

## **Managing Complex Projects: Implied Lessons from the Making of *Avatar***

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This newsletter subject draws indirectly from a recent National Public Radio (NPR) feature entitled “The Evolution of Cinematic Special Effects.” The main topic of this feature is James Cameron’s *Avatar*. This NPR feature is interesting both for its insights into the creation of *Avatar* and for its brief history of special effects in cinema.

But what caught my ear in the NPR feature was its mention of Cameron’s “pre-visualization methodology” (p. 8 in the script), as used to plan and to create the many stunning special effects in *Avatar*. This reference to project/planning methodology got me thinking about generic project management lessons that might be useful for Shipley’s environmental professionals.

The Talk of the Nation feature speaks generally to the growth of cinematic special effects. But most of the examples discussed deal with the ground-breaking graphics in James Cameron’s newly released *Avatar*.

Here, then, is a list of suggestions for anyone coordinating or working on a complex and creative project (movie, document, or website):

- 1. Begin with a comprehensive, if sketchy, vision of the final product.**
- 2. Coordinate details from this early vision with all interested and affected parties.**
- 3. Remind all contributors that the vision is an evolving product, one that begins sketchy and messy.**
- 4. Make the evolving vision as comprehensive as possible, combining content information with project management tasks.**
- 5. If well done, this project management effort will turn out to be both efficient and creative.**

The above-cited NPR feature did not list formal principles, such as the preceding five suggestions. But Cameron’s creative process seems to reflect similar principles. For access to this NPR feature, go to [NPR](#); this feature was on the *Talk of the Nation* show, December 28, 2009. Besides insights into *Avatar*, the feature surveys historical highlights of special effects techniques.

I discuss each of the preceding suggestions below. In most instances, I begin with a brief reference to the NPR feature, but then I broaden the discussion to draw in general principles of project

management. My examples refer to the complex tasks related to the preparation of documents for compliance with the National Environmental Policy Act (NEPA).

### **1. Begin with a comprehensive, even if sketchy, vision of the final product.**

Don't overlook an initial vision (recorded for all to see and to use). Often experienced project leaders and seasoned project contributors mistakenly assume that the final product is obvious. But the obvious is rarely clear, and multiple contributors are always going to have different viewpoints on future project tasks.

As described in the NPR feature, Cameron began planning for *Avatar* with a "pre-visualization methodology." This was the term Tyruben Ellingson used for Cameron's creative approach. (Mr. Ellingson worked on vehicle designs for *Avatar* and appears to have been directly involved in many of the special effects.) I am not clear as to what actions his reference to "pre-visualization methodology" included. But from my reading of Ellingson's comments, this initial step appears to have been a visualization of the product to follow. So it did not actually precede visualization. Instead, it was an early, very sketchy visualization.

As Ellingson goes on to say, Cameron in early meetings worked on what actions and characters would occur where and when. As an analogy, Ellingson mentions the common theatrical process where a play's director and its actors would begin a production by blocking out each scene spatially, with map of where each actor would be and when they would be there.

Notice in this play analogy and, by implication, in Cameron's cinematic process, the initial planning step is a spatial, visual process.

This spatial emphasis is especially important for today's writers. Quality documents and useful websites begin today with spatial design, including page layout, text, and potential graphics. So writers today who are working on a complex project (including either a series of screens or documents) should visualize their final product as early as possible.

The recommendation in the preceding sentence is why Shipley workshops on NEPA documents routinely encourage NEPA teams to prepare an early storyboard for all key documents. A storyboard, well done and done early, captures a working vision of the documents that the NEPA team will prepare.

For additional information on storyboards, see Shipley Group newsletters 61 (November 2008) and 56 (July 2007). See Shipley website <http://www.shipleygroup.com/environmental/index.html?pg=news> for an archive of Shipley newsletter, most of which focus on NEPA compliance skills.

### **2. Coordinate details from this early vision with all interested and affected parties.**

Tyruben Ellingson (as introduced above) does not list or given a numerical estimate for the contributors to Cameron's early planning efforts. A clear implication, however, is that a complex

movie like *Avatar* includes an amazing number of contributors, both during planning and then later during production. The special effects credits for a movie like *Avatar* potentially include hundreds of names. This number alone suggests just how complex a modern cinema production has become.

Many of today's technical projects require collaboration from dozens to even hundreds of contributors. The traditional single inventor, like a Thomas Edison, is increasingly rare. Most work on computer software, for example, draws on many contributors, each with increasingly specialized skills.

Similarly, for a NEPA project, interested and affected persons, including all resource specialists and NEPA practitioners, likely number in the dozens or even in the hundreds (for especially complex projects).

A good practice in a well-run NEPA project is that all interested and affected parties be given early and ongoing access to the analysis process. Legally required NEPA scoping (Section 1501.7 of the CEQ Regulations) provides early and ongoing access to all interested parties. Agency managers and agency legal counsels are especially important contributors to this early planning process. They should be invited to attend a NEPA team's early work on a storyboard. And then they should be brought in later to review more detailed versions of the storyboard.

A well-run NEPA process should contain no last-minute surprises for an agency manager or legal counsel! And members of the interested public should also not be surprised by late-stage agency decisions.

### **3. Remind all contributors that the vision is an evolving product, one that begins sketchy and messy.**

Invite contributors to provide early and provisional suggestions as the vision is being filled in and adjusted. For example, in the early planning stages of *Avatar*, Cameron appears to have welcomed input from a wide range of technical experts.

Remember in this early stage that a useful vision is always going to be sketchy and messy. Messiness is even useful because it encourages contributors to submit ideas. So an early vision or storyboard (recorded either on a computer, a large whiteboard, or even sheets of paper) looks disorganized, jumbled, and chaotic. It will have pieces of text, task assignments, warnings, and other bits of relevant information inserted here and there, often with ever-useful post-its. Remember that its very messiness is its value.

Remind contributors not to be judgmental during these early creative meetings. Judgmental comments are counter productive because they close out creative options and close down discussions.

### **4. Make the evolving vision as comprehensive as possible, combining content information with project management tasks.**

The early and evolving vision combines content points, graphic suggestions, project management reminders, and task assignments. So this early vision is less a coherent creative product (as in a movie segment or a draft document) than a project management tool. Such a tool tracks who is supposed to do what and when and how they will do it.

As Ellingson implies in his *Avatar* observations, Cameron's creative process was the result of years of actual experience managing complex creative processes.

A complex NEPA task is or should be a similarly creative process. As noted above, the initial vision of a NEPA project is far more than a traditional outline of content topics. Instead this vision, as captured in a storyboard, is a project management tool. Pages or screens from the storyboard properly record project reminders: "Ask Joan for contracted dates" or "Schedule a meeting with Peter to review alternatives." The storyboard often records deadlines: "On July 15, Meg will review methodologies."

This complex, comprehensive storyboard replaces isolated project update memos, assignment memos, and other traditional documents. A properly filled-in storyboard begins to link related actions and different sorts of project decisions. As such, the storyboard is both a project management tool and a useful, realistic vision of documents to be produced.

### **5. If well done, this project management effort will be both efficient and creative.**

Writers and teams of writers are still learning how to collaborate on project management tasks and on the associated documents. I base this observation on my nearly 30 years working with NEPA project teams. Each team has its own quirks and preferences. So each team works at its own speed and in its own way. I think it is safe to say that no single team approach is the right one. Instead, each NEPA team has to discover what creative techniques work best for its members.

My challenge to NEPA teams is for each team to develop tools for increasing team efficiency. Such tools (often, written plans and associated checkpoints) might include the following:

- **A clearly defined project scope (and one recorded in a clear Purpose and Need statement)**
- **A list of personnel assignments along with a written summary of the appropriate analysis tasks**
- **A collaboratively developed project schedule (with approval from an agency decision maker)**
- **An early and evolving storyboard (as described earlier in this newsletter)**
- **Written quality criteria, both for the analysis information and for the associated documents**
- **Early and on-going collaborative reviews of the evolving analysis information and the associated documents**

- **Monitoring team meetings for their successes and problems**
- **A list of lessons learned when work on a proposed action is nearly finished**

Both cinemas and documents (either in printed versions or on websites) are creative products. As creative and visual products, they should speak clearly and credibly to all potential users/readers.

Too often, today's technical professionals, when confronted with a writing assignment, begin with the notion that the task means text and more text. Such an assumption ignores the role of visual design as a crucial consideration. No professional document today can afford to ignore the creative demands of a quality appearance (whether for pages or for screens).

The preceding case for quality visual information is why I chose to open the current newsletter with references to Cameron's creation of the visually effective *Avatar*. Writers today need to rethink their approach to writing and to document preparation. As part of this rethinking, they need to integrate all sorts of creative visual techniques into each of their documents and websites.