#CollabDaysBE

Dataverse deep dive:
watch out for the sharks

- Joris Poelmans| @jopxtwits

CollabDays Belgium 2022 by BIWUG

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Want to know more about Inetum Realdolmen?
Come and have a talk at our booth!

An experienced team of more than 40 experts with following competences:

- Office 365 Governance
- Low-code application development
- Advanced automations
- Change Management and User Adoption
- File server and SharePoint migrations
- And a lot more ☺

Power Lab Podcast

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About me

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- Solution architect Microsoft Business Solutions @Inetum – Realdolmen
- Former SharePoint MVP (2005-2016) and founding member of BIWUG
- Blog: https://jopx.blogspot.com
- Twitter: @jopxtwits

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Agenda

- Understanding business and project context
- Lessons learned from a large scale Dataverse deployment
  1. Architecture matters
  2. You do not own the platform
  3. Accelerate with DevOps
  4. Embrace Azure
  5. Technical debt

What is not covered
- Code walkthroughs …
- Recipe and checklist for success – context matters
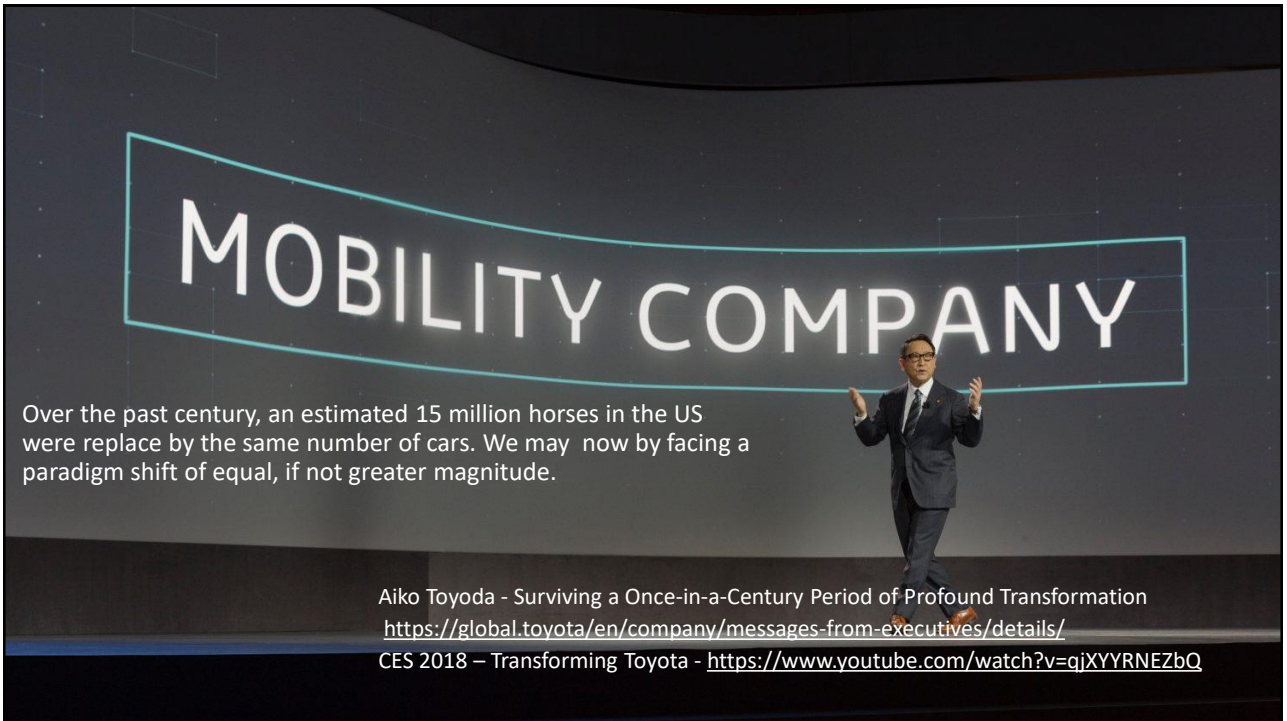
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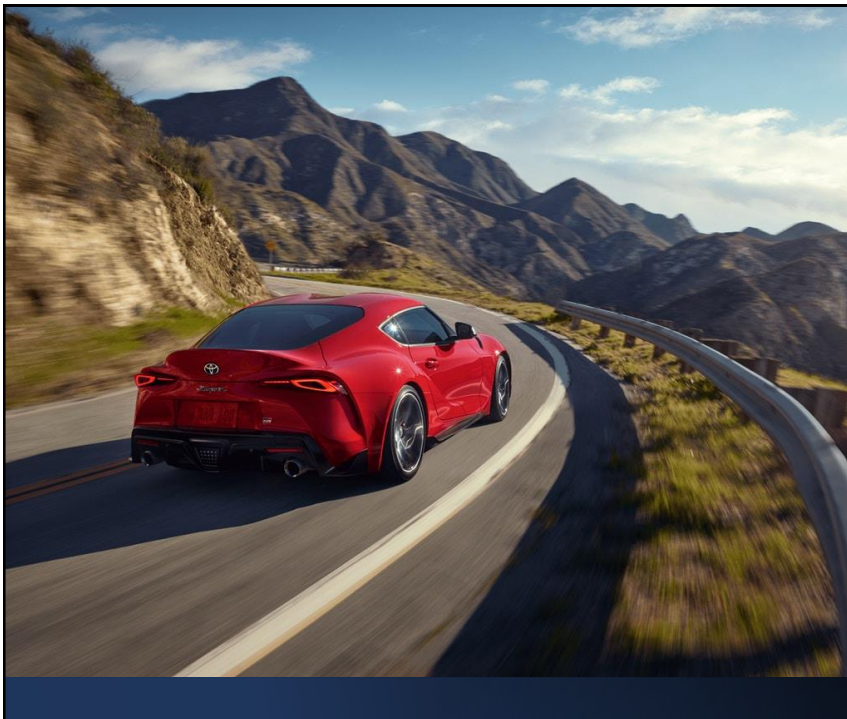# Pan-E CRM implementation
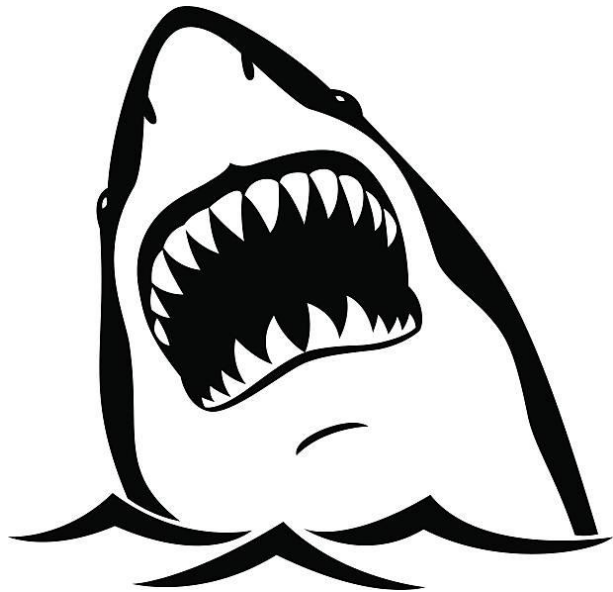
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Toyota Motor Europe

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MOBILITY COMPANY

Over the past century, an estimated 15 million horses in the US were replace by the same number of cars. We may now by facing a paradigm shift of equal, if not greater magnitude.

Aiko Toyoda - Surviving a Once-in-a-Century Period of Profound Transformation
https://global.toyota/en/company/messages-from-executives/details/
CES 2018 – Transforming Toyota - https://www.youtube.com/watch?v=qjXYYRNEZbQ

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Consolidate customer touch points throughout the customer lifecycle into a single customer-centric view

Deliver consistent & personalized customer experiences across the entire lifecycle of marketing, customer service, sales and aftersales, …
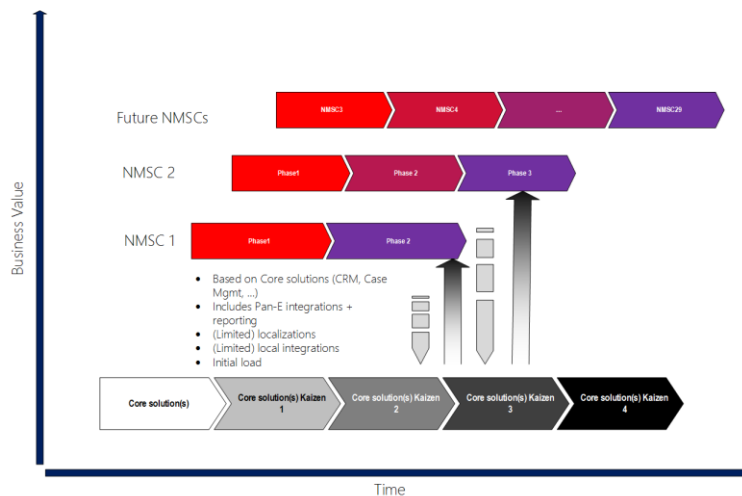
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TECHNICAL BUILDING BLOCKS & TOOLS

- D365 Sales & Customer Service
- Azure Cloud as integration layer & data storage
- Power BI for reporting
- Salesforce Marketing Cloud
- Development tooling

  - C#, React.js (PCF controls)

  - Azure DevOps (Build & release mgt)

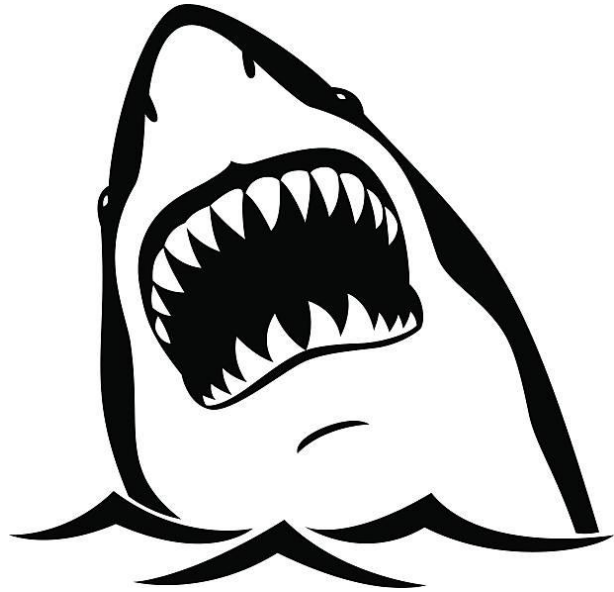 - Atlassian stack: Jira, Confluence and Bitbucket Stash

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THE CHALLENGE OF SCALE
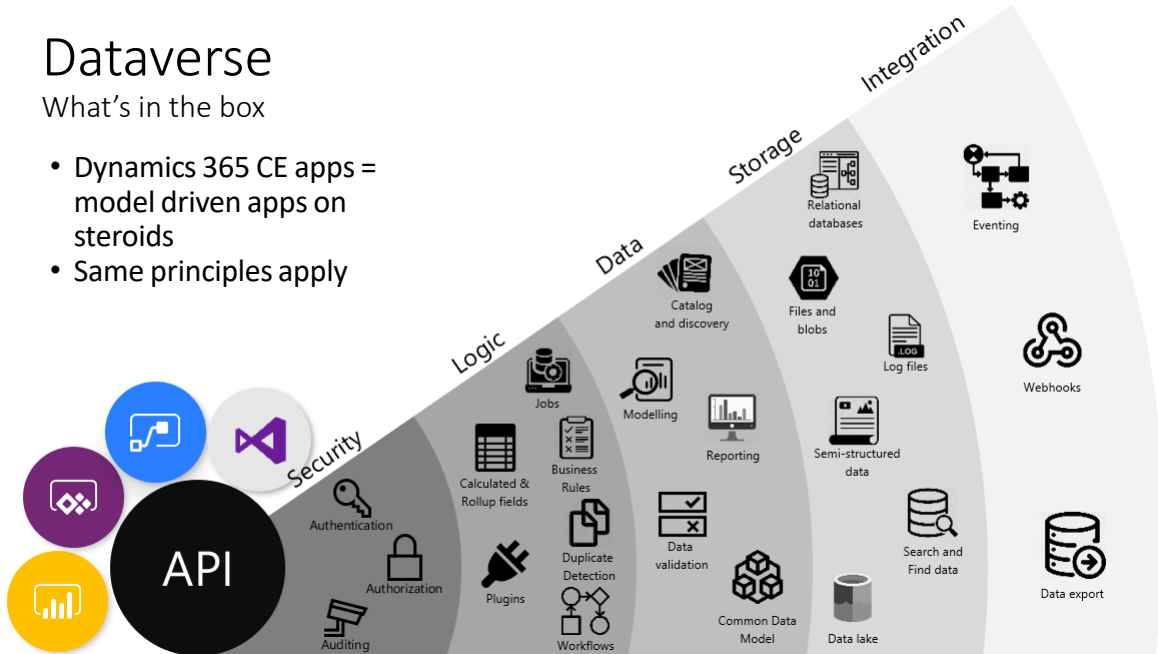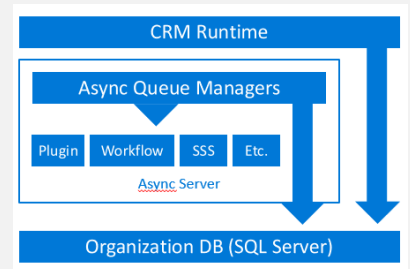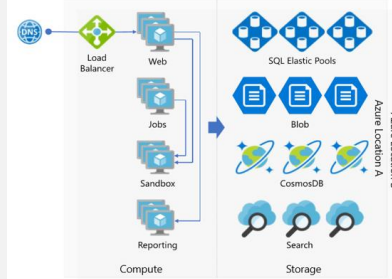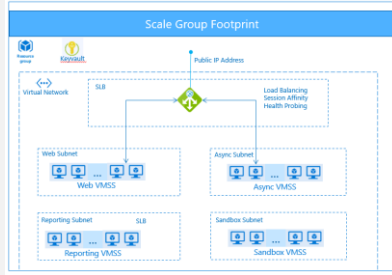

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Lesson 1: Architecture matters

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Dataverse
What's in the box

- Dynamics 365 CE apps = model driven apps on steroids
- Same principles apply

Integration

Storage

Data

Logic

Security

API

Authentication

Authorization

Auditing

Calculated & Rollup fields

Plugins

Workflows

Business Rules

Duplicate Detection

Jobs

Modelling

Data validation

Reporting

Common Data Model

Catalog and discovery

Files and blobs

Relational databases

Log files

Semi-structured data

Data lake

Search and Find data

Eventing

Webhooks

Data export

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Understanding Dataverse architecture

- Scale groups
- Compute and storage stacks on Azure
  https://bit.ly/3CsFgJq
- Async service for background jobs

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Fasttrack program

- Customer success service for large customers with Fasttrack solution architect support
- More info:
  - ▸ Success by Design resources
  - ▸ Dynamics 365 implementation guide
 - ▸ Dynamics 365 FastTrack Architecture Insights
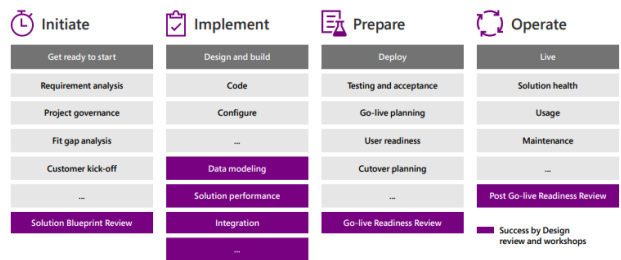
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Managed solutions

- Microsoft's recommended solution approach:
  ▸ Unmanaged = dev only
  ▸ Managed = QA/ACC/PROD
- Separate dev environments for core solutions
- Single solution preferred approach
  https://bit.ly/3botSlv
- Must reads:
  ▸ Solution lifecycle Management: Dynamics 365 for Customer Engagement Apps -
 https://bit.ly/33GbP3X
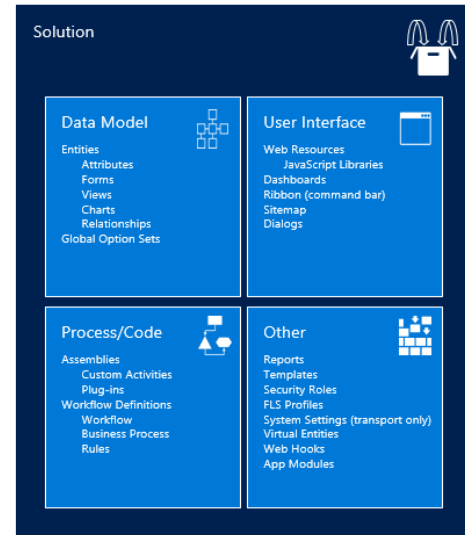
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Lessons learned about solution layering

- Layering – multiple solutions with dependencies
- Layers should be considered on a per-component basis
- Merge or top wins for components in multiple solutions - https://bit.ly/2KbfgIc
- View solution layers - https://bit.ly/2Kb04uD
- Remove "unmanaged layer" functionality
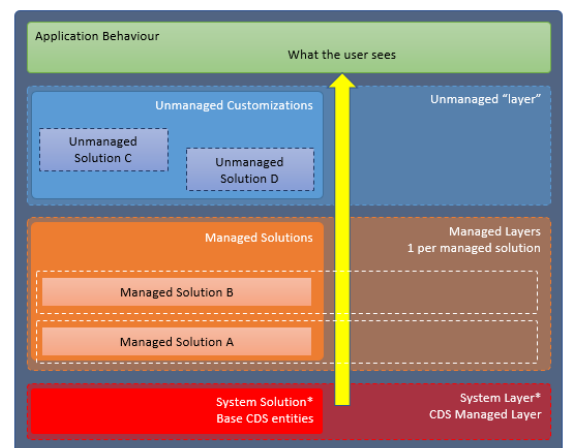
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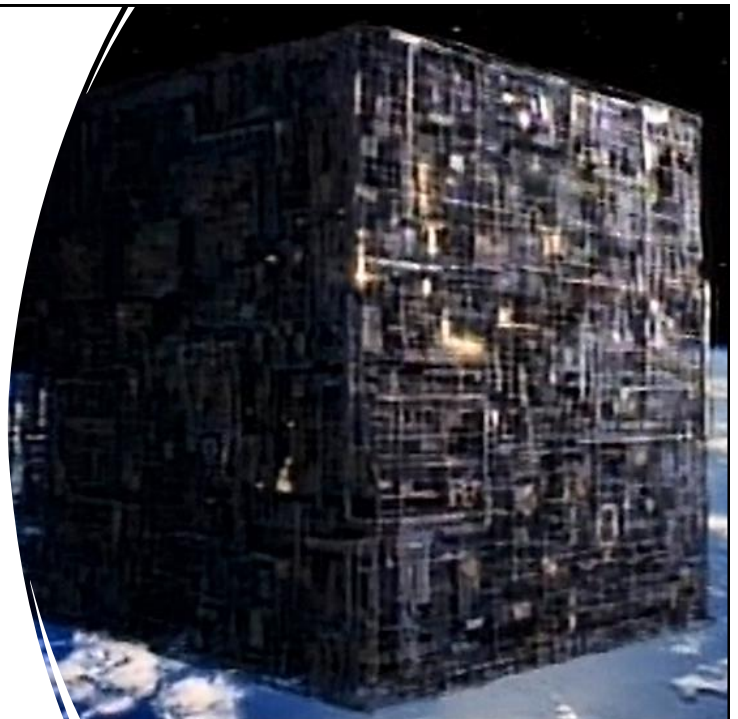# Lesson 2: You do not own the platform
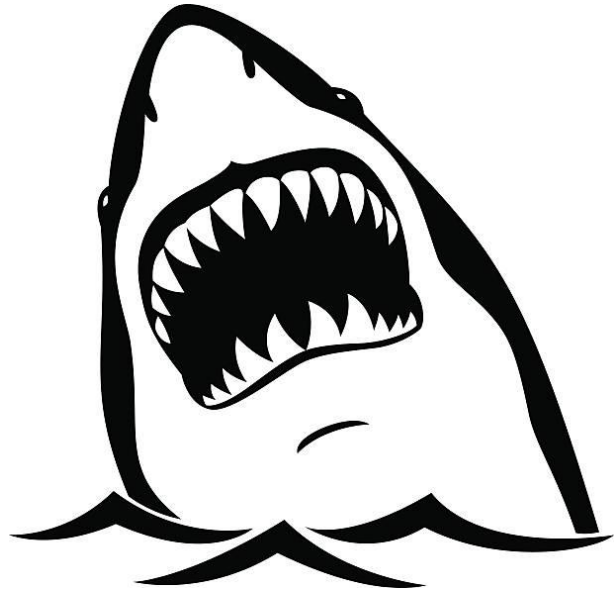
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Understanding the limits

- API limits – 6000 requests in 5 minutes (300 seconds) sliding window https://bit.ly/3ellyGy
- Use rotating application identities to scale throughput
- Batch request and plugin limits - https://bit.ly/3RO5xYf
- Asynchronous service quotas - https://bit.ly/3fQclaB
- Follow up on executions in PPAC

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The Microsoft release train

Stations	Internal Testing	Canary	Japan/ South America/ Canada/ India	Apac/ GBR/ Oceana	Europe/ North America	Dedicated SG/Government Cloud

Typical time in station	~ 2 weeks	~ 1 week	~ 1 week	~ 1 week	~ 1 week

- Modernizing the way we update - https://bit.ly/2NCle7h
- More transparency about releases - https://bit.ly/34LVo6s
- Leverage canary
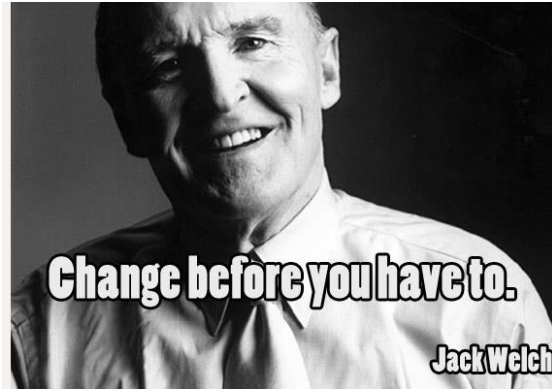- Be safe – check your solutions
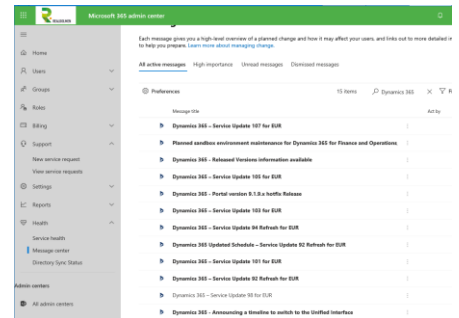
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Solution checker

- Static analysis of PowerApps solutions
  - Performance and stability risks called out by severity and location (component/line)
- **Best practice documentation**
- Available:
  - PowerApps Admin portal - https://bit.ly/33xhBVD
  - PowerShell - https://bit.ly/2CyY3nS
  - Azure DevOps Task - https://bit.ly/2KpOv34

PowerApps Check lifecycle

DEV > QA > ACC > PRD

Fix Change Check

Fix Change Check

- **Frequent checks** during development
- Minimum quality reached by each developer before progressing

- **Check on consolidated Environment** prior to promoting to ACC
- Make informed/document decisions on risk
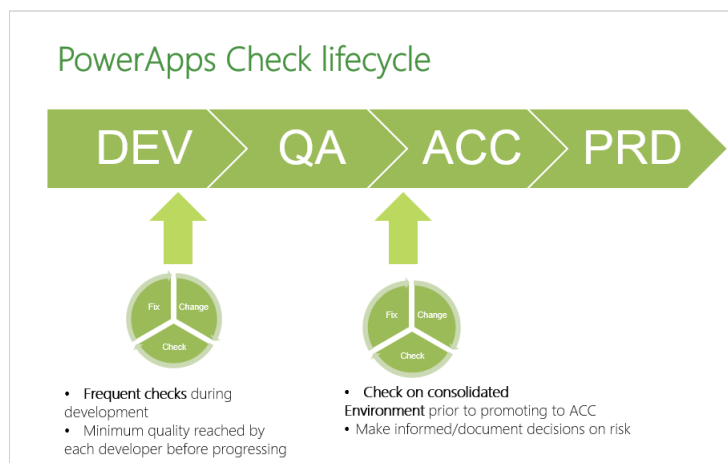
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Follow up on the roadmap

Change before you have to.

Jack Welch

- D365 & Power Platform - 2 major release waves per year
- Roadmap release map available a couple of weeks in advance
  - https://aka.ms/Dynamics365ReleasePlan
  - https://aka.ms/PowerPlatformReleasePlan
- Release Planner (Preview) https://experience.dynamics.com/releaseplans/?app=Microsoft+Dataverse
- Insider program - https://experience.dynamics.com/insider
- Deprecation announcements - https://docs.microsoft.com/en-us/power-platform/important-changes-coming
- Don't forget about the full application landscape e.g. Azure

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Impact of license changes

- Timing of impact depends on licensing agreement
- Important changes
  - Dataverse storage capacity change - https://bit.ly/3RQudzz
  - Dataverse API request entitlements
    - Difference between D365 and Power Apps (all licenses)
    - Watch out for integrations – typically use non-interactive/system users
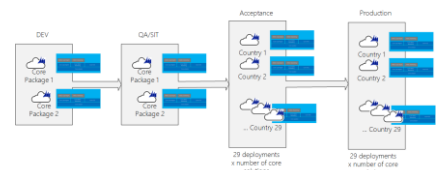   - Additional API packs available for purchase https://bit.ly/3fX6rV4
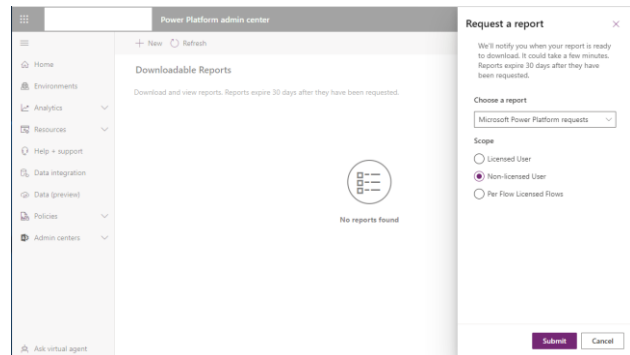
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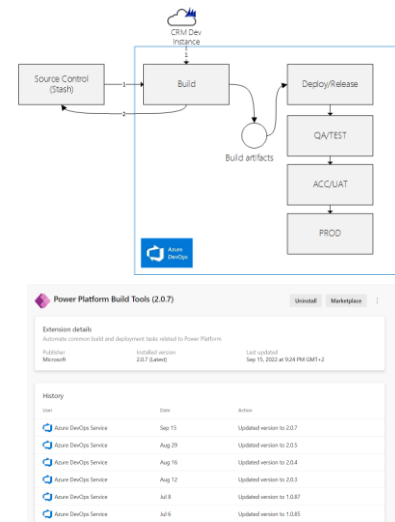# Lesson 3: Accelerate with DevOps
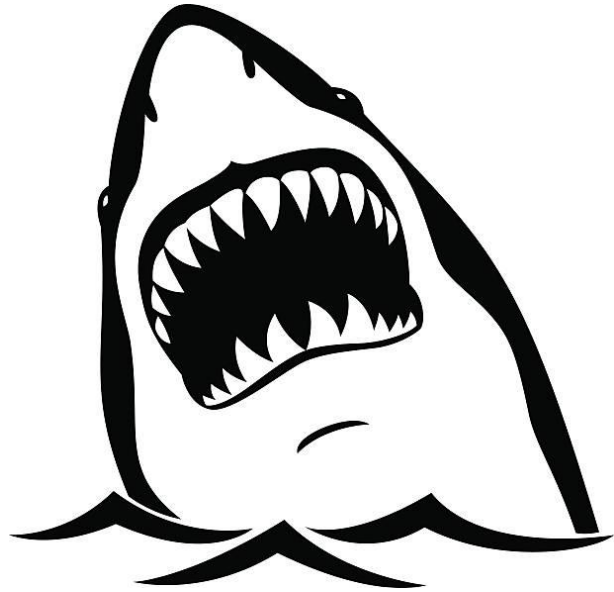
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Invest in continuous delivery

- Take all components in account when creating a deployment strategy
- Azure DevOps and Power Platform Build Tools can help
- Don't forget testing as part of your deployment strategy
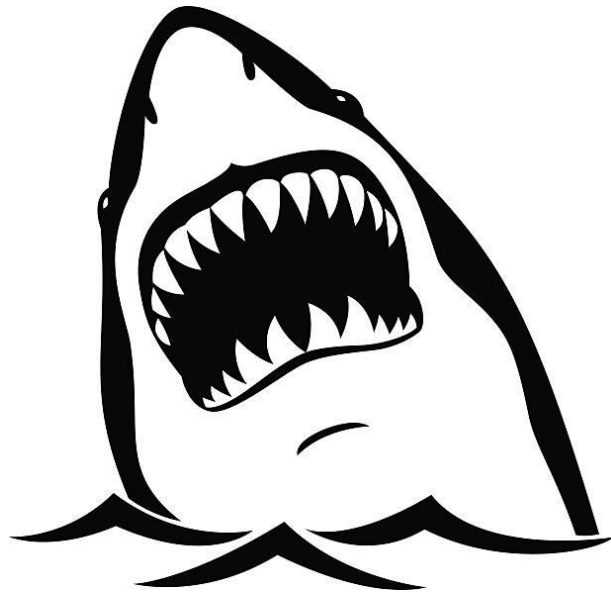

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Our Toolset

- Bitbucket Stash (Git)/Jira/Confluence
- Azure DevOps – https://azure.microsoft.com/en-us/services/devops/
- Power Platform Build Tools https://bit.ly/3eiqEoa
  - Update 2.0 https://bit.ly/3T5uAHi
- EasyRepro framework - https://github.com/microsoft/EasyRepro

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Lesson 4: Embrace Azure

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Why to extend Dataverse with Azure ?

- When Power Automate does not fit.
- Data warehousing/reporting scenarios
- Interoperability with external systems
- Consolidate business logic for advanced scenarios
- Scheduled jobs (timer) in Dataverse are cumbersome
- Offload processing
- Optimize storage costs & archiving
- Extend monitoring & logging
- Secret management

Azure Cloud Hero

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How to extend Dataverse with Azure?

Data warehousing/reporting scenarios

- Synapse Link for Dataverse https://bit.ly/3RRToBy

Processing/integration logic

- Service Bus/Event Hub integration https://bit.ly/3T26CwO
- Azure Logic Apps/Functions/Web Jobs

Optimize storage costs

- Azure Blob Storage or Azure Data Lake
- Azure Table Storage
- Azure Cosmos DB https://bit.ly/3SQ5a0X
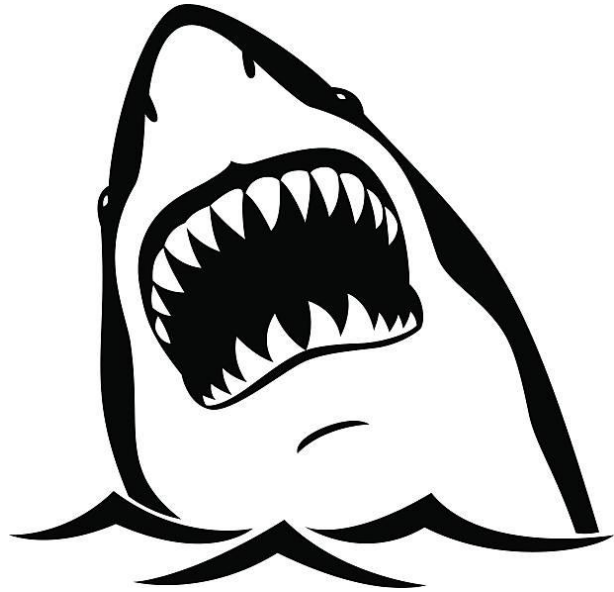
Monitoring & logging

- Application Insights https://bit.ly/3ejr9yi

Secret management

- Azure Key Vault https://bit.ly/3yypI5Y

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Lesson 5: Technical debt

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Managing technical debt

The "Quick" Way

versus

The "Right" Way
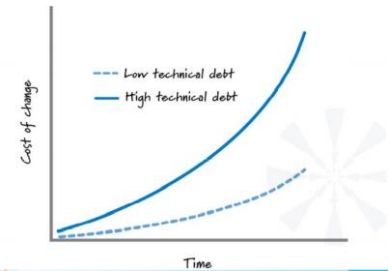
Speeds you up in the short term but …

slows down future development

- Intentional (or strategic)
- Unavoidable
- Unintentional (or naïve)

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Repaying technical debt

- Explain to business stakeholders/visualize
- Reserve capacity
- Tools:
    - Power Platform Solution checker
      https://bit.ly/3EoL3SR
    - Static Code Analysis & Vulnerability scans
- Keep an eye on upcoming deprecations

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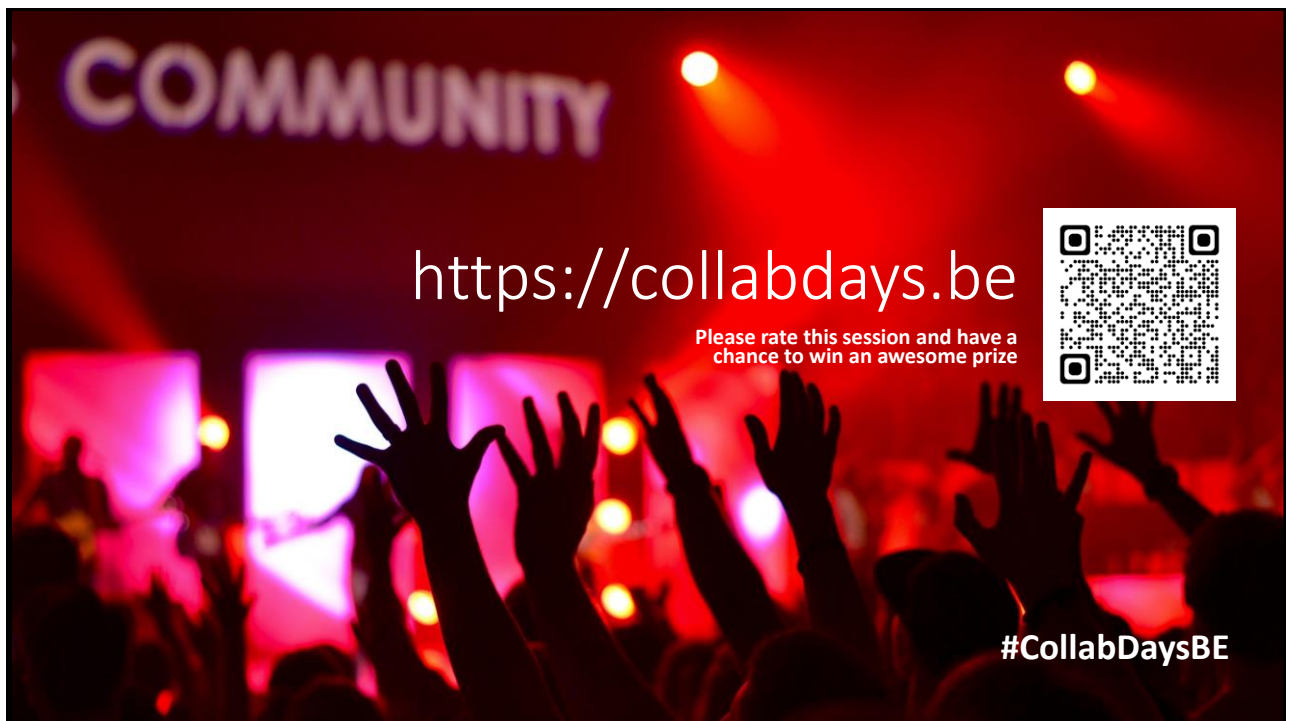# Other things I learned …
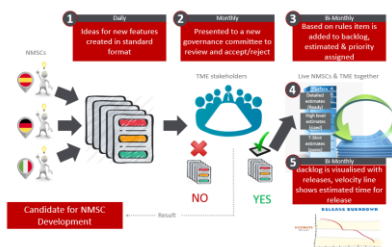
Governance structure

Scrum works

The answer to every licensing question is 42

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Progress cannot be generated when we are satisfied with existing situations.

Taiichi Ohno

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COMMUNITY

https://collabdays.be

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THANK
YOU

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