



All-round strongly-typed approach to MS CRM

CRM3005

Ramón Soto Mathiesen
Managing Specialist / CTO of CRM Department

d e l e g a t e

Shared Success

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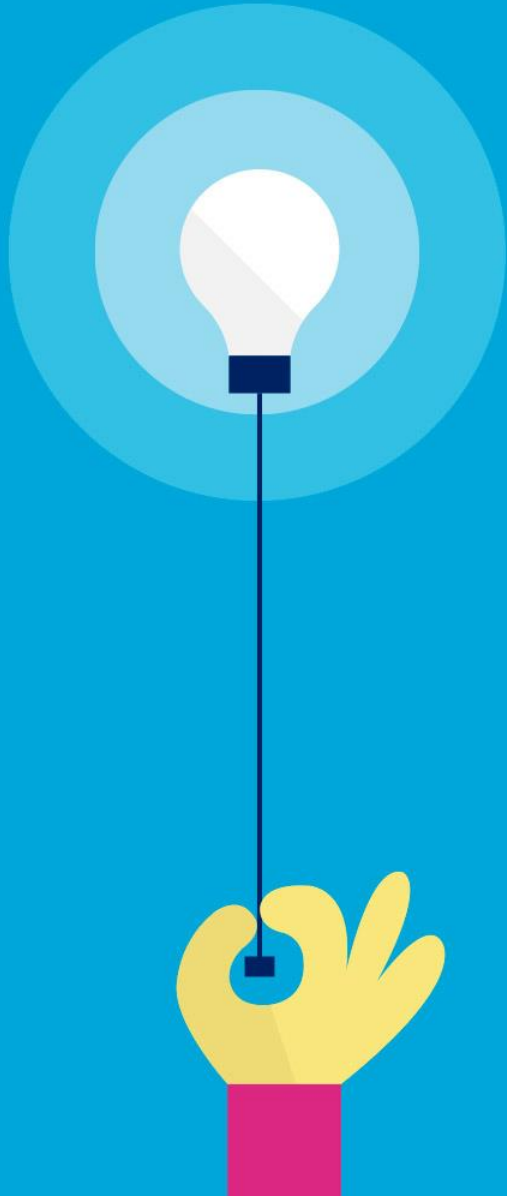
Agenda



- Matching of expectations
- Short introduction: Speaker and Delegate A/S (CRM)
- All-round strongly-typed approach to MS CRM
 - Client-side code: XrmDefinitelyTyped
 - Scripting: DAXIF# (Click-Once Deployment, Data migration ...)
- Live demo
 - Client-side developer: Web resources (TypeScript, XrmDefinitelyTyped and DAXIF#)
 - Business Analyst: Click-Once Deployment (F# and DAXIF#)
 - Data specialist: Import and export of data (F# and DAXIF#)
- Summary
- Q&A



Matching of expectations



Our goal is to inspire customers and other consultancy houses to use Microsoft's newest technologies, TypeScript and the functional programming language F#, in combination with the MS CRM platform in order to create more correct and robust applications as well as deliver them faster with fewer errors.

Note: Feel free to interrupt and ask questions along the way



Short introduction

Short introduction – Ramón Soto Mathiesen



Delegate A/S: 2013 -

- Position: CTO of CRM Department
- I am responsible for the department's technical vision and solutions, as well as the implementation of these visions and solutions to our customer projects.
- CRM Projects: Schultz Information, William Demant Holding, Konica Minolta, Danske Fragtmænd, Radiometer, Jyske Bank ...

Education: 2005 - 2010

- M.Sc. in Computer Science, with minors in Mathematics (DIKU/HCØ/Pisa)
- Microsoft certified: MCP + MCSA + MCSE + MCDBA + MCTS



Netcompany A/S: 2010 - 2012

- Position: Senior Software Architect
- CRM Projects: ISS, DSR, Peugeot, Konica Minolta, Mærsk Drilling, Ældre Sagen, Søfartsstyrelsen, Oticon A/S, Brüel & Kjær, ...

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Short introduction – Delegate A/S (CRM)



- Consulting firm known for their mission-critical SharePoint solutions since 2006
- Our CEO is **Peter Østergaard**, a former *Associate Partner* at Netcompany and *Microsoft CRM Sales Lead*
- The CRM department was established the 1st of February 2013, the day I started at Delegate A/S
- At the head is **Kaspar Bøgh Christensen**, former *Dynamics CRM Director* at Avanade
- And last summer, **Michael Weis** arrived, a former *Microsoft Solution Sales Lead*, *Dynamics CRM*
- The company's motto: "*We must be the best, not the biggest.*"

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Short introduction – Delegate A/S (CRM)



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Gold Customer Relationship Management

Microsoft Partner Award 2014

Årets CRM Partner

Microsoft

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[Link](#)

- The company's motto: *"We must be the best, not the biggest."*



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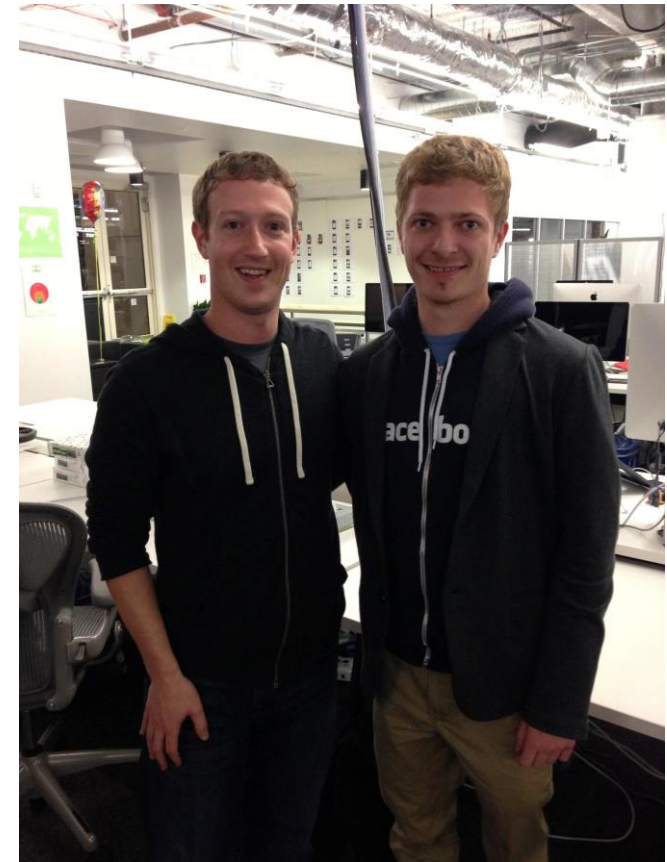


All-round strongly-typed approach
to MS CRM

Client-side code: XrmDefinitelyTyped



- What is TypeScript: TypeScript is an *open-source, typed superset* of JavaScript that *compiles to plain* JavaScript, designed by Anders Hejlsberg (Technical Fellow at Microsoft). It provides static typing, classes and interfaces. One of the big benefits is to enable IDEs to provide a richer environment for spotting common errors as you type the code.
- Why TypeScript: One of our M.Sc. students (Mr. T, he's the one on the right in case you were in doubt) got tired of submitting erroneous JavaScript code so he decided to create XrmDefinitelyTyped.



Client-side code: XrmDefinitelyTyped



- XrmDefinitelyTyped brings the power of TypeScript to xRM client-side scripting (OData, form scripts, ...).
- It is basically CrmSvcUtil, but for TypeScript instead of C#. With this tool you get full type-safety, intellisense, and in general a lot faster and more reliable coding based on your CRM system.
- Does not add any additional JavaScript code, since it works solely based on generated TypeScript declaration files (.d.ts). This means your new TypeScript code will be just as efficient as your old JavaScript code.

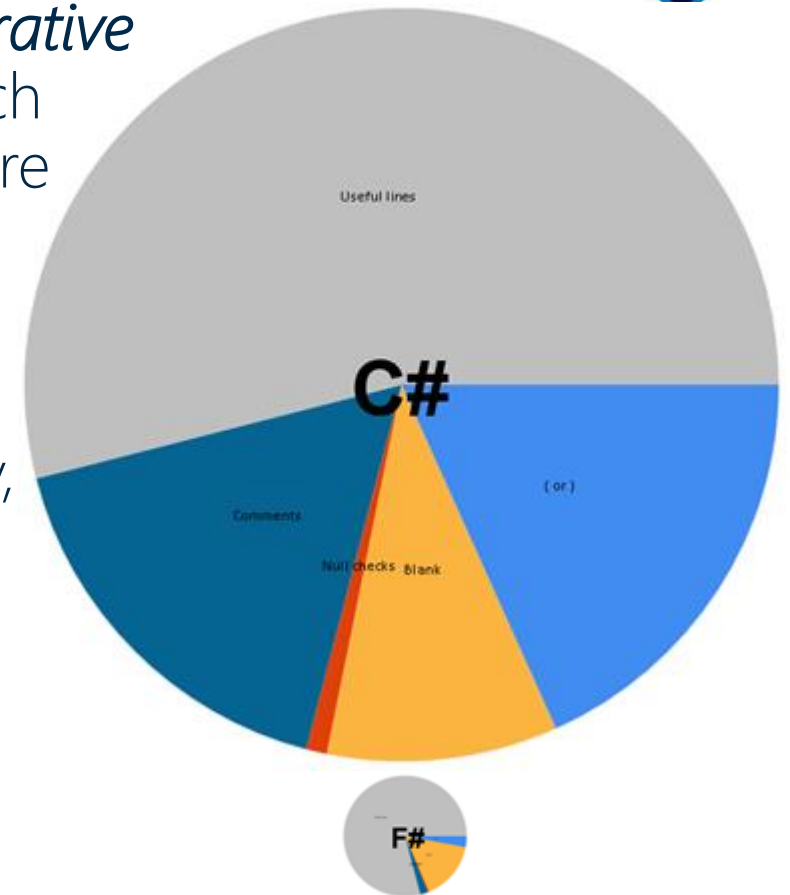
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Scripting: DAXIF# (Click-Once Deployment, Data migration ...)



- What is F#: Is an *open-source, strongly typed, multi-paradigm* programming language encompassing *functional, imperative* and *object-oriented* designed by Don Syme (MS Research Cambridge UK) and maintained by Microsoft, F# Software Foundation and open contributors
- Why F#? Less code base, error-free projects, only one language, large data (big data), parallelism, concurrency, asynchronous processor ...
- DAXIF# started out as DAXIF (C#, .BAT files, almost no time for unit testing, ..., you know the drill). Now all modules are less than 100 lines of code making it easy to read it again and again and again ...



Scripting: DAXIF# (Click-Once Deployment, Data migration ...)



- DAXIF# is defined as a set of stand-alone tools in combination with other MS tools make it easier to work with CRM/xRM on a daily basis (also for developers who are not familiar with the platform)
- *One can think of DAXIF# as a Swiss army knife that can help with the daily tasks of working on MS CRM with the following modules: Click-Once Deployment, Data migration, Daily development, ... among others*



CLASSIC



SWISS CHAMP



SPARTAN

Live demo



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```
C:\WINDOWS\system32\cmd.exe

C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:37:34.8778624+01:00 - Info: Retrieve Solution: XrmVSSolution
2013-10-31T21:37:40.7700813+01:00 - Info: The Solution was retrieved succesfully
2013-10-31T21:37:40.7730816+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:37:46.8473812+01:00 - Info: The Solution was fetched succesfully

C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:39:04.5538401+01:00 - Info: Retrieve Solution: XrmVSSolution
2013-10-31T21:39:04.5558395+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmFramework/XRMServices/2011/Organization.svc
2013-10-31T21:39:04.5568400+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:04.5568400+01:00 - Verbose: Path to folder: C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\
2013-10-31T21:39:04.5568400+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:04.5568400+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:04.5578405+01:00 - Verbose: User: crminstall
2013-10-31T21:39:04.5578405+01:00 - Verbose: Password: *****
2013-10-31T21:39:04.5578405+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:04.5628399+01:00 - Verbose: License is valid
2013-10-31T21:39:04.8861609+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:04.8871937+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:04.8881854+01:00 - Verbose: Proxy timeout set to 1 hour
2013-10-31T21:39:04.8891852+01:00 - Verbose: Export solution
2013-10-31T21:39:10.2564126+01:00 - Verbose: Solution was exported succesfully
2013-10-31T21:39:10.2594103+01:00 - Verbose: Solution saved to local disk
2013-10-31T21:39:10.2633944+01:00 - Info: The Solution was retrieved succesfully
2013-10-31T21:39:10.2653946+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:39:10.2653946+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmTEST/XRMServices/2011/Organization.svc
2013-10-31T21:39:10.2663928+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:10.2663928+01:00 - Verbose: Path to file: C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip
2013-10-31T21:39:10.2663928+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:10.2673929+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:10.2673929+01:00 - Verbose: User: crminstall
2013-10-31T21:39:10.2673929+01:00 - Verbose: Password: *****
2013-10-31T21:39:10.2673929+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:10.2693935+01:00 - Verbose: License is valid
2013-10-31T21:39:10.3433980+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:10.3433980+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:10.3444229+01:00 - Verbose: .ZIP loaded succesfully
2013-10-31T21:39:10.3453975+01:00 - Verbose: Proxy timeout set to 1 hour
2013-10-31T21:39:10.3463976+01:00 - Verbose: Import solution
2013-10-31T21:39:15.6090210+01:00 - Verbose: Solution was imported succesfully
2013-10-31T21:39:15.6100211+01:00 - Info: The Solution was fetched succesfully

C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:39:38.4002648+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:39:38.4012824+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmTEST/XRMServices/2011/Organization.svc
2013-10-31T21:39:38.4012824+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:38.4022661+01:00 - Verbose: Path to file: C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip
2013-10-31T21:39:38.4022661+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:38.4022661+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:38.4022661+01:00 - Verbose: User: crminstall
2013-10-31T21:39:38.4032640+01:00 - Verbose: Password: *****
2013-10-31T21:39:38.4032640+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:38.4072838+01:00 - Verbose: License is valid
2013-10-31T21:39:38.6853029+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:38.6862855+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:38.6872829+01:00 - Error: Could not find file 'C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip'.

C:\_tfs_delegat\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>
```

Live demo



MS CRM Online

- Source: <https://delegatedemosource.crm4.dynamics.com/>
- Target: <https://delegatedemotarget.crm4.dynamics.com/>

CRM Administrator

- admin@delegateDemoSource.onmicrosoft.com
- admin@delegateDemoTarget.onmicrosoft.com

Adam Barr

- adamb@delegateDemoSource.onmicrosoft.com
- adamb@delegateDemoTarget.onmicrosoft.com

Ken Mallit

- kenm@delegateDemoSource.onmicrosoft.com
- kenm@delegateDemoTarget.onmicrosoft.com

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Live demo – Client-side developer



Web resource synchronization

- MS CRM Developer Toolkit is not quite optimal to use as all files, regardless of type, are stored in a single folder ("root").
- It will often be various files located in a folder structure. This structure should also be reflected in the CRM solution (HTML + relative paths, etc.)
- In the end, it will also remove some errors/warnings when using it in combination with MS Solution Packager
- By using XrmDefinitelyTyped in combination with TypeScript we ensure that we at least will not have any errors in our JavaScript code before we sync with the cloud.

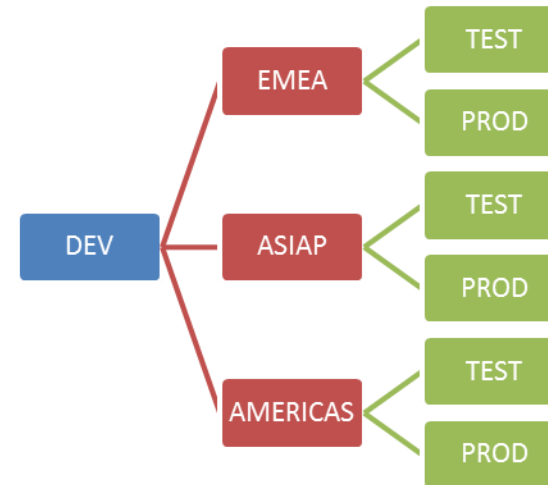
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Live demo – Business Analyst



Click-Once Deployment

- How many have tried to manually deploy from DEV → TEST → PROD? *Pain-in-the-ass* ☹ !!!
- And have you tried to do it for a global customer? (Growing exponentially)
- What about dependence on a technical resource/competence (internal / consultancy) to perform the task?



Live demo – Data specialist



Data Management (Import/Export with Parallelism)

- Import and export of data should be done as fast as possible.
- By using some of the currently available tools, there must be made some kind of mechanism to ensure that data is not being loaded multiple times? (one of the clients we have taken have an issue with SCRIBE + MSMQ)
- If you know little to MS CRM data model, you can easily establish a hierarchical import sequence that makes it possible to load data in parallel by exploiting all the computer processing power
- **Magic:** By using TypeProviders, we are sure that no part of the file will be executed until all "static data and metadata types" are evaluated against the target system

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Summary



XrmDefinitelyTyped

- Still in a prototype phase (not all SDK is implemented but will be)
- Open-source? Probably 😊

DAXIF#

- NUGET package:
<https://www.nuget.org/packages/Delegate.DAXIFsharp/>
- Github website with documentation and API Description:
<http://delegateas.github.io/Delegate.DAXIFsharp/>
- Is constantly being developed:
http://delegateas.github.io/Delegate.DAXIFsharp/RELEASE_NOTES.html

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Promotion:



- Do you work daily with Microsoft Dynamics CRM, and want to meet and share your experience with like-minded, so join the Danish CRMUG user group.
- CRMUG is a global Microsoft Dynamics CRM user group with over 13,000 members. The Danish division was established in spring 2013 and has already collected over 60 members.
- The purpose of the group is to exchange experiences, discuss solutions, networking and learning about CRM. There will be approximately 4 times a year, where there will be discussions, lectures and knowledge sharing. The meetings typically contain both a technical track and a business track, so there is something for all interests.
- Sign up by sending an email to the Chairman: Pernille Poulsen - ppo@brf.dk

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Q&A

#Ask me about everything!

Join me at the Microsoft Booth the next
30 minutes @Meet The Experts

Dont forget to: Evaluate this session!