

Investment protection in Oracle Forms

Get a clear picture of your application through
PITSS.Analysis

Patrick Walther, Manager Consulting

London, 6. May 2015

*The Oracle
Modernization
Experts*



- < Sites: Germany (Stuttgart, Bielefeld, Wolfratshausen), UK (Milton Keynes), USA (Troy, Michigan)



- < Oracle Gold Partner
- < Member of OMA – Oracle Modernization Alliance
- < Oracle Forms Migrations Partner
- < Oracle Forms Beta-Tester
- < More than 15 years experience with Oracle Technologies
- < More than 500 **completed executable** migration projects
- < Customers in more than 50 countries





The ORACLE® Specialist

- More than 15 years of experience with Oracle technology
- Oracle Status:
- Oracle Gold Partner
- Oracle Independent Software
- Oracle Modernization Alliance member
- Oracle Preferred Migration Partner
- Oracle Forms Beta-Tester



PITSS GmbH

PITSS America LLC

www.pitss.com





- Founded 1999
- Company Form GmbH / LLC
- Locations
 - Germany PITSS GmbH Stuttgart, Munich, Bielefeld
Milton Keynes (UK)
 - USA PITSS America LLC Troy Michigan

■ Oracle Partner with more than 20 years of experience in Oracle technologies

■ Member of OMA (Oracle Modernization Alliance), “preferred” migration partner

■ Flagship solution PITSS.CON

■ Expertise > 500 Oracle Forms projects, customers > 30 countries globally

■ Memberships



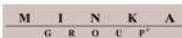
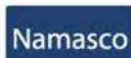


PITSS.CON Customers





PITSS North & South American Customers

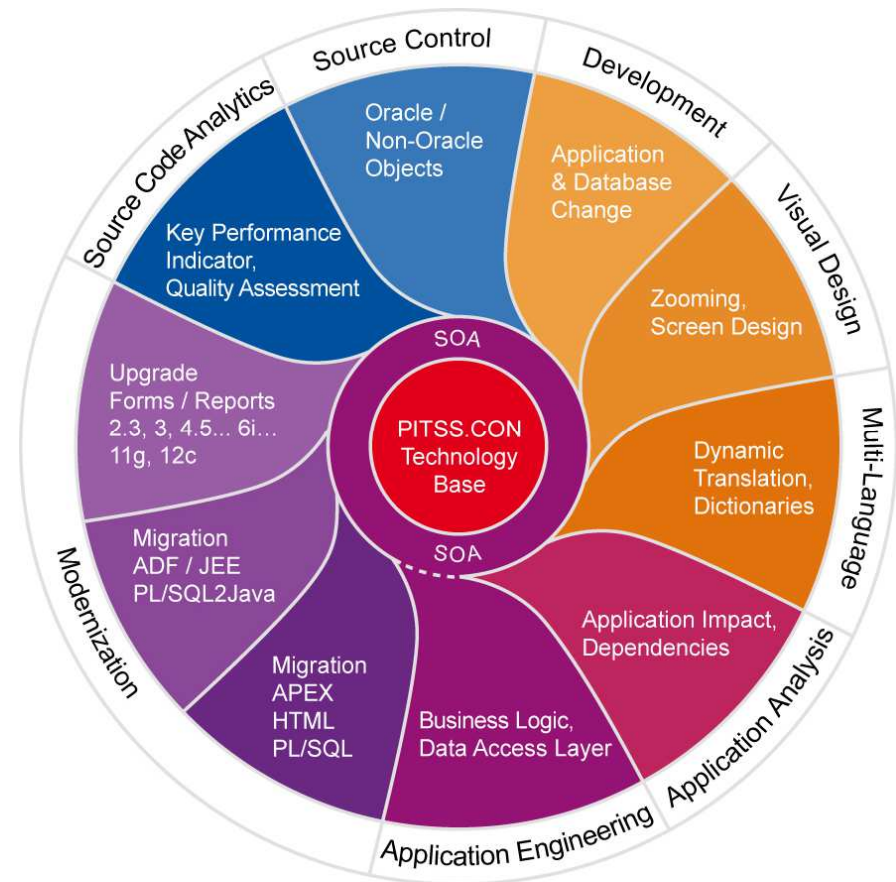




PITSS.CON overview



- Technology Base
- Maintenance / Development
- Visual Design
- Multi Language
- Application Analysis mechanisms
- Application Engineering for SOA
- APEX Assistant
- ADF-Assistant
- Automatic upgrading / migration
- Source Code Analytics
- Source Control





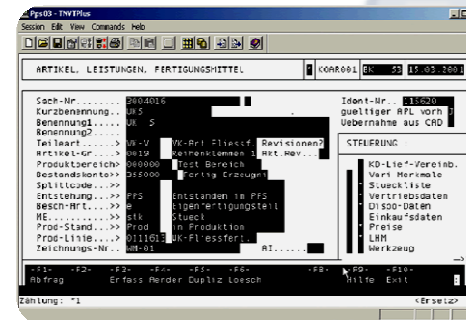
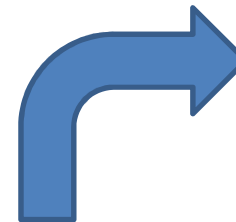
Introduction



- **My Ladder**
 - Very old
 - Build by my Grandpa
 - Not very well maintained



- **Oracle Forms**
 - Could be Very old
 - Could be Build by my Grandpa
 - Could be Not very well maintained





How do we protect our investment?

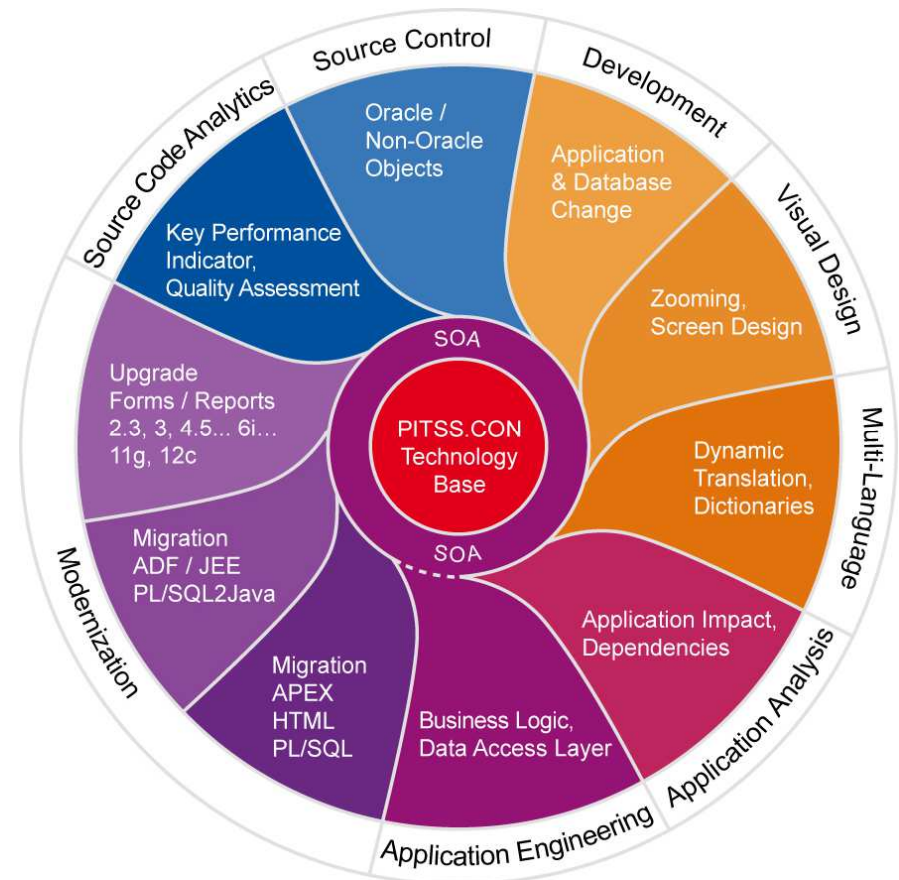


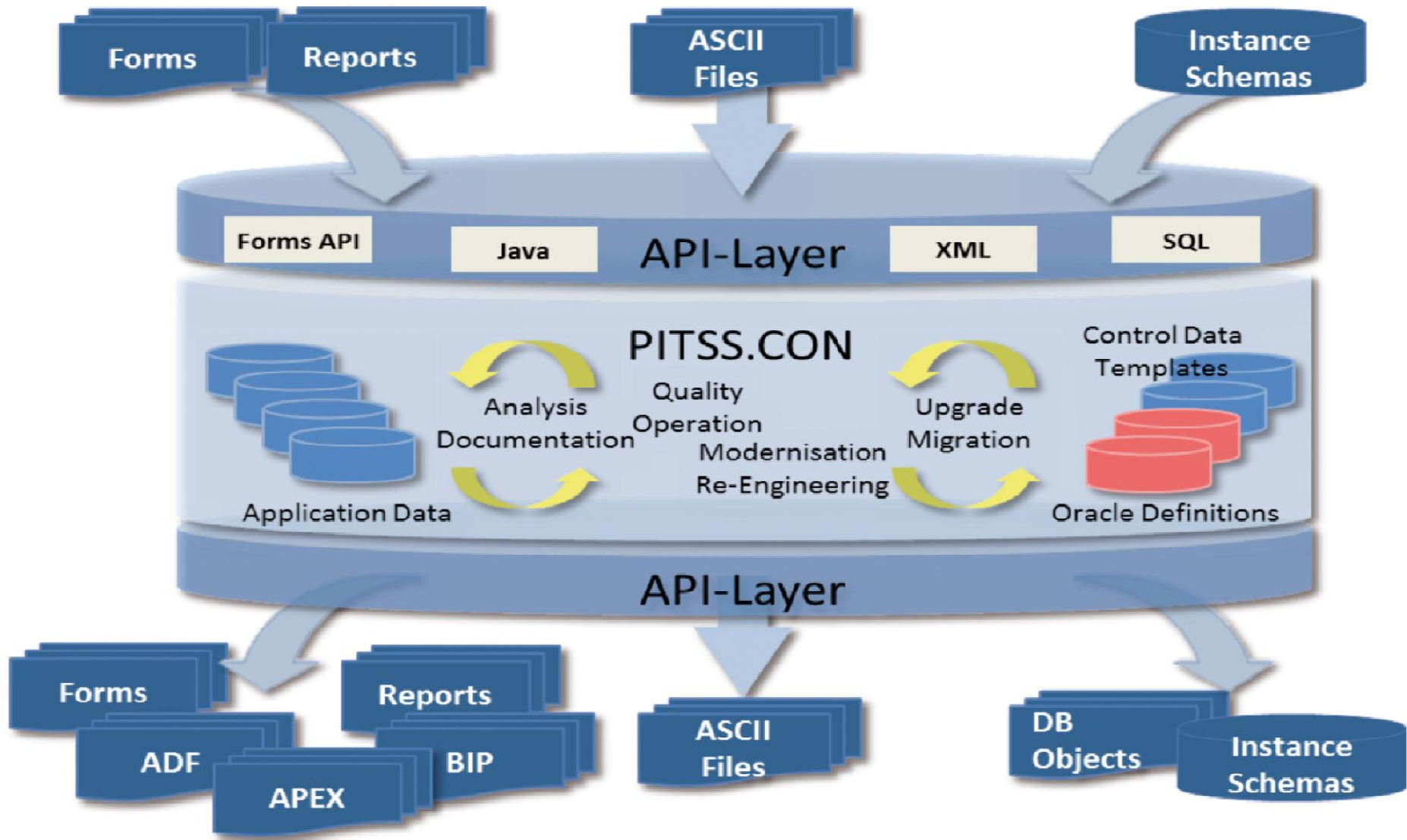


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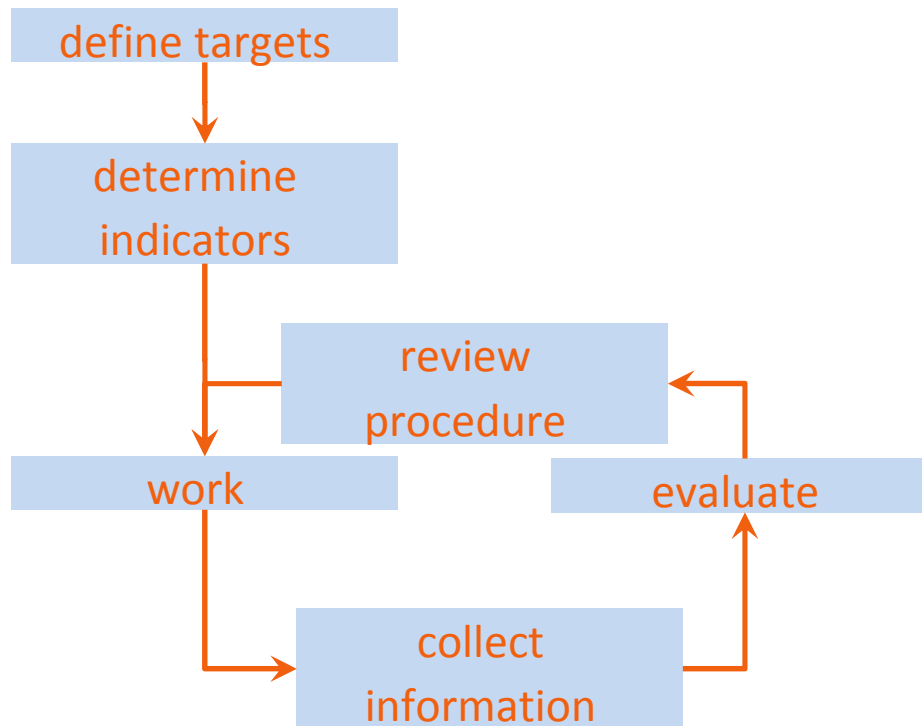




What does quality signify?

Quality is defined according to the standard EN ISO 9000:2005 (the valid standard to quality management), as *“rate, in that a set of inherent (measurable) features fulfils requirements “*.

Source: Wikipedia



■ process metrics

- development time
- required resources

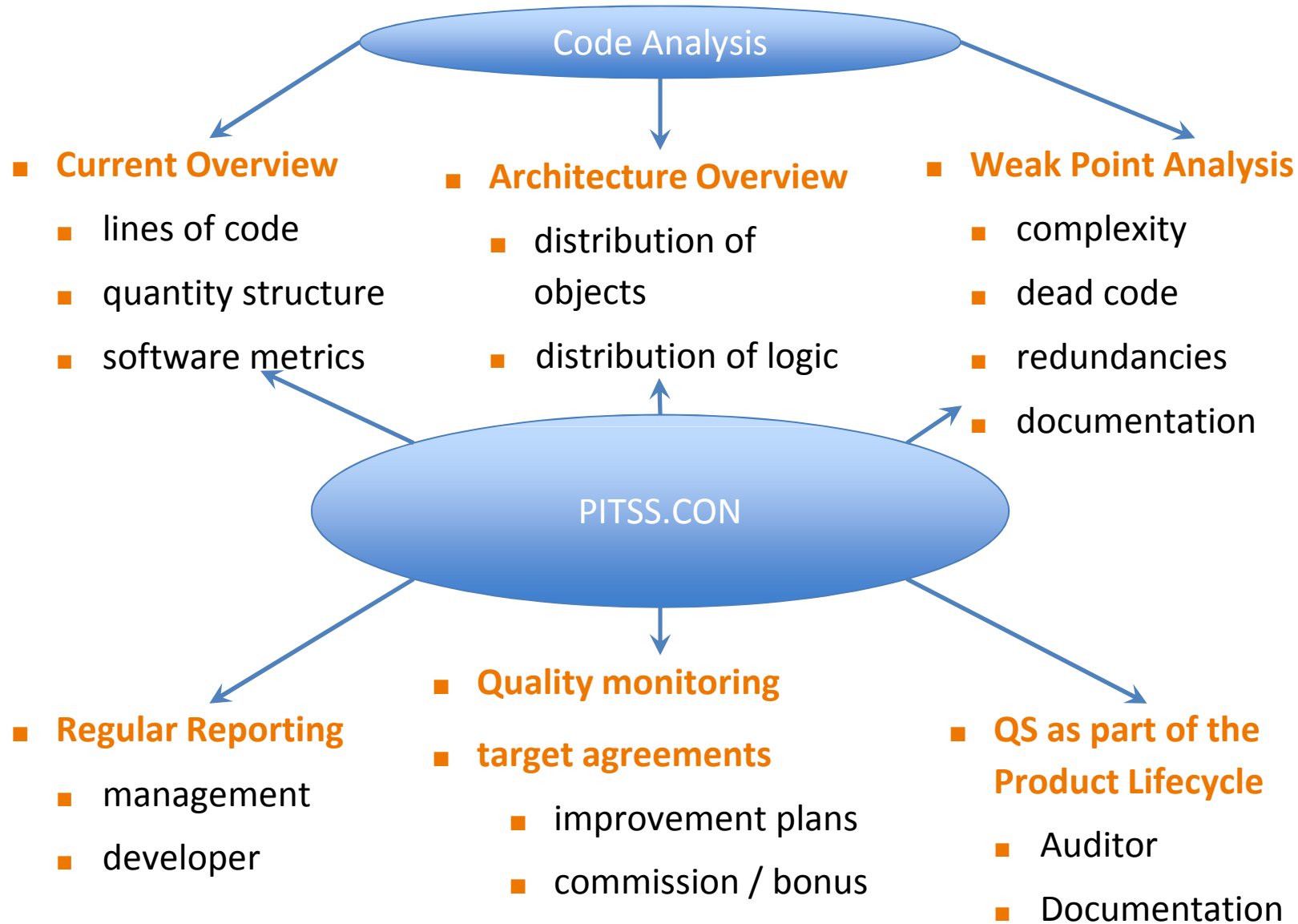
■ product metrics

■ dynamic

- period
- error count

■ static

- software metrics
- architecture
- naming conventions





Current Overview – PITSS.CON (LIVE)



Application Analytics

Object Type	LOC	Empty Lines	Empty Lines Ratio	Commented Lines	Comment Ratio	Med.Line Size (Chars)	Source Code (Mb)	PII	Lines/PU	PII ***	Lines/PU ***
FUNCTION	16	0	0.00 %	3	0.00 %	30	0.000	1	16	1	16
PACKAGE	44	8	18.18 %	15	34.00 %	48	0.003	3	16	7	6
PACKAGE BODY	160	18	10.06 %	10	11.95 %	34	0.008	4	40	0	18
PROCEDURE	11	0	0.00 %	3	0.00 %	36	0.000	1	11	1	11
TRIGGER	3	0	0.00 %	3	0.00 %	16	0.000	1	3	1	3
VIEW	44	0	0.00 %	3	0.00 %	29	0.001	6	9	6	9
FMD	6,865	172	2.51 %	2,629	30.30 %	31	0.213	212	32	236	23
PLL	17,551	1,217	6.93 %	4,737	26.99 %	44	0.773	99	177	729	24
Total	24,692	1,413	5.72 %	7,400	29.97 %	35	0.996	320	70	1,049	24

Target: All Modules DB and ASCII files

Graph Content: Medium Line Size (Chars) Source Code Size (Mb) - Pie Source Code Size (Mb) Bar PII medium size (lines) PII medium size (lines)***

Source code overview

Medium line size (characters)

Object Type	Medium Line Size (Chars)
FUNCTION	30
PACKAGE	44
PACKAGE BODY	34
PROCEDURE	35
TRIGGER	16
VIEW	29
FMD	31
PLL	44

Application Analytics

Object Name	Total LOC	Empty Lines	Comm. Lines	Comm. Ratio
1 PLL PB WIN_API_ENVIRONMENT	662	53	11	1%
2 P.LL PB WIN_API_ENVIRONMENT	662	53	11	1%
3 P.LL PB WIN_API_FILE	670	41	12	2%
4 P.LL PB WIN_API_FILE	670	41	12	2%
5 P.LL PB RP2RRO	632	34	138	22%
6 FMD PD BLK_BUSS_DOSS	577	5	195	34%
7 P.LL PB WIN_API_BITOP	566	46	15	3%
8 P.LL PB WIN_API_BITOP	566	46	15	3%
9 P.LL PB WIN_API_UTILITY	473	20	8	2%
10 P.LL PB WIN_API_UTILITY	473	20	8	2%
11 P.LL PB WIN_API_SHELL	450	18	14	3%
12 P.LL PB WIN_API_SHELL	450	18	14	3%
13 P.LL PB D2K RES	413	39	39	9%
14 P.LL PB WIN_API_SESSION	403	26	8	2%
15 P.LL PB WIN_API_SESSION	403	26	8	2%
16 P.LL PB WIN_API_DIALOG	375	24	6	2%
17 P.LL PB WIN_API_DIALOG	375	24	6	2%
18 P.LL PB RP2RRO	372	18	118	32%
19 P.LL PB WIN_API	366	26	49	13%
20 P.LL PB WIN_API	366	26	49	13%
Total	10,683	637	1,018	10%
Target	24,648	1,413	7,400	30%

Source Code Components

Component	Percentage
LOC	64%
Comments Ratio	30%
Empty Lines	6%

Location: DB FMD PLL OLB MMB RDF

Object Type: Package (object) Package (details)

Show first: 20 largest objects

Graph Content: Source Code Components Source Code Components (largest objects)

Application Analytics

Object Name	Staten.	Cyclomatic Complexity	Halstead Volume	Maintain. Index
1 FMD PB BLK_TRANSPORT	133	22	3,724	17
2 FMD PB BLK_BUSS_DOSS	236	46	4,972	23
3 FMD PB PLSQL_DOC	116	46	2,078	81
4 FMD PB BLK_POS	65	10	1,798	72
5 FMD PB BLK_BUSS_TIHO	73	30	1,021	10
6 FMD PB FITSS_DOC	74	30	867	2
7 FMD T WHEN-BUTTON-PRESSED	66	22	858	76
8 FMD T WHEN-CUSTOM-ITEM-EVENT	48	12	822	105
9 FMD T WHEN-CUSTOM-ITEM-EVENT	48	12	822	105
10 FMD P CI_FAR_AI_MASTER_DETAIL_S	67	20	771	36
11 FMD PB HI_K_BUSSE_DOSS	46	20	732	76
12 FMD PB BLK_BUSS	47	26	717	90
13 FMD T WHEN-MOUSE-DOUBLE-CLICK	47	10	667	92
14 FMD T WHEN-VAI-IDATE-ITEM	36	14	656	81
15 FMD T WHEN-VAI-IDATE-ITEM	36	14	656	81
16 FMD T WHEN-CHECKBOX-CHANGED	47	25	362	80
17 FMD PD BLK_V_TIHO_CHARACTER	34	13	246	91
18 FMD T WHEN-CHECKBOX-CHANGED	32	13	241	26
19 FMD T WHEN-BUTTON-PRESSED	36	17	206	19
20 FMD PB BLK_BUSS_DOSS_TIHO	22	8	320	58

Source Code Metrics (Halstead Volume)

Reasonable (07%)

Too Complex (11%)

Legend: Reasonable Challenging Too Complex

Show first: 20 objects

Source Code Metrics (top objects): Statements Cyclomatic Complexity Halstead Volume Maintainability Index

Location: DD FMD PLL OLB MMD RDF

Order By: Statements Cyclomatic Complexity Halstead Volume Maintainability Index

Object Type: Package (object) Package (details)

Application Analytics

Object type	Var.	Var/PU	Arg.	Arg/PU	Exc.	Exc./PU
FUNCTION	543	4.68	248	2.12	46	0.39
PACKAGE	1,083	21.66	2,716	2.78	0	0.00
PACKAGE BODY	2,414	2.56	2,420	2.56	353	1.01
PROCEDURE	753	9.69	167	2.14	73	0.94
TRIGGER	355	1.27	0	0.00	28	0.10
VIEW	3	0.00	0	0.00	0	0.00
FMD	4,015	0.80	3,007	1.59	3,104	0.62
MMB	0	0.00	0	0.00	0	0.00
PLL	544	1.68	653	2.02	45	0.14
Total	9,719	1.29	9,210	1.87	4,249	0.56

Variables

Object Type	Percentage
FUNCTION	8%
PACKAGE	11%
PACKAGE BODY	25%
PROCEDURE	8%
TRIGGER	4%
FMD	41%
PLL	8%

Legend: FUNCTION PACKAGE PACKAGE BODY PROCEDURE TRIGGER FMD PLL

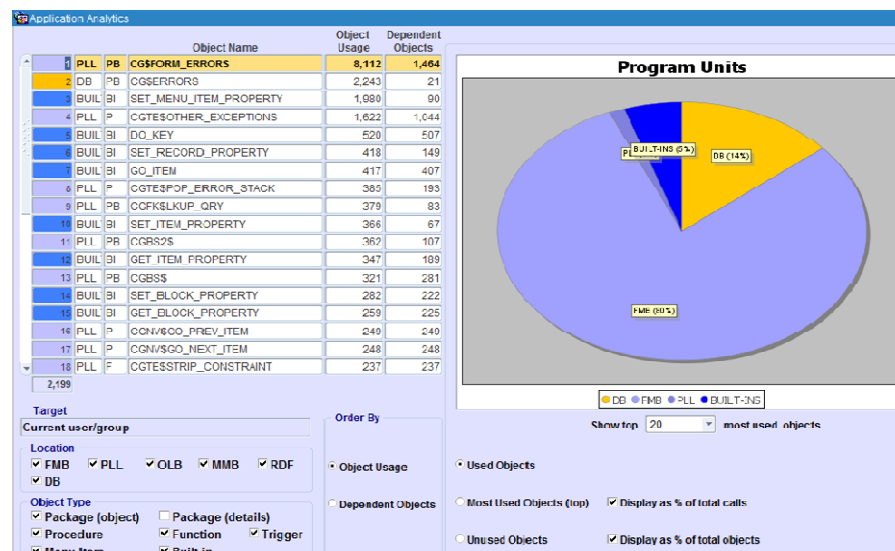
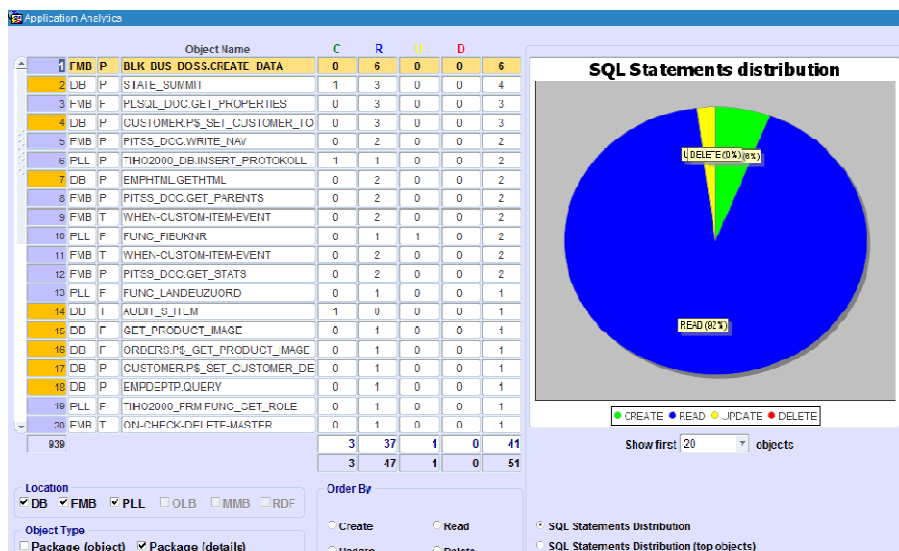
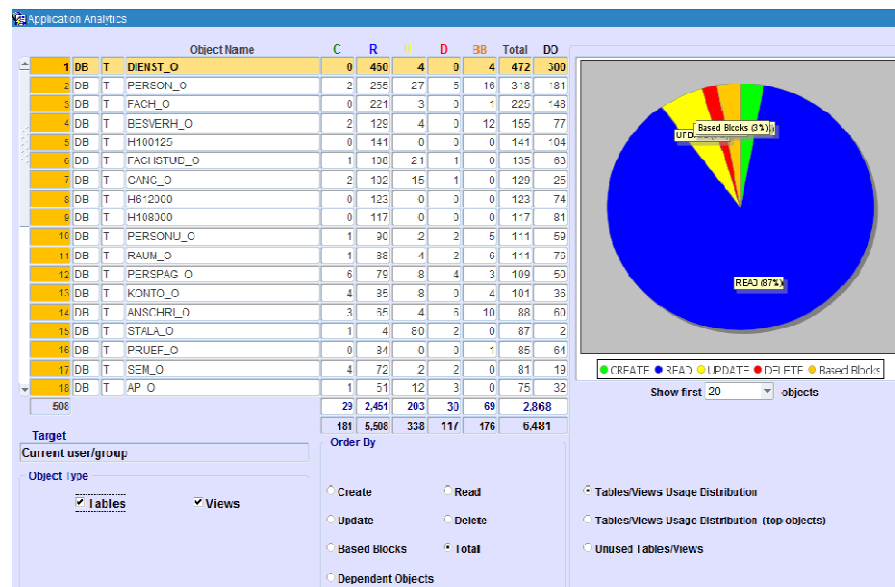
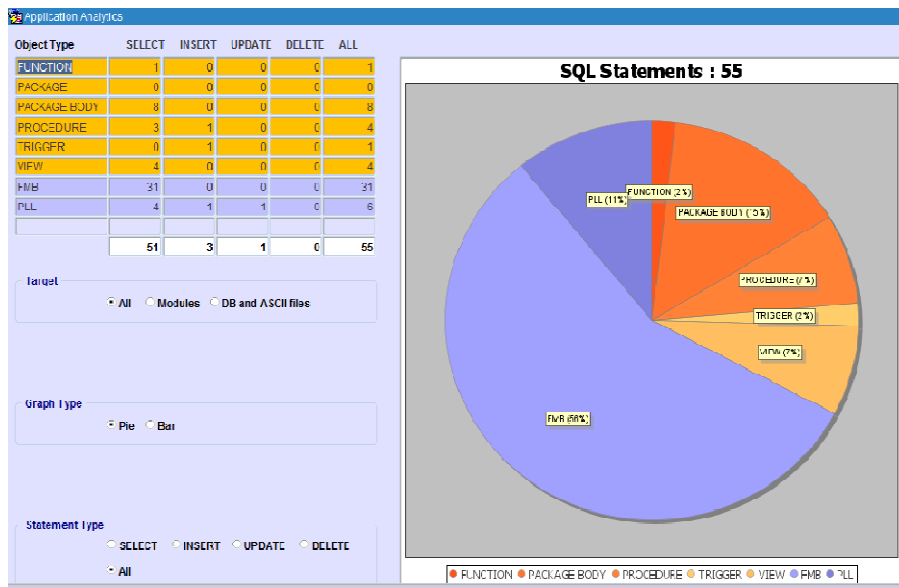
Location: All Modules DB and ASCII files

Graph Type: Pie Bar

Graph Content: Variables Variables / PU Arguments Arguments / PU Exceptions Exceptions/PU

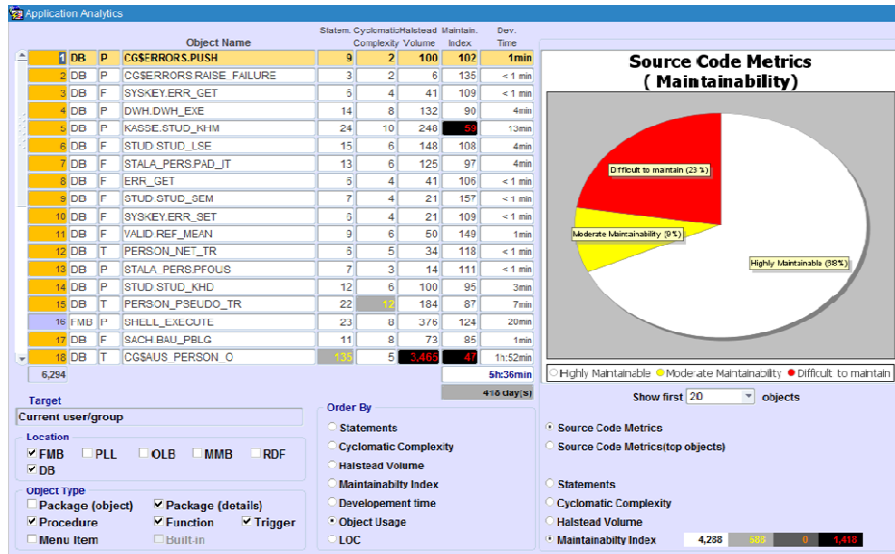
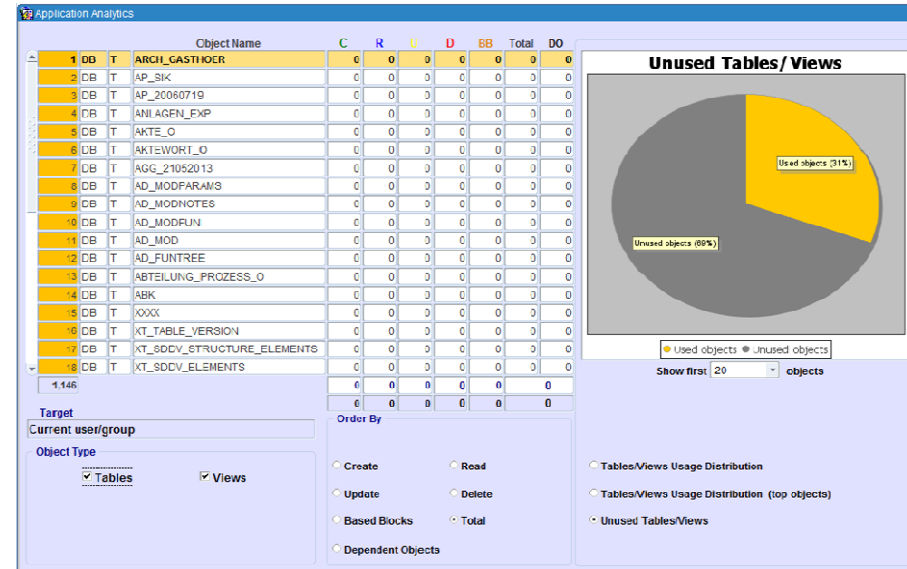
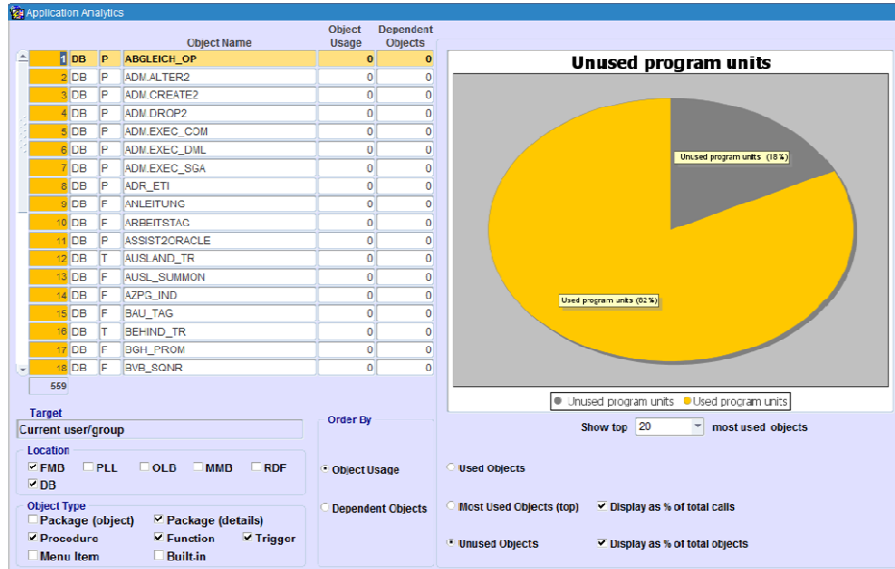


Architecture Overview – PITSS.CON (LIVE)





Weak Point Analysis – PITSS.CON (LIVE)



Scientific accepted software metrics

- Halstead
- McCabe
- Maintainability

Standard Metrics

- Statements



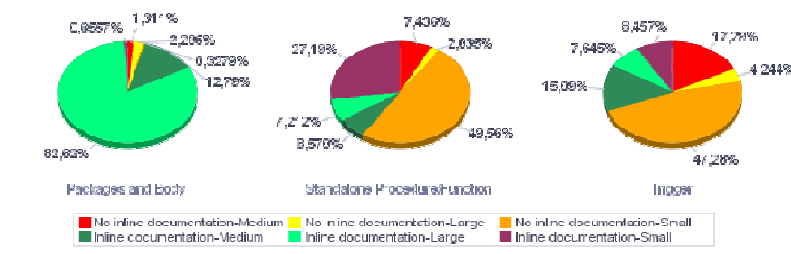
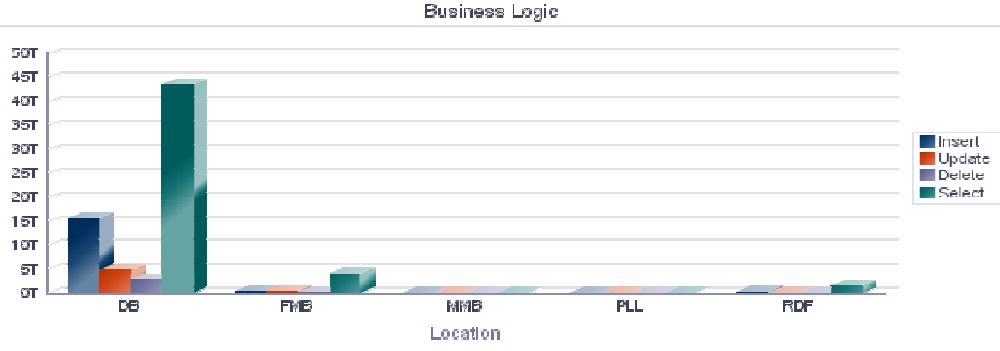
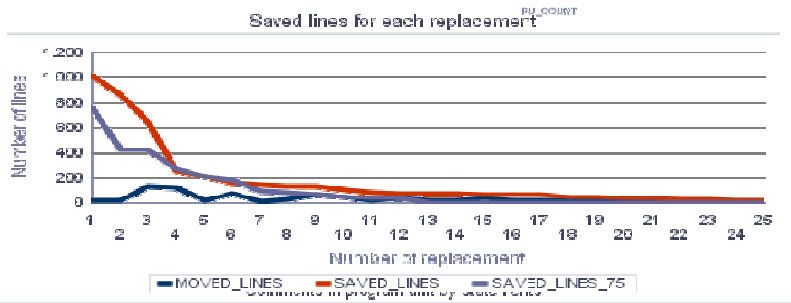
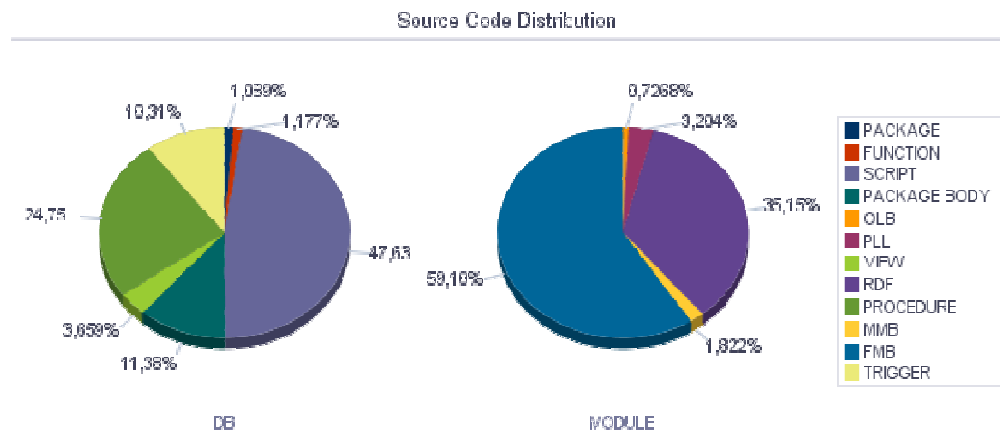
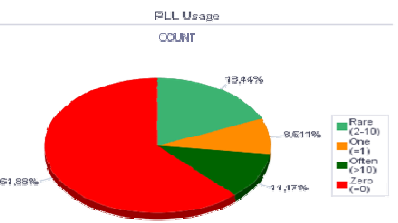
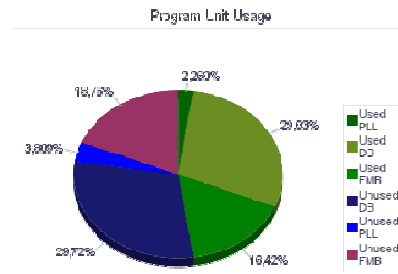
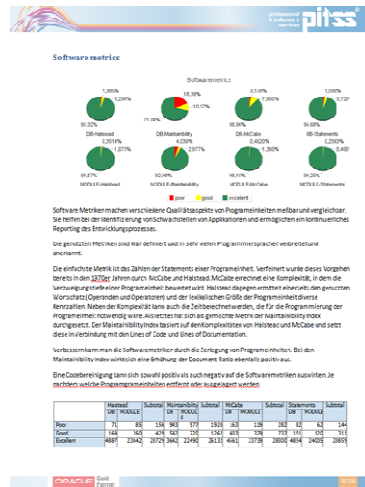
Code Analysis by PITSS



	StausQuo	Quality	Development	Forms Upgrade	ADF	APEX
Quantity Structure	✓					
Code Distribution	✓					
Program Size	✓					
Program Structure	✓					
LOC / LOD	✓					
Comment Ratio		✓				
Object Distribution		✓	✓			
Program Use			✓			
Table Use			✓			
Quality Metrics		✓				
Maintainability		✓				
Naming Conventions		✓				
Exception Handling			✓			
Security Issues			✓			
Library Use			✓		✓	✓
Complexity Reflection	✓				✓	✓
Dead Code			✓		✓	✓
Redundancy			✓		✓	✓
Expenditure Estimate			✓	✓	✓	✓
Optimization Potential	✓	✓	✓	✓	✓	✓
Recommendations		✓	✓	✓	✓	✓



Results in one document and one presentation



Step	Group	Type	Time to fix [h]	Count	Technical Debt [h]
1	Remove Global Variable:	1 times used	0,08	17	1,42
		2 times used	0,25	25	6,25
2	Remove Unused Objects:		8,00	1	8,00
3	Redundance (>3):		0,25	71	17,75
4	* Split and doc.:	Maintainability DB	0,50	438	109,50
		Maintainability MODULE	0,50	151	37,75



- **„The quality attack“**
 - identify weak points
 - stop the development and process weak points
 - control of results

- **Implementation of Quality Management**
 - identify weak points
 - plan time and improvement in defined intervals
 - control of results and plan the next interval

- **„Good to know“**
 - improvements are executed, if resources are once available





- **reduces maintenance costs**
 - **accelerates development process**
 - **reduces error probability**
 - **ensures that you can handle the application**
-
- **Reduces training periods**
 - new employees
 - replacements (holiday, sickness)





- **PITSS.CON considers the whole application**
 - Forms (FMB, MMB, PLL,OLB)
 - Reports (RDF)
 - Database (Tables, views, procedures, functions, packages ...)
 - SQL Files
 - C, ProC, Cobol Code
- **Repeatable tests**
- **Check and implementation of coding standards**
- **Supports code reviews (especially important at outsourcing)**
- **Completes the documentation of the application**



Vielen Dank für Ihre Zeit.

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