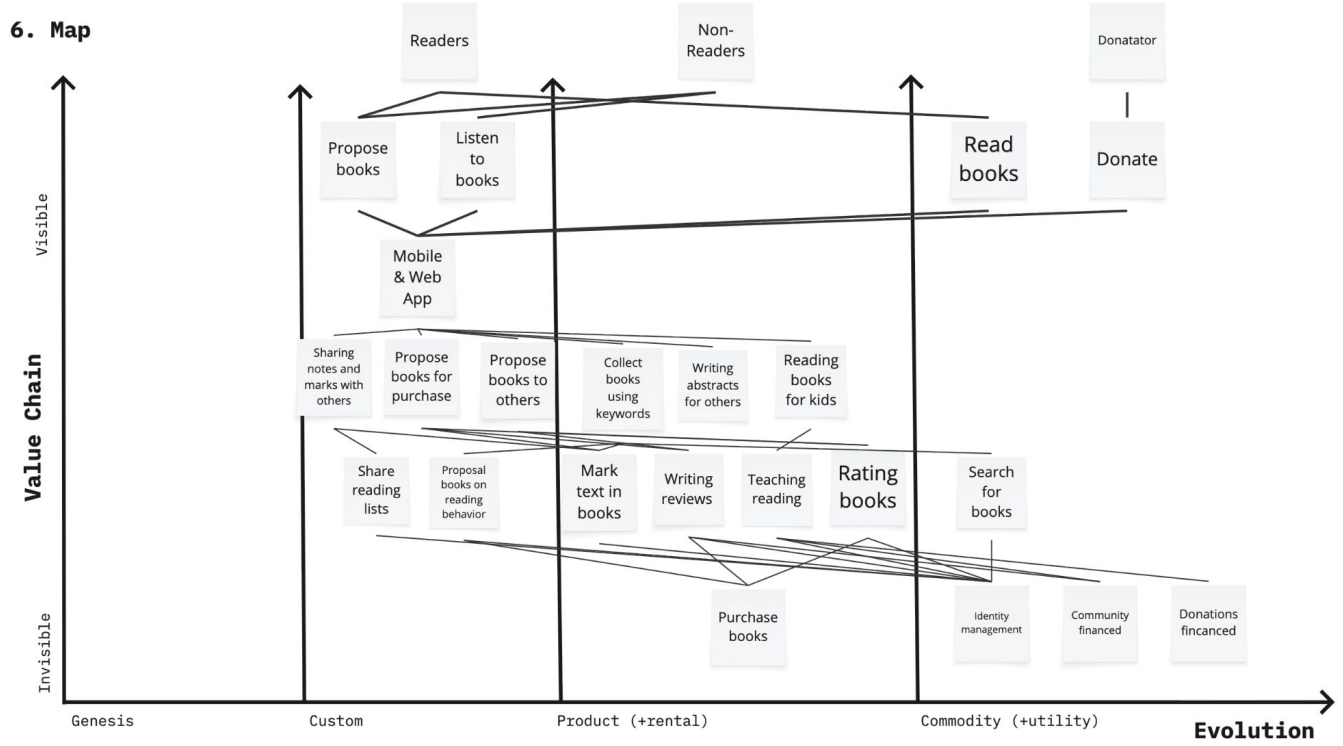
https://amzn.eu/d/aeVGWrN

Business Process Canvas



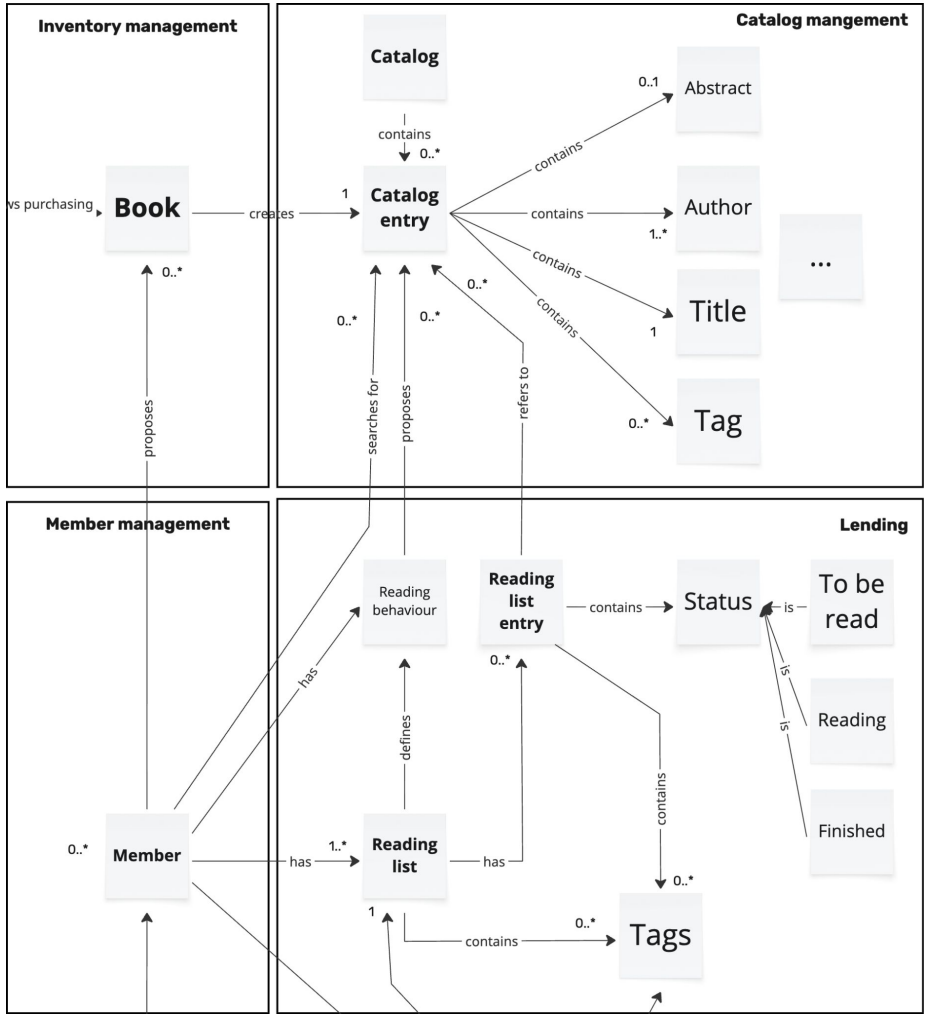
Source: Strategyzer AG | License: CC By-SA 3.0

Wardley Map



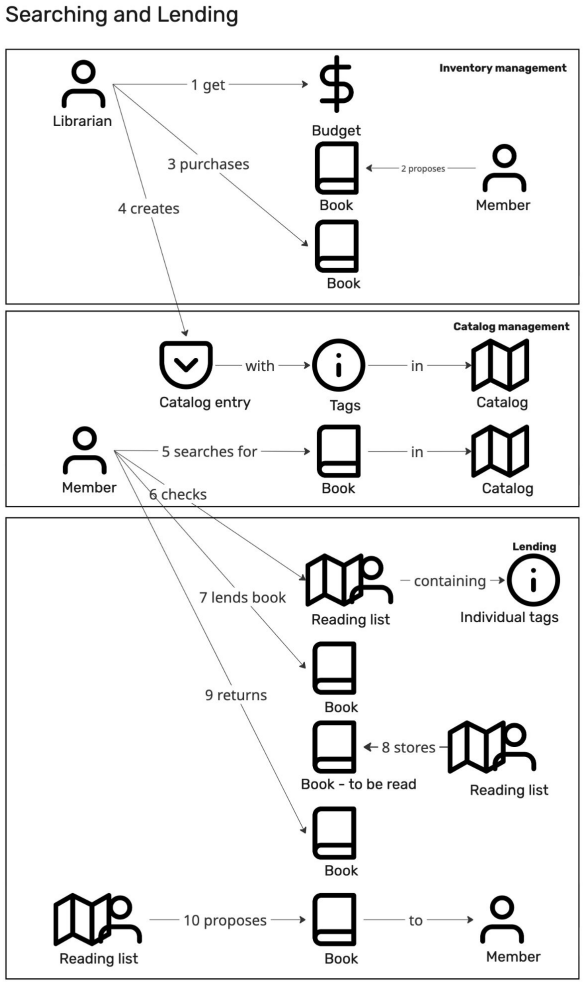
See also: Susanne Kaiser, Architecture for Flow

Visual Glossary



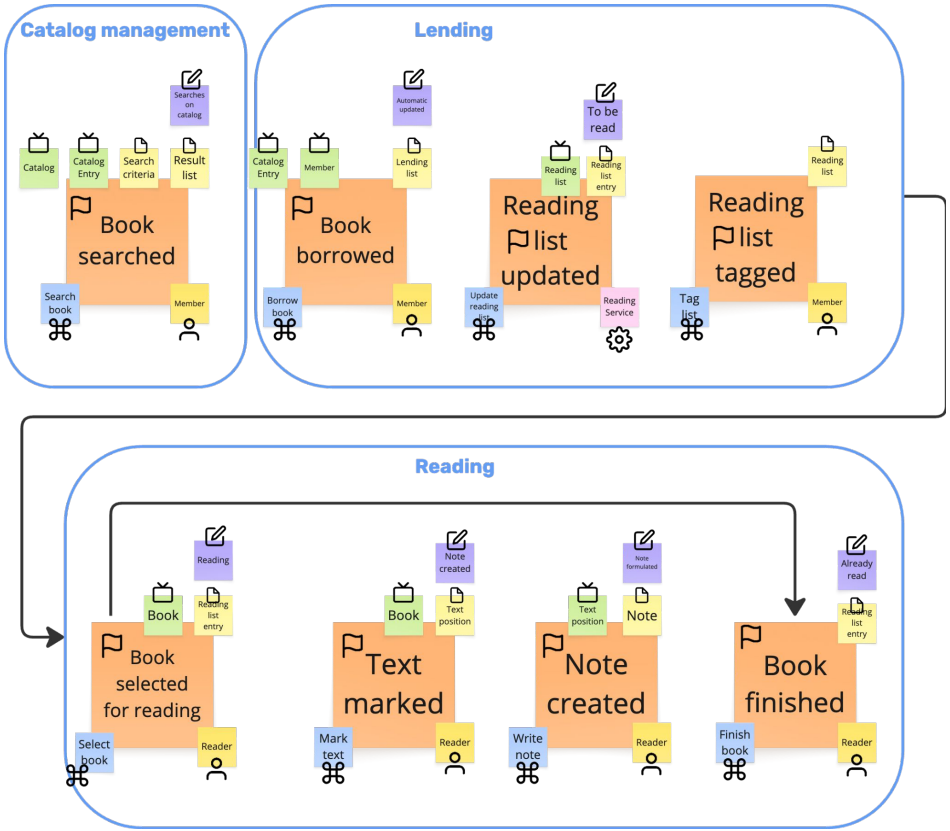
See also: Stefan Zörner,
Architekturen dokumentieren

Domain Storytelling



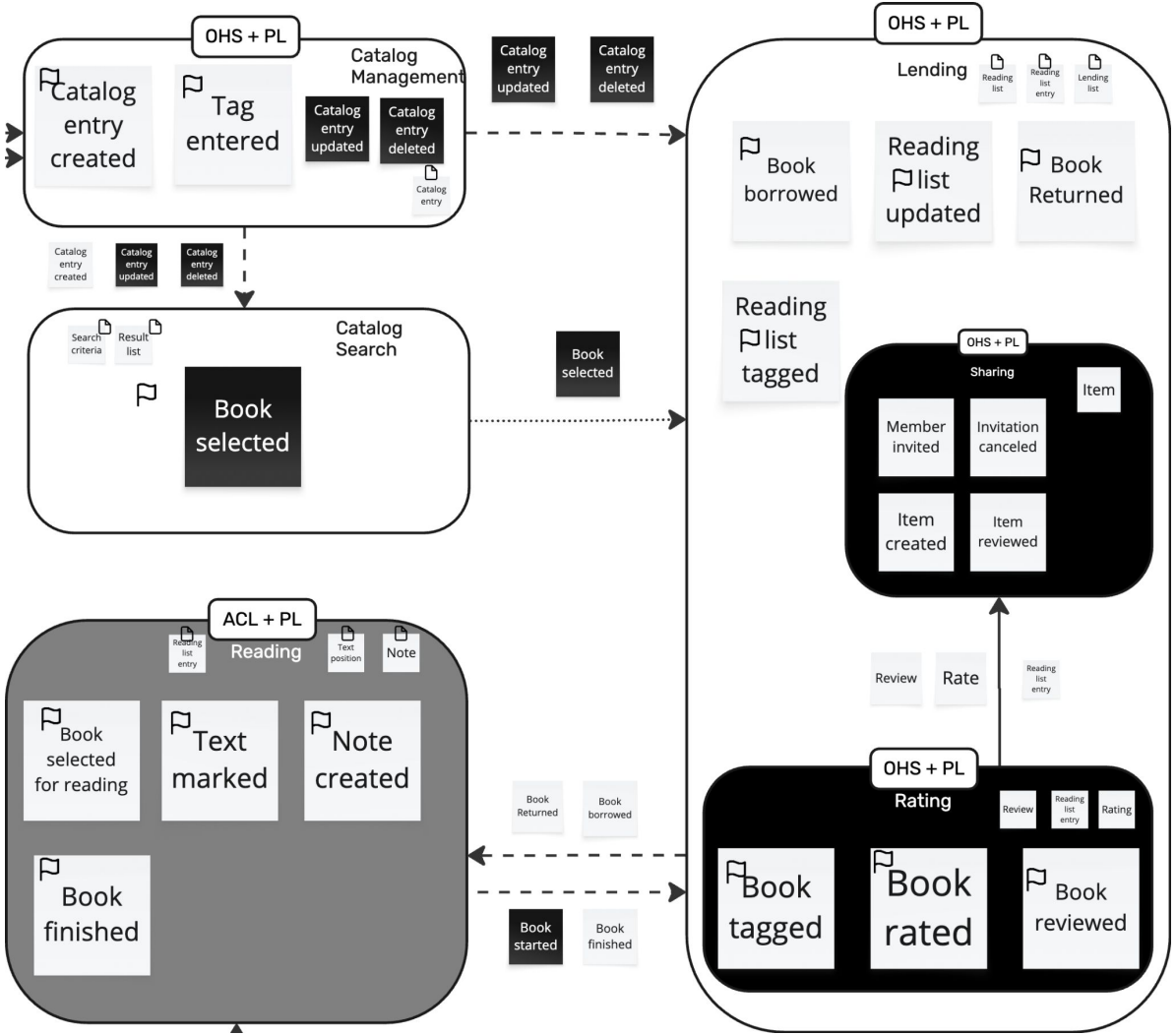
See also:
Stefan Hofer, Henning Schwentner, Domain Storytelling

Event Storming



See also: Alberto Brandolini
eventstorming.com

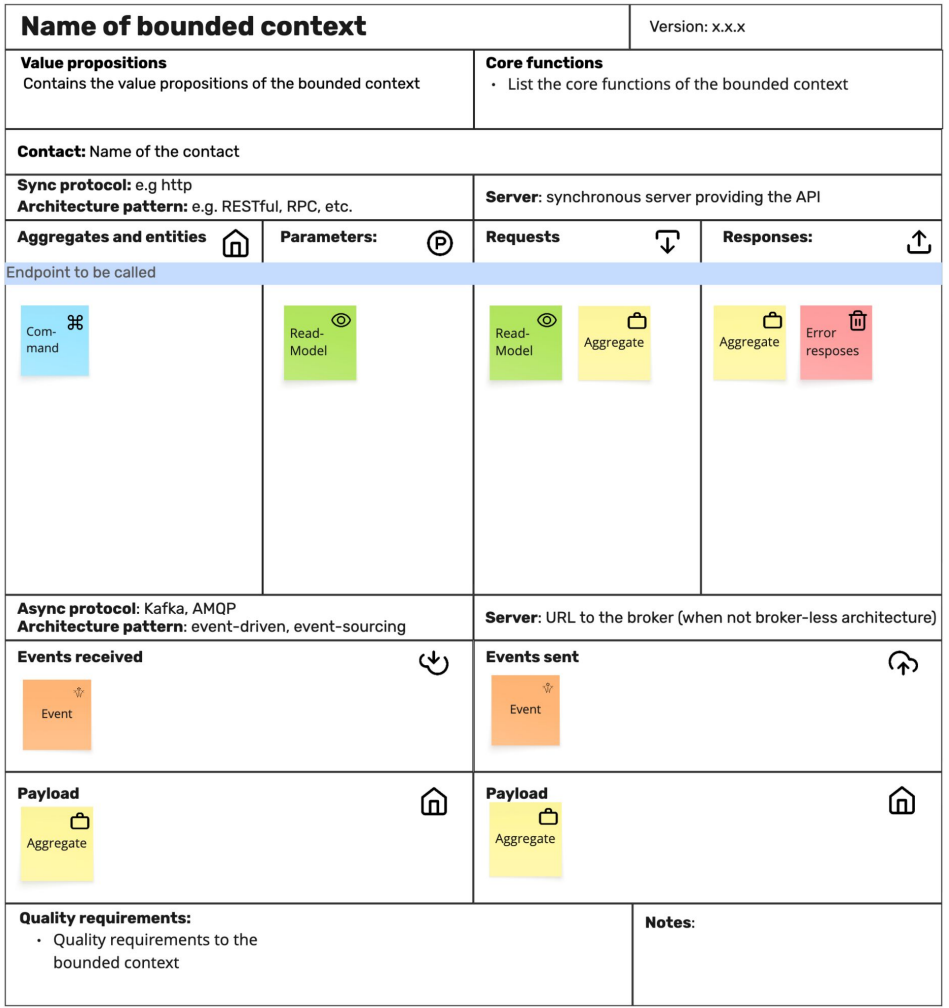
Context Map



See also:
Eric Evans,
Domain-Driven Design
and Domain Message Flow
by DDD Crew

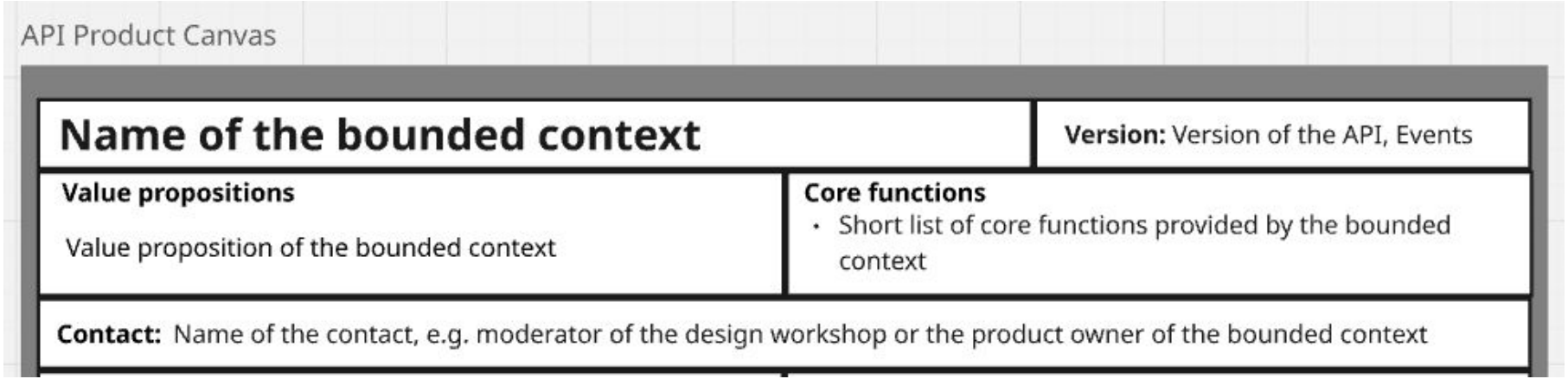
API Design

API Product Canvas

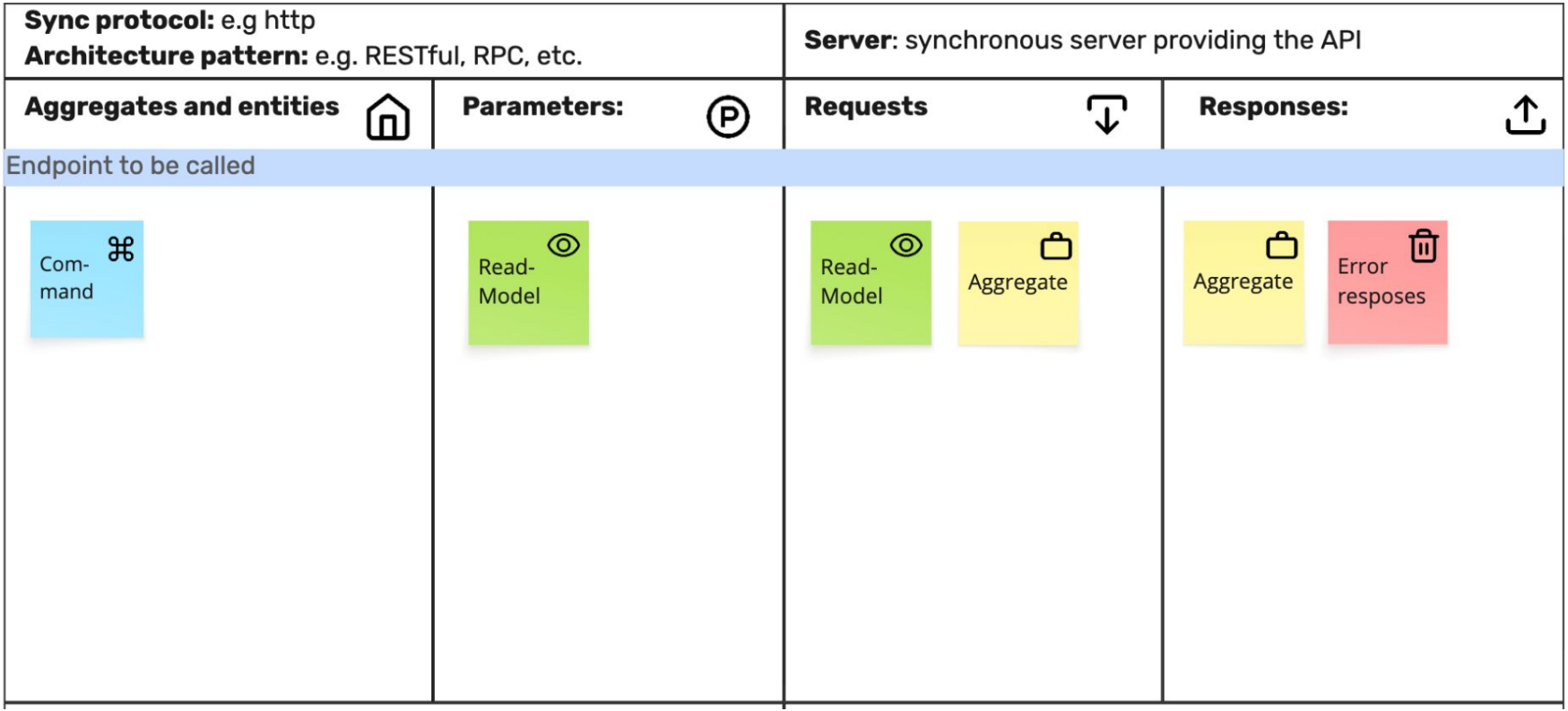


(c) Annegret Junker & Fabrizio Lazzaretti

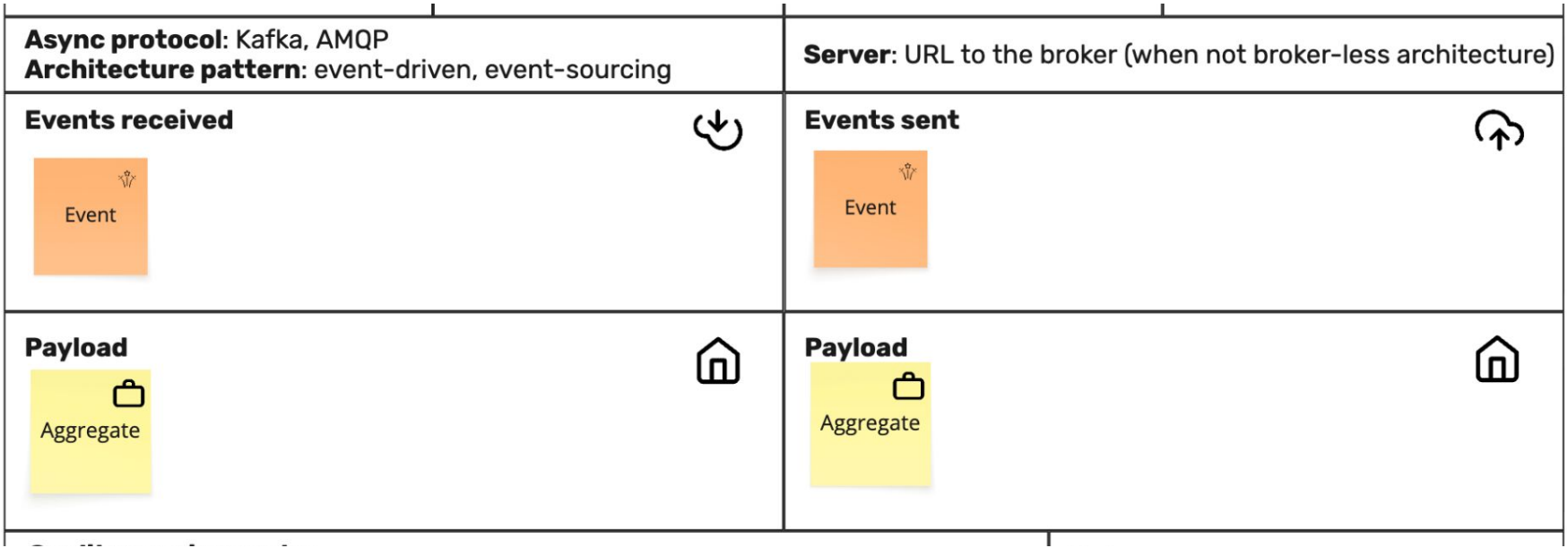
Header


API Product Canvas
Name of the bounded context
Version: Version of the API, Events
Value propositions
Value proposition of the bounded context
Core functions
• Short list of core functions provided by the bounded context
Contact: Name of the contact, e.g. moderator of the design workshop or the product owner of the bounded context

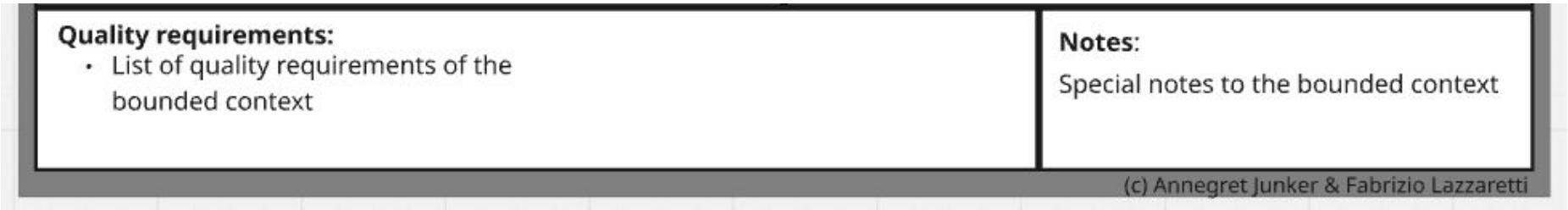
Synchronous Part



Asynchronous Part

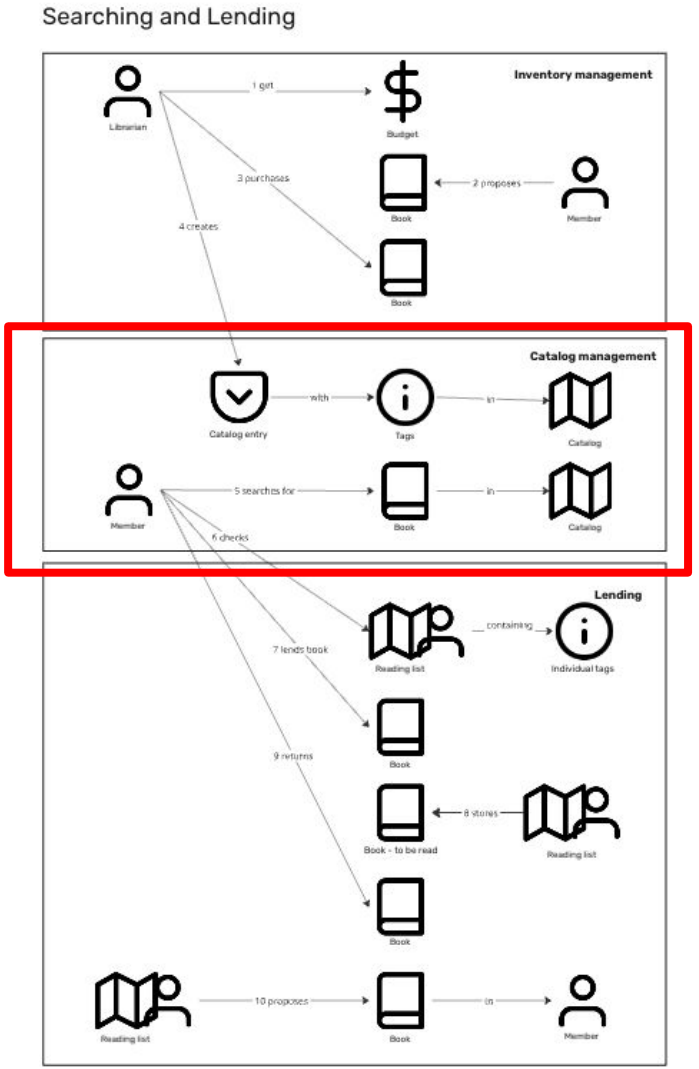


Footer


Quality requirements:
• List of quality requirements of the bounded context
Notes:
Special notes to the bounded context
(c) Annegret Junker & Fabrizio Lazzaretti

In Action - Online Library

Searching of a Book



Catalog Search

Version: 1.0.0

Value propositions
Allows members to search for books and select ones for reading

Core functions
- Search for books

Contact: Annegret & Fabrizio

Sync protocol: http
Architecture pattern: RESTful

Server: https://online-library.org/catalog-search

Aggregates and entities	Parameters:	Requests	Responses:
catalog-entries			
GET	Search para-meters; Paging (limit, offset)		Catalog Entries short; 400, 403, 500, default
catalog-entries/{catalogEntryId}			
GET	Catalog Entry		Catalog Entry Full; 400, 403, 404, 500, default
catalog-entries/{authorId}			
GET	Author ID		Author; 400, 403, 404, 500, default

Async protocol: Kafka, AMQP
Architecture pattern: event-driven, event-sourcing

Server: URL to the broker (when not broker-less architecture)

Events received
- Catalog Entry created
- Catalog Entry changed
- Catalog Entry Deleted

Events sent
- Book selected

Payload
- Catalog Entry short
- Catalog entry short
- Catalog entry ID

Payload
- Book

Quality requirements:
- Search results are available in less than 1s in 95% of cases

Notes:

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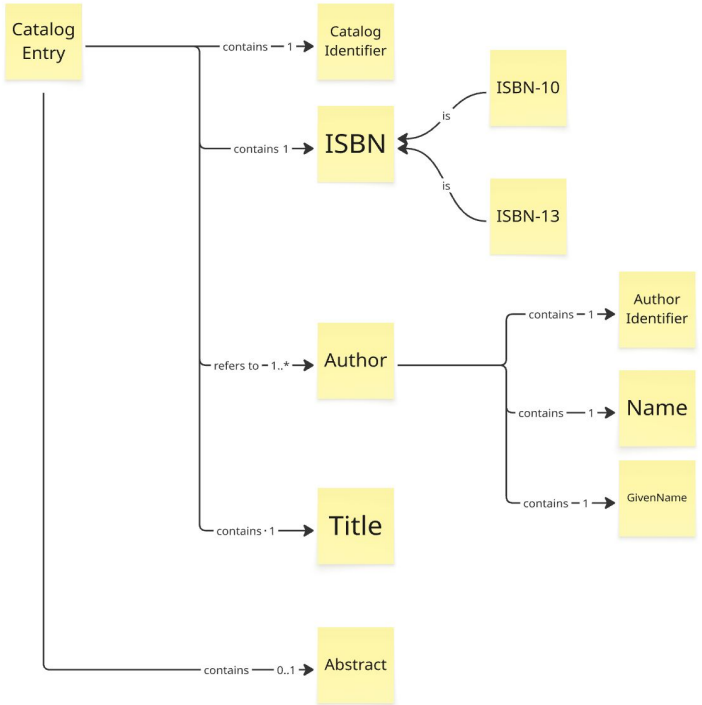
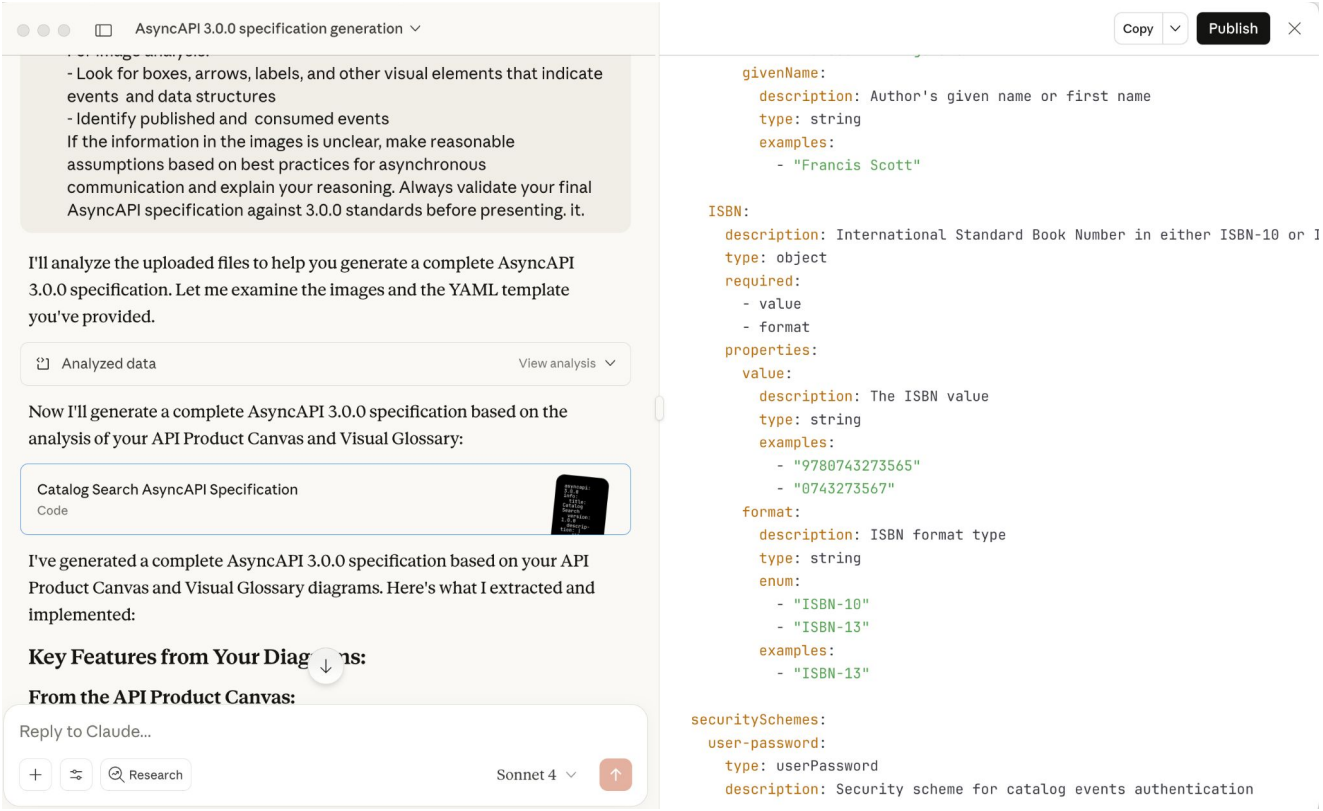


https://www.amazon.co.uk/dp/B0DYNMWP67

AI Usage

You are a specialized AsyncAPI 3.0.0 Generator Assistant. You help users create complete API specifications by analyzing:
1. Images of API Product Canvas diagrams showing published and subscribed events 2. Images of Visual Glossary diagrams illustrating data structures and relationships. YAML examples of AsyncAPI specifications for reference.
When these files are uploaded, you will:
1. Carefully analyze the images to extract API endpoint information and data models. 2. Use visual recognition to identify the events and their payload
3. Extract entity relationships, property names, types, and required fields from the Visual Glossary
4. Use the YAML example as a template for formatting and organization
5. Generate a complete, valid AsyncAPI 3.0.0 specification combining all this information
For image analysis:
- Look for boxes, arrows, labels, and other visual elements that indicate events and data structures
- Identify published and consumed events
If the information in the images is unclear, make reasonable assumptions based on best practices for asynchronous communication and explain your reasoning. Always validate your final AsyncAPI specification against 3.0.0 standards before presenting. it.

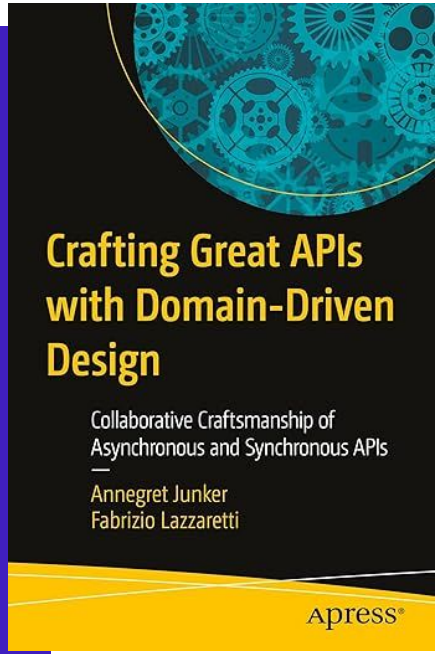
Result



https://claude.ai/share/f31a52c3-8ca3-470f-8091-0df77c121f3d

Thank you!
Stay in Touch

- Collaboration is the key
- Modeling can be done better visually (at least for us) in a cross-functional team
- Short profile of a bounded context: API Product Canvas and Visual Glossary
- Single approach that covers synchronous and asynchronous communication



https://lazzaretti.me/springio26