Re-Use and Autonomy in a DevOps world

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Converging Trends:

- SOA (2010)
- Agile Methodology
- Cloud

2015
- Microservices
- Mode 2, DevOps Agile Mindset
- Cloud, CI/CD

2020
- Low Code Microservices
- Enterprise DevOps Agile Mindset
- DevOps Automation

Faster Changing World
FASTER
CHANGING
WORLD

WE NEED TO MAKE MORE FASTER AT BETTER QUALITY
Make More Faster at Better Quality

How?

More

Re-use?

Efficiency?

Dependencies?

Large Scale?

More Autonomy?

Flexibility?

Speed?

Small Scale?
Digital Transformation On All Levels

- Biz-DevOps
- Business Aligned Microservices
- Operational Improvements
- Core System Microservices
- Makers Centre
- New Market Solutions
- Customer Experience
- IoT
- Self-Learning
- Shared Systems
- Legacy Migration
- Autonomy?
- Re-use?
Digitize Customer Interactions
Digitize Business Operations
Digitize IT Dev & Ops processes

Business Alignment, Speed, Flexibility

Autonomy?

Re-use?

Core System Microservices

Good Architecture, Robust, Automated

Digital Transformation On All Levels
More Autonomy?
Business Alignment, Speed, Flexibility

Good Architecture, Robust, Automated

More Re-use?

Business Aligned Microservices

Mobile
Cust Portals
Business Portals
IoT & Biz Metrics
Low Code & CI/CD

Core System Microservices

Core Systems
DevOps Metrics

Digitize Customer Interactions

Digitize Business Operations

Digitize IT Dev & Ops processes

Digital Transformation On All Levels
“Business Aligned Microservices interact as Actors in a Business process”

Maximize Probability that a Feature request lands in one single Microservice

The Business will understand architecture and be part of the discussion?

Business Alignment, Speed, Flexibility

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**Business Aligned Microservices**

- Sales
- Customer Service
- Returns
- Invoicing
- Orders
- Accounts
- IoT Metrics
- Customer Portal

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**Biz Dev Ops**
Don’t re-invent the wheel” does not mean we all have to use the same Wheel.
Make More Faster

Full Re-use? → Copy Re-use? → Copy & Change Re-use?

Autonomous Units?
@ Better Quality
Mendix Makes Good:

Maximize Probability that a Feature request lands in one single Microservice

- GUI needed
- Logic needed
- Data needed
- Integration needed

Minimize Integration and Dependencies to be Autonomous

Business Aligned Microservices

Quality: Continuous Integration checking into the team-server

Integrity: UX-Logic-Data maintained by Platform

One App
One Model
One Deployable
One Happy Customer

Digital Transformation On All Levels
Microservices **Hide Complexity** inside and Expose Services for Good Communication

The art of great System Design is to **Minimize Dependencies and Integration**

Minimize Integration and Dependencies to be Autonomous
Real Example:

Business Aligned Microservices And Teams

Logistics Domain

- Commercial
  - Routing
    - Portal/Batch
      - Input
      - Proc
    - PD Operator Orders
      - Input
      - Proc

- Packages
  - TGN Manual Orders
    - Input
    - Proc

- Business Lines - Operations
  - Pharma
    - PH Pharma Orders
      - Input
      - Proc
  - International
    - Hercules
      - Input
      - Proc

Alignment via Ownership

- Business line
- Business unit
- DevOps teams
- Microservices Architecture

Business Alignment, Autonomy, Speed

1.5 million orders / day, Tested to handle peaks of 1000 orders / s
Digital Transformation
On All Levels

Biz-DevOps
Close cooperation with the Business
Innovation in Customer Engagement
Operational Improvements

Invent

Makers Centre
Large Programs, Shared Systems,
Legacy Migration
Core System Microservices

Deliver

Foundation & Enterprise
Governance, Re-use, Review, Assistance
Platform, CICD, Tooling
Road-map, Business Case

Enable
Core System Microservices

Microservices to Build Large Systems

(James Lewis & Martin Fowler)

We split a large system in smaller independent pieces that work together.

We call that a Microservice Architecture System.

MSA System
Business Aligned Microservices & Core System Microservices

Biz-DevOps for Biz-oriented Microservices

Digital Transformation On All Levels

Makers Centre with Change Management Capacity for Cross-Unit Automation and Core System Microservices

DevOps Tribe DevOps Tribe DevOps Tribe DevOps Tribe DevOps Tribe DevOps Tribe

Maker Centre
Example: Core Systems Replacement

Digital Transformation
On All Levels

Integration App / ODS

MDM Dashboard
 Addresses
 Network
 Routes
 Personell

Data Capture
 Mobile and Scanning
 Operations

Integration App / ODS

Foundation
 Re-use
 Automate

Deliver
 6 Teams
 24 Devs
 DevOps Tribe

Maker Centre
“Good Re-use is not for Free”
"Good Re-use is not for Free"

Good Architecture and Design + Generalize Components and maintain Best Practices

Foundation Team
Reviews, Re-use, App Store, Atlas, Data Hub, Best Practices, Governance, Rewards

IT DevOps Automation
Low Code, CICD, Cloud, Auto-test

New Tech
IoT, Events, Security, Self-Learning,
Example: Self-Learning in Logistics

Process across Apps that uses Data Lake for self-learning

Step 1
Reference data
Changes

Step 2
Reference data

Step 3
Statistical Data

Step 4
Data Lake
Layers of processing data

Step 5
Event Manager
Events or Files or Kafka

Digital Transformation On All Levels

Turn statistics into tuning parameters

Real-time events e.g. availability

Operational data
Faster than your Competition?

Biz-DevOps:  
- New Market Solutions  
- Customer Experience  
- Biz Ops Improvements

Enable Digitization!

Makers Centre:  
- Core Systems  
- Shared Systems  
- Legacy Migration

New Tech
- IoT, Events, Security, Self-Learning

Foundation
- Re-use, App Store, Atlas, Data Hub,

Automation
- Low Code, CICD, Cloud, Auto-test

Autonomy?  
- Digital Transformation On All Levels  
- Re-use?
Faster than your Competition?

How Mendix Supports you?

- **Biz-DevOps**
  - Low-Code Platform
  - Cloud CICD

- **REST Publish**

- **Re-use Owner**
  - App Store
  - **Maker Center**
    - NEW: Data Hub

- **Atlas UX Library**

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Autonomy?

Digital Transformation On All Levels

Re-use?
Faster than your Competition?

Business & IT Alignment
With flexibility and lower cost changes
Innovation & Efficiency

(Biz)DevOps
Business focused Teams with ownership

(Biz)Microservices
Architecture aligns with Business Function

Makers Centre, Foundation, IT Automation
Cloud, Low-Code, CI/CD, Re-use, AppStore, Atlas

Faster-than-competition Digital Evolution

Competitive
Flexibility
Core Basis

Quality & Speed
Autonomy, Ownership
Productivity, IT stability

Digital Transformation On All Levels

MENDIX WORLD
Faster than your Competition?

Summary:

1. Balance Re-use with Autonomy
2. Use Microservices and Biz-DevOps
3. Establish a Good Foundation Team for Re-use
4. Makers Center and Automation team for large scale
5. Allow approach to be optimized per Use-Case

Questions?

Mendix provides
Architecture & Design Workshops

Digital Transformation
On All Levels