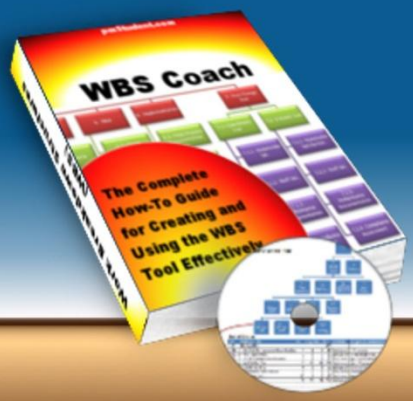
Top 7 WBS Mistakes Project Managers Make



by Josh Nankivel

Table of Contents

Introduction

Thank you for your interest in one of the most fundamental project management tools, the Work Breakdown Structure.

In my career I've seen a lot of project managers and organizations limp along on projects, in ways that could have been prevented with proper use of the WBS tool. There are 7 major mistakes I've seen and want you to be aware of.

 Using the WBS as a task list

 Organizing the WBS by organizational structure

 Time-phasing the WBS

 A lack of traceability to the WBS

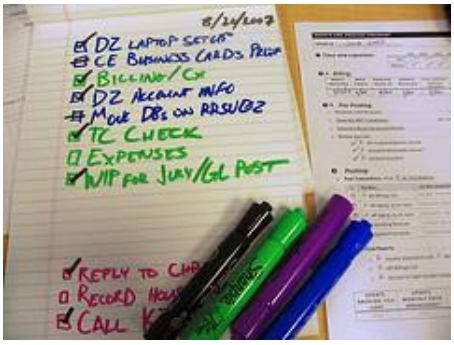
 No leverage for change control

 No support activities

 Taking the WBS for granted

Mistake # 1 - Using the WBS as a task list

When I first began managing small projects, I used a task list to plan and remember what needed to be done. I was making a mistake, and it showed because conversations about scope immediately turned to how, who, and when (tasks/schedule) instead of what (deliverables). A WBS gives you this focus for initial planning and scope control throughout the project. A task list has no levels of decomposition that clearly show how smaller pieces of scope will come together and produce the final output of your project. With a task list:



- You will lose sight of what the scope of your project really is
- You will not think of things that need to get done until you miss them "oh man, why didn't we think of that?"
- Managing scope change will become a nightmare!

The level of rigor you go through will vary depending on your project size and type. I have managed projects that lasted only a few weeks, and I used a WBS for them. In that case, my WBS was a simple spreadsheet where I broke down deliverables. This was not a task list, it was a WBS.

I've also managed large aerospace projects over 5 years in duration. The more complex your projects are, the more dire your need for proper use of the WBS tool!

Mistake # 2 - Organizing the WBS by org structure

The mistake I want to highlight here is another very common one. This is one of those natural intuitions we have as regular people; and we must recognize that and resist the urge as project managers.

Perry looked me straight in the eyes. "What do you mean I can't organize my WBS this way? It's my WBS; I can do whatever I want!"

"Very true Perry" I said. "It is your WBS and you can do whatever you want. I'm telling you that organizing your WBS to artificially align with your organizational structure is a mistake. You will regret it later."

Perry decided to do it his way. I knew he would uncover missing work his team hadn't thought of. Why? Instead of being focused on the output of the project as a WBS should be, he organized it by one of the inputs, the resources doing the work. This takes the focus off the unique product(s) being produced by the project, and leads to unexpected omission of scope.

It can also lead to scope bloat! When you try to plan a project this way, scope can creep in that is not really a part of the end product, and/or isn't really necessary to meet the requirements for your deliverables.

The WBS should be output-oriented for optimal effectiveness, not input-oriented!

Mistake # 3 - Time-phasing the WBS

This WBS mistake has a special place in my heart. :-) It's organizing your WBS by phases of the project, and it's probably the most controversial.

While I say it is a mistake, note that most project managers think it's fine. My project experience has taught me that it is NOT fine.

When you create a WBS, you will be tempted to organize it in phases. During the brainstorming process I cover in WBS Coach you'll find it natural for people to think of work through time. "After we get that done, the next step will be..."

This is fine. When building a WBS I find it naturally tend to be in rough chronological order left to right, which is handy since the numbering scheme will probably go from left to right as well.

Some people say it's OK to organize your WBS by the phases of your project. In fact, the PMBOK Guide 4th Edition even has a graphic illustrating a WBS using phases for level 2 organization. I disagree with this approach **completely**.

I have seen how this kind of project planning can lead to unstated assumptions and missing scope in your WBS. Again, you must focus on the unique product that is going to be delivered in order to capture all of your scope in the most complete way.

There is a difference between organizing your WBS by phases and having some general chronology. For instance, System A may need to be developed before System B can be started, so your level 2 WBS items could be "System A" and "System B" and be in left-to-right order. That is fine.

If you put "System B" before "System A" that would be fine too. It may be more convenient to have "System A" be your 2.0 element and "System B" be the 3.0 element just for aesthetics, but not necessary.

What is NOT fine is to organize your WBS by "Phase 1" and "Phase 2". Phases are not deliverables or services, they are time periods. Creating a WBS using these project phases is one of the biggest contributors to "unforeseen" and missing scope that I've come across. That scope eventually gets added on anyway, at a higher cost and with unhappy stakeholders.

On my last project the major phases were SRR (System Requirements Review), PDR (Preliminary Design Review), CDR (Critical Design Review), Readiness Testing, etc. These occurred at an element level, segment level, ground system level, and mission level.

Part of NASA's mission WBS was our ground system, and immediately beneath the ground system was its constituent parts, for instance our DPAS segment. Phase-based deliverables absolutely show up underneath, and I'm not saying it's forbidden to think about phase requirements at all when developing

the WBS. We absolutely had to find out what level of maturity and artifacts would be required at the various phases to ensure 100% of the scope was captured.

Phase-based organization is a schedule activity though. On a larger and more complex project like this it's the IMS (Integrated Master Schedule) interfacing with all of the intermediate and detailed schedules. This is where the phases really come together. It is helpful to have an identifier in the schedule that identifies relationships with phases.

Even (especially?) on smaller projects without an IMS I've observed how basing WBS structure on phases (and the other mistakes in my report) take the focus away from the end-result and muddy the waters when it comes to scope/schedule.

Sometimes we'd need to move functionality forward or back based on circumstances…the scope of the project didn't change, just the timing. I don't touch the WBS unless the scope of the project is changing.

Mistake # 4 - A lack of traceability to the WBS

This mistake highlights something many project managers do that's not a problem with the WBS itself, but how it's implemented and used on the project

Your newly created WBS should become the foundation for many other planning processes and artifacts in your project. It will also be a living document, something that is updated as scope changes on your project are approved BEFORE they become reality. Wherever applicable, it's critical that your project artifacts are traceable to each other. When a change in the WBS occurs, you want to be able to easily find the places in other project documentation that require analysis and updates. When there's a question about some aspect of your scope, you want to easily find all the relevant information about it.

Traceability allows for this.

The WBS numbering scheme becomes a kind of common language used for nearly everything else you do on the project:

- Requirements
- Basis of Estimates
- Product Backlog (in Scrum)
- Scheduling
- Budgeting
- Status Reporting
- Charge Codes
- Risk Management
- Quality Management
- Scope Verification
- ...and more

Generating reporting becomes especially easy when you organize your entire project by the WBS. It means that for any given deliverable you can easily generate a report at any time with everything relevant, almost as if it was a mini-project all by itself.

This may seem simple (and it is) but it's very powerful at making your life easier as a project manager.

Mistake # 5 - No leverage for change control

The last mistake highlighted how important it is to create and maintain traceability between your project artifacts and processes, using the WBS as the central hub.

Let's take that concept a bit further.

Say a stakeholder comes to you with a change request. How easy is it for you to know for sure what impacts that change might have? How do you evaluate that? Unfortunately, a lot of project managers use intuition. Intuition is great, but there is a better way.

Remember when I said the WBS numbering scheme should become a kind of common language used for nearly everything else you do on the project?

When the WBS numbering scheme is utilized across all of your project artifacts it is easy for any change's impact to be fully assessed by tracing the change across all of them. The WBS should be the central hub where you can assess what pieces of your project will be impacted by a proposed change, especially if it's an emergency change that needs to be implemented pronto.

Filter your other artifacts for the specific WBS element(s) you know are being impacted. Use this as a systemic way to evaluate the impact of any given change across the various. Take the guess work out.

For instance, let's say the proposed change is for a specific requirement. If you had no traceability on your project you are likely to think about the change for a little bit and make your best guess as to the impact. Even more common is that we just "fit it in".

Imagine instead that you've implemented full traceability using the WBS as a central theme. Now you look at the requirement and see it's tied to 3 WBS elements, on various levels of the WBS structure. You check to see if the requirement impacts deliverables outside the original 3. If not, you evaluate the impact of this change on those 3 deliverables. Traceability means you have full information at your disposal, from the impacts on risk management to what kind of scope verification and testing impacts are going to occur.

Mistake # 6 - No support activities

Back to the makeup of the WBS itself. Some project managers try to include only the things that are directly related to tangible deliverables on their projects, and ignore the support activities that are a necessary part of the project or track them separately.

This is a mistake for several reasons.

I cover Support elements, Project Management elements, and Analytical elements in WBS Coach. These are categories of support elements and they are very important. Activities like these have substantial costs associate with them and a dramatic impact on your projects.

The WBS should represent the total scope of your project. Every penny spent should track to your WBS somewhere. Anything outside of your WBS is not a part of your project, period.

When you are creating project artifacts with your team or doing status reports, where does that time get charged? Those activities are a part of getting your project done, and they show up on your WBS under a project management element.

When an EVM requirement was modified on a project I once worked as a

federal contractor, it had significant impacts on our project. Because it was captured on my WBS, I could point to the scope there and assess what the changes would be. If it was not captured on my WBS the whole process would have been more complex, and I probably would have missed something.

That administrative assistant who supports you and your project team? Her role in the project should be captured somewhere on your WBS. Even if someone isn't turning screws, this represents real work that is getting done and real costs to your project.

Incidentally, you should also capture this work on your basis of estimates. Being complete has saved me more than a few times, like when I was at risk of losing administrative support for my project. When you can point to a place in your WBS, and then a list of tasks with good estimates showing the value being added it becomes easy to defend your team against bad decisions. You can say things like "which of these things are we going to stop doing?" and then (through traceability) assess exactly what that means.

One more mistake to go.

Mistake # 7 - Taking the WBS for granted

The final mistake I see lots of project managers make is just ignoring their WBS.

So you've created a great WBS that captures all deliverables, 100% of your project scope. Congratulations!

Now what?

On a lot of projects, the WBS just sits there. It never gets updated again, or it's just put on a schedule ("we'll check it again in a year and update it.")

This approach to utilizing the WBS is almost completely worthless. It's just paperwork.

Updates to the WBS should be event-driven. Things like change requests, new information, etc. should trigger you as the project manager to look at your WBS. It's your first stop. And guess what? Changes to your project DON'T HAPPEN unless the WBS is updated to reflect them. The WBS IS your scope control. It's right there....why do so many project managers "wing it" and leave their WBS to collect dust?

More to come…

PLEASE observe the warnings I've given here. A project is a terrible thing to waste, and so is a WBS. I hope this report has been helpful and even produced some "aha!" moments for you.

I'll be sending some more resources on this topic your way if you signed up for this report. If not and you want to see the other resources, just go to http://WBSCoach.com/free and sign up.

Feel free to email me directly with questions, feedback, or just to say hello. I would really like to know what you think of this report and if you got some value from it. I also run a blog at http://pmStudent.com where I write about project management best practices, career coaching, and other related topics.

Cheers!

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WBS Coach

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