

Overcoming Challenges of Upgrading Highly Customised CRM Environments

Mario Trueba Cantero
Senior CRM Developer/Consultant
MetroBank

Mario Trueba Cantero

- Senior CRM Developer
- 3 – 4 years of experience
- Twitter: @mtcantero
- Blog:
crmandcoffee.wordpress.com



What are we going to talk about

➤ Should I support the upgrade from a technical point of view?



What are we going to talk about

- 3 different upgrade scenarios
- 3 common challenges for each



What are we going to talk about

Tools Tools Tools!!!

- ▶ Dynamics XRM Tools
- ▶ SQL 2 FetchXML
- ▶ Microsoft Dynamics Legacy Feature Check
- ▶ Microsoft Dynamics Custom Validation Tool

Things to consider when upgrading

What is our budget?

How customized my environment is?

Are we upgrading from an
earlier version to the latest?
CRM 4 to 2013

How much time do we have?

Would it be a good idea to
rewrite some processes?

Does the new version provide better OOB Functionality?

Type of Developers

Comfort Zone Developer



Crazy Developer



YES, LET'S UPGRADE!

Types of Upgrades

- Normal Upgrade
- Migration Upgrade
- On Premise / Online

Normal Upgrade

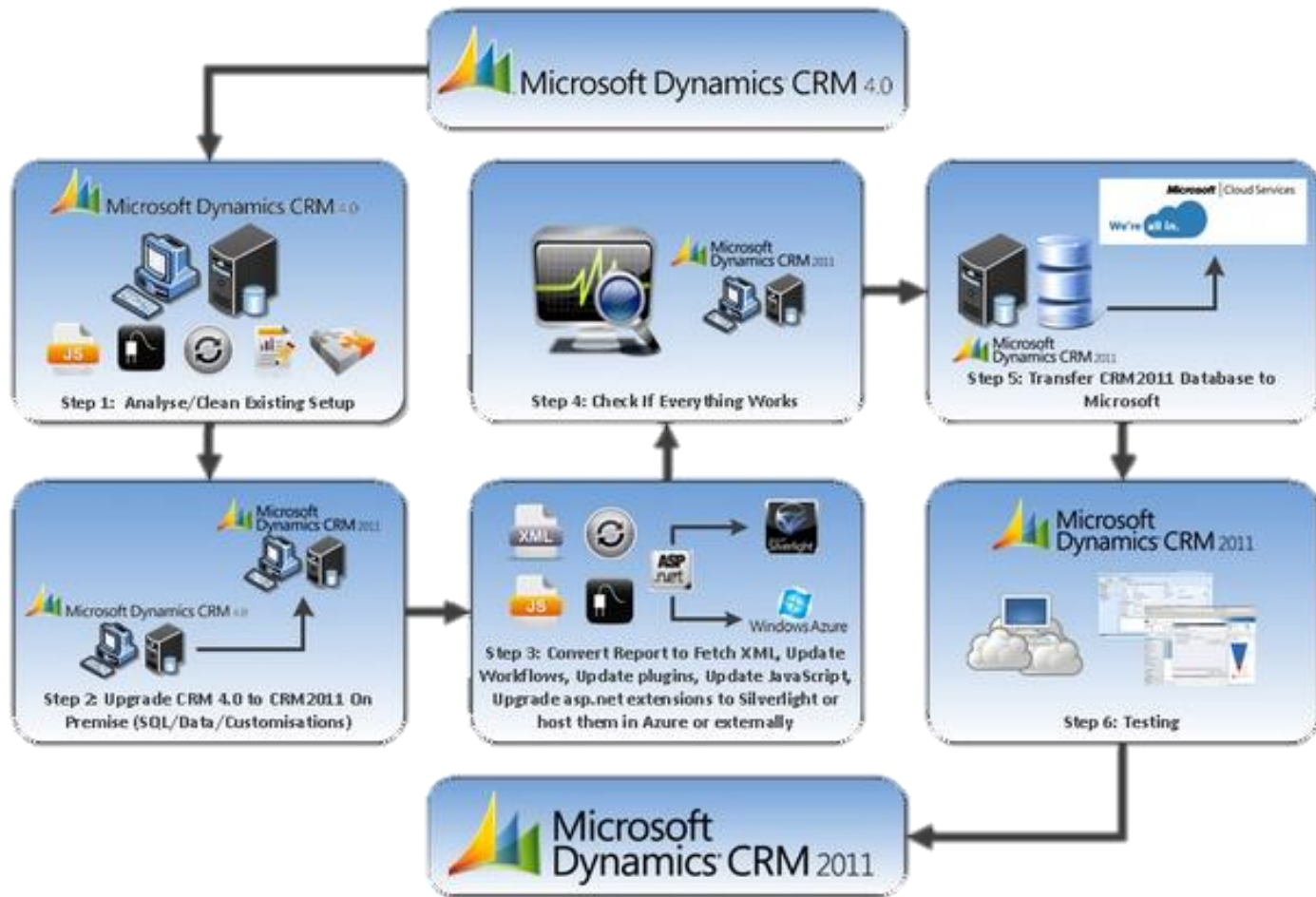
- Applying the upgrade to a current Organisation.
 - More Complex.
 - Less impact for the users.
 - Less innovation.
 - Should be carried out in Phases.

Migration Update

- Install the new version on a separate environment and recreate the Business Processes.
 - Proves to sometimes be easier.
 - Easier to carry on Development and Support for the existing Organisations.
 - More impact on our users
 - More Innovation
 - Data migration Tool Required : SSIS, Scribe, etc..

On Premise/ Online Upgrade

- Normal update & Migration update
- Supported, Supported, **Supported!**
- Bye SQL – Hello FetchXML!
- Sandbox Plugins
- Example:



Summary

- We have identified the things that we need to consider.
- We have analysed the team that we have and we know its weaknesses and strong points.
- We have decided what type of upgrade we want to do.

Upgrade Scenarios

Common challenges faced as you upgrade through versions of Dynamics CRM

1. ASP.NET applications

Problem:

- Microsoft drastically reduced the use of the ASP.NET applications on the ISV folder to only those that were using the CRM 4 endpoint.
- ISV folder was deprecated on 2013.

Solution:

- HTML Web Resources (Javascript, Silverlight, HTML 5).
- Plugins.

2. Plugins: watch your data types

Problem:

- CRM 2011 introduces the native .NET types on the Entity Attributes
- No need to carry on using types like CRMBoolean, Dynamic Entity, etc..

Solution:

- Rewrite the code.
- Check the following list by Ben Hosking:
<http://crmbusiness.wordpress.com/2011/01/28/type-mapping-between-versions-crm-2011-and-crm-4/>

3. FetchXML, Your new friend

Problem:

- CRM 2011 online doesn't allow custom SQL SRS Reports

Solution:

- Change the Data Source of you Reports from SQL to FetchXML

1. Auto Save Feature

Problem:

- With 2013, Microsoft introduced the Auto Save feature that will save the record every 30 seconds if changes have been done.
- It will affect to Plugins, Workflows, JavaScript code.

Solution:

- Turn it off under Settings > Administration > System Settings.
- Another possibility is to use Javascript to “disable” it manually on every form.

```
function preventAutoSave(econtext) {  
    var eventArgs = econtext.getEventArgs();  
    if (eventArgs.getSaveMove() == 70) {  
        eventArgs.preventDefault();  
    }  
}
```

2. Multiple Browsers

Problem:

- ◀ Dynamics 2013 introduced multi browser support.
- ◀ Internet Explorer uses a different status values for XMLHttpRequest

Solution:

- ◀ Source: SDK

```
if (this.readyState == 4 /* complete */) {  
    this.onreadystatechange = null; //avoids memory leaks  
    if (this.status == 204 || this.status == 1223) {  
        //Success  
    }  
    else {  
        //Error  
    }  
}
```

3. The Process Stage Paradox

Problem:

- With the introduction of the Polaris Forms the Sales Pipeline in Opportunities used an option set attribute named Sales Stage

Solution:

- Dynamics CRM 2013 introduces the Process Stages for all the entities so a change to the Opportunity Entity is required, all the Opportunities now need to use the **stageid** field rather than the **salestagecode** attribute.

1. Merge my CRM 2011 forms?

Problem:

- With CRM 2015 Microsoft will stop adding new features to the 2011 forms.
- Although some people reported issues when Merging the Forms and exporting the customizations.

Solution:

- Migrate and if required use this workaround by Jukka Niiranen:
- <http://niiranen.eu/crm/2014/10/dont-merge-forms-in-crm-2013/>

2. Unsupported IE versions

Problem:

- Non-supported versions of Internet Explorer (8 and 9) will no longer redirect to the mobile website, but CRM will not be tested with these versions so your results might be unreliable.

Solution:

- It is important to consider any Client Side code that might break with non supported browsers - before we knew that it will just not work
- Now the form will load, but the logic might not work.
- Scenarios: Auto Populate data, OnSave events

3. Process Stage enhanced

◀ Problem:

- ◀ Business Processes and Business Rules have been enhanced.
- ◀ Jumping Process Stages depending on logic.

◀ Solution:

- ◀ Use Out of the Box functionality

Summary

- CRM 4 to 2011, big changes in the SDK main issues around Javascript, Plugins and Reports
- CRM 2011 to 2013, less changes required, most common issues are regarding the new functionality, Business Rules, Process Stage...
- CRM 2013 to 2015, programmatically everything stays similar, but it's important to adopt features introduced in 2013 and enhanced in 2015

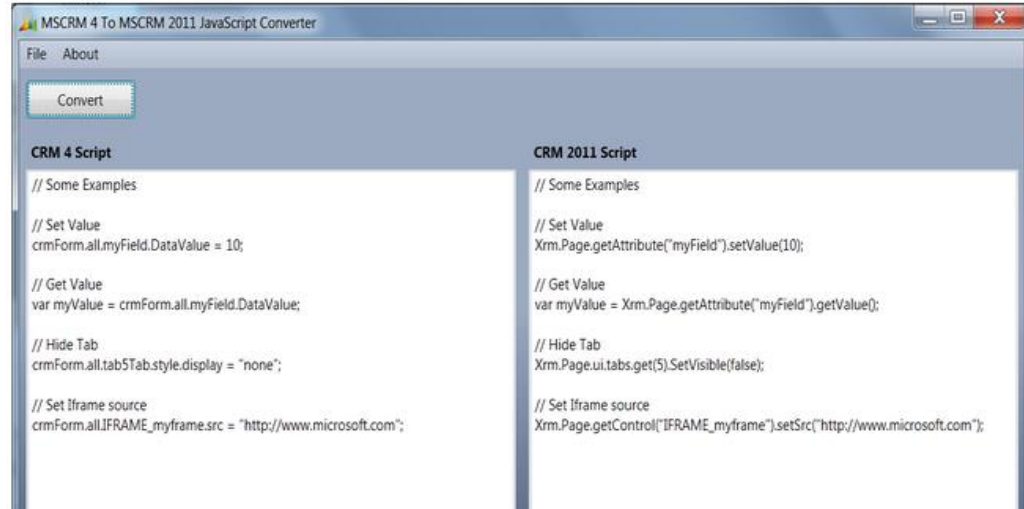
Tools Tools Tools Tools!

JavaScript Converter

➤ CRM 4 to CRM 2011
Javascript Converter

➤ Author:
Rhett Clinton, MVP

➤ Link:
dynamicsxrmtools.codeplex.com



```
File  About
Convert

CRM 4 Script
// Some Examples
// Set Value
crmForm.all.myField.DataValue = 10;

// Get Value
var myValue = crmForm.all.myField.DataValue;

// Hide Tab
crmForm.all.tab5Tab.style.display = "none";

// Set IFRAME source
crmForm.all.IFRAME_myframe.src = "http://www.microsoft.com";

CRM 2011 Script
// Some Examples
// Set Value
Xrm.Page.getAttribute("myField").setValue(10);

// Get Value
var myValue = Xrm.Page.getAttribute("myField").getValue();

// Hide Tab
Xrm.Page.ui.tabs.get(5).setVisible(false);

// Set IFRAME source
Xrm.Page.getControl("IFRAME_myframe").setSrc("http://www.microsoft.com");
```

SQL2FetchXML

- Convert SQL queries to FetchXML for reports, custom views
- Author: KingswaySoft
- Link: sql2fetchxml.com

Enter SQL Script:

Convert

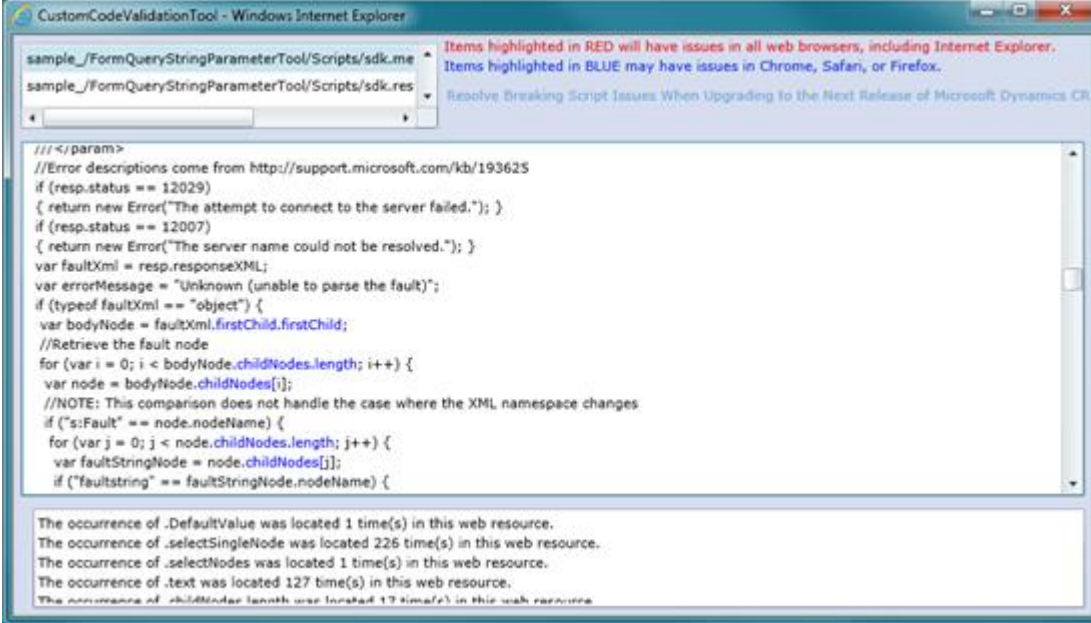
Generated FetchXML:

Custom Code Validation Tool

➤ Dynamics CRM
2011/2013
Custom Code
Validation Tool

➤ Author:
Microsoft

➤ Link:
<http://bit.ly/1En3az3>



```
sample_/FormQueryStringParameterTool/Scripts/sdk.me
sample_/FormQueryStringParameterTool/Scripts/sdk.res

Items highlighted in RED will have issues in all web browsers, including Internet Explorer.
Items highlighted in BLUE may have issues in Chrome, Safari, or Firefox.
Resolve Breaking Script Issues When Upgrading to the Next Release of Microsoft Dynamics CRM

<</param>
//Error descriptions come from http://support.microsoft.com/kb/193625
if (resp.status == 12029)
{ return new Error("The attempt to connect to the server failed."); }
if (resp.status == 12007)
{ return new Error("The server name could not be resolved."); }
var faultXml = resp.responseXML;
var errorMessage = "Unknown (unable to parse the fault)";
if (typeof faultXml == "object") {
var bodyNode = faultXml.firstChild.firstChild;
//Retrieve the fault node
for (var i = 0; i < bodyNode.childNodes.length; i++) {
var node = bodyNode.childNodes[i];
//NOTE: This comparison does not handle the case where the XML namespace changes
if ("s:Fault" == node.nodeName) {
for (var j = 0; j < node.childNodes.length; j++) {
var faultStringNode = node.childNodes[j];
if ("faultstring" == faultStringNode.nodeName) {

The occurrence of .DefaultValue was located 1 time(s) in this web resource.
The occurrence of .selectSingleNode was located 226 time(s) in this web resource.
The occurrence of .selectNodes was located 1 time(s) in this web resource.
The occurrence of .text was located 127 time(s) in this web resource.
The occurrence of .childNodes.length was located 17 time(s) in this web resource.
```

Legacy Feature Check Tool

➤ Author: Microsoft

➤ Link:

go.microsoft.com/fwlink/p/?LinkId=309565

➤ `C:\CRM\LegacyFeatureCheck\Microsoft.Crm.LegacyFeatureCheck.exe /out:results.xml`

Any Questions?