

SAP SAPPHIRENOW



About the Speakers

Yuling Li

- IT Manager, Schlumberger
- Joined Cameron (a Schlumberger company) after graduating with an MBA degree from Rice University in 2008; started BI journey since 2010 and still loves it.
- Passionate about exploring all kinds of cuisines.

Ashish Tewari

- Manager, Deloitte Consulting LLP
- 13 years of experience in SAP space. Expertise in managing data work for clients ranging from Financial Services, Utilities to Manufacturing.
- Had an encounter with bear once at Sequoia National park



Key Outcomes/Objectives

- Meeting business expectation of enhanced user experience
- Improving business planning and consolidation functions
- Supporting month end close with timely data and agile system performance
- Enhancing data load scheduling and monitoring capabilities



Agenda

- Schlumberger Overview
- Project Alpha: Upgrade to BW on HANA
 - Overview
 - Background
 - Objective and Success Factors
 - Approach
- Performance Gains
- Lessons Learned / Recommendations
- Future Enhancements
- Wrap-up
- Appendix



Schlumberger (SLB): Overview

Schlumberger is the world's leading provider of technology for reservoir characterization, drilling, production, and processing to the oil and gas industry. Working in more than 85 countries and employing approximately 100,000 people who represent over 140 nationalities, Schlumberger supplies the industry's most comprehensive range of products and services, from exploration through production and integrated pore-to-pipeline solutions for hydrocarbon recovery that optimize reservoir performance.





Project "Alpha": Background

Project Background	 Cameron implemented SAP BW as the strategic Business Intelligence tool for operational reporting and decision support during the Optimus program, an SAP upgrade and business transformation Project Optimus BW system supported global management and operational reporting for Sales, Finance, Supply Chain, Quality, Engineering and Manufacturing functional areas
Technical Landscape	 Primary Source System — SAP ECC 6.0 (SAP SRM and SAP APO as secondary) SAP BW 7.4 (on DB2) for data warehouse and modeling SAP BusinessObjects 4.2 and BEx for analytical reporting SAP Netweaver Enterprise Portal (Validations) SAP BPC 10.1 (Validations)
Challenges	 Performance issues with data loads impacting BPC and monthend close process Performance issues in execution of business queries and enterprise reports Sub-optimal user experience

The migration to SAP BW on SAP HANA (Project Alpha) is providing improved Integration, Performance, Scalability and Flexibility which will enable Optimus BW to address the business needs now and in the future

7.5 on HANA

The SAP HANA platform is providing a technology foundation that will enable to improve the efficiency of IT processes, deliver more advanced capabilities and ultimately improve the user experience and customer satisfaction

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Project Objectives and Success Factors

Engagement Objectives

- *Performance improvements* in data loading and compression of the batch window to reliably finish on time
- Business users' ability to leverage the front-end reporting tools with reasonable performance levels and improve the overall UX
- *Improve responsiveness* to business needs by shifting to Agile delivery methods
- Prepare the BW environment for **future growth** and align with the company reporting strategy
- Evaluate impact and integration with SAP BusinessObjects (BOBJ) and BPC

Critical Factors for Success

- Functional migration and hyper care complete in 16 weeks
- Improved daily and weekly data load performance to minimize impact on BPC and the consequent delays in the month-end close
- Improved query response time and thus improve the user experience for the business to perform analytics
- Simplified data modeling on a renewed technology platform that will enable agile development and speed of solution delivery
- Enablement of new and enhanced analytics capabilities to the business, which were inhibited by the performance challenges that existed before migration to HANA



Guiding Principles

BW HANA DB migration approach is centered around five key objectives:

- **1.** Accomplish overall business objectives of migration
- The key objective is to improve overall user experience by enhancing data load performance; deliver timely reporting capabilities; improving query response time and align with the company BI reporting strategy
- 2. Minimize business disruption for the end users
- One step approach for both upgrade and migration. Ensures minimal or no business disruption and less system downtime
- 3. Thorough testing for technical assurance and risk mitigation
- A holistic testing approach to model the end-user experience before the system goes live and discover deficiencies that may negatively impact user productivity and experience
- 4. Ensure that in-house support is ready on day one
- Provide knowledge transfer at each iteration and help build SLB internal expertise & experience in BW on HANA

5. Lay the foundation for future optimization and simplified IT governance

• Setup foundation for simplified BW data modeling and improve the response time for delivery of the BW reporting for business

Upgrade and Migration Approach

- Project Alpha had one step approach for both upgrade and migration using DMO (Database Migration Option)
- This approach reduced the risk while accelerating the benefits of using BW on HANA



Data Loads Performance Highlights

Before and after Process Chains run time was used to track the performance for data loads in BW production.

25-70%	50-60%	50-80%	
Overall improvement	Master data meta chain	Critical transactional process chain	
60-80%	30-36%	4 20000000	
DSO activation	Daily data load cycle run time	Data load cycles (previous was 2)	



Feedback from BI and BPC Users

🗇 BI Users

- Goals achieved to improve the report response time. Business users were engaged in smoke testing and all provided positive feedback. Most of the users feel the reports are running faster compared to Pre Migration
- It's been observed that the performance increased 30% to 80% when there are high volumes of data.

🔊 BPC Users

- JE's from 45 minutes to load, down to 20 minutes
- Segment input templates from 15-30 seconds to submit, down to 8-10 seconds

- Segment reports from 3-5 minutes to run, down to 2-3 minutes
- BPC packages from 1-2.15 hours, down to 34-57 minutes
- BPC data load time in BI was reduced by 50 75%.



Lessons Learned / Recommendations

#	Activity	Expected Impact/Benefit	System	Phase
1	Engage support teams (Network, security, emergency transport) in advance	Save time during the upgrade process.	Prod	Pre-migration
2	Analyzed CPU usage and increased the CPU memory for the systems that is coming up for the upgrade	DMO execution will be faster.	Prod	Pre-Migration
3	Housekeeping: Clear temp tables and system logs in the system	To free up lot of memory and help in quicker DM execution.	Prod	Pre-Migration
4	Follow the change management process with change request open for any emergency changes during production cycle.	To expedite the last minute transport of an important fix.	Prod	Post-Migration
5	Load the PSA requests to DSO (or above) layers before migrating the system to HANA.	To avoid data loss due to PSA structure change in the upgraded HANA system	Prod and Non-prod	Pre-migration
6	Note down issues faced during the DMO process and keep the fix ready for the subsequent cycles.	Faster DMO cycle.	Prod and Non-prod	Pre-migration



Lessons Learned / Recommendations Cont....

#	Activity	Expected Impact/Benefit	System	Phase
7	Take table record-count and extract to compare with post-migration system.	This will help in comparing and resolving any anomalies in count mismatch.	Prod and Non-prod	Pre-migration
8	Check all features of the reports e.g. custom variable, Broadcasting, Report- to-report interface, structure and exceptions & condition.	This will ensure that reports are working correctly and as expected.	Prod and Non-prod	Pre-migration
9	Interface configuration, file system mounting, and message server were tested and issues resolved prior to go-live	Transport and cutover process was smooth	Prod	Post-Migration
10	Keep business management and users posted on progress and timeline, and select a relatively slow time for cutover and go-live instead of month or quarter end.	To minimize any interruption to the business users.	Prod	Post-Migration



Future Enhancements

Opportunities for Future Improvements

- Remove redundant layers and simplify the data flows
- Move customized ECC reports to BW on HANA and relieve the burden to SAP
- Leverage BW on HANA for future development, Eclipse based modeling
- Plan to migrate existing data models to new data flow elements
- Migrate the presentation layers
- Migrate the data storage layers
- Utilize new features of the integration and join data in BW on HANA
- To connect with Power BI and promote self-service to business with governance
- Prepare the system for BW/4HANA and S/4HANA





Source: SAP

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Presentation Materials

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For questions after this session, contact us at atewari@Deloitte.com and YLi107@cameron.slb.com



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Appendix

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SLB Optimus BI Landscape (New Architecture)





Project Major Milestones

Project teams successfully met these milestone dates for BW upgrade and migration to HANA:



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Project Testing Scope

Sandbox Testing	 Verified that BW objects are active post migration Verified that BW cubes and DSOs are active post migration Verified BW queries are executable Test functionality of the BW system like developing new objects in the migrated environment
Unit Testing	 Verified that the data is loaded into BW Info providers Verified that the reports are executable Verified the BW system is connected to all the source and external systems Documented the unit test results Resolved errors identified in the unit/functional testing
Integration Testing	 Verified that data loads to BPC cubes Verified that BW is connected to all source and external systems Verified that data flows from source to the target Resolved any errors identified in the Integration testing Documented the integration test results



Project Testing Scope Cont...

Regression Testing	 Tested all the business delivered reports that have been identified in the testing scope Tested all the data loads using process chains that have been identified in the testing scope Tested all Reports including the BOBJ and Pre Calc. reports are executed Tested all the functionality of the BW system Resolved errors identified in regression testing Tested all the interfaces to BPC and APO
Performance Testing	 Ran the data load and report execution Documented the performance improvement before and after migration for both data loads and report execution Identified performance improvement recommendations and applied the recommendations Prepared the model for the end-user experience before the system went live, and identified performance deficiencies that might negatively impacted user productivity and experience Discovered performance flaws in the application and supported infrastructure in a controlled manner. The flaws are addressed early on through additional sizing and other measures.

