LAYERED DDD RINGS SERVED WITH CLEAN ADAPTER ONIONS

JUG Saxony Day

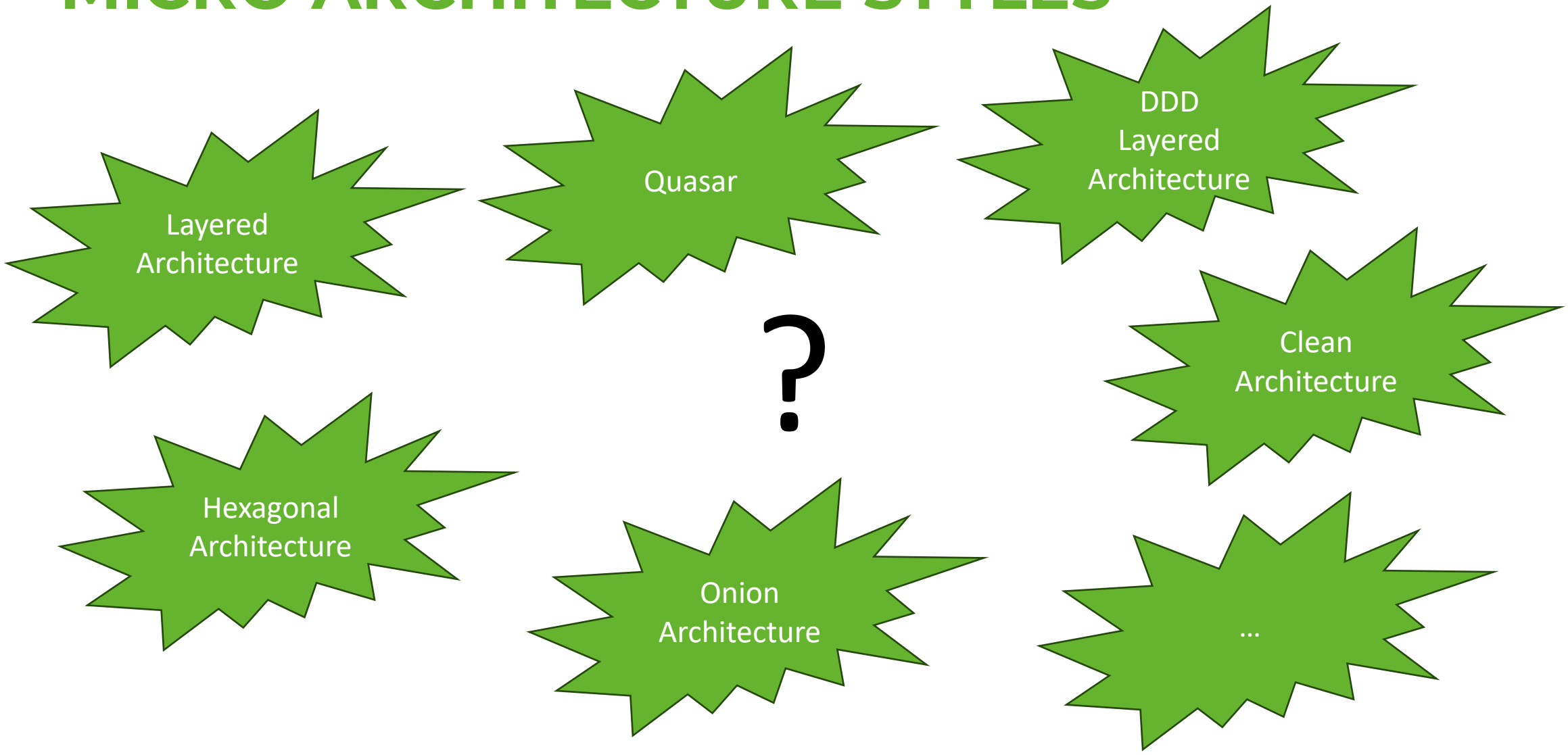
27 September 2024

Dirk Mahler

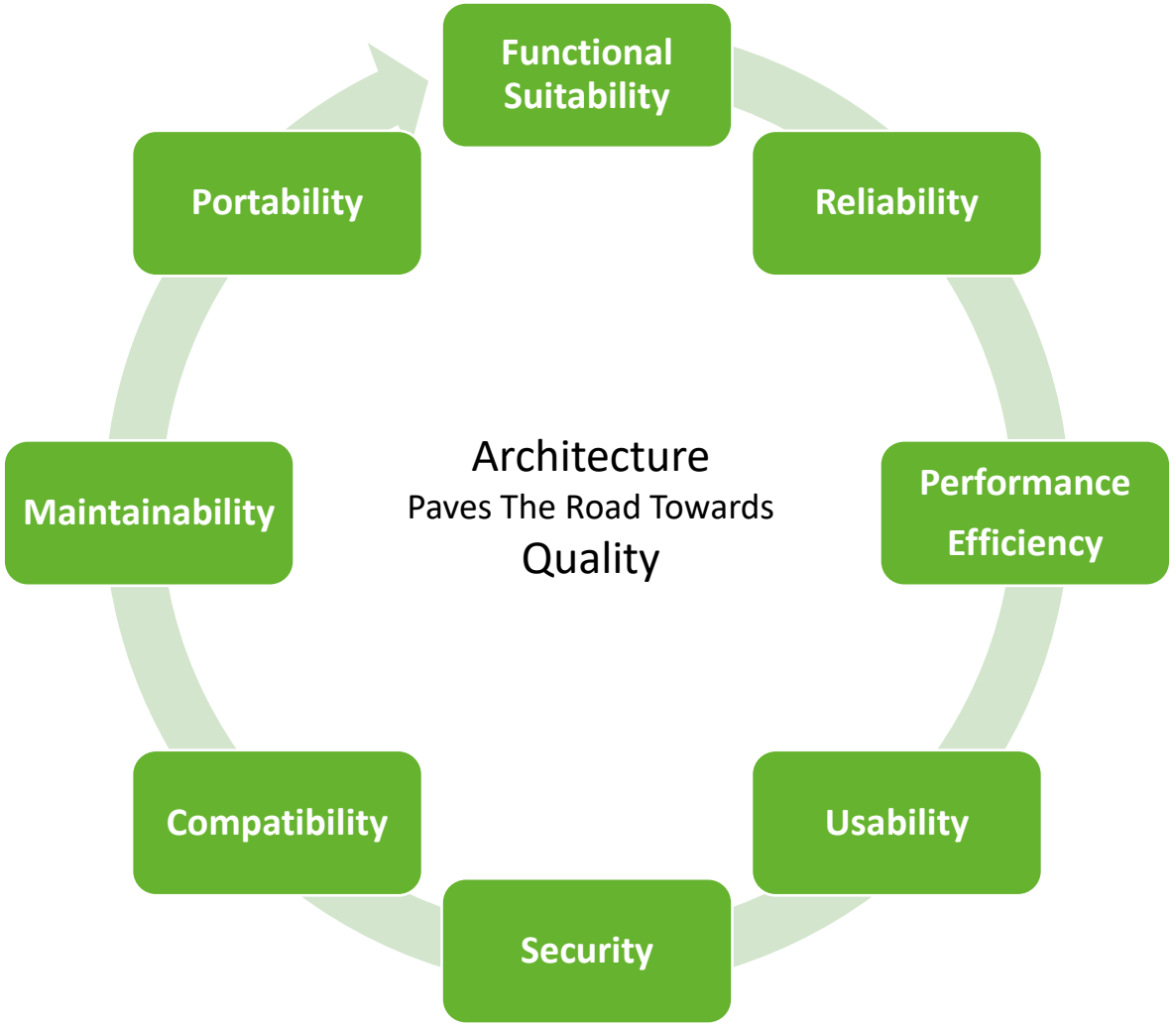
BUSCHMAIS

- About Us
  - Professional IT Consulting
  - since 2008, located in Dresden/Germany
- Our Focus
  - Development of modern business applications
  - Architecture and Quality Assurance
  - Optimization of software development processes
- Our Customers (selection)
  - Public Sector: ITZBund, Sächsische Aufbaubank-Förderbank
  - Industry: ASML, xfab, GlobalFoundries, Thyssenkrupp Steel
  - Telecom & Retail: Deutsche Telekom, COOP Switzerland

MICRO ARCHITECTURE STYLES



DO WE NEED ARCHITECTURE?



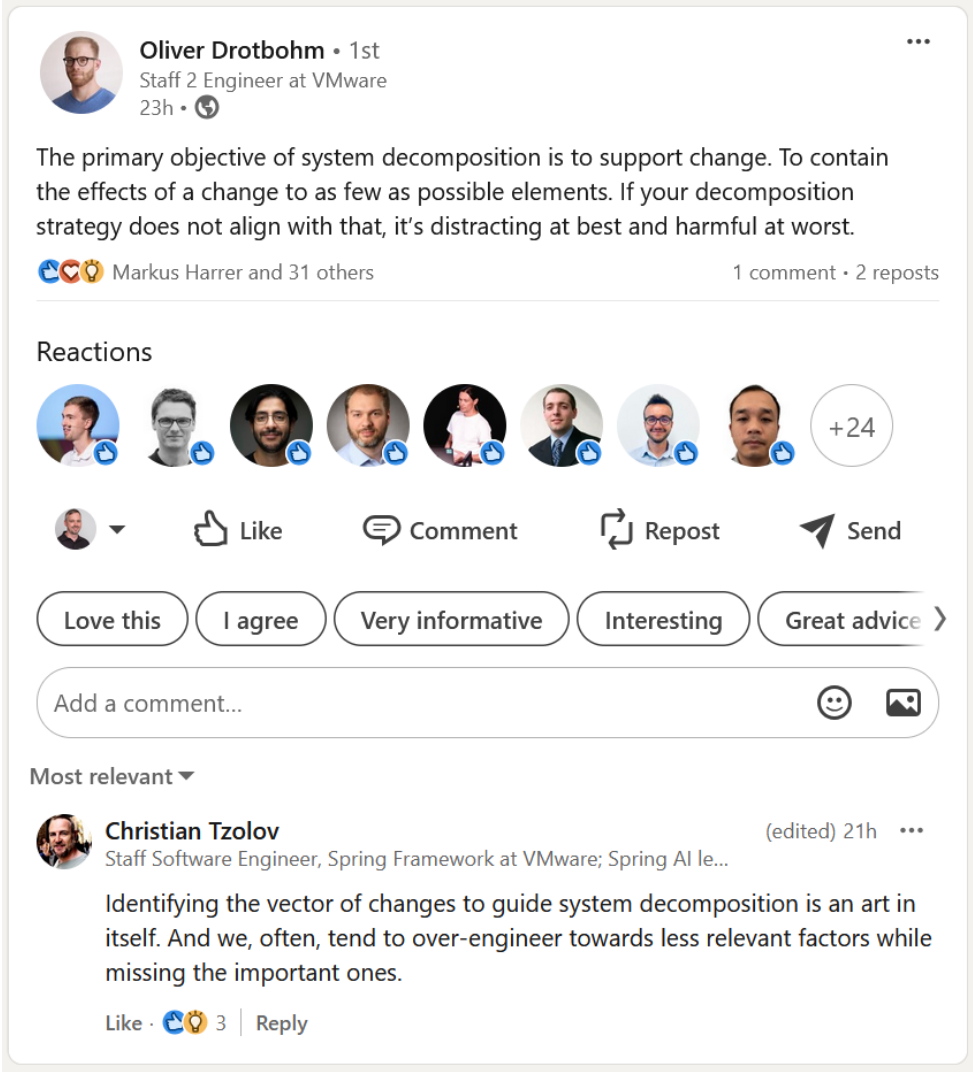
DO WE NEED ARCHITECTURE?

- The Architect‘s Tool Kit
  - Decomposition & Integration
    - Macro vs. Micro architecture
  - Cross Cutting Concerns
  - Technology Selection

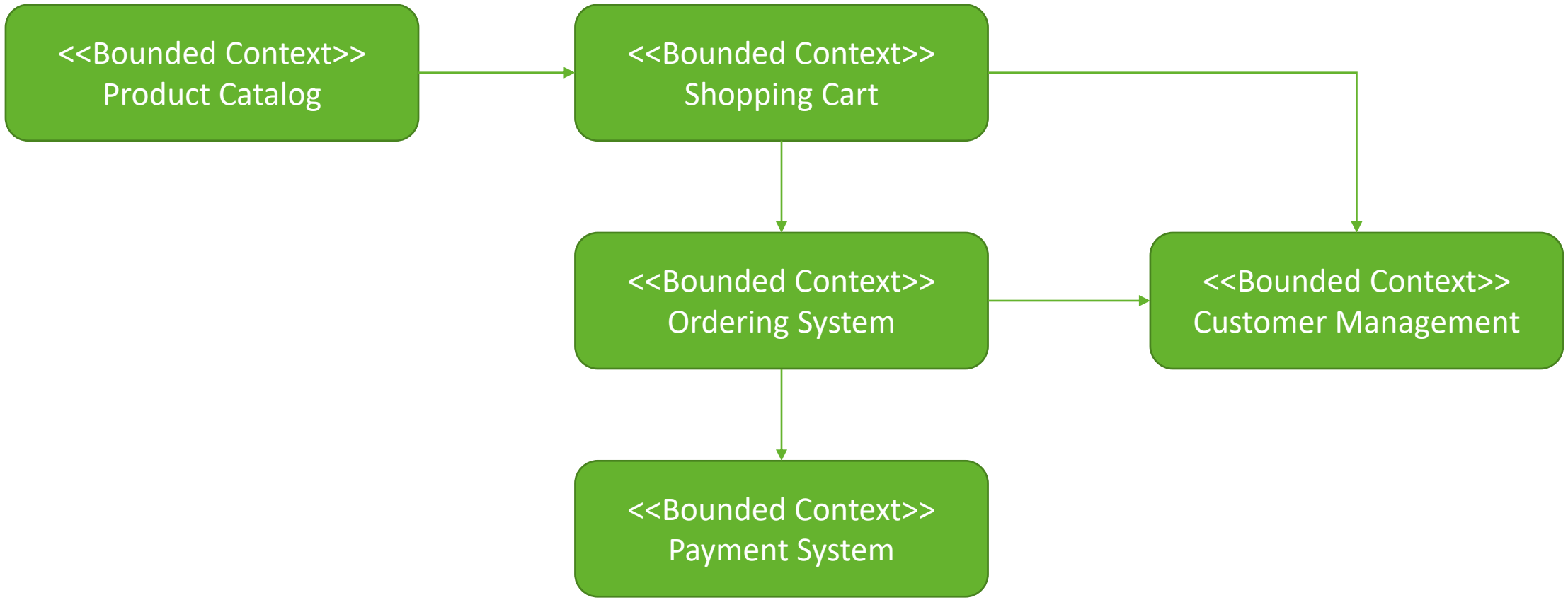
- Interacts with…
  - Process
    - Development & Quality Assurance
  - Organization
    - Teams & Communciation Channels

DECOMPOSITION

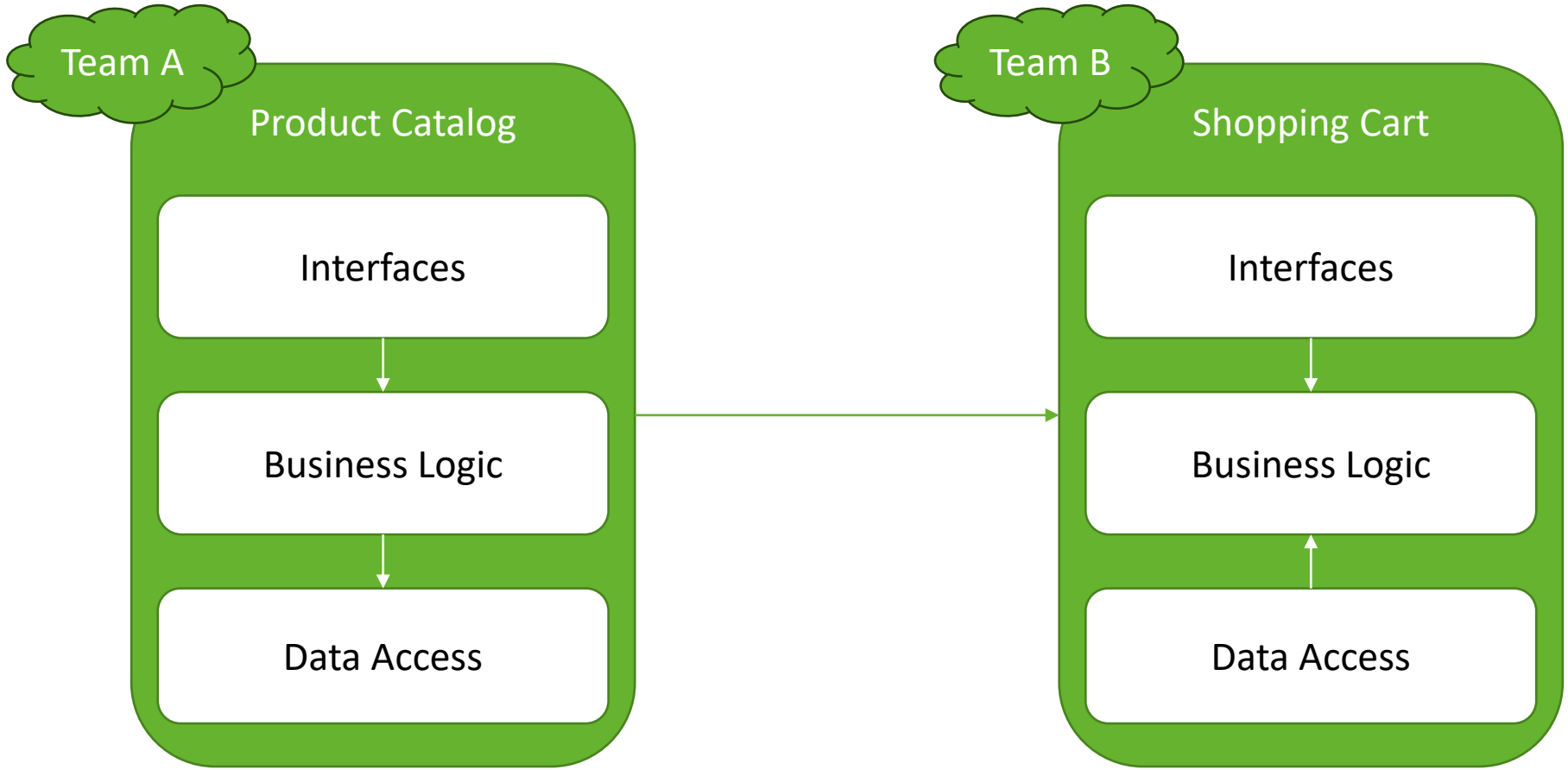
- Keep Control Over Changes
  - Enable internal changes
    → Domain
  - Reduce impact of external changes
    → Integrated services & systems



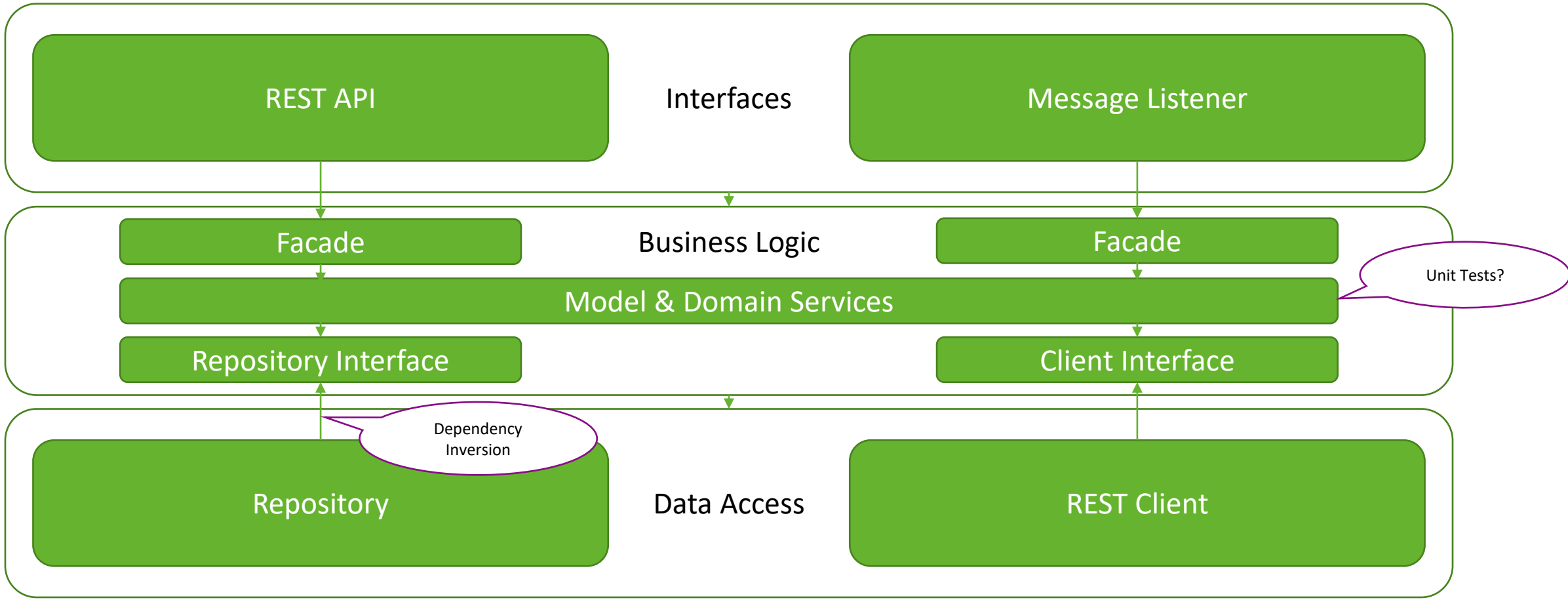
MACRO ARCHITECTURE



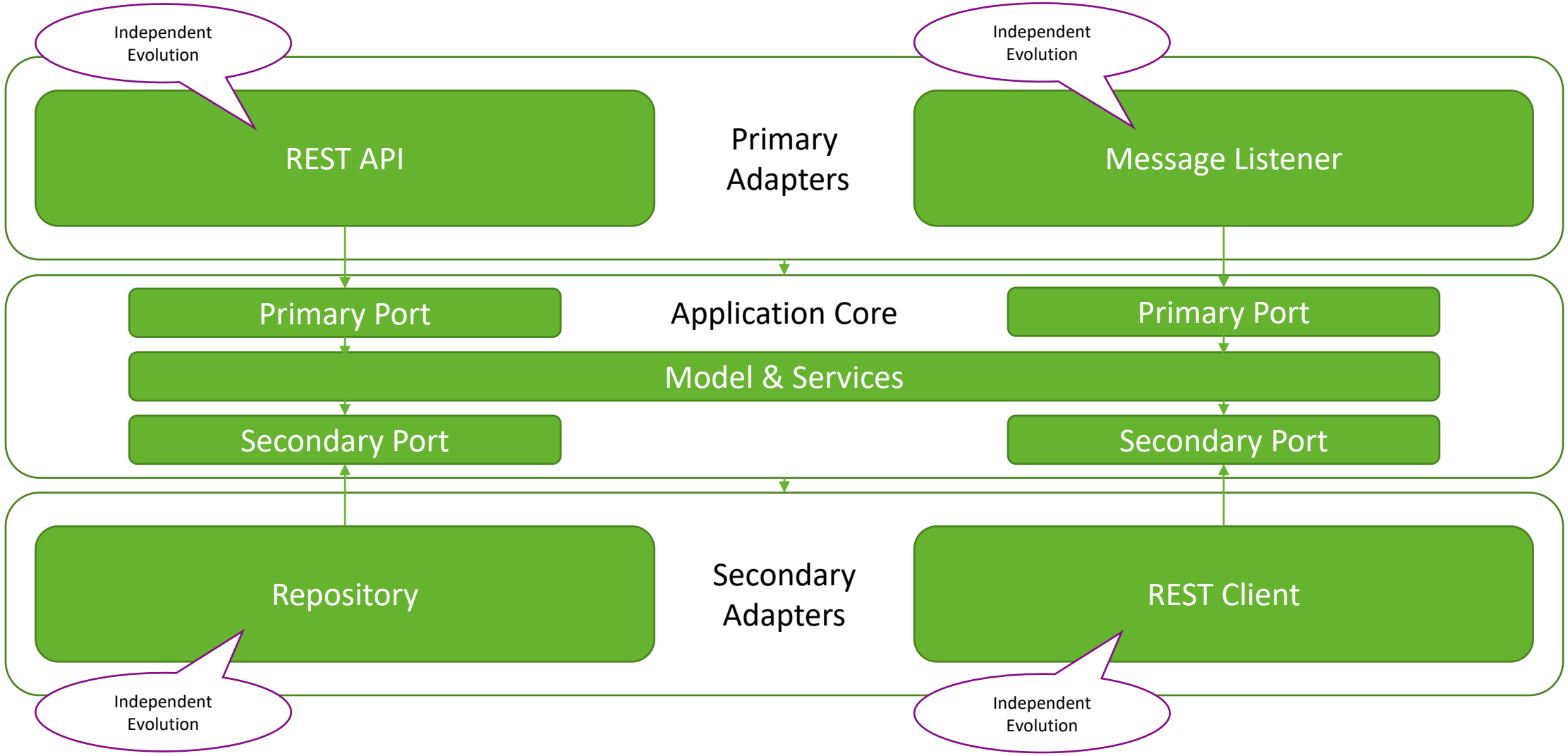
MACRO VS MICRO ARCHITECTURE



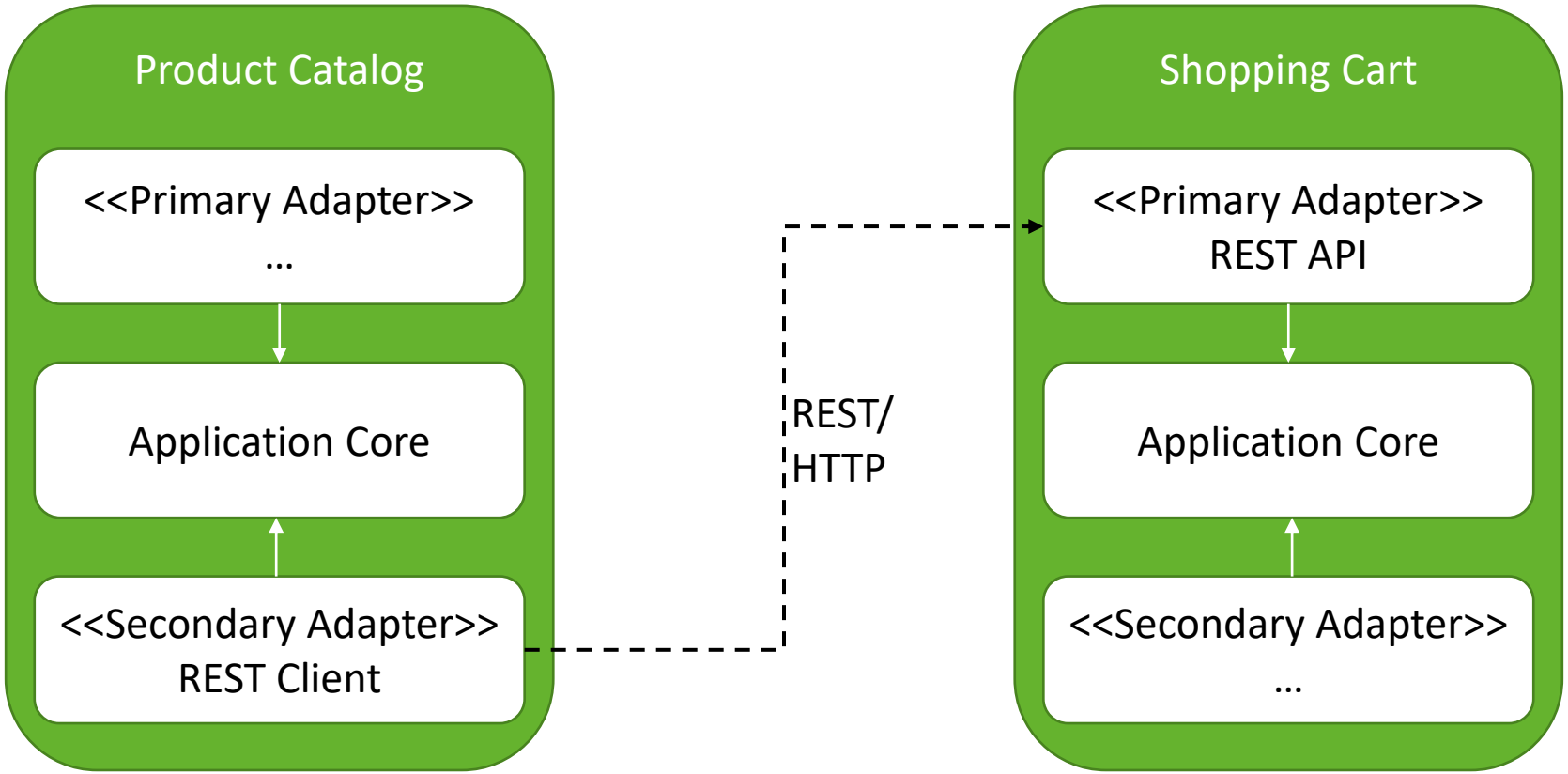
REFINING LAYERS



PORTS & ADAPTERS



MACRO VS MICRO ARCHITECTURE



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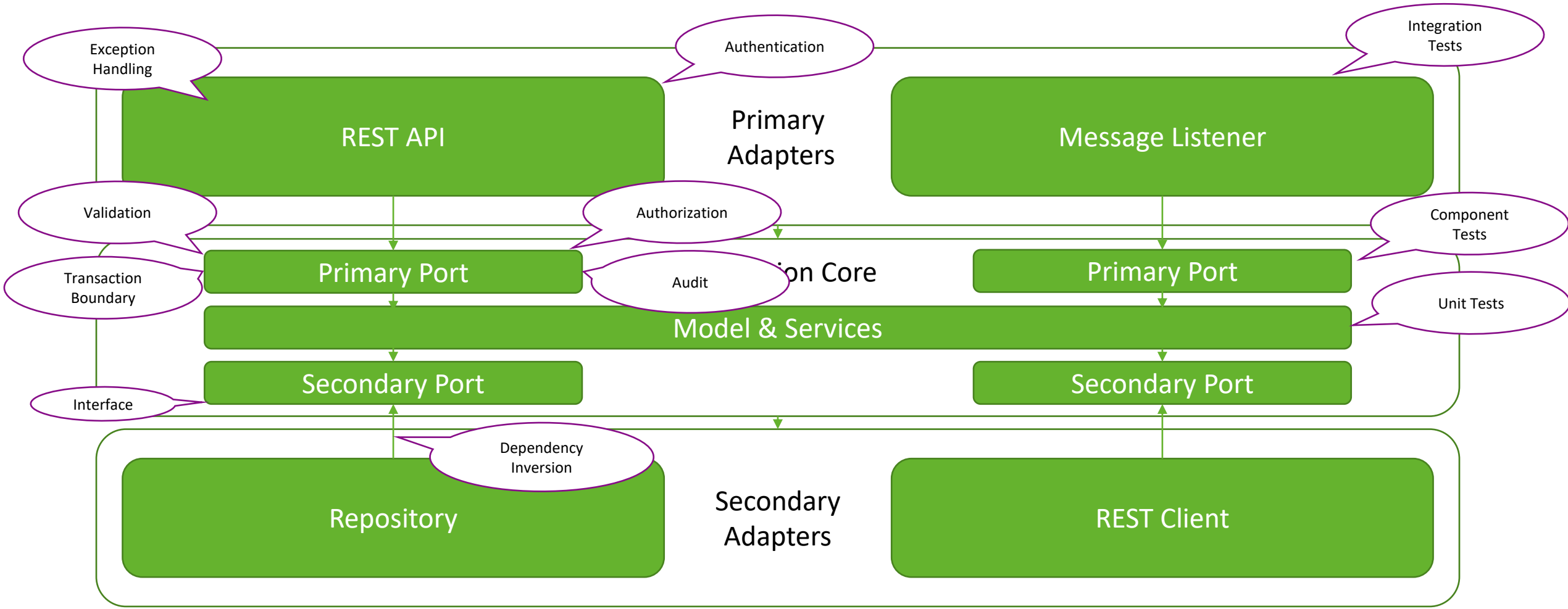
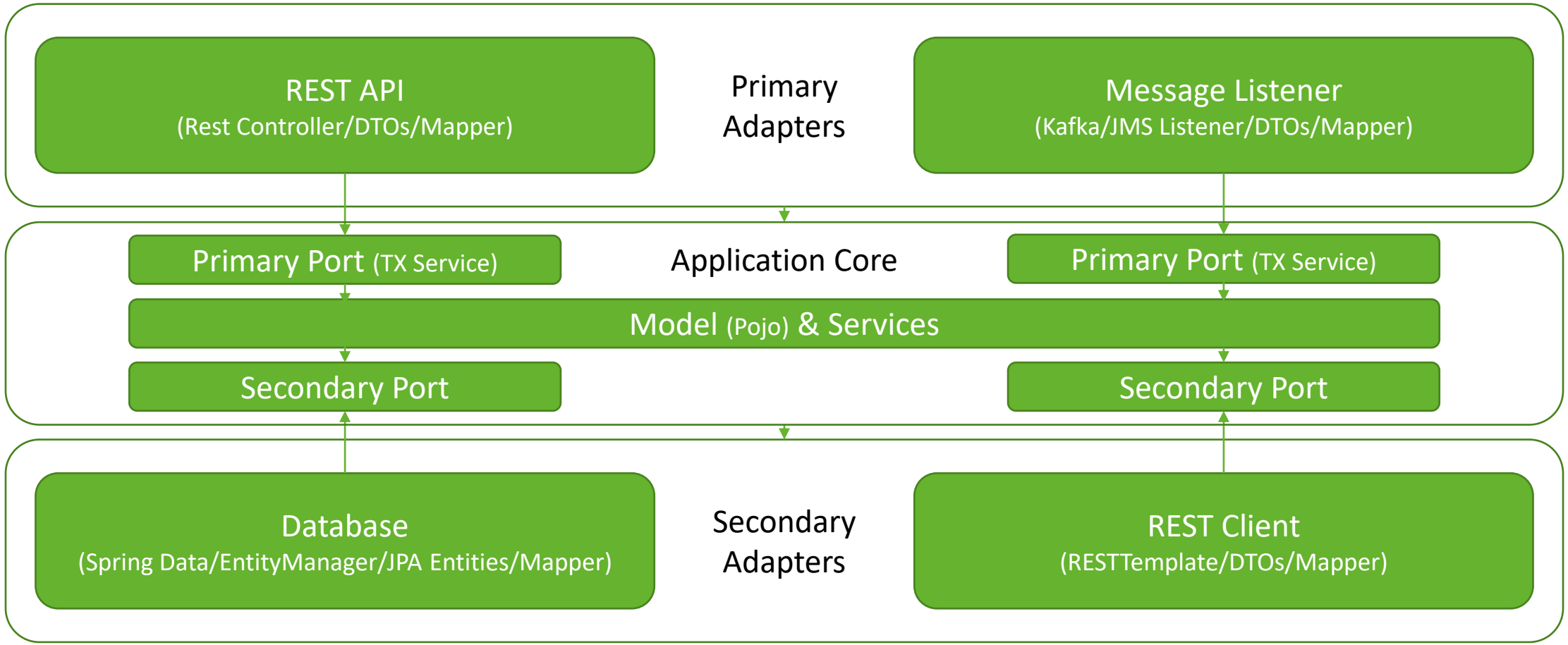
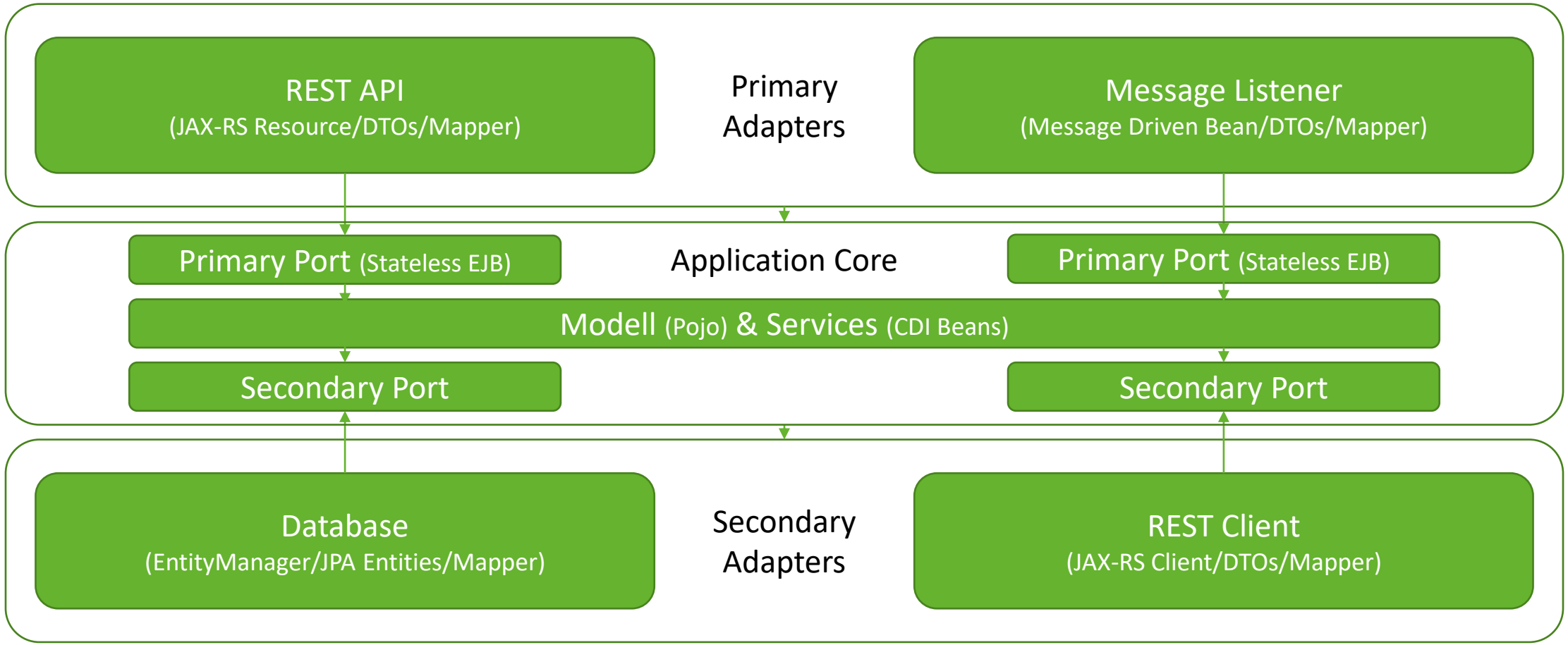


PORTS & ADAPTERS - SPRING

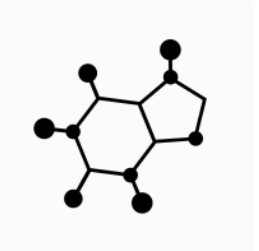


PORTS & ADAPTERS - JAVA EE



MICRO ARCHITECTURE VS. CODE

```
@PrimaryAdapter(name="REST-API")
@RestController
@RequiredArgsConstructor
class CartItemController {
  private final CartItemApplicationService cias;
}
```



https://github.com/xmolecules/jmolecules

```
@PrimaryPort
@RequiredArgsConstructor
class CartItemApplicationService {
  private final CartItemRepository cir;
}
```

```
@SecondaryPort
interface CartItemRepository {
}
```

```
@SecondaryAdapter(name="Repository")
@RequiredArgsConstructor
class JpaCartItemRepository implements CartItemRepository {
  private final EntityManager em;
}
```

MICRO ARCHITECTURE VS. CODE

```
com.buschmais.demo.cart…

…adapters.primary.rest.CartItemController
…adapters.primary.rest.dto.CartItemDTO

…application.model.CartItem
…application.CartItemApplicationService
…application.CartItemService
…application.CartItemRepository

…adapters.secondary.db.JpaCartItemRepository
```

jQAssistant

Your Software. Your Structures. Your Rules.

ArchUnit

DISCUSSION

Can we use JPA Entities

as Domain Model

in the Application Core?

WRAP UP - WHAT REALLY MATTERS

- Keep control over changes
  - Domain vs. integrated systems & services
- Separation of domain and technical concerns
  - technology agnostic domain logic
  - enable effective testing on different levels (unit/integration/system)
- Defined location of cross cutting concerns
  - transaction boundaries, error handling & logging
  - authentication, authorization
- Recognizable patterns → Reduction of Cognitive Load

BUSCHMAIS

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