

SAP NetWeaver[®]

BI and

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Successful SAP BW Implementation and Upgrade Tips (Part One)

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In This Session ...

- This is a two-part session:
 - ◆ We will cover mistakes commonly made in SAP BW implementations and upgrades
 - ▶ Why the mistake occurs
 - ▶ How to spot the problem
 - ▶ The impact of the mistake or problem
 - ▶ How to prevent (or minimize the impact) of common issues
 - ◆ You will:
 - ▶ Get help keeping your new or upgrade project on track
 - ▶ Learn from others' troubles

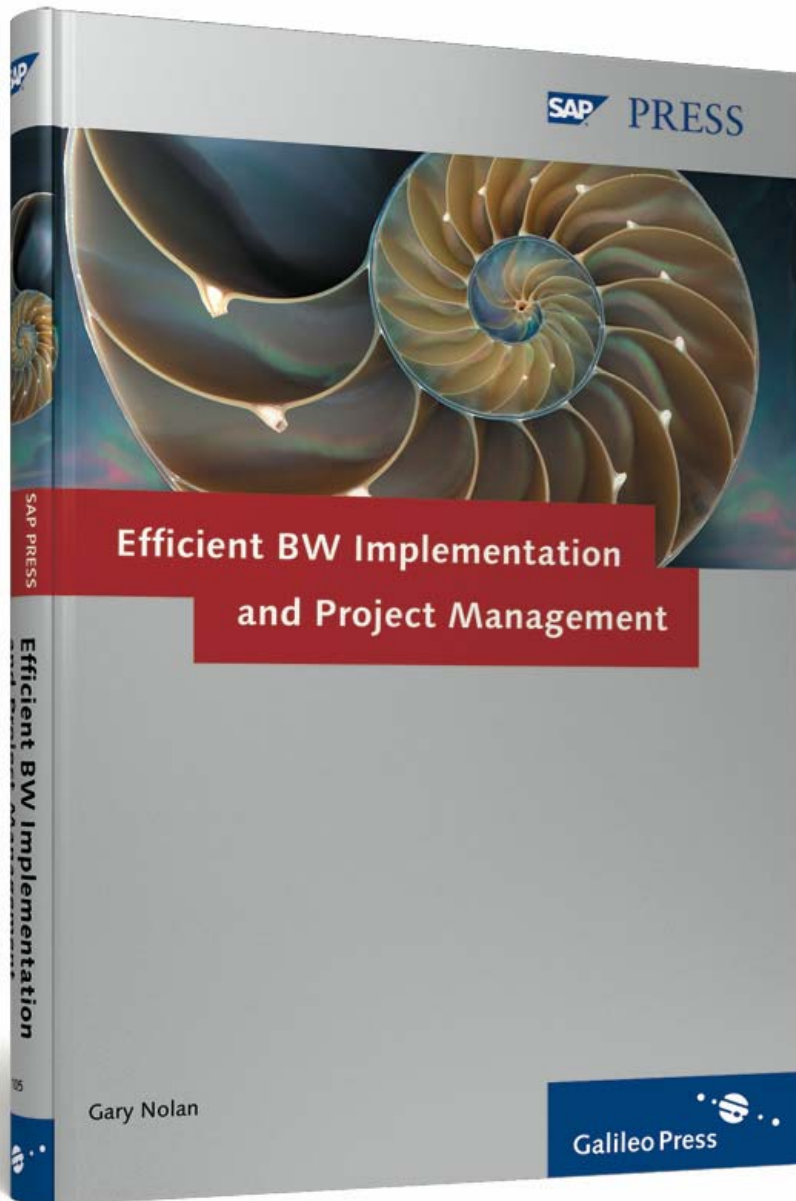
What We'll Cover In This Session (Part I) ...

- Overview of BW
- Defining and Managing BW Scope
- BW Governance and Documents Needed
- BW Communication Issues / Challenges
- Data Modeling in BW - Common Issues
- BW Strategy/Upgrade Challenges
- Wrap-up

What We'll Cover In The Next Session (Part II) ...

- Data Quality Concerns
- BW Performance Concerns and Challenges
- Common BW Technical Issues and Challenges
- Staffing and Resource Issues in BW Projects
- Wrap-up

Efficient BW Implementation and Project Management



By Gary Nolan

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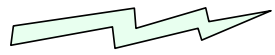
What did I get Myself Into?

- Implementing an SAP BW project presents its own challenges that are unique to SAP projects
- Common analogy:
 - ♦ Implementing SAP R/3 is a science; implementing SAP BW is an art
- This is because:
 - ♦ SAP BW 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 SAP BW (you) are at the bottom

Why do People Implement SAP BW?

- To take the analytics off the transactional (SAP R/3) system
- To transition to a “single version of the truth”
- To consolidate, harmonize, and centralize information
- To establish an Enterprise Data Warehouse (EDW)
- Competitive advantage — better analysis means better decision making
- To provide flexible analysis of information assets
- To avail business information to more people in the organization

Use the Right Tool for the Job



GOTCHA!

SAP BW is **not** the only reporting solution

OLTP (On-Line Transactional Processing System, e.g., SAP R/3)

Process-oriented

Isolated

Current

Supports business operations

Has process scope

Tactical

Detailed

Rapid response needed

Used by transactional users

Database tuned for relational database access

OLAP (On-Line Analytical Processing System, e.g., SAP BW)

Subject-oriented

Integrated

Historical

Supports business strategy

Has enterprise scope

Strategic

Summarized

Rapid response not critical

Used by management

Database tuned for reporting

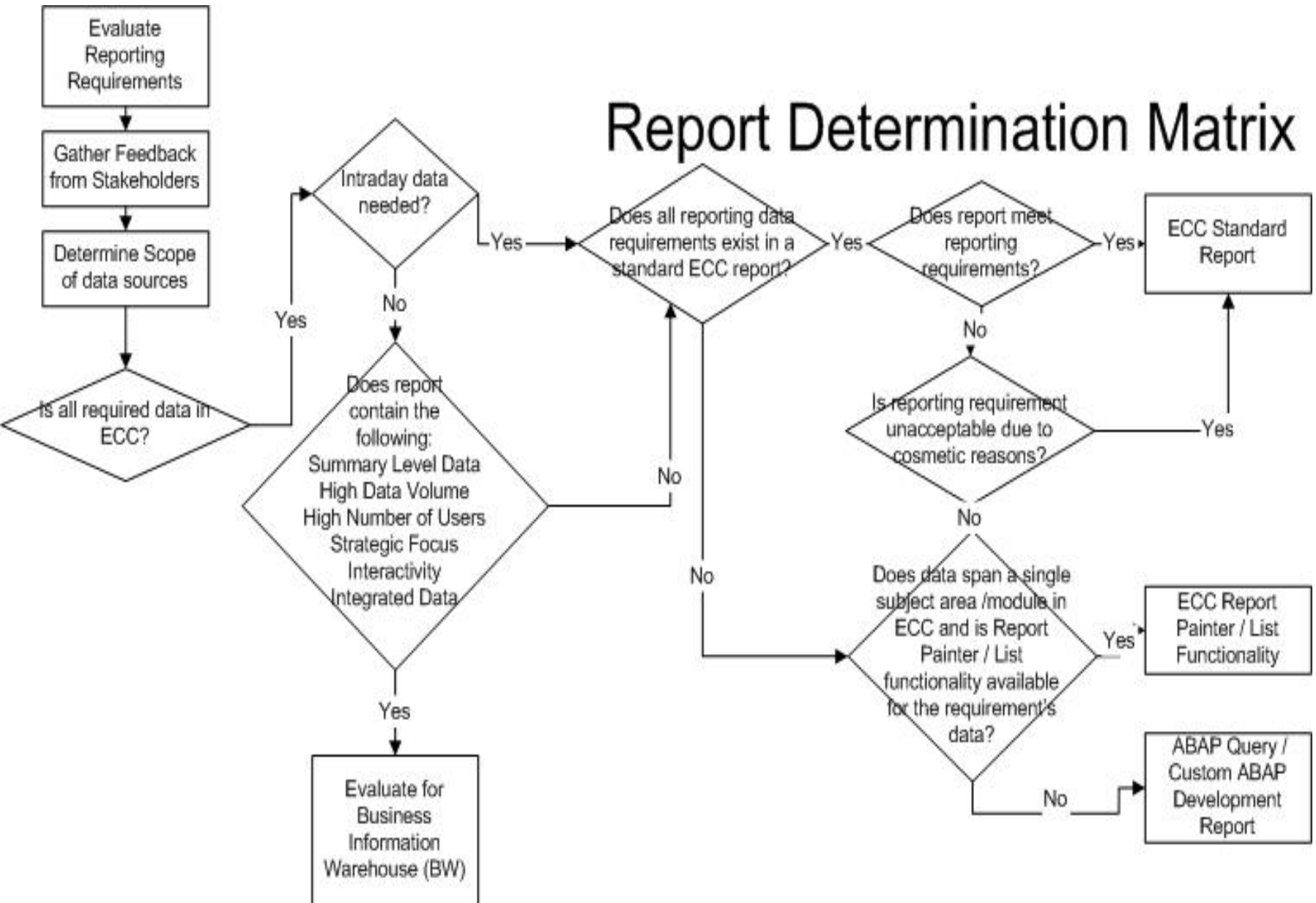
Help Work to SAP BW Strengths

- Help the process teams understand what SAP BW does well, and what it does not do well
- As a general rule:
 - ♦ SAP BW does work well for summarized aggregated and strategic reporting that spans one or many source systems or subject areas
 - ♦ SAP BW does not work well for very detailed intraday document reporting of transactional data
 - ♦ SAP BW does not typically allow real-time reporting
 - ▶ Shhhh! There is some functionality to provide some real time reporting in SAP BW, but ... be careful with delivering that message!

Help the Process Teams Help You

- Work to prevent this kind of attitude
 - ◆ Each time a report requirement is raised, no matter the scope:
 - ◆ “Yeah ... just mark that down as SAP BW and move on ... they’ll take care of it”
- How can we get the process team members to pick the right reports for SAP BW?
 - ◆ Have workshops to help educate the teams on SAP BW
 - ◆ Show some demos of standard content to get them excited
 - ◆ Help them understand where SAP BW excels

Develop a Report Decision Flow



In Summary

- Know the challenges faced in a SAP BW project — learn to expect them
- Clearly understand the reasons for implementing SAP BW
- Know SAP BW's strengths and weaknesses
 - ♦ Play to the strengths
- Make sure that SAP BW is the right tool for the job
 - ♦ Don't use a wrench to hammer a nail
- Help the process teams help you
 - ♦ Keep them informed about SAP BW and when to use SAP BW

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Know who your Audience (and Critics) Are ...

- Each project has many interested internal and external parties or customers
 - ♦ They often change or their interests change during various phases of the project
- What should I do?
 - ♦ Clarify the project stakeholders
 - ♦ Align stakeholders' expectations and impact on the project
 - ♦ Understand stakeholders influence and importance
 - ▶ Expect that needs and expectations can and will change
 - ▶ Monitor and revisit as necessary
 - ♦ “Don’t be a stranger”
 - ▶ Meet regularly with the stakeholders
 - ▶ Keep them as involved in the process as possible

Identifying Potential Scope Creep for your SAP BW Project

- Scope creep is even more prevalent in SAP BW projects than transactional system projects
 - ♦ As pressure mounts on the transactional systems, more requirements get “pushed” to SAP BW
 - ♦ As more groups see SAP BW, 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 BW projects suffer delays and/or cancellation because of an inability to say NO to “just one more thing we forgot”

Conflicting Scope — SAP R/3 and SAP BW Concurrently

- Significant challenges appear when SAP R/3 and SAP BW 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 R/3 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 \$#@*^# BW team again ... ”
 - ▶ “Listen ... if I don’t get this transaction working, you BW people won’t have anything to report on”
 - ▶ “It’s just reporting ... ”

How to Deal with R/3 and SAP BW Concurrently

- Stagger the SAP BW go-live a few months after SAP R/3 (if possible)
- Limit the scope to high priority queries
 - ♦ Stagger the others on a subsequent phase
- Expect a very dynamic environment
 - ♦ And a lot of “re-do’s”...
- Include some time after configuration is “complete” in SAP R/3 for testing
- Create robust test scripts with many iterations of testing
- Insist on “valid” master data for testing
- Expect some reloads of SAP BW after go-live

Fight the Overly Ambitious Scope

- **Start small — choose an application of “reasonable” size**
 - ◆ Limit first rollout of SAP BW 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).



Scope Definition — The Initial Scope Document

- The most important document created in SAP BW 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?
 - ♦ A Functional Model Document

Further Defining Scope — The Functional Model

- 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 BW effort
 - ♦ Build one Functional Model Document for each subject area that will be implemented
 - ♦ The Functional Model is reviewed and supplemented by the SAP BW team
 - ♦ It's goal is to serve as a “scope contract” between the SAP BW development team and the business
 - ♦ This is not a SAP BW model ... no talk of InfoCubes/ODS, etc.

Build a Functional Model Document by Subject Area

- Business questions asked/answered by model
- History requirements of information
- Data Sources required to complete model
 - ♦ Volume/System/Frequency
- Dependencies/Constraints/Assumptions
- Transformation of data required
- Frequency and timing
- Functional Model Diagram to show flow and data model
- Presentation requirements
- Audience and Distribution of Presentation
- Security
- Sign-off

Use of the Functional Model

- 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 a SAP BW physical model
 - ◆ DataSources
 - ◆ InfoSources
 - ◆ ODS
 - ◆ 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

Build your SAP BW Data Model

- Build the SAP BW data model based on the functional model
- Now that you understand the sources, volume, and goals of the subject area, the data model can be created
 - ♦ Extractors (Data Sources)
 - ♦ ODS
 - ♦ InfoCubes
 - ♦ Presentation
- This approach allows the data model to be created on a firm foundation ... the Functional Model Document

Tips and Tricks for Creating your Project Scope

- Limit first rollout to a pilot group
- If possible, do not plan a simultaneous SAP BW and SAP R/3 go-live
 - ♦ Stagger the SAP BW rollout
- Build Functional Models for each subject area
- Do not let project management/stakeholders set an artificial deadline
- Review timeline and adjust as appropriate
- Have back-up plans if other teams cannot meet their requirements
 - ♦ This risk grows as the number of external data sources increases



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Governance Documents Needed in a Typical BW project

- Documents that are a “must have” ...
 - ♦ Stakeholder Document
 - ♦ Project Plan
 - ♦ Project Charter
 - ♦ Naming Standards Document
 - ♦ Landscape Document (Dev, QA, Prod, etc.)
 - ♦ Architecture Document (Cubes, ODS, etc.)
 - ♦ Disaster Recovery Document
 - ♦ Development Standards Document
 - ♦ Functional Models
 - ♦ Cutover Plan
 - ♦ Go-Live Checklist
 - ♦ Security Standards Document
 - ♦ Communications Documents (Functional/Technical Specs)

The Biggest Mistakes in SAP BW Governance are ...

- Naming standards not followed or enforced
- Transport strategy not clear ... or not followed
- Development (DEV)/Quality Assurance (QA)/ Production (PRD) not in sync
 - ♦ Basis settings/database settings/transport issues
- No SAP BW Data Modeling review or centralization of modeling decisions
 - ♦ Some areas have a sound model, others are not so sound ...
- No clear strategy for security or security decisions left until the end of the project

Institute “Why Not SAP?” Approach

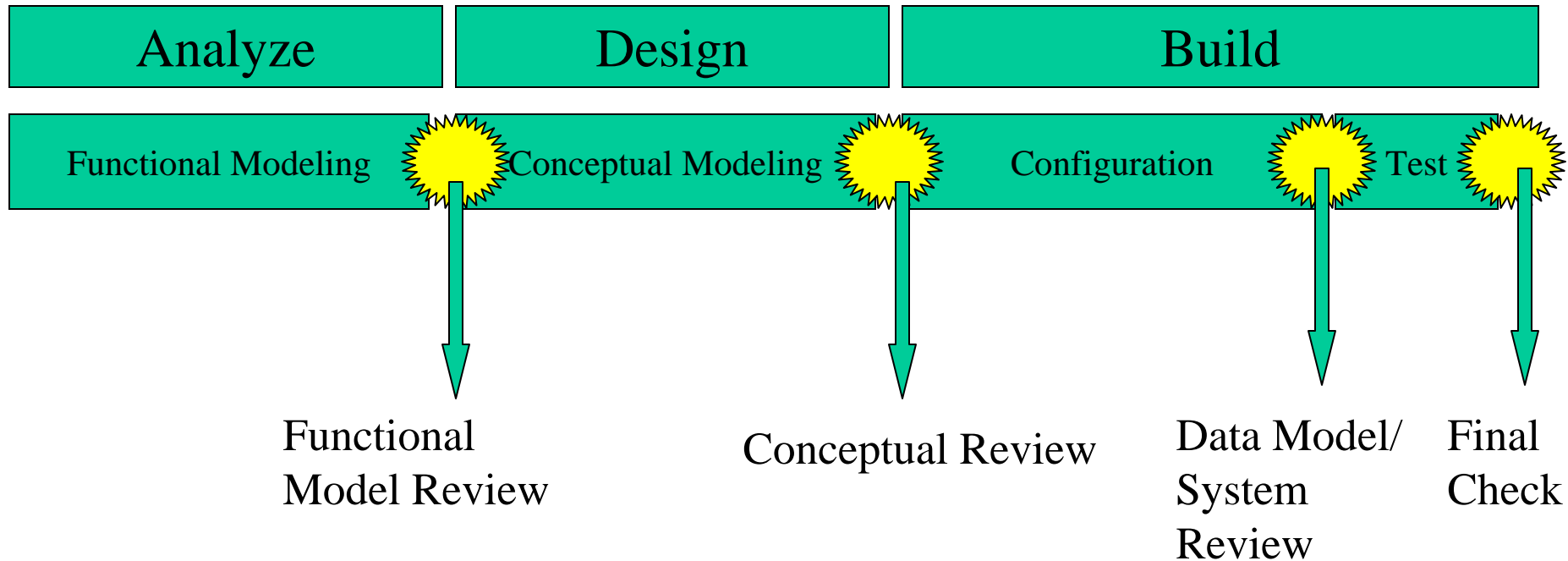
- Common BW Third Party (non-SAP) Tools
 - ♦ Extraction Transformation and Loading (ETL)
 - ♦ OLAP (for query presentation)
 - ♦ Batch schedulers
- Third-party tools are ALWAYS more complicated than you think
- Take a “Why Not SAP?” approach to all requirements
 - ♦ Third-party tools are often “required” because the users/team has been already using them
 - ♦ Push back these requirements; if possible, require justification and escalate non-SAP tools to steering committee



Governance Tips

- Establish a design steward for each functional area
 - ♦ The steward
 - ▶ Is a member of the SAP BW development team
 - ▶ Is not a consultant
 - ▶ Is responsible for current and future design in one functional area
 - ▶ Can spot conflicts and scope creep in his/her area
 - ♦ This establishes some ownership in the development team
 - ♦ Allows team members to focus on one functional area
 - ▶ SAP is much too big to understand many areas
 - ♦ The design steward works with the business, project manager, and overall BW data architect
- Have some redundancy in case team members leave or are reassigned

SAP BW Review Process



Implement reviews at various stages in the implementation cycle to ensure adherence to governance, naming, and modeling standards


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Become a SAP BW Ambassador

- It is a mistake to develop in a silo! You must do all you can do to get the word out about SAP BW — it will:
 - ♦ Stop the scope assumptions
 - ♦ Build excitement
 - ♦ Get people on board
- You must become a SAP BW ambassador (SELL IT!)
 - ♦ At the beginning of the project, this usually involves selling the product, methodology, and tools to the stakeholders
 - ♦ Next, you transition into building “SAP BW Champions” in the organization
 - ♦ Finally, you help to invite other organizations into the SAP BW circle

Ownership from the Business Representatives

- **Get the business involved as early as possible**
 - ◆ This gets some ownership of SAP BW
 - ◆ Do not allow SAP BW to be seen as an IT-driven project  *Tip*
- **Interact with the business users**
 - ◆ Keep them involved in all decisions
 - ◆ Show progress, schedule demos/prototypes
- **Keep them involved**
 - ◆ Have them aid in testing
 - ◆ If possible, have them do the end-user training
- **Require sign-off**
 - ◆ This minimizes scope creep
 - ◆ Fosters ownership

Avoid Meeting Paralysis

- Too many meetings; not enough getting done
 - ◆ The SAP BW team can easily fall into this trap
 - ◆ Many times, the team is waiting on business decisions to be made by the process teams
 - ◆ Two common approaches from the project teams
 - ▶ “Invite the SAP BW team — we never know, a reporting need might come up.”
 - ▶ “Don’t invite them, the meeting is too big already ...”
 - ◆ Need to strike a balance between staying informed and being paralyzed by the number of groups to keep informed
- Set rules for meetings

Communication Tips for your SAP BW Project

- Do “lunch and learns” to show SAP BW prototypes
- Locate the team centrally and keep open lines of communication
 - ♦ This includes outside of the office ...
 - ♦ Many SAP BW issues/problems have been solved by simply stepping away from the environment
- Keep in tune with the changing requirements of the process teams
- Do not be a stranger to the business users



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What Is a SAP BW Data Model?

- Combination of:
 - ♦ ODS
 - ♦ InfoCube(s)
 - ♦ InfoSource(s)
 - ♦ Master Data
 - ♦ Queries
- To provide consistent, complete, and timely data to the users to facilitate business decision making
- This should be developed based on current needs with an eye for the future

Why are Data Modeling Decisions Important?

- Many times, decisions made on the initial rollout of SAP BW are not easily reversed
 - ♦ Dumping and reloading data in SAP BW can be time-consuming
 - ♦ Any new InfoCube or ODS requires reconciliation/testing
- If data needs to be re-initialized from the SAP R/3 source, this requires a downtime on SAP R/3
 - ♦ For example: Order data initial remilitarization requires orders to be stopped in SAP R/3
 - ♦ Proper planning can reduce or eliminate the need to reinitialize data from SAP R/3

Lay a Proper Foundation for your Project

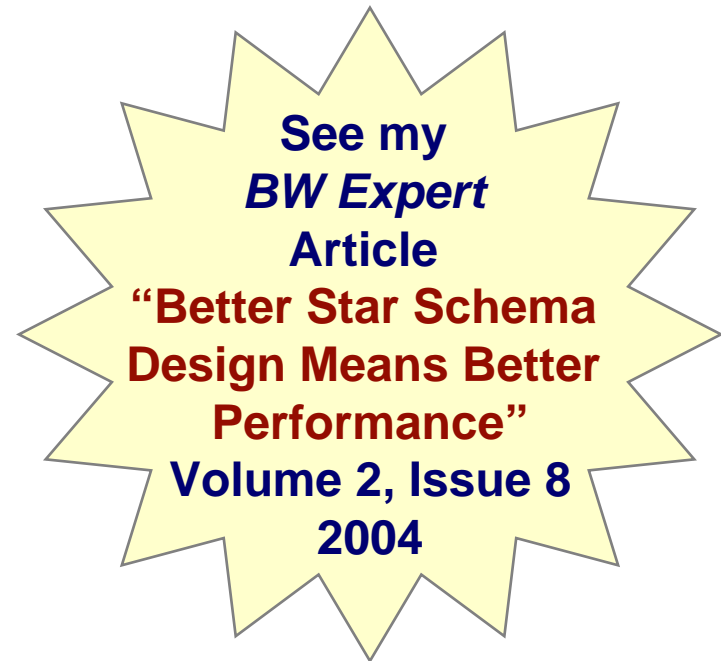
- Employ or utilize an experienced SAP BW data architect to lay a sound foundation for your SAP BW implementation



- ♦ This person should be very experienced in SAP BW (not just data warehousing in general)
- ♦ With the right decision making, time/effort savings can be HUGE

How can I Make Data Modeling Easier?

- Fully understand the requirements ... with an eye for the future
- Know the source data
- Have data modeling standards and enforce them
- Pull data once/use over and over
- Fully test, including deltas
- Utilize business content ...



Business Content

- **Business content is:**

- ♦ InfoObjects Over 11,000
- ♦ ODS objects 350+
- ♦ InfoCubes 600+
- ♦ MultiCubes 120+
- ♦ Queries 3,300+
- ♦ Workbooks 2,000+

- **Business content can be a very good start to get a conversation going ...**

Business Content (cont.)

- It can also be used “as-is” or modified to fit needs
- At minimum, you should be able to leverage the DataSources (extractors) from SAP R/3
 - ♦ These exist for virtually every master data and transactional source in SAP R/3
- Only activate the content you need — do not activate all of it ...



Tip

Avoiding Realignment of Transactional Data in BW

- **Realignment** refers to a restatement of transactional data that has been loaded into BW. This often requires a dump and reload of this data.
- Realignment 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

Data Modeling Tips

- **Focus on information delivery**
 - ♦ The more you understand the data and business requirements, the more sound the data model becomes
 - ♦ Use the Functional Model to help understand the requirements
- **Build for the future**
- **Plan for realignments**
- **Utilize business content whenever possible**
- **Plan for performance**

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Tips and Tricks for Your Support Package Strategy

- Stay as current as possible with SAP BW support packages
- Each support package application requires a full regression test of SAP BW
 - ♦ Queries and Loading
- There is no “fast way” or “automated way” to do regression testing
 - ♦ Automated testing tools are not adequate for most SAP BW testing
- Because of the cost and time involved, many customers wait until they plan to roll out big changes to SAP BW
 - ♦ They plan to do regression testing anyway, so why not add the support package before the regression test?


GOTCHA!


Note

SAP Upgrade Drivers

Upgrade Drivers: SAP BI Release Strategy

Version	End Mainstream Maintenance	End Extended Maintenance
SAP BW 2.0B	Dec 2005	Dec 2005
SAP BW 2.1C	Dec 2005	Dec 2005
SAP BW 3.0B	Dec 2006	Dec 2006
SAP BW 3.1C	Dec 2006	Dec 2006
SAP BW 3.5 (NW 2004)	Mar 2010	Mar 2013
SAP NetWeaver 2004s BI	Mar 2011	Mar 2014

Information from Service Marketplace alias "releasestrategy"

SAP NetWeaver BI Upgrade Drivers

- BI Accelerator – Faster performance
- Web Application Designer – Improved design
- BEx Query Designer – More flexibility with report design
- Information Broadcasting – More features
- BEx Report Designer – Formatted reporting
- BI Integrated Planning – More flexible and easier than SEM BPS....
- Remodeling Toolbox
- PDF Printing...
- And More...

Upgrade Tips

- **Most common reason for an upgrade: “SAP made me do it”**
 - ♦ Many customers wait until a release is going off-support to upgrade
- **Plan an upgrade strategy**
- **Wait until releases become mature before upgrade**
 - ♦ This usually takes about six months (more for SAP NetWeaver 2004s)
 - ♦ SAP NetWeaver 2004s release is STILL not mature enough for most customers
 - ♦ Other than a technical upgrade (utilizing SAP BW 3.x functionality only) expect some significant time ‘chasing software issues’
 - ♦ Each new SAP NetWeaver 2004s support package has new ‘surprises’

SAP NetWeaver BI Upgrade – Lessons Learned

- The Java side of SAP BW requires a lot of tuning
 - ♦ Make sure you have a basis Java resource
- The new Java reporting allows for larger queries
 - ♦ You need to use design principles to limit data
- Plan significant time if you have complex authorizations
 - SAP recommends going to the new Analysis Authorizations, the migration program gets you only 80% converted
- Check hardware compatibility
 - ♦ Adobe does not run natively on a 64 bit platform
- The standard web template needs some work
 - ♦ Plan on customizing and creating your own using the WAD
- The BI capabilities of SAP NetWeaver 2004s require a **lot** more memory
 - ♦ Java, Unicode, etc

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Resources

- [BW Expert Publication - www.bwexpertonline.com](http://www.bwexpertonline.com)
- [Efficient BW Implementation and Project Management – SAP Press – coming out first quarter 2007](#)
- Gary Nolan, “Better Star Schema Design Means Better Performance” (BW Expert, Volume 2, Issue 8, 2004).
- sdn.sap.com – SAP SDN Network
- service.sap.com/bi – Service Marketplace for BW

7 Key Points to Take Home

- Help the process teams understand what SAP BW is ... and what SAP BW does well
- Establish a clear scope and avoid scope creep
- Build an Functional Model Document to help clarify scope
- Implement SAP BW governance — and enforce it
- Establish design stewards to govern your SAP BW model
- Data model for performance and plan for realignments
- Become a SAP BW Ambassador — sell the project

Your Turn!



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