

Successful NetWeaver BI Implementation Tips - Avoiding Common Pitfalls

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In This Session

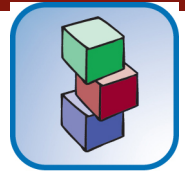
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- **Discuss common mistakes made when gathering SAP NetWeaver® Business Intelligence (BI) requirements and implementing the BI solution**
 - **Aid in refining requirements to make your SAP NetWeaver BI solution as effective as possible**
 - **Develop sound project strategies**
 - **Learn of common mistakes and issues and how to avoid them during your implementation**

What We'll Cover ...

-
- **Overview & Scope Management**
 - **Requirements Refinement**
 - **Implementation Tips and Strategies**
 - **Wrap-up**

What Did I Get Myself Into?

- **Implementing an SAP NetWeaver BI project presents its own challenges that are unique to SAP projects**
- **Common analogy:**
 - ♦ **Implementing SAP ERP Central Component (ECC) is a science; implementing SAP NetWeaver BI is an art**
- **This is because:**
 - ♦ **SAP NetWeaver BI allows for an extremely flexible environment**
 - ♦ **Data can (and usually does) come from many sources**
 - ♦ **Many different types of users are involved with different views of the way things “should be”**
 - ♦ **Data quality rolls downhill, and with SAP NetWeaver BI (you) are at the bottom**



**Building
Blocks**

Identifying Potential Scope Creep for Your SAP NetWeaver BI Project



- **Scope creep is even more prevalent in SAP NetWeaver BI projects than transactional system projects**
 - ◆ **As pressure mounts on the transactional systems, more requirements get “pushed” to SAP NetWeaver BI**
 - ◆ **As more groups see SAP NetWeaver BI, they dream of new ways to analyze data where requirements didn’t previously exist**
 - ◆ **Often the greatest organizational “pain” revolves around data analysis**
 - ▶ **Substandard transactional reporting**
 - ▶ **Ad hoc analysis (spreadsheets, spreadsheets, and even more spreadsheets)**
 - ◆ **Many SAP NetWeaver BI projects suffer delays and/or cancellation because of an inability to say NO to “just one more thing we forgot”**

Fight the Overly Ambitious Scope

- **Start small — choose an application of “reasonable” size**
 - ◆ Limit first rollout of SAP NetWeaver BI to a limited scope with a limited data set and limited group of users
 - ◆ Allows you to “prove out your processes”
 - ▶ Documentation
 - ▶ Network infrastructure
 - ▶ Transport process
 - ▶ Data validation
 - ▶ Performance
 - ◆ The first rollout sponsor should desperately want (and need) the capabilities that will be delivered. This helps to ensure their support when problems arise (they will).



Best
Practice

Conflicting Scope — SAP ERP and SAP NetWeaver BI Concurrently



- **Significant challenges appear when SAP ERP and SAP NetWeaver BI are being implemented at the same time**
 - ◆ **Data volume is not known**
 - ◆ **“Valid” test data has not been created**
 - ◆ **Configuration changes are not communicated**
 - ◆ **Most SAP ERP implementations are doing configuration changes right up to go-live (as issues are found)**
 - ◆ **You are not a high priority for the project teams**
 - ▶ **“That \$#@*^# BI team again ... ”**
 - ▶ **“Listen ... if I don’t get this transaction working, you BI people won’t have anything to report on”**
 - ▶ **“It’s just reporting ... ”**

How to Deal with SAP ERP and SAP NetWeaver BI Concurrently



Tip

- **Stagger the SAP NetWeaver BI go-live a few months after SAP ERP (if possible)**
- **Limit the scope to high-priority queries**
 - **Stagger the others on a subsequent phase**
- **If you cannot delay the SAP NetWeaver BI go-live ...**
 - **Expect a very dynamic environment**
 - **And a lot of “redos” ...**
- **Include some time after configuration is “complete” in SAP ERP for testing**
- **Create robust test scripts with many iterations of testing**
- **Insist on “valid” master data for testing**
- **Expect some reloads of SAP NetWeaver BI after go-live**
 - **Because of adjustments to the data model**

Establishing Scope

- How can we make sure that we have a meaningful and deliverable scope?
- Often times the first (and often failing) approach is to look at:

Where we are ...

not

Where we want to be ...



Report Inventory



- **New implementations often spend a great deal of time gathering, understanding, and categorizing existing reports**

This report inventory is often not only a waste of valuable time ...

- **It often forces the business subject matter experts (SMEs) and SAP NetWeaver BI team to build to the existing reports**
 - ▶ **This is the wrong way of thinking ...**
- **The goal should be to help the SMEs to understand the existing system and map reporting requirements to existing business pains ... not to existing reports!**
- **This forces them to think about the new processes and how reporting can help provide better visibility of the enterprise**

Abandon All Existing Reports? Are You Crazy?



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- The goal is not to abandon and ignore all existing report requirements
 - Just do not become a slave to gathering and tracking all existing reports in the organization
 - Instead, spend the time understanding the most common analytics
 - ◆ Use these to frame existing:
 - ▶ Business Measurement Criteria
 - ▶ Business Pain/Management Focus
 - ▶ Key Performance Indicators (KPIs)

How Do We Get More Detail on Reporting Requirements?

- **Establish meaningful deliverables that allow the process teams to convey their requirements**
 - ◆ These documents should not only allow the process teams to convey their needs but also serve as a conduit to force some agreement on the requirements
 - ◆ **Many SAP NetWeaver BI projects fail or are delayed because the process teams cannot decide what they really want**

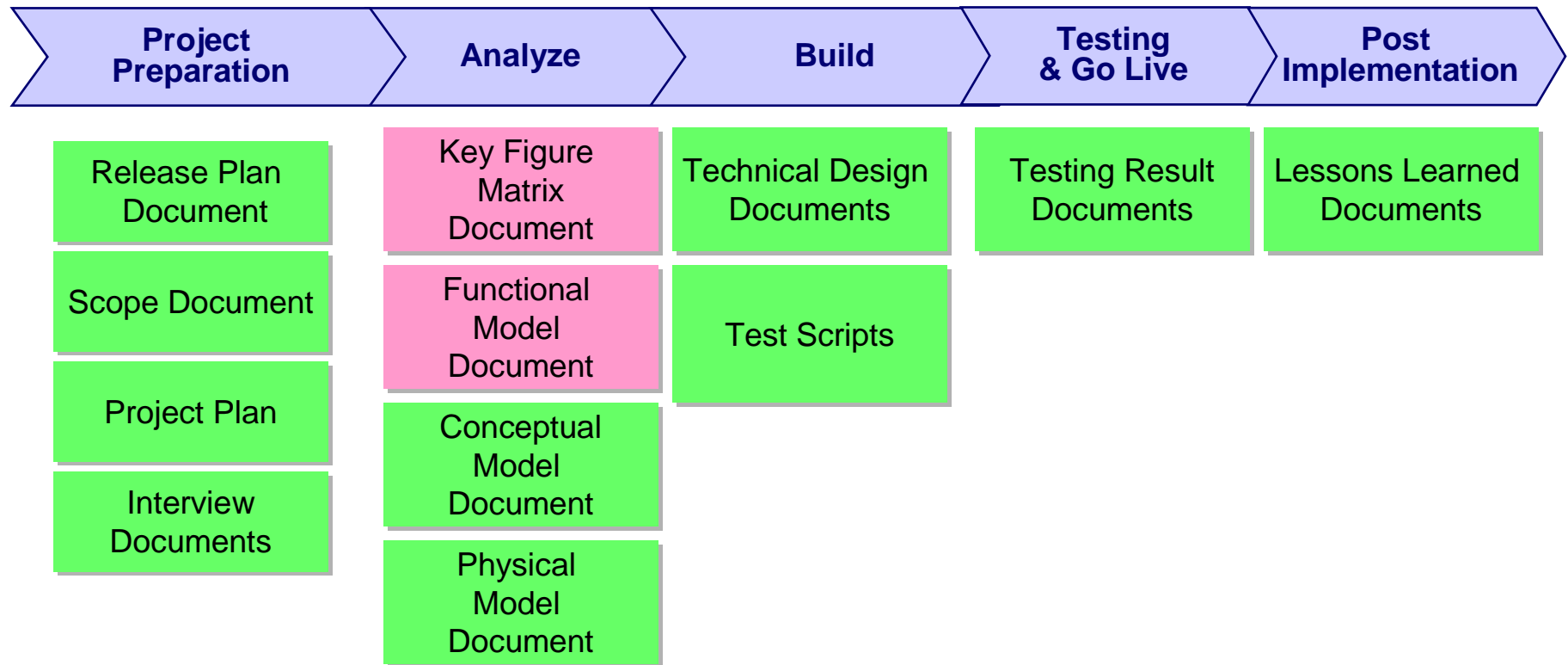
Scope Definition — The Initial Scope Document

- **The most important document created in SAP NetWeaver BI projects is the initial scope document**
 - ♦ This document is created early in the project or upgrade
- **This document has great intentions but is usually at too high a level to be useful**
- **Typical scope statements:**
 - ♦ “Provide sales reporting and sales analysis ...”
 - ♦ “Track on-time delivery ...”
- **How can we get the scope down to a more detailed level?**
 - ♦ Detailed document deliverables ...

SAP NetWeaver BI Deliverables

- The only way to tie down and get agreement on scope between both the SAP NetWeaver BI team and the process teams is with a clear set of **deliverable documents**
- These documents should be owned and driven by the process teams, **NOT the SAP NetWeaver BI team**
- This serves two purposes
 - ◆ It forces them to “ante-up” some requirements
 - ▶ Many times the same people that say they need SAP NetWeaver BI the most are the ones that are not willing to complete the documentation needed
 - ◆ It establishes agreement and understanding of the needs and scope

SAP NetWeaver BI Project Document Deliverables



The Key Figure Matrix and the Functional Model Document are Vital to Successful Requirement Gathering

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Establishing a Key Figure Matrix

- **A universal document used to track and document the most common Key Figures and Key Performance Indicators (KPIs)**
 - ◆ **Establishes one place for all key figures and KPIs**
 - ◆ **Enforces one vision and view of these values**
 - ◆ **Allows agreement on one formula and method for calculating a KPI**
 - ◆ **Establishes one central repository for naming and change management**
 - ◆ **Sets common abbreviations, categories, granularity, etc.**
 - ◆ **Assigns one owner to a KPI**
 - ▶ **It is quite common for one KPI to be measured quite differently by different audiences**
 - *One customer I worked with had three different definitions of a commonly used measure – who decides which measure is “right”?*
 - ▶ **This document keeps the SAP NetWeaver BI team out of these decisions**

What Should be Put into the Key Figure Matrix?

- **All values that are derived, calculated, or shown as part of any SAP NetWeaver BI data model**
- **The focus is on the calculated and restricted key figure values**
- **This document should be established once at the beginning of the project, before development**
 - ♦ **It should then be supplemented with any new key figures that are added later as part of subsequent rollouts**

How Do I Complete the Key Figure Matrix?

- **Most projects use a spreadsheet as their Key Figure Matrix**
- **The document must be a “living” document and owned by the business and process teams**
 - **This should not be seen as an SAP NetWeaver BI team deliverable**
- **Before any work can be done in SAP NetWeaver BI, insist that all key figures that are calculated be documented in the Key Figure Matrix**
 - **There should be no query formulas or InfoProvider transformation calculations without the measure first documented in the Key Figure Matrix**

How Can I Use the Key Figure Matrix?

- **Introduce the Key Figure Matrix to the process teams early in the implementation cycle**
- **Show the process teams how the Key Figure Matrix can benefit them**
 - ◆ **Often the process teams do not have a similar centralized document with their measures**
 - ◆ **This is helpful for them to foster agreement and ownership of the measures that guide the business**
 - ◆ **After implementation, many projects leverage the Key Figure Matrix as end-user documentation, this allows everyone in the organization to see the various key figure calculations**
 - ▶ **Have a question about a value on a query? Go to the common Key Figure Matrix.**

Further Defining Scope — The Functional Model

- In conjunction with the Key Figure Matrix, more detail is also needed around the project
- The best way to get agreement on scope is to delve as deeply as possible into the requirements
- I have seen this best accomplished through building a **Functional Model Document**
 - ♦ This document is created by the business process teams to detail the scope and requirements of the SAP NetWeaver BI effort
 - ♦ This must be owned and driven by the process teams to ensure commitment

Functional Model Document

- **Build one Functional Model Document for each subject area that will be implemented**
 - ♦ **A “subject area” is a very subjective term ...**
- **Its goal is to serve as a “scope contract” between the SAP NetWeaver BI development team and the business**
- **This is not an SAP NetWeaver BI model ... no talk of InfoCubes ODS/DSOs, etc.**
- **Sign-off is imperative to help make sure there is some finality to the requirements gathering**
 - ♦ **Without it the requirements never seem to be “locked down”**

Sections of the Functional Model Document



- **Subject/owner**
- **Business questions asked/answered by model**
 - ♦ This section is designed to reflect and understand the goal of the model, why are we doing this? What are we trying to measure?
- **History requirements of information**
 - ♦ This represents what data needs to be in SAP NetWeaver BI on “day-one”
 - ♦ Often issues arise when there is a great deal of historical data required in SAP NetWeaver BI. This might mean conversion of legacy data, etc.

Sections of the Functional Model Document (cont.)

- **Data sources required to complete model**
 - ♦ **Format of the data**
 - ♦ **Source system**
 - ♦ **Volume/system/frequency**
 - ♦ **Owner**
- **Dependencies/constraints/assumptions**
 - ♦ **Does something else need to be completed or loaded before SAP NetWeaver BI can load data? Are there other constraints on the data?**

- **Transformation of data required**
 - ♦ Often knowing about complex transformations early can help the scoping of the build
 - ♦ Many times this is not known at the time of creating the functional model
- **Frequency and timing**
 - ♦ How often is data needed? Is there a need for real-time data?
- **Functional Model Diagram to show flow and data model**
 - ♦ Flow of data throughout the model
- **Presentation requirements**
 - ♦ How will data be reported? What reporting method is needed?
- **Audience and distribution of presentation**
- **Security**
 - ♦ What are the security needs and at what level?
- **Sign-off**

Mock-Up Reports

- **One of the most valuable parts of the Functional Model Document are the Mock-Up reports**
- **These are typically Microsoft Excel spreadsheets to show sample reports that will come when the Functional Model is built**
- **Many things can be learned from the mock-ups**
 - ♦ **Do the key figures on the mock-ups appear in the Key Figure Matrix?**
 - ♦ **Does the data shown in the mock-ups exist at the same level of granularity?**
 - ♦ **Can the data shown be properly joined?**
 - ♦ **Does the report make sense to be delivered in SAP NetWeaver BI?**

Use of the Functional Model – Once Complete

- **Have a Functional Model “Break the Model” meeting**
 - Helps determine if the model serves the requirements
 - ▶ **Can I get data by ...?**
 - ▶ **Can I measure ...?**
- **Use this Functional Model to develop an SAP NetWeaver BI physical model**
 - DataSources
 - InfoSources
 - ODS/DSO
 - InfoCubes
 - Information Delivery (Query)
- **This allows you to map your model to the requirements**
- **Insist on sign-off**
 - This can then be used as your detailed scope agreement
 - Implement a scope change process for requirements outside of this model

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Key to Success = Foster Ownership

- One of the **most** important measures of success in any SAP NetWeaver BI project is the level of ownership from the subject matter experts (SMEs)
- The more the process teams and SMEs see the tool as “their” tool and their solution, the better the implementation usually becomes
- This helps with:
 - ♦ Scope Management
 - ♦ Issue Resolution
 - ♦ Testing
- The goal is when an issue arises that it is seen as “our” issue, not the SAP NetWeaver BI team’s issue
 - ♦ Once the SMEs own the solution, they are much more prone to better prioritize and resolve issues; without it, projects often lag, or even fail

How Can You Foster Ownership?

- **Do “lunch and learns” to show SAP NetWeaver BI prototypes**
- **Locate the team centrally and keep open lines of communication**
 - ◆ **This includes outside of the office ...**
 - ◆ **Many SAP NetWeaver BI issues/problems have been solved by simply stepping away from the environment**
- **Keep in tune with the changing requirements of the process teams**
- **At least weekly status meetings on issues**
- **Do not be a stranger to the business users**
- **Keep the business users very involved in the issue resolution and testing process**



Mind Your Master Data

- **Many projects fail or are not as effective as possible because of poor quality master data**
- **Poor master data is the result of several things:**
 - ♦ **Multiple or conflicting sources of master data values**
 - ♦ **User error**
 - ♦ **No active or passive governance on master data**
 - ♦ **Lack of stewardship**
 - ♦ **Ineffective conversions of master data**
 - ♦ **Inconsistent transformation into SAP NetWeaver BI**
- **Often the only time it is clear that there is an issue with master data is when users try to drill down on these inconsistent values ... and get inconsistent results**

Master Data Cleanliness

- **Do not assume that the source master data is clean and/or consistent**
 - ♦ **Most SAP projects spend very little time doing “data dialysis” on their master data**
 - ♦ **They establish very few rules or validation of master data values**
 - ♦ **This results in inconsistent master data**
 - ♦ **Often issues with master data only come to light when SAP NetWeaver BI reports rely on the data values**
 - ♦ **Users complain, “This SAP NetWeaver BI report is incorrect!” but the issue is with the associated master data**

Legacy Master Data

- The effort to remove duplicate records and harmonize legacy master data so it can be used with SAP master data is often underestimated
- This effort often involves significant effort from both the legacy team and the SAP ERP process teams to map data
- Often cross-reference tables are needed to map and transform data into the SAP ERP terminology

If Legacy Master Data is part of the requirements ... leave plenty of time for this effort

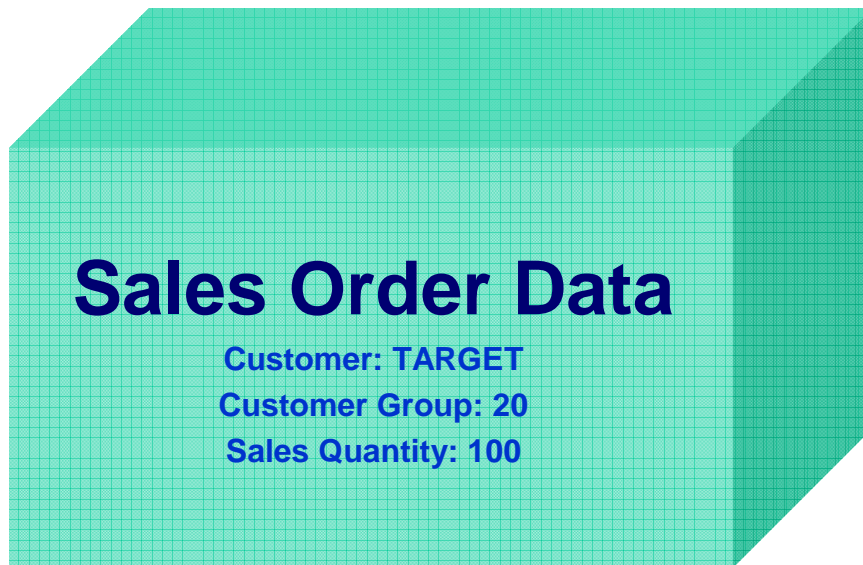


Solution

Separate Values into “As Posted” or “Restated Values”

- **All reporting requirements can be separated into two different types of reports**
 - ♦ It is important to understand which perspective that values in reports are using
- **As Posted View**
 - ♦ Data in this view comes directly from the values in the transactional data
 - ♦ This data remains static
- **Restated View**
 - ♦ Data comes from the attributes of master data
 - ♦ This provides an automatic “restatement” of data as the attributes in master data change

“As Posted” or “Restated Values” (cont.)



Sales Order Data
Customer: TARGET
Customer Group: 20
Sales Quantity: 100

Transactional Data – Data is loaded from the source and is stored as the value exists in the source.



Customer Master
Customer: TARGET
Customer Group: 10
...
...

Master Data – Restated and reloaded each night. New values are reflected in SAP NetWeaver BI after master data load is complete and master data is activated.

Which Customer Group Should Be Used for Reporting?

Query Development Tips

- **Only build queries with MultiProviders, never directly on the InfoCube or ODS/DSO**
- **It is typically better to have fewer queries with many different free characteristics and key figure values in one query than many queries with very narrow scope**
 - **This strategy allows existing queries to answer many more business questions by simply using new filter criteria or drilling down differently in the report**
 - **Also allows for easier testing, documentation, and rollout**
- **You can add many key figure values to one query by putting it in the query and hiding it with the ability to view when necessary**
- **Be careful of query requirements with many different levels of granularity**

What About Developing Queries in Production?

- **Many customers develop queries directly in production**
 - ♦ This is a big debate among customers
- **Pros**
 - ♦ Quick deployment
 - ♦ Real production data can be used to test queries
- **Cons**
 - ♦ Hard to enforce governance
 - ♦ Performance issues may arise
 - ♦ Lack of understanding of the data leads to incorrect assumptions
- **The best way to achieve optimal performance and standardize queries is to not allow query development in production**
 - ♦ Develop all queries in the development environment and transport through the landscape (DEV → QA → PROD)



Tip

If You're Developing Queries in Production...

-
- **Keep query development in the hands of a few well-trained power users**
 - **Have a certification/training process for the power users**



**Best
Practice**

Query Publishing Strategy Segmentation

- It may make sense to allow the power user queries to exist in production for a limited time
- If these power user queries are useful, they could be copied and transported by the BI team
 - ♦ This would make them “Sanctioned”
- Before “sanctioning,” queries can be reviewed to make sure they adhere to:
 - ♦ Development standards
 - ♦ Naming standards
 - ♦ Performance standards
 - ♦ Security standards
- Segregate these on the Portal by type

-
- **Understanding and communication change control helps to eliminate many issues with end users**
 - **Determine how your changes to the data model will affect existing queries or the existing user base**
 - ♦ **Some query changes will break existing favorites built from that query**
 - ♦ **Know what these changes are in order to prevent frustrated users**
 - **Develop a methodology for communicating change**
 - **Periodically purge non-used queries**
 - ♦ **Publish a list of these, wait for a few weeks, then delete**

Establish a Review Process

- **In order to complete the design, several design reviews should be completed**
- **These design reviews:**
 - ♦ **Allow the SAP NetWeaver BI data architect and project manager to evaluate design**
 - ♦ **Ensure that designs follow the design standards**
 - ♦ **Check naming standards**
 - ♦ **Evaluate the model for possible performance pitfalls**
 - ♦ **Assess that model will fulfill current requirements**
 - ♦ **Verify that the model will allow for future growth**

Types of Reviews

- **Functional Model/Conceptual Review**
 - ♦ Designed to ensure that the functional requirements are clearly understood by the SAP NetWeaver BI team and the model meets the requirements
- **Data Model and System Review**
 - ♦ Allows an opportunity to look over the design to ensure that all design standards have been followed and documentation is complete
- **Final Check**
 - ♦ Provides the project team one more review of the solution before the solution is moved to the production environment

Should I Fix Junk Data in SAP NetWeaver BI???

- **SAP NetWeaver BI does allow for the transformation of data; however:**
 - ♦ **RESIST, RESIST, RESIST all requests to FIX data in SAP NetWeaver BI**
- **Practice saying: “SAP NetWeaver BI is a reflection of data in its source — fix it there and we would be glad to pull the changed data”**
- **Why?**
 - ♦ **Violation of audit/data standards**
 - ♦ **Reloading may just bring back the bad data**
 - ♦ **You are tied to these “fixes” forever**
 - ♦ **You place the burden in the wrong place**
 - ♦ **You provide no incentive to keep the data clean in the first place**
- **The SAP NetWeaver BI team should be focused on gathering and realizing requirements of analysis, not cleansing bad data**



Data Quality Tips

- **Get business to commit to “one version of the truth”**
 - **Single source for data**
- **Make sure the process teams commit to auditing and fixing master data**
- **Keep on top of configuration changes**
- **Be especially wary of interfaces/custom programs that push data into source outside of its norm**
- **Test every scenario you can dream up**
- **Be prepared for several reloads of SAP NetWeaver BI in the first few weeks/months**
 - **Schedule system downtime right after go-live (you will need it)**
 - **Plan on weekend/late night loads after go-live, and prepare your team in advance**



Solution

- **External (non-SAP) data is always a bigger deal than you think**
 - ♦ **Work to quickly understand the scope of historical legacy data in the SAP NetWeaver BI data model**



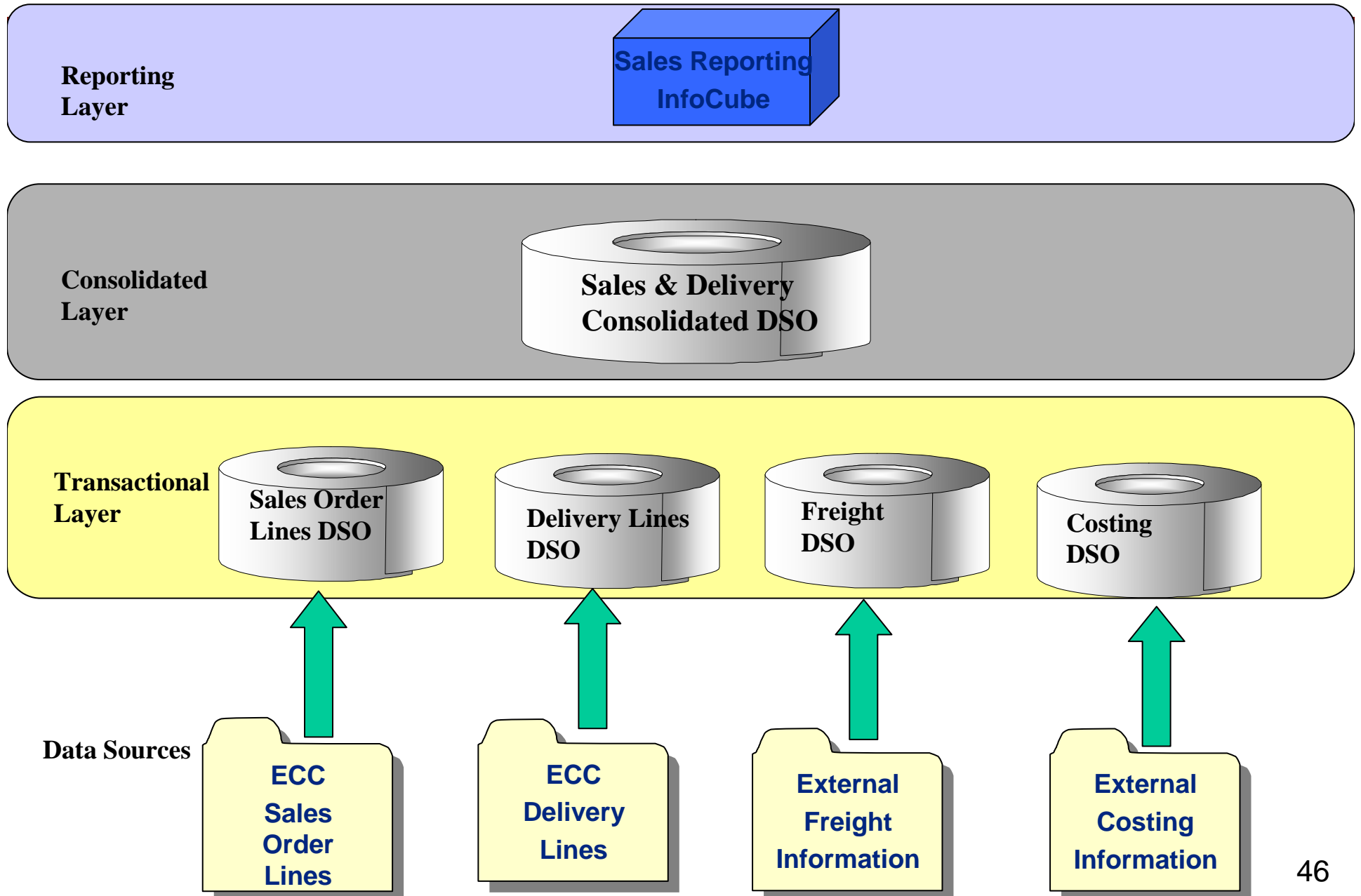
Tip

- ▶ **What is the source/volume/fields/method of delivery**
- ♦ **If this data is coming from an external source – work to limit the scope of this external data as much as possible**
 - ▶ **While still providing the reporting requirements**
- ♦ **Legacy data is very often “dirty” and it does not always harmonize well with other data**
- ♦ **Expect a great deal of transformation and/or cross-reference tables to map the legacy data to SAP transactional data**
- ♦ **Since the resource providing legacy data is often outside your organization, often times you should expect delays ... and some rework ...**

Plan for Growth

-
- **Many SAP NetWeaver BI data models are completely scrapped or redesigned after each rollout**
 - ♦ Often this can be minimized or even avoided by planning for this growth and change
 - **Build for the current requirements, plan for the future (and even unknown) requirements**
 - ♦ This often means bringing in more data than actually required, keeping an eye for the future

Multi-Layered Approach to BI Modeling



Multi-Layered Approach

- **This multi-layered approach separates the data into different phases or lifecycles**
- **Data Sources**
- **Transactional Layer**
 - **This is the first place that persistent data is stored in the BI environment**
 - **This layer should include almost all fields from the source**
 - **This allows for data to be loaded first into one DSO without significant transformation**
 - **This reduces or prevents reloading data from the source if different data is needed for other requirements or data models**
- **Consolidated Layer**
 - **This layer allows for data to be harmonized from multiple transaction layer sources**
- **Reporting Layer**
 - **Most reporting is performed at this layer**

Advantages to a Multi-Layered Approach

- Builds BI into a data warehouse rather than simply a series of data marts that cannot be accessed together
- We cannot gather **all** future requirements – helps build for the future ‘unknowns’
- It minimizes the impact of future requirement changes
 - While also allowing for reporting the current requirements
- Minimizes the number of reloads from the source
 - Data is already in BI, all future changes become a BI event, the process teams have minimal involvement
 - Some reloads of data from source are quite impactful or impossible after go-live because of high volume
 - Minimizes the impact of the reloads



Avoid Realignments of Transactional Data

- **Realignment** refers to a restatement of transactional data that has been loaded into SAP NetWeaver BI. This often requires a dump and reload of this data.
- Realignments of data in the organization are a necessary evil and can be a nightmare
- How can you mitigate this pain?
 - ◆ Plan ahead
 - ◆ Master data attribute modeling
 - ▶ **Queries read from attributes of master data, give an automatic “restated” view**
 - *e.g., queries access the salesperson from an attribute of the customer master record rather than from the transactional data*
 - As the salesperson changes, the queries are automatically restated with the new salesperson value
 - ▶ **If the transactional view of salesperson is used, a dump and reload of data would be needed, re-determining the salesperson during load**

Audit?

- **Bring in third-party experienced resources from time to time to do a “health check”**
 - ♦ **Do not limit this to audit from a technology standpoint ...**
 - ▶ **Many clients only address this via EarlyWatch**
 - ▶ **EarlyWatch does not provide the full picture**
- **Look at the NetWeaver BI system from an applications point of view**
 - ♦ **Outsider viewpoint**
 - ♦ **This can also be accomplished via SAP with their solution review program**



Gathering Requirements Does Not End at Go-Live ...

- Many models need refinements based on new requirements
- New models need to be evaluated with old models
- Good data modeling decisions and understanding of the requirements help to aid in a more flexible model and easier adjustments post go-live



7 Key Points to Take Home

- **Establish a sound methodology for gathering requirements and communicate it to the process teams**
- **A Key Figure Matrix & Functional Model Document help provide deliverables to establish scope**
- **Foster Ownership from the process teams**
- **Master data cleanliness (or lack thereof...) is a key factor in defining a successful project**
- **Implement a review process at various stages on your project**
- **Be wary of using your NetWeaver BI system to clean bad source data**
- **Keep an eye for the future by anticipating future reporting needs**

For More Information...



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