Managing SAP Projects 2006

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Common Mistakes to Avoid When Implementing or Upgrading SAP NetWeaver® BI (Part Two)

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In This Session …

- This is a two-part session, and this is part *two*
  - We will cover mistakes commonly made in SAP BW implementations and upgrades
    - Why the mistake occurs …
    - How to spot the problem …
    - Impact …
    - 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
  - Plus, you will take home:
    - Checklist to apply to your BW project

What We Covered in Part One (Last Session) …

- Overview
- Scope
- Governance
- Communication
- Data modeling
- BW strategy/upgrade
- Wrap-up

What We'll Cover in Part Two (This Session) …

- Data quality
- Performance
- Technical concerns
- Resources
- Wrap-up

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Effects of Bad Data

- Most of the query “problems” in BW are the result of bad source data
- Users see these problems as BW issues
  - This means that the perception of BW can be adversely affected
- Many times BW lends visibility to poor master data standards in its sources
- Establish active governance on the source systems
  - Audit the master data to determine the correctness/ completeness of data
  - Utilize mandatory fields
- After go-live: Plan to spend a lot of time in the source system chasing down issues

Let's Just Fix That Junk Data in BW

- BW does allow for the transformation of data; however:
  - RESIST, RESIST, RESIST all requests to FIX data in BW
- Practice saying:

  "BW 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

Testing, Testing, and More Testing

- Testing is very important … for obvious reasons
  - Once you lose users' confidence in the system, it is very difficult to get it back
- Reloading of data in BW can be very difficult and time-consuming
  - Reloads are often necessary when data is incorrect or missed
  - Reloads usually require downtime on the transactional system
  - This downtime can be many hours or even days!
    - That means NO TRANSACTIONS for that time
    - In some environments, this downtime is not possible

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 BW 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

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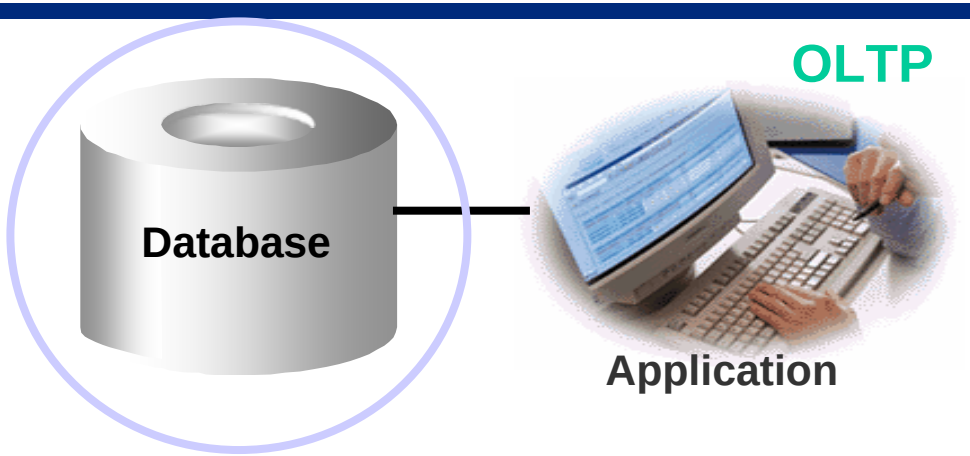
Performance Tuning in SAP BW

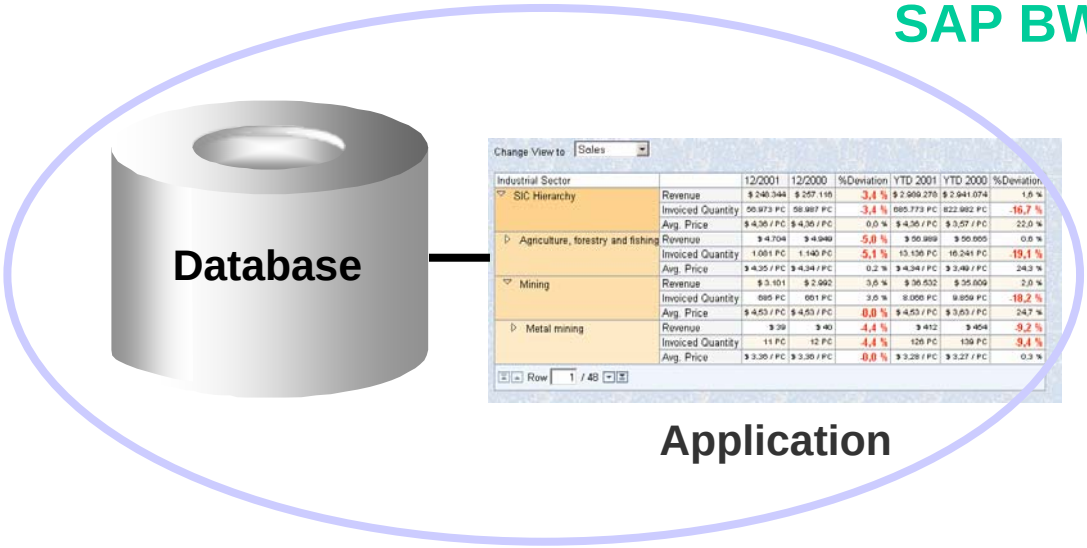
OLTP systems

- Application development and performance tuning separate
- Performance tuning by Basis experts



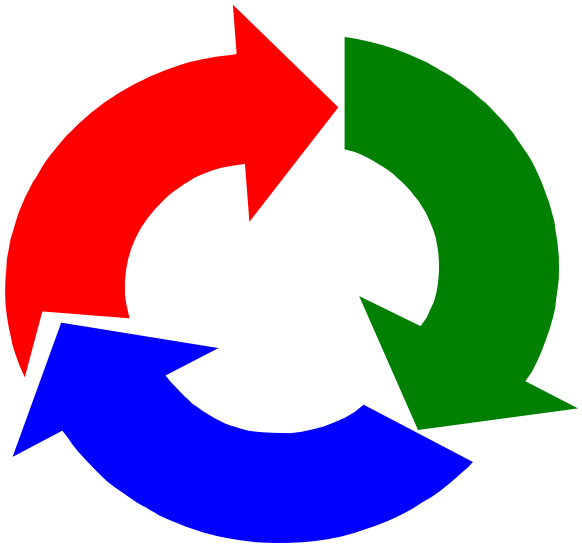
SAP BW

Performance must be designed into the SAP BW solution!



Performance Tuning

- Performance tuning is an ongoing task
  - As the environment matures, several other things occur:
    - Increased data volume, so query performance can suffer
    - Batch loading time increases with increased volume
    - Users are getting more sophisticated in their analysis
    - The business is changing, new metrics are being analyzed



Measuring Performance

- Objective measurements of performance are necessary
  - Load performance
  - Query performance
- Implement the statistics cubes in BW
  - Schedule these InfoCubes to be loaded in batch nightly
  - Use the standard content queries to monitor queries
  - Address for performance those queries that have:
    - High usage statistics
    - High mean query time
  - This keeps your performance-tuning efforts yielding the most “bang for the buck”

Performance Sub-Team

- Many performance issues become a “hot potato”
  - Each group passes the issue to another
- Establish a sub-team to concentrate on performance
- This is not a full-time job — staff with members of Basis, BW development, database, and business
- This makes sure that performance issues are tracked and tackled together
- Use BW statistics to measure performance and to track progress

The Top BW Performance Tips ...

- Stay current on support packages
- Police the data model
- Implement partitioning
- Use time-dependent master data carefully
- Implement compression
- Implement OLAP cache
- Implement aggregates
- Monitor BW statistics

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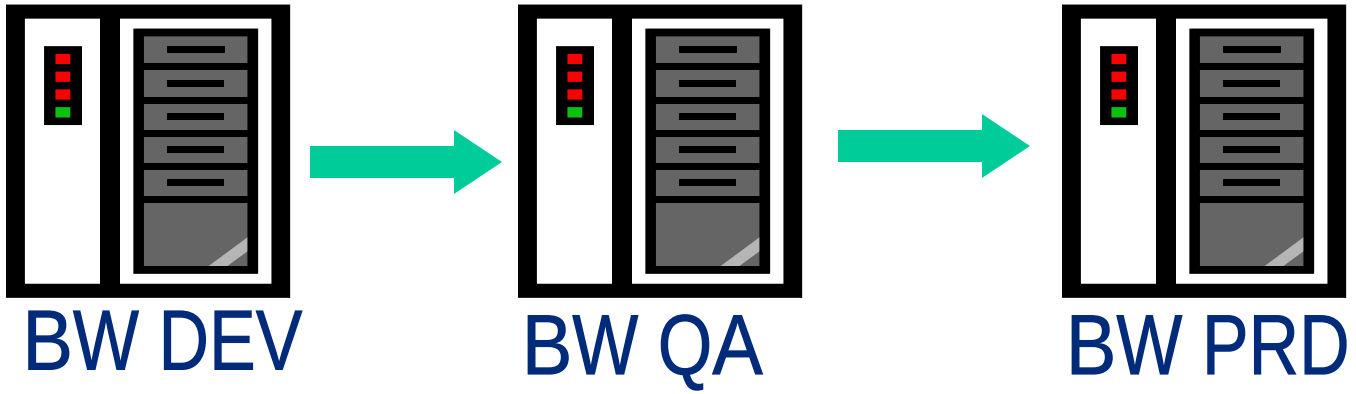
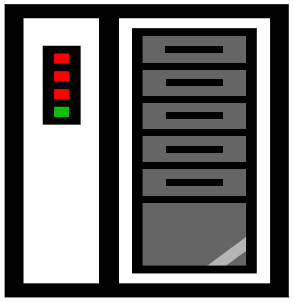
Technical Concerns

- The BW team works with the Basis/technology team much more than with the R/3 team
  - Data volume
  - Sizing
  - Indexes
  - Partitioning
  - Performance

Establish a clear line of communication between the Basis team, DBA, and the BW development team

Typical BW Landscape

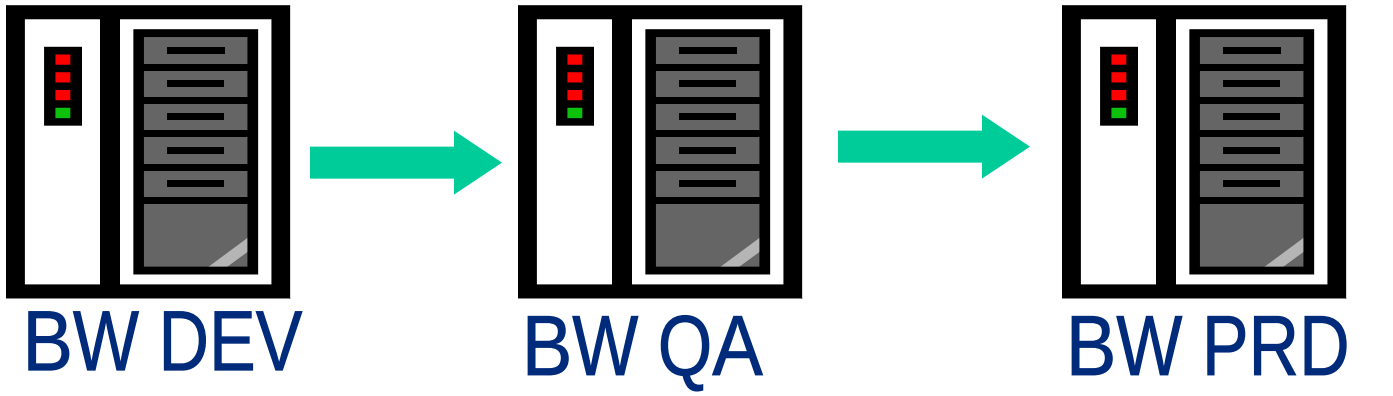


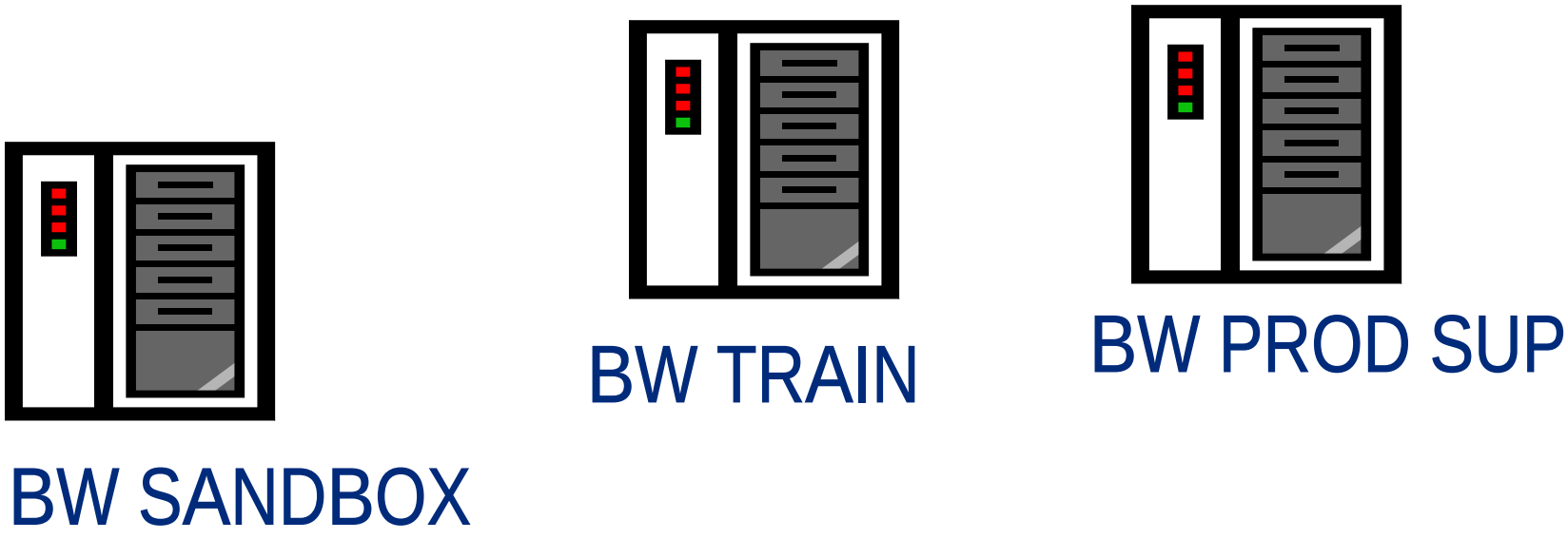


BW SANDBOX

The BW landscape usually mirrors the R/3 or ECC landscape

Extended BW Landscape





BW Transports

- To get a BW configuration from one system to another, a transport is used — just as in R/3 or ECC environments
- BW transports are typically much more volatile than R/3 or ECC transports
- BW has many more dependencies and thus more opportunity for failure
- Common transport issues
  - Missing dependent objects in BW
  - Missing dependent data sources in source system
  - Transports out of order
  - Mystery … ?

BW Transport Tips

- Track transports diligently
  - This can be done via Solution Manager
  - Keep track of order and status of each transport
- Take extremely good notes
  - To fix a BW transport, another is usually created, then the original sent again — document this clearly
- Break up the transports
  - Do not group too much into one transport
  - The best projects I have witnessed separate transports by object type; for example, InfoObjects in one transport, ODS in another, etc.

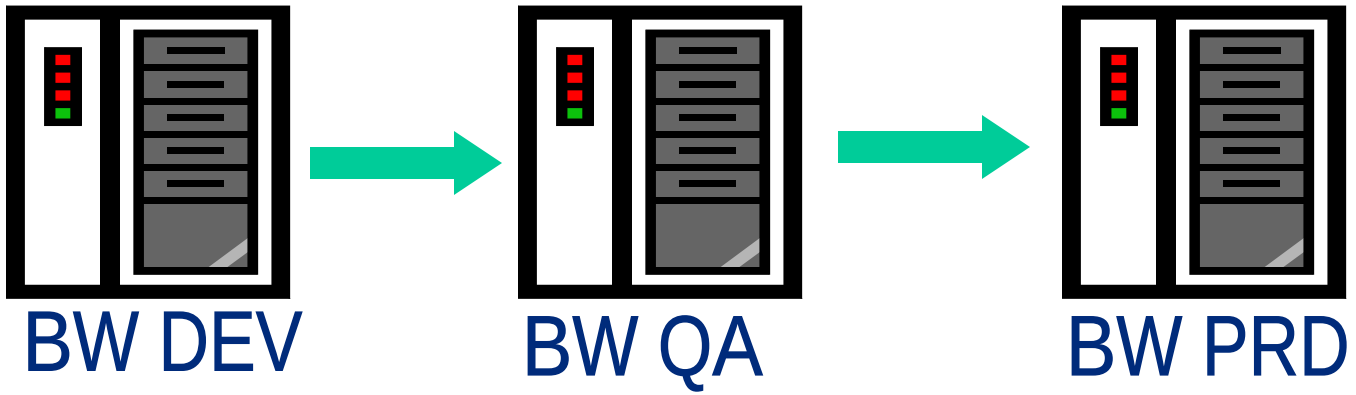
Have a Sound BW Landscape Strategy

- A BW landscape is the series of systems and their lifecycle throughout the project
- Example: One development system, multiple development systems, etc.
- The landscape strategy affects other strategies:
  - Upgrade
  - Project Release
  - Cutover
  - Notes/Support Packages
  - Change Control
  - Master Data
- Clearly think about the current and future requirements when developing the landscape strategy
- A common development environment does not mean a global system

Landscape Tips

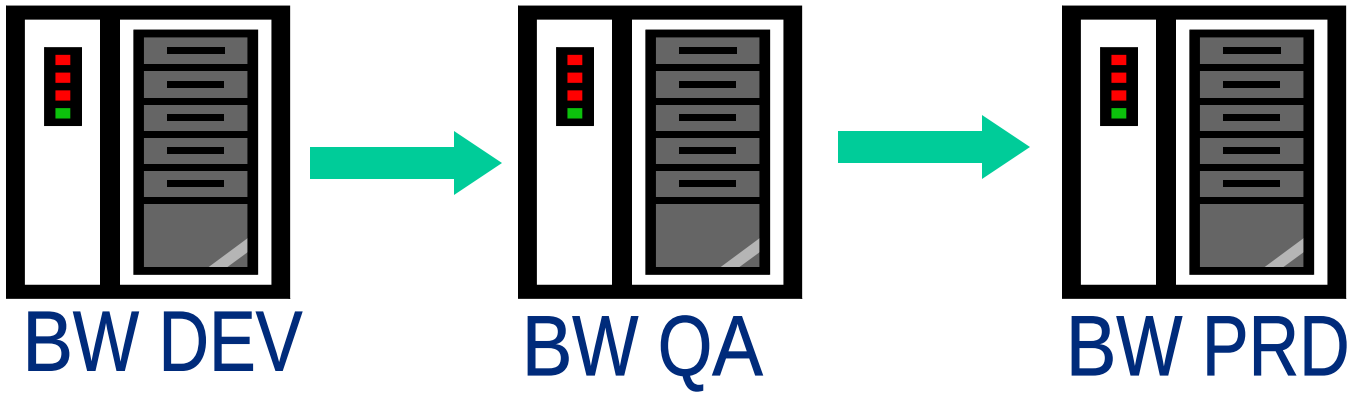
- Insist on a BW sandbox for prototyping
- Do not allow anyone to pollute your QA/PRD environment
- You may have to open up the system for small transport issues
  - Develop a procedure to allow these “emergency” situations
- Never, never, NEVER open up the QA/PRD systems for any other reason
  - Don’t just “talk the talk”… ENFORCE IT
- Insist on clear documentation and tracking for all transports

Multiple Rollout Strategy Landscape



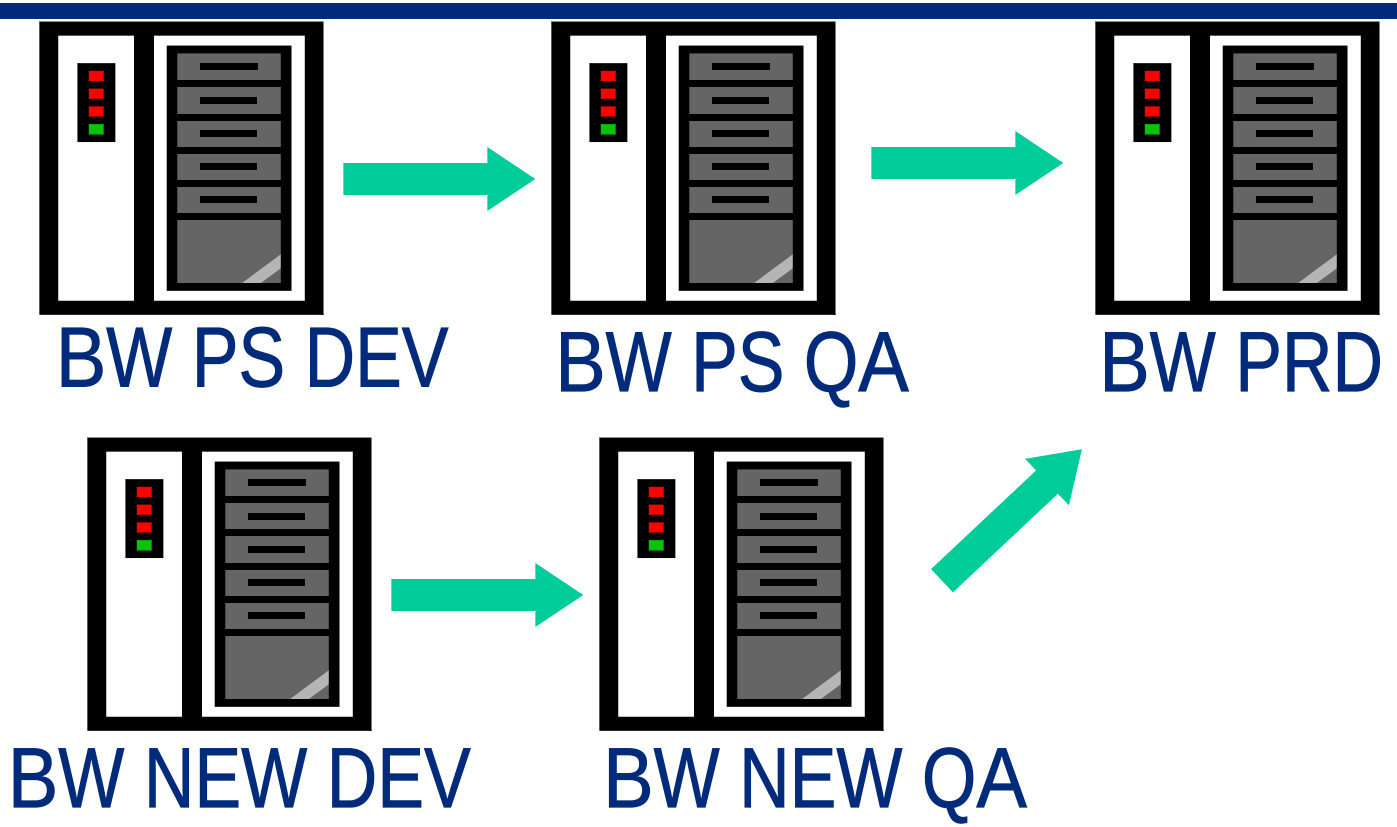
- After go-live, the existing environment becomes the “production support” environment
- So where do I do new development?

New Development …



- In smaller scope rollouts, the new development can occur in the production support landscape
- Any changes may need to be backed out if a production support issue occurs

Wave Development …



- New development occurs in the new DEV system
- Any production support fix is manually integrated into the BW NEW Dev

Develop 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

- In my experience 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)

Other Technology Tips …

- Stay current on BW support packages
  - Have a clear support package strategy
- Be wary of implementing new technology without robust testing
  - Third-party scheduler — lost a lot of time on integration
- Think about the solution from end to end
  - Consider network latency
  - Ensure desktops rolled out with SAPGUI
  - Check front-end patches on user machines
  - Verify authorizations
  - Validate proper role assignment of users

ABAP in BW

- Expect to use ABAP coding in your BW implementation
  - Transformation of data
  - Custom selection of data
  - Extract supplementation (add missing fields in the extractor)
  - Default values for query variables
  - Determine values in the query at runtime
- Although you should expect to use ABAP for some transformation and even user exits, this should be the last resort
  - Look to other solutions first …
  - Excessive ABAP becomes a burden during upgrade/patches
  - Clearly document all code

ABAP in BW (cont.)

- Most ABAP is coded by BW team — make sure you have adequate ABAP resources
- Most BW consultants only have a cursory knowledge of ABAP
- Since BW code is usually iterative, one small performance issue can be magnified
- Plan to audit all ABAP code
  - ABAP standards
  - Performance

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Getting the Right Help …

- BW is difficult to implement without adequate consulting resources
  - Learning curve on product is quite steep
  - Decisions made early in a BW project build the infrastructure and are difficult to reverse
    - A poor data model hurts everyone
  - An experienced data architect is crucial on a BW project

Getting the Right Help … (cont.)

- A good BW consultant can do in a few hours what may take several less-experienced consultants 10× that
  - A good consultant quickly gets by the inevitable gotchas
    - Failed data loads
    - Transformation of data issues
    - Data harmonization issues
    - ABAP coding issues
    - R/3 integration issues
    - Notes issues

BW Project Management

- Qualified, experienced BW project management is key
- BW product education is a must, not a “nice to have”
  - This is for the project manager and the project team
- You cannot be an effective project manager without a clear knowledge of BW

  - This is best gained by getting your hands “dirty” doing some configuration in BW
  - It gives you product knowledge and an understanding of issues

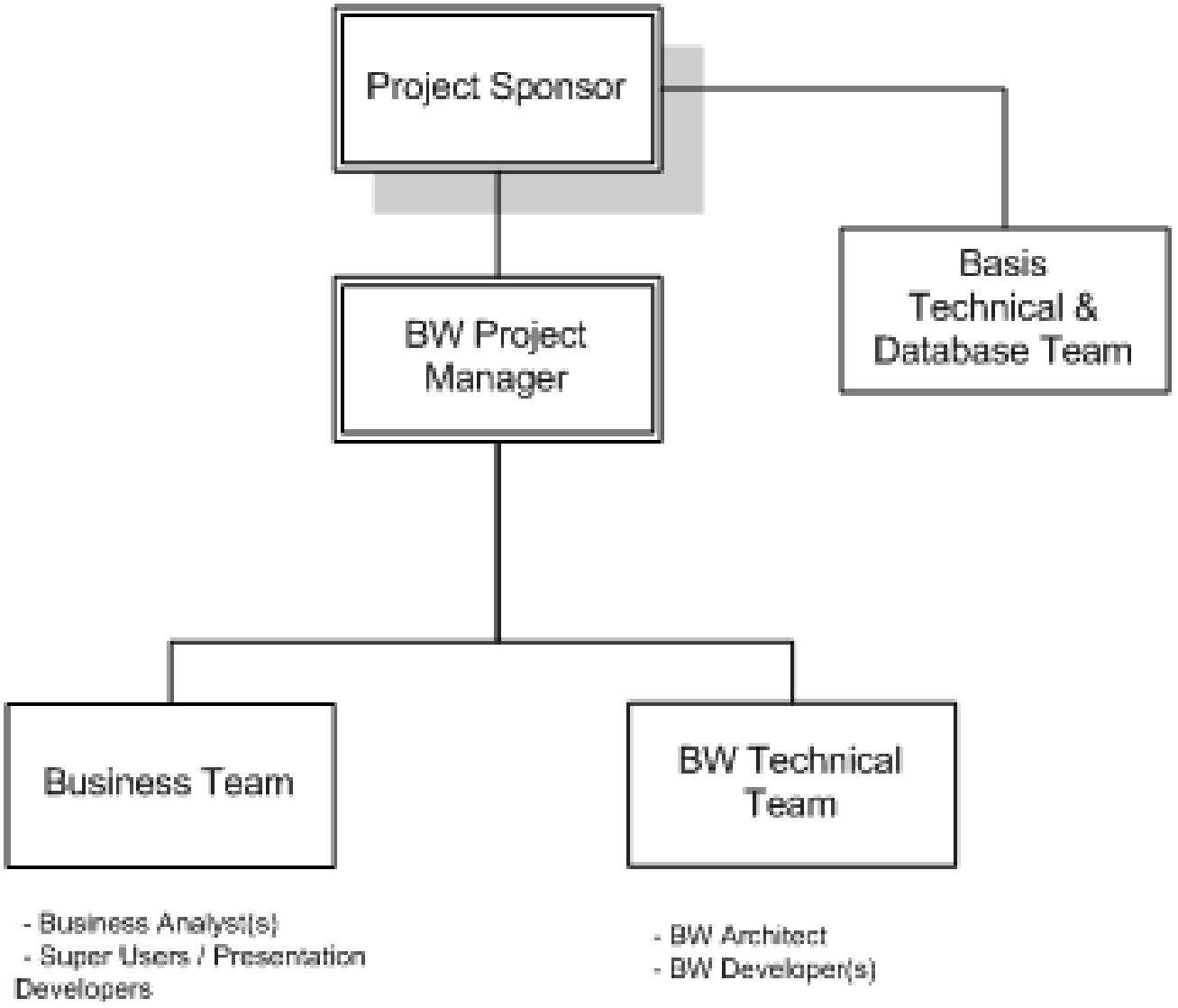
A Good SAP BW Consultant …

- Has hands-on experience with the BW product
- Has an opinion about how SAP BW should be implemented
  - Rather than being opinionated without merit, his/her opinion comes from experience
- Has experience with best practices
- Has a passion for self-improvement
- Is equally comfortable being a team member or a team leader
- Has listening skills
- Has communication skills
- Has some R/3 application skills (enough to troubleshoot)
- Has some ABAP skills

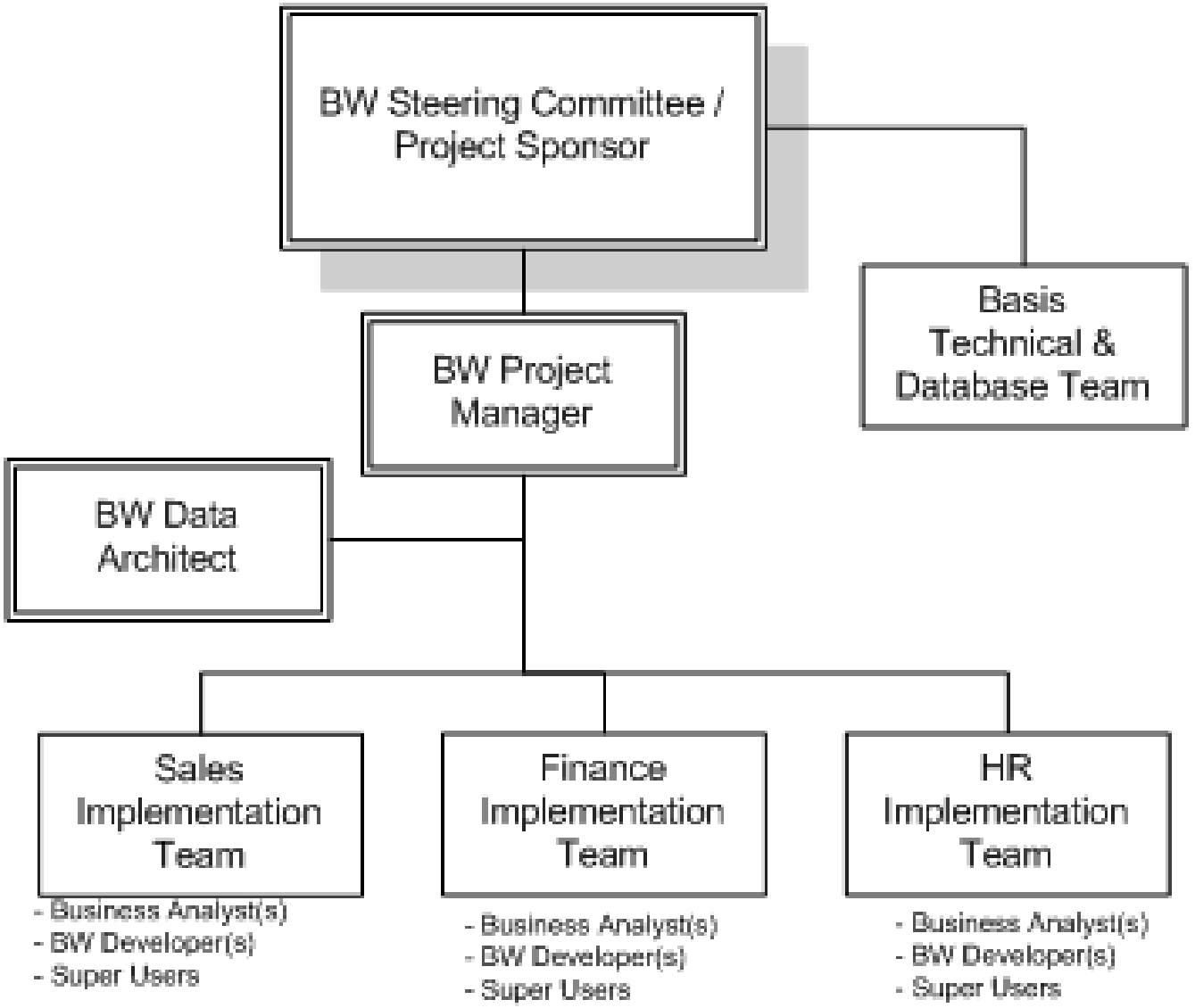
Choosing Consulting Resources

- Insist on interviewing all consultants
- Don’t overlook the social/ communication skills
- Ask a lot of open-ended interview questions
- Without experience, a consultant is almost useless
- Do not be afraid to send a poor consultant packing

Typical BW Project Team — Small Team



Typical BW Project Team — Multiple Subject Areas



Common Resource Issues on Projects

- Inadequate internal resources
  - BW should not be implemented using a majority of external (consultant) resources
    - Optimal mix — 20-30% external resources
    - This does increase the time to implement, since internal resources get “up to speed” on the product
    - Be careful — this is a highly desirable skill set in the market
      - *Even the Red Sox’s Johnny Damon left for the money*
  - Do not allow a rift to occur between SAP resources, external parties, and your consulting partner resources
    - Make it clear that this will not be tolerated
      - *Causes knowledge sharing to stop*
      - *People may start acting defensively in order to deflect possible future blame*

Do Not Rely Too Much on Your Consulting Partner …

- The large consulting partners can provide a great deal of good
  - But they must be managed properly
- Some large consulting firms have been known to put their own good ahead of the client
  - Review results ignored
  - Filtering messages
  - Ignoring under-performing resources
  - Overstaffed projects
- The difference between the customers that have wrung the value out of the large consulting firms comes down to involvement and audit
- Trust but verify …

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 BW system from an applications point of view
  - Outsider viewpoint
  - This can also be accomplished via SAP with their solution review program

Outsourcing BW Development

- Why not outsource the development and configuration overseas to a third-party solution center?
- Limited success in BW — why?
  - Outsourcing works well with clearly defined functionality with limited reach
  - Works great for R/3 ABAP work; much of it is standalone and specifications can be clearly communicated
    - BW is usually quite dynamic
  - Much of BW involves a lot of "back and forth" with the business users and the transactional system configuration and extraction teams
    - BW environment is usually quite complex (R/3, outside data sources)
    - Data questions/concerns — data integrity/data harmonization issues
    - Query presentation — a lot of back and forth
  - BW has a steep learning curve, difficult outsource resources that can quickly understand business requirements, and data modeling strategies

Bottom line: In my experience, the BW development environment does not lend itself well to outsourcing

Outsourcing BW Production Support

- Can I outsource BW once I go live? The outsource resources would handle data load failures, issue tracking, and resolution post go-live
- Mixed success — why?
  - Depends on:
    - Role of production support
    - Complexity of environment
    - Stability
    - Data quality
    - Knowledge transfer
    - BW skill set
    - Continuity of resources
- Just keep in mind:

  "If you know neither the enemy nor yourself, you will succumb in every battle."

  -Sun Tzu-

Why Mixed Success of Outsourced BW Production Support?

- The large consulting companies each have “solution centers” to handle this type of work, but they vary widely in the quality of their resources
  - It is getting harder to keep good people, demand in BW is exploding, and production support is used as a stepping stone for many
- “78 percent of executives who have outsourced an IT function have had to terminate that agreement early”

  DiamondCluster International
  - Why?
    - Poor service
    - Change in strategic direction
    - Costs

Outsourcing BW Production Support

- Bottom line: You may be able to have some success outsourcing production support, freeing your team up for new development requirements
  - You will have to continually manage the production support environment
  - Expect a great deal of turnover

Resource Tips

Lesson

- Develop “super users” from the business community
- Pair consultants with employees — make the employee ultimately responsible
- Consultants’ number one job should be knowledge transfer
- Consultants should also be responsible for skill transfer
  - Schedule sessions to go over functionality tips in BW

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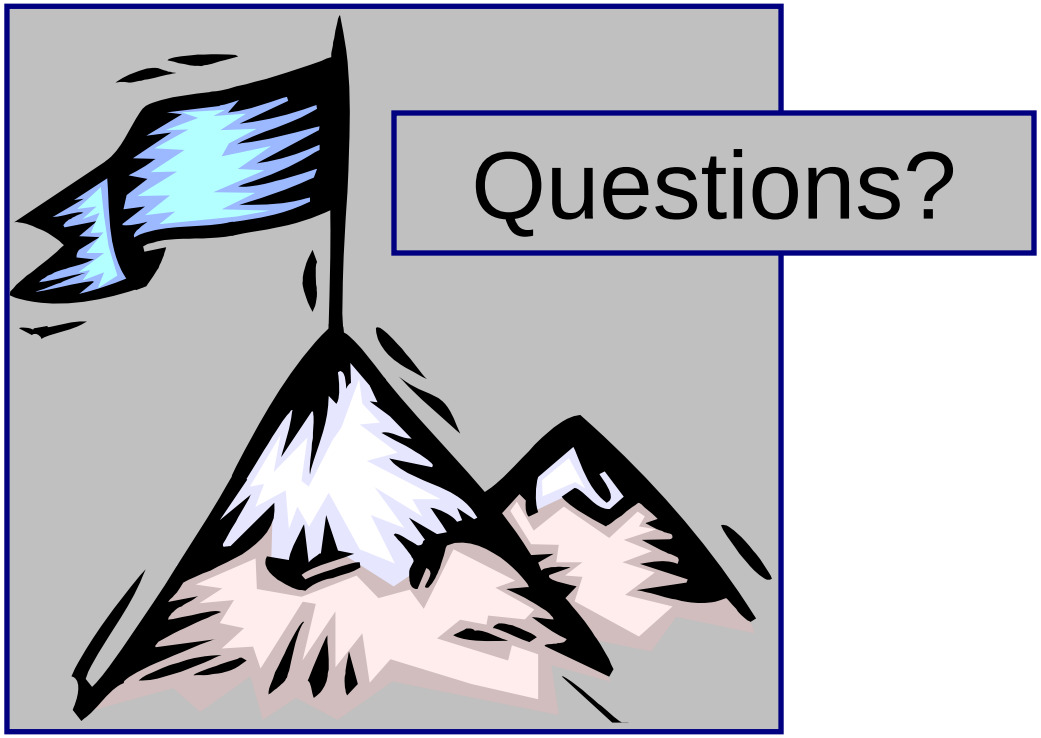
Resources

- Gary Nolan, “ Better Star Schema Design Means Better Performance” (*BW Expert*, Volume 2, Issue 8).
- Gary Nolan, “Data Modeling with Time-Dependent Master Data” (*BW Expert*, Volume 2, Issue 4).

7 Key Points to Take Home

- Data quality is one of the biggest issues in a BW project
- Make performance a priority — data model for performance
- Create a clear line of communication to the Basis and database teams
- Developing a clear landscape strategy can aid project planning and help ensure efficient implementation
- Audit all ABAP in BW
- Do your best to keep and retain the most experienced BW consultants possible
- Be wary of outsourcing BW — keep this to limited areas of BW

Your Turn!



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