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Successful custom code adaptation for S/4HANA Hager Group case study

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Me, myself & I



- Metalhead
- Brewing & Asian kitchen enthusiast
- Guitar & Football player
- Tychy, Poland

hagergroup SAP Community

- In Hager Group for 20 years
- Currently Software Development Manager
- Former ABAP Developer

- SAP Champion Ξ.
- Former blogger
- Book author about ADT
- Creator of few Eclipse plugins and ABAP Open-Source projects



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02 Preparation for S/4HANA conversion

03 Execution of S/4HANA custom code adaptation

04 Hypercare

05 What would I do differently now?

06 Summary



Hager Group

Our business

Hager Group is a leading supplier of solutions and services for electrical installations in residential, commercial and industrial buildings.



Residential buildings



Commercial buildings

Key figures

* per 31.12.2023

88

Nationalities

3.2

Billion euro turnover in 2023



Employees

>100

Countries in which Hager Group solutions are available +12.3%

Organic Growth

22

Production facility locations worldwide

Hager Group worldwide Our 22 production facility locations

Production facility locationsSales distribution

Components and solutions available in more than 100 countries.



hager group

Our brands The specialists

:hager

Electrical installation systems in residential, commercial and industrial buildings.



Multifaceted switch designs combined with smart building automation.

ELCOM.

Modern door communication systems and individual and high-quality door station solutions.

ESO DC

Innovative solutions for energy storage and electromobility in Germany/Switzerland.

(6) воссніотті (6) івосо

Cable management and small distribution boards for domestic and industrial applications.

eficio smart building @

Integrated software solutions for energy management of buildings and remote control and optimisation of energy consumption on site for commercial customers



Specialist and market leader of flexible and rigid conduit systems for low voltage installations in Europe.



OPERATION FOR Preparation for S/4HANA CONVERSION

Custom objects in ECC Custom Code Migration

Class Enhancement Function Groups Report Before

Total number of selected custom code objects in ECC

Tools preparation Basic setup

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- SCMON ABAP call monitor run for 1.5 year
- Evaluation of the custom code usage on a base of STAD statistics
- ATC setup to check S/4HANA readiness of newly created code
- Custom Code Migration Fiori App (upgrade of ATC system to S/4)

Priority assessment Excel file based on STAD & ATC

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Custom Code classification



Exchange with Business Preparation



- Business was informed ahead
- Some of the work streams started to assess custom code at early stage
- Critical custom code was identified
- Clear explanation of Fiori strategy

External Partner selection Preparation



- Several discussions with external partners
- We've selected one, that can cover each part of conversion and support functionally and technically
- Time is your enemy





D3 Execution of S/4HANA custom code adaptation

System copies Test Conversions



- 1x technical conversion and 2x sandbox conversions before conversion of Dev system
- Technical system kept and used for development needed after S/4 conversion
- ACT_UPG, SPAU, SPDD transports created and reused
- Start of custom code adaptation on sandbox system

Scope adaptation Custom Code Migration App





- SCMON data included
- Manual adaptation of the scope
- Add-ons exclusion
- External custom code excluded (installed through abapGit for example)

Differences in ATC findings Custom Code Migration App

- Development system have much more ATC findings
- Open TRs and local objects are one of the reasons

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Cleaning of Transport Requests Preparation

- Many old TR still not released
- Changes not needed anymore but not reverted
- Different state of Dev system and Prod
- Inactive objects (including \$TMP package)
- Some of the owners of not released TR, already outside the company
- We need it, but I don't have time to test



Mass processing of Automatic Quick Fixes Custom code adaptation

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ABAP Development Tools for SAP NetWeaver

- Converted sandbox used
- Maximum one package at time
- Only in ABAP Development Tools

Mass processing of Automatic Quick Fixes Custom code adaptation



- Only for ATC findings with recommended quick fixes
- Custom Code Migration app will still show Automatic Quick Fixes Allowed
- Automatic Quick Fixes can be used manually in ADT

Actualized plan S/4HANA conversion project

PROJECT PLAN	NING S/4HANA	2021		20)22		2023					
RESPONSIBLE	WHAT	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
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Functions + D&I	Go-Live						Pro	oduction Conve	ersion 12 1 Hyper	5.08.2023 Care Phase		

System Landscape Dual Maintenance



- (1) System Copy AD1 to AD2
- Conversion AD2 to S/4HANA (Dual Maintenance Start, Transport Route Change) -> Future DEV-System for S/4HANA
- (3) System Copy AP1 to Al4
- (4) Conversion Al4 to S/4HANA
- (5) Actualization of Al4 Sandbox through AD2 (regular transports)

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Transports setup Dual Maintenance

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🚊 AD2K902552 -	C ZSD_ZSD2_LOG_VER_VBRX	Methoden zu Faktura			
AD2K902697 -	ZSD_ZSD2_PO_PRICE_GETTER	Purchase order price getter			
aD2K902714	ZSD_ZSD2_PURCHASE_REQ_BADI	Class called in ME_PROCESS_REQ_CUST BADI for ZSD			
AD2K902725	ZSD_ZSD2_VEG	Methoden zu Verkaufsbeleg			
AD2K902733 -	ZSD_ZSD2_VEG_V8RK	Methoden zu Faktura			
AD2K902748 -	ZSD_ZWAB_AZURE_Q3				
AD2K902851 -	ZSD_ZWAB_EXPORT_Q3				
AD2K902959	ZSD_ZVAB_PRINT_PICTURE_UITL				
AD2X902990 -	ZSD_ZVAB_PRINT_SELECT_QUOTS				
AD2K902998 -	ZSD_ZVOM_COCKPIT_ORD_WALUE				
AD2K903093 -	ZSWSCCL_CATGEN_ATTVALS				
AD26903144	ZSWSCCL_CATGEN_CARHDR				
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AD2K902095 -					
AD2K902095 -	ZSWSWCL_COMMON_APPDOCDOWNL_XML				

- Only "few" transports on converted development system (block of TR creation to most of developers)
- Block of adapted objects on ECC system in special TRs
- Regular checks of released TRs on ECC if the dual maintenance was done

Manual code Adaptation Custom code adaptation







ABAP Development Tools for SAP NetWeaver

- Work split between Hager in-house and TCS developers
- Split mainly per package
- Daily exchange with TCS Dev Lead
- Priority based on the category from Excel file
- MS DevOps & PowerBI for developer's time management
- ATC Exemptions in hands of Hager
- Some of the T-codes were fully re-developed

Decommissioning Custom code adaptation

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- Special package structure
- abapGit as tool to archive code
- MS DevOps Git Repository
- Quick revert
- Several iterations
- ADT used to make deletion from system

Internal tests Sandbox conversions

- MS Planner used to collect issues
- Hard management and follow up
- No link to test data
- Manual reporting



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SolMan as incident handling tool Integration test

- Test plans/cards stored in SolMan
- Test plans linked to incidents
- Built-in dashboards



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	3: Medium	ZSD195			3000003600	Closed	Łukasz PĘGIEL		1.06.23	13.06.23	
	3: Medium	ZCAXUP03 Program	Dumps outloading data		3000003330	Closed	Lukasz PEGIEL	0	5.06.23	07.06.23	
	3: Medium	Impossible to choose	type of file "XLS"		3000003310	Closed	Łukasz PĘGIEL	0	5.06.23	09.06.23	
	3: Medium	Wrong PL descr. und	er BOM: Item button		3000003311	Closed	Łukasz PĘGIEL	a	5.06.23	06.06.23	
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	3: Medium	New debts created a	i business partner		3000003223	Closed	Łukasz PĘGIEL	0:	2.06.23	12.06.23	
	3: Medium	Deletion of debt not	working		3000003225	Closed	Łukasz PĘGIEL	0:	2.06.23	06.06.23	
	3: Medium	Debitors Contact not	uploaded to Azure		3000003167	Closed	Łukasz PĘGIEL	01	1.06.23	02.06.23	
	2: High	Program ZFICHR10 is	missing		3000002657	Closed	Łukasz PĘGIEL	21	1.03.23	21.03.23	
	2: High	ZPPEST00 variant do	es not exist in sa38		3000002343	Closed	Łukanz PĘGIEL	15	5.03.23	31.03.23	
	3: Medium	Transaction does no	work		3000002005	Closed	Łukasz PĘGIEL	10	0.03.23	14.03.23	
	3: Medium	Loading time too lon	g - quotomat		3000001810	Closed	Łukasz PĘGIEL	01	1.03.23	14.03.23	
33	2: Minh	E2na CA28 Delawar			2000001464	Closed	Lokara BCOID	0	. 02 22	16 02 22	

ATC findings burnout





Go-Live & Hypercare

Go-Live OMG no issues!

- No issues during Go-live at any phase
- TR released earlier to make sure no inactive objects are inside
- ~50 TR released in total

	Seque	Request/Task		Туре	Status of	Source	Transp	Short Description	Import Phase
					request/task	client	ort		
1	v		×				Targe -		
10		AD2K900024		Workbench	Released	000	DUM	SPDD AD2 S/4-Conversion	SPDD
11		AD2K900046		Workbench	Released	000	DUM	ACT_UPG: Cannot be corrected on AD1 / Corrected on Al4	ACT_UPG
12		AD2K900049		Workbench	Released	000	DUM	ACT UPG: Can be corrected on AD1 / Corrected on Al4	ACT UPG
13		AD2K901025		Workbench	Released	100	AI4	S/4 Conversion after SUM> Prepare Financial Conversion	Financial Data Migration
14		AD2K901027		Customizing	Released	100	AI4	C1-#10276-FI: Customizing Financial Data Migration	Financial Data Migration
16		AD2K901040		Workbench	Released	100	DUM	SPAU AD2 S/4-Conversion	SPAU
17	4	AD2K901046		Workbench	Released	100	AI4	D2-#10276-CA: Reg 1: Custom Code Adaptation	Custom Code
18	6	AD2K901079		Customizina	Released	100	AI4	C2-#10276-CA: Reg 1: Same version as on AP1	Custom Code
19	5	AD2K901081		Customizing	Released	100	AI4	C2-#10276-CA: Reg 2: Version different from AP1	Custom Code
24		AD2K901252		Workbench	Released	100	DUM	M1-#10276-PP:NA/1482635-0023/VA01/CO40: Performance issues w	SPAU
25	2	AD2K901256		Customizina	Released	100	AI4	C1-#10276-SD: ZVAB S/4Hana	Custom Code
30	7	AD2K902206		Workbench	Released	100	AI4	D1-#10276-SD: ZVAB S/4Hana	Custom Code
31	6	AD2K902228		Workbench	Released	000	AI4	D1-#10276-SD: ZB31 S/4Hana	Custom Code
32	5	AD2K902240		Workbench	Released	000	AI4	D1-#10276-SD: Basis-Tools S/4Hana	Custom Code
33	1	AD2K902425		Workbench	Released	100	DUM	M1-#10276-BC: NA/2680079-0005/SAP Note implementation	Custom Code
36	9	AD2K902674		Workbench	Released	100	AI4	MES - ERP & MES common part	Custom Code
40	2	AD2K902847		Workbench	Released	100	AI4	M1-#10276-MM: 03/3199201-0003/Note implementation(Task96522)	Custom Code
44		AD2K903138		Workbench	Released	100	AI4	M1-#10276-FI: 04/3284252-0002/Note impl. (Task 96841)	Einancial Data Migration
49	1	AD2K903425		Customizing	Released	000	AI4	ALV Excel Templates	Custom Code
50	-	AD2K903455		Workbench	Released	100	AI4	D2-#10276-BC: ACT_UPG Al1 Objects	ACT UPG
51		AD2K903467	-	Workbench	Released	100	AI4	D2-#10276-BC: ACT_UPG on Al2 round 2	ACT UPG
52		AD2K903470	-	Workbench	Released	100	AI4	D2-#10276-BC: ACT_UPG on Al1 round 3	ACT UPG
53	1	AD2K903630	-	Workbench	Released	100	AI4	SAP Note 3144349 for VISTEX S4 Conversion	Post-Conversion
54	3	AD2K903855		Workbench	Released	100	AI4	M1-#10276-FI: 03/3225499-0003/Note impl. (Task 98466)	Custom Code
58	4	AD2K904276		Customizing	Released	100	AI4	WP Authorization - ALL 7* Roles	Custom Code
59	10	AD2K904545		Workbench	Released	100	AI4	D2-#10276-CA: Reg 1: Custom Code Adaptation (new)	Custom Code
61	8	AD2K904811		Workbench	Released	100	AI4	D2-#10276-CA: FIORI Activation Content (new)	Custom Code
63	3	AD2K905516		Customizina	Released	100	AI4	C2-#10276-CA: FIORI Activation Content (new)	Custom Code
70		AD2K906474		Workbench	Released	100	AI4	D1-#10276-FI: S/4Hana: CreditMat Mig	Credit Management Migration
73		AD2K906681		Customizing	Released	100	AI4	Activate BC Sets Mobisvs after S/4 Conversion	Post-Conversion
77		AD2K907456		Workbench	Released	100	AI4	M1-#10276-FI; NA/3148858-0001/Note impl. Task 102459	Financial Data Migration
84	14	AD2K907882		Workbench	Released	100	AI4	D2-#10276-CA: Custom Code Adaptation (Delta after DR)	Custom Code
85	11	AD2K907884		Customizina	Released	100	AI4	C2-#10276-CA: Delta Customizing (Delta after DR)	Custom Code
86	11	AD2K907898		Workbench	Released	100	AI4	D2-#10276-CA: Additional FIORI Content (post DR)	Custom Code
87	9	AD2K907900		Customizina	Released	100	AI4	C2-#10276-CA: Additional FIORI Content (post DR)	Custom Code
89	-	AD2K907943		Customizina	Released	100	AI4	C1-#10276-SD: Customizing GTS Commodity Code Mig - FNABLE	Custom Code
90		AD2K907947		Customizina	Released	100	AI4	C1-#10276-SD: Customizing GTS Commodity Code Mig - DISABI F	Custom Code
91	7	AD2K907951		Customizina	Released	100	AI4	C2-#10276-CA: Additional D&I Auth. Content	Custom Code
92	13	AD2K907955		Workbench	Modifiable	000	AI4	D1-#10276-SD: ZB31 S/4Hana	Custom Code
94	10	AD2K908017		Customizing	Modifiable	100	AI4	C1-#10276-SD: ZVAB S/4Hana - Post adjustments	Custom Code
100	12	AD2K908161		Workbench	Modifiable	100	AI4	D1-#10276-SD: ZVAB S/4Hana (Tuning)	Custom Code
101	8	AD2K908202		Customizing	Released	100	AI4	Error corrction in Z MM 1Spot GetArticledata + C	Custom Code
102	-	AI1K900728		Workbench	Released	000	DS4	SPDD Adjustment Al1	SPDD
103	_	AI1K901728	-	Workbench	Released	100	DS4	All Conversion - SPAU	SPAU
104		AI2K901559	-	Workbench	Released	100	DU2	SPAU AI2 Conversion	SPAU
105	_	AI4K901508	-	Workbench	Released	100	DU4	SPAU Dress Rehearsal	SPAU
106	-	AD2K908438		Customizing	Released	100	AI4	C2-#10276-CA: Authorization for Gol ive Team	Financial Data Migration
107		AD2K908389		Customizing	Released	100	AI2	Automatic FX conversion for MR21	Post-Conversion

Hypercare Why we are here?

- No critical bugs after Go-live
- Only few programs to bring back (mainly print programs)
- Minor bugs found during first month
- Performance optimization continues (for ex. replacement objects, like MARC)





What would I do differently now?

What would I do differently? Not that much \odot

- Use another tool instead of
 Excel
- Earlier start of dual maintenance
- Earlier/faster decommissioning
- Earlier usage of SolMan

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Summary

- Sok objects in scope
- 38K ATC Findings
- 16 Hager Developers
- 12 TCS Developers + 1 Dev Lead
- © 2 years / 1 year of full-time CCA



Thank you for your attention!

Łukasz Pęgiel

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