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YBS ORACLE FORMS APPLICATION STRATEGY IN A SOA WORLD

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Public



- Background to Yorkshire Building Society
- History of YBS Oracle Forms Application
- Strategic Roadmap
- Analysing the application using PITSS
- The journey to SOA supported by PITSS
- Next steps for YBS



BACKGROUND TO YORKSHIRE BUILDING SOCIETY

YORKSHIRE BUILDING SOCIETY

- Financial Services organisation Mortgages and Savings our key business
- Strong Mutuality agenda everything we do is for the benefit of our members
- Between 2008 and 2012, we went through significant Merger and Acquisition activity
- YBS Group now contains multiple brands..
- 3.5m Customers
- £37.6bn Assets
- Over 4,500 Employees





HISTORY OF YBS ORACLE FORMS APPLICATION

FORMS APPLICATION - HISTORY

- Initially developed during the late 90's driven by the need to move from a mainframe to overcome Y2K issues
- Developed using Oracle Forms 4.5 Client/Server initial module definitions generated from Oracle Designer 2000
- Migrated through versions currently 10gR2 plans for 11gR2 this year
- Mid-tier forms adopted for business rather than technology reasons
- Evolved into a large application 000's of modules
- Large supporting database again, 000's objects
- Application is not just Oracle Forms Also utilise lots of COBOL (overnight processing), Java (Web channel), MS VB/.Net (Branch channel)



STRATEGIC ROADMAP



Single Brand architecture



• Multi - Brand cloned architecture



 Our architecture was starting to constrain our business agility!



- Organisational growth aspirations £50bn assets 5 million customers within 5 years
- Re-engineering not just technology but Business and associated processes
- Future state architecture SOA and BPM. Improve IT agility to satisfy business requirements

📌 Remote Working	A Charlton Kings	📌 Bradford	📌 Leeds	📌 Lynch Wood	📌 Town & Cities	📌 External
Messaging	Admin Centre Actiontact Centre Messaging Video Conferencing	Centre Branch Centre Messaging	Messaging Conferencing	Centre Centre Messaging Conferencing	Branch	Web Cathy Mobile Services
Browser Based Web	IVR Browser Based Web	Based Web Interface	Based Web Interface	IVR Telephony Browser Based Web Interface	Browser Based Web Interface	Browser ATM
Weblogic Server				T		Contact Centre Technology
WebCenter Sites	88 Webcenter Portal					Avaya Aura Contact Proactive
	Ul Handler					Centre Contact
G Srd Party Systems	Customer Mortgages	Banking & Savings Insurance & Investments	Collections	Finance HR	Risk & Fraud	Quality Portal Monitoring
KoFax	t ↑	t t	†	↑ •	+	Verint Impact 360 Workforce
Cheque Printing	Weblogic Server					📌 External
		Enterpris	e Service Bus			Online Services
						Experian Equifax
L&G Application	Enterprise Services		, 			Sharesave Stargate
SharePoint	Customer	Sales	Service	Other	Case Management	BACS/Faster Payment
MS Office	Core Business Services	Data Services Underlying Serv	vices	Jtility Services Decision Services	BAM	Microsoft Office 365
Matsoft						Rayment Hub
Oracle Enterprise Repository	Weblogic Server					Batch Services
Authentics		Enterpri	se Service Bus			Debits KeyData
Microsoft Exchange			Data Warehours		OPOI Secure	Mailings General
(Resolve)	Master Data Master Data Hepd Office S Management Data Oracle Cutomer Hub	siness	Data warehouse		Transaction Multi-Brand	Bank Clearing Quest
Arrears (FICO)		Core Database	Warehouse Mode		Processing Batch	Снарз

- Centred around a single, brand aware database
- No appetite to do a wholesale conversion of our Forms to ADF (yesterdays application in todays technology)



We faced a number of challenges to be able to deliver our strategy:

- Declining pot of Subject Matter Experts both Technical & Business who understand the existing application functionality
- Minimal system documentation for the existing applications it has evolved over the last 18 years
- Needed a mechanism for identifying business logic and enabling informed decisions to be made to help move us in the strategic direction
- Choice of doing this manually slow, resource heavy, and possibly inaccurate

or we look for tooling to assist

- A small number of tools out there, but PITSS was the only tool we identified which worked at the code level we required
- We ran a proof of Concept activity to evaluate PITSS in late 2012. It worked for Forms, Reports and Database
- COBOL could be loaded in and allowed simple textual search but didn't provide the full impact analysis we required
- With an assurance a COBOL parser could be provided, we purchased a number of PITSS modules in Mid 2013
- Modules purchased Technology Base, Maintenance/Development, Application Analysis, Application Engineering and Source Code Analytics



ANALYSING THE APPLICATION

PITSS SOURCE CODE ANALYTICS

• We know we have a large application, but now we can quantify it...



• We know we have a large application, but now we can quantify it...



• We know we have a large application, but now we can quantify it...



We know we have a large application, but now we can quantify it...



• So, we have a complex application. But how complex is it?

🧟 A	pplicati	on An	alytics	5								
				while the Name	с	R		D	BB	Total		
	1	DB	T	PARTIES	61	4,563	48	23	43	5,73	3,877	
İ	2	D	Т	ACTIVITY_PLAYERS	191	4,529	176	33	102	5,379	2,602	
	3	DB	T	PEOPLE	36	2,415	40	24	49	2,76	1,814	
	4	DB	T	BRANDO	0	1,601	0	0	0	1,705	27	Based Blocks (2%)
	5	DB	Т	SCHEME_PROVIDERS] 1	1,364	0	0	12	1,439	1,147	
	6	DB	Т	ADDRESS_USAGES	47	1,823	69	41	104	2,129	1,087	
	7	DB	Т	INTERNAL_ORGANISATIONS	0	1,269	0	0	19	1,326	996	
	8	DB	Т	LOAN_PARTS	12	1,614	20	2	13	1,878	992	
	9	DB	Т	ACCOUNT_NUMBERS	6	1,727	7	2	9	1,780	991	
	10	DB	Т	POSTAL_ADDRESSES	34	1,326	42	9	39	1,951	950	
	11	DB	Т	SAVING_ACCOUNTS	2	1,452	38	0	20	1,595	941	
	12	DB	Т	SAVING_PRODUCTS	1	1,724	7	0	22	1,838	929	
	13	DB	Т	CB_ACCOUNTS	3	1,377	50	1	24	1,551	894	READ (84%)
	14	DB	Т	LOAN_PART_STATUSES	35	1,529	41	5	7	1,698	883	
	15	DB	Т	LENDING_APPLICATIONS	5	1,156	100	0	30	1,899	871	
	16	DB	Т	EMPLOYMENT_DETAILS	25	932	10	32	39	1,168	841	
	17	DB	Т	OFFERS	2	1,064	0	1	25	1,108	835	CREATE • READ • UPDATE • DELETE • Based Blocks
	18	DB	Т	ALIAS_REFERENCES	4	972	0	0	2	1,021	795	Show first 20 objects
	19	DB	Т	COMMUNICATIONS	19	641	84	8	34	2,327	685	
	20	DB	Т	LOAN_PART_CONDITIONS	41	1,092	113	4	35	1,455	659	
	0				530	35,400	878	186	645	43	,157	
					11,354	22,250	4,846	1,164	4,339	157	,556	
~ 0	bject T	ype -			~ Orde	r By —						
					0.000			0.0				C Tables Manage Black Budden
					Cre	ate		⊖ Ri	eau			Tables/views usage Distribution Tables/views Usage Distribution (top objects)
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						ed Bloc	ks					
					O Tot	al		@ De	epende	ent Obje	ects	
<u> </u>)								

• We initially thought we would only need to brand a handful of tables!

🦉 Applicat	ion An	alytics	3								
			Object Name	с	R		D	BB	Total	DO	
A 1	DB	Т	PARTIES	61	4,563	48	23	43	5,732	3,877	
2	DB	Т	ACTIVITY_PLAYERS	191	4,529	176	33	102	5,379	2,602	
3	DB	T	PEOPLE	36	2,415	40	24	49	2,760	1.814	
4	DB	T	BRANDS	0	1,601	0	0	0	1,706	1,371	Based Blocks (2 %)
- E	DB	T	SCHEME_PROVIDERS	1	1,364	0	0	12	1,439	1,147	
ε	DB	Т	ADDRESS_USAGES	47	1,823	69	41	104	2,129	1,087	
7	DB	Т	INTERNAL_ORGANISATIONS	0	1,269	0	0	19	1,326	996	
8	DB	Т	LOAN_PARTS	12	1,614	20	2	13	1,878	992	
9	DB	Т	ACCOUNT_NUMBERS	6	1,727	7	2	9	1,780	991	
10	DB	Т	POSTAL_ADDRESSES	34	1,326	42	9	39	1,951	950	
11	DB	Т	SAVING_ACCOUNTS	2	1,452	38	0	20	1,595	941	
12	DB	Т	SAVING_PRODUCTS	1	1,724	7	0	22	1,838	929	
13	DB	Т	CB_ACCOUNTS	3	1,377	50	1	24	1,551	894	READ (94%)
14	DB	Т	LOAN_PART_STATUSES	35	1,529	41	5	7	1,698	883	
15	DB	Т	LENDING_APPLICATIONS	5	1,156	100	0	30	1,899	871	
16	DB	Т	EMPLOYMENT_DETAILS	25	932	10	32	39	1,168	841	
17	DB	Т	OFFERS	2	1,064	0	1	25	1,108	835	● CREATE ● READ ● UPDATE ● DELETE
18	DB	Т	ALIAS_REFERENCES	4	972	0	0	2	1,021	795	Show first 20 vojec
19	DB	Т	COMMUNICATIONS	19	641	84	8	34	2,327	685	
20	DB	T	LOAN_PART_CONDITIONS	41	1,092	113	4	35	1,455	659	
0	J			530	35,400	878	186	645	43	157	
				11,354	22,250	4,846	1,164	4,339	157	,556	
Object 1	Гуре -			Orde	r By —						
				Cre	ate		⊂ R	ead			○ Tables/Views Usage Distribution
	ΖT	ables	s Views	CUpo	late		O D	elete			Tables/Views Usage Distribution (top objection)
				GBas	ed Bloc	ks					C Unused Tables/Views
				C Tot	al		@ D	enende	nt Obie	rte	

• We were surprised to find we have a number of unused tables!

6	Applicati	on Ana	alytics	3								
				Object Name	c	P		n	RR	Total	DO	
C	1	DB	Т	NJ2		0	0	0	0		0	Illnused Tables/Views
	2	DB	т	NEIL2	0	0	0	0	0	0	0	
	3	DB	Т	NEIL	0	0	0	0	0	0	0	
	4	DB	Т	BANK_TRANS_SPLITS	0	0	0	0	0	0	0	
	5	DB	Т	CST_ISC_WORK_APPLIC	0	0	0	0	0	0	0	Unused abjects (12 %)
	6	DB	Т	CST_ISC_TABLE	0	0	0	0	0	0	0	Unused Objects (13 *)
	7	DB	Т	CST_PROFNAME	0	0	0	0	0	0	0	
	8	DB	Т	CST_NEW_BUSINESS	0	0	0	0	0	0	0	
	9	DB	Т	HIST_MAINTENANCE_TRANSACTIONS	0	0	0	0	0	0	0	
	10	DB	Т	HIST_ICBS_TXN_CODES	0	0	0	0	0	0	0	
	11	DB	Т	GL_SETS_OF_BOOKS_COPY	0	0	0	0	0		0	
	12	DB	Т	GL_POSTING_HISTORY	0	0	0	0	0		0	Used abjects (9791)
	13	DB	Т	GG_EVENT	0	0	0	0	0	0	0	Used objects (87 *)
	14	DB	Т	GGTEST	0	0	0	0	0		0	
	15	DB	Т	GENTIA_SQL	0	0	0	0	0		0	
	16	DB	Т	GAE_LIVE_ACCOUNTS	0	0	0	0	0	0	0	
	17	DB	Т	GAE_CUS0936B	0	0	0	0	0		0	Used objects Unused objects
	18	DB	Т	GAE_ACCOUNTS	0	0	0	0	0	0	0	Show first 20 objects
	19	DB	Т	FTP_PARAMETER	0	0	0	0	0	0	0	
		DB	Т	FSCS_SAVING_PRODUCT_PROVISION	0	0	0	0	0	0	0	
ς	323				0	0	0	0	0		0	
				l	0	0	0	0	0		0	
6	Object 1	ype –			- Order	Ву —						
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					Ound			0 N	-1-4-			C Tables/views Usage Distribution
		× 18	bles	Views	O upda	ne 		OD	elete			Unused Tables/Views
					Base	ed Bloc	:KS					
					C Tota	I		@ Di	epende	ent Obje	cts	

Source Code Metrics - the number of Statements within a module



Cyclomatic Complexity - How easy is it to test?



• Halstead Volumetrics - How easy is the code to comprehend and maintain for developer

🧑 A	pplicatio	on Ana	lytics	3					
				Object Name	Statem.	Cyclomatic I	Halstead Volume	Maintain.	
	1	FMB	Р	PR_SET_PARM_OPTS_BNK	778	24	32,532	-49	Source Code Metrics
ĺ	2	FMB	Ρ	PR_GET_DET			$\overline{}$		
	3	FMB	Ρ	PR_REALLO					volume)
	4	FMB	Р	PR_CREATE					
	5	FMB	Т	WHEN-NEW-	: An avera : More ser	ige programme nior skills mos	er snould i f likelv redi	pe able to c uired to con	comprehend and maintain this code
	6	FMB	Т	WHEN-NEW- > 3000 Tob Comple	x: Candida	ate for re-desig	or re-fac	toring to im	nprove readability and maintainability
1	7	FMB	P	PR_PROCES					
	8	FMB	Ρ	PR_ENABLE_DISABLE_PROC	377	127	9,412	43	
	9	FMB	Т	POST-QUERY	293	17	9,256	70	
	10	PLL	Р	COMM_PACK.PR_BATCH_LET	333	96	9,179	-49	Challenging (47%)
	11	FMB	Т	POST-QUERY	272	7	8,621	-17	Too Complex (53%)
	12	FMB	Т	KEY-COMMIT	305	89	8,337	-7	
	13	FMB	Т	POST-QUERY	266	6	7,991	34	
	14	FMB	Т	KEY-COMMIT	363	178	7,749	-69	
	15	FMB	Р	PR_EXECUTE	323	102	7,734	_9	
	16	FMB	Р	PR_POST_NOTICE_DIARY	397	91	7,637	- <mark>55</mark>	
	17	FMB	Р	PROCESS_NEXT_BLOCK	353	71	7,592	-46	
ļ	18	FMB	P	PR_SET_TX_FOR_RG	278	20	7,532	<mark>50</mark>	
	19	FMB	Р	PR_OLD_VALIDATE	436	218	7,117	-79	Challenging Too Complex
J	20	FMB	P	PR_SET_NBT_01	235	40	7,112	-27	Show first 500 🔽 objects
l	212,845								C Source Code Metrics
									Source Code Metrics(top objects)
$-\mathbf{L}$	ocation				- Order B	у ———			
	DB 🔽	FMB		PLL OLB MMB RDF	State	ments			C Statements
-0) bject T	vpe –			Cyclo	matic Comple	exity		Cyclomatic Complexity
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	Proced	lure		▼ Function ▼ Trigger	 Maint Object 	amability index A Usano	×		S Manuanabily muex
	Menu	tem		Built-in	CLOC	A USUGE			

Maintainability - How easy is the code to maintain?



So the application really is complex. Right?











THE JOURNEY TO SOA

PITSS APPLICATION ENGINEERING

• We have logic within our existing Forms functionality which we may want to reuse rather than having to re-write within a new technology

👥 BL As	sistant
	Sistant Containers Settings Custom Containers Settings C
	ACTPLY Trigger PRE-QUERY PRE-QUERY POST-QUERY POST-QUERY Relation Relation Canvas
_	Pool - OFF Filter FMB - OFF Filter MMB - OFF
	© 1999 - 2013 by PITSS

 Using the Application Engineering functionality within PITSS, where it is appropriate we can look to push this logic from Oracle Forms into the database

 The PRE-UPDATE trigger contains logic which allows the business user to link customer records and associated customer related data together

👧 BL As	Assistant				
*	- cus2100s - cus2110s	Settings Custom]
		DATABASE OBJECTS			
	- Crigger - Crigger - CripR-UPDATE - CripR-QUERY - CripR-QUERY				
Ø	Relation D-Fm NBT_AMEND_HIS D-Canvas -Editor -List of Values -Object Group				
			Pool - OFF	Filter FMB - OFF © 199	Filter MMB - OFF 9 - 2013 by PITSS

• PITSS calculates all the dependencies within the trigger

💓 BL As	sistant
*	Containers Settings Custom
Ð	Cus2140s
Œ	⊖- <u>s</u> cus2150s
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4	B-Alert
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	Properties
	– S ² on- Edit Code
	$-\delta^2$ pos
	⊕-Item View Dependencies (Call Stack Up)
	Relation View Dependencies (Call Stack Down)
	Eind similar objects
	-List of Values
	-Object Group
9	
	Pool - OFF Filter FMB - OFF Filter MMB - OFF
	© 1999 - 2013 by PITSS

• And displays them for review...

🔜 BL Assistant											
	Object	Name		Туре	SQL	Call Ir	ntern	BI	Used	Activity	
PRE-UPDATE (Block level : ACTPL)	18 PR_U	PDATE_CB	_ACCOUNTS	PROCEDU	RE 1	1		0	2	2	
TES_ERROR.MESSAGE_DISPLAY	19 PR_U	PDATE_API	P_PARTIES	PROCEDU	1		0	2	1		
-E3 YBS_ERROR.MESSAGE_DISPLAY	20 PR_U	PDATE_AFF	ORDABILITY	PROCEDU	RE 3	1		0	2	3	
PR_CHECK_PEOPLE_MATCH	21 PR_S	ALES_APP_	PARTIES	PROCEDU	RE 1	1		0	2	1	
-E3 YBS_ERROR.MESSAGE_DISPLAY	22 PR_S	ALES_EXIS	T_MORTGAGE	PROCEDU	RE 1	1		0	2	1	
D- FN_CHECK_MAIN_HOLDER	23 PR_S	ALES_MPI_	DETAILS	PROCEDU	RE 2	1		0	2	2	
D- PR_UPDATE_R85_TAX_EXEMPT_TAB	24 PR_C	HECK_PER	SONIDS	PROCEDU	RE 6	3		0	1	21	
PR_UPDATE_CARD_PIN_DETAILS	25 PR_C	HECK_ADD	RIDS	PROCEDU	RE 8	3		0	1	23	
PR_UPDATE_ADDRESS_USAGES	26 PRE-U	PDATE		TRIGGER	13	1:	5	1	0	34	
PR_UPDATE_CB_ACCOUNTS	PR_UPDATE_CB_ACCOUNTS										
P- PR_UPDATE_APP_PARTIES											
PR_UPDATE_AFFORDABILITY	Details	SQL Details	;								
P. PR_SALES_APP_PARTIES											
PR_SALES_EXIST_MORTGAGE	New Obj	ect Name	T_PRE_UPDATE				<u> </u>				
P- PR_SALES_MPI_DETAILS	Туро		Thiert Name (8)		Data Tv	10		Νοω Οί	hiect nan	10	
PR_CHECK_PERSONIDS	GLOBAL	GLOBAL.G	S PC ID	IN	VARCHA	R2 G (GS PC	ID	sjeet nan		
PR_CHECK_ADDRIDS	ITEM	:ACTPLY.D	RV SYSID	IN	NUMBER		RV SY	'SID			
-E3 YBS_ERROR.MESSAGE_DISPLAY	ITEM	ACTPLY.EI	NDED AT	IN OUT	VARCHA	R2 I E	NDED	AT			-1
-E3 FN_CHECK_MAIN_HOLDER	ITEM	:ACTPLY.EI	NDED BY	IN OUT	VARCHA	.R2 E	NDED	BY			
-E3 PR_UPDATE_R85_TAX_EXEMPT_TAB	ITEM	:ACTPLY.EI	NDED_DATE		DATE	I E	NDED	DATE			
-Eg pr_update_card_pin_details			-					_			
-Eg pr_update_address_usages	Туре	Location	Object n	ame		Referen	ce				
-E PR_UPDATE_CB_ACCOUNTS	PROCEDURE	DB	PR_ADDUSE_PARTY_	DEDUPE		Кеер					_2
-EÅ PR_UPDATE_APP_PARTIES	PROCEDURE	DB	PR_CHECK_PERMRK	(Кеер					_
-Få PR UPDATE AFFORDABILITY	BUILT_IN	BUILT_IN BUILT_IN MESSAGE				Remove					
-Få pr sales app parties	FUNCTION	MODULE	FN_CHECK_MAIN_HOL	DER		Remove	•				
					P	ol - OFF	- F	ilter FMI	B - OFF	Filter MME	- 0FF
									© 199	9 - 2013 b	V PITSS
					P	ool - OFF	- F	ilter FMI	B - OFF © 199	Filter MME 3 - 2013 b	3 - OFF γ PITSS

• The objects can then be transferred to a database package

		_	0	hiort Na	mo		Туто	SOL	Call Inter	n Bl	hoell	0.ctivity	
	PRE-UPDATE(Block level : ACTPL*▲		18 P	PR SALE	ES APP F	PARTIES	PROCEDURE	1			2	1	
	TES_ERROR.MESSAGE_DISPLAY		19 P	R SALE	ES MPI D	ETAILS	PROCEDURE	2	1	0	2	2	
	Få YBS_ERROR.MESSAGE_DISPLAY		20 P	PR UPD	ATE CAR	D PIN DETAILS	PROCEDURE	6	1	0	2	17	
	PR_CHECK_PEOPLE_MATCH		21 P	R UPD	ATE AFF		PROCEDURE	3	1	0	2	3	
	🎝 YBS_ERROR. MESSAGE_DISPLAY		22 P	PR_UPD	ATE_R85	_TAX_EXEMPT_TABLI	PROCEDURE	3	1	0	2	5	
	FN_CHECK_MAIN_HOLDER		23 P	R_CHE	CK_PER	SONIDS	PROCEDURE	6	3	0	1	21	
	P. PR_UPDATE_R85_TAX_EXEMPT_TAB		24 F	N_CHE	CK_MAIN	HOLDER	FUNCTION	1	1	0	2	4	
	P PR_UPDATE_CARD_PIN_DETAILS		25 P	PR UPD	ATE APP	PARTIES	PROCEDURE	1	<u></u> 1	0	2	1	
	🗭 🗎 pr_update_address 🧟 Transfer Obje	ects	Flow to D	B 2000				······	5	1	0	34	
	PR_UPDATE_CB_ACCO									·	^	<u>^</u>	
	P PR_UPDATE_APP_PAR'					Pitsscon Owner			ı 🗖				
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	-Få YBS ERROR.MESSAGE				Calc	ulate Flow				ED AT			-
	-E3 FN CHECK MAIN HOLD			1.21				01-070		ED_NI			
				·AC		DED DATE				ED DATE			
	-E3 PR UPDATE CARD PIN DETAILS				ZIT ET.EN	DED_DATE	1.11001127						
	-E3 PR HPDATE ADDRESS HEAGES		Туре	L	ocation	Object i	name	Re	eference				
	-E3 PR HPDATE CB ACCOUNTS		PROCEDU	URE D	в	PR_ADDUSE_PARTY_	DEDUPE	Ke	eep 🔻				
	-E3 DD HDDATE ADD DADTIES		PROCED	URED	в	PR_CHECK_PERMRK	<	Ke	ep 💌	ļ			
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	TO DE CALEG ADE DADETEC		FUNCTIO	N M	IODULE	FN_CHECK_MAIN_H	LDER	R	emove 💌				
	A PAGE AND A PARTIES												
ſ								Poo	I - OFF	Filter FN	1B - OFF	Filter MM	B - OF
_ L													

Internal logic calls now reference other objects transferred to the package

🕵 BL Assistant												
		Object Name		Туре	SQL	Call Interr	n Bl	Used	Activity			
Image: Pre-upparts (Block level : ACTPLY_	18	PR_SALES_APP	PARTIES	PROCEDUR	RE 1	0	0	2	1			
THE YES_ERROR.MESSAGE_DISPLAY	19	PR_SALES_MPI_	DETAILS	PROCEDU	RE 2	0	0	2	2]		
YBS_ERROR.STRIP_FIRST_ERR	20	PR_UPDATE_CA	RD_PIN_DETAILS	PROCEDU	RE 6	0	0	2	17	J		
YBS_ERROR. INIT_PARAMETER_	21	PR_UPDATE_AFF	ORDABILITY	PROCEDU	RE 3	0	0	2	3]		
-E3 YBS_ERROR. INIT_PARAMETER_	22	PR_UPDATE_R8	5_TAX_EXEMPT_TABLE	PROCEDU	RE 3	0	0	2	5]		
QRY_ACTIONS.QRY_BUTTONS	23	PR_CHECK_PER	SONIDS	PROCEDU	RE 6	0	0	1	21]		
MISC. CHECK_BUILTIN	24	FN_CHECK_MAIN	_HOLDER	FUNCTION	1	0	0	2	4]		
-Få Misc. Check_Builtin	25	PR_UPDATE_API	P_PARTIES	PROCEDUR	RE 1	0	0	2	1			
-Få Misc. Check_Builtin	26	PRE-UPDATE		TRIGGER	13		1	0	34			
Få Misc. Check_Builtin			Trans	fer Objects	Flow to	DB						
- I MISC. CHECK_BUILTIN												
- Fig Misc. Check_Builtin	Details	s SQL Detail	s									
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 The newly created package can be inspected and edited within PITSS before being applied to the database

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• This example was estimated by development to have reduced the amount of developer effort required by between 60-75% over doing it manually



NEXT STEPS FOR YBS



- Strategic Journey continues currently mapped out to 2019
- SOA & BPM has initially proved to be perhaps more difficult than we originally envisaged
- Importance of our investment in Oracle Forms is back on the agenda (It is running our Business today!). We have an upgrade project in progress - although in reality, it was the constraints of IE8 which has pushed the upgrade to the fore
- Identify further opportunities to exploit using PITSS. We would like to take the opportunity as part of the Forms upgrade to remove some of the considerable quantities of 'dead code' which exists within our application today
 - Would demonstrate we are shrinking our 'legacy' code base as we increase deployment of newer technologies and code, but also
 - Make this legacy code 'easier and simple' to maintain in future but....
 - Requires a change of mind-set, both Management and Developer currently no time is allocated to improving or refactoring our code when checked out by projects
- Continue to push the benefits of PITSS to our development community and harden code refresh processes
- Look to exploit new features of PITSS specifically:
 - Development effort in Source Code Analytics more accurate estimating?
 - User Journey's ability to track execution activities within the application which are not directly visible to our end-user

Any regrets?

That we didn't have the tool 10 or more years ago!



Thank you for listening