

Great Scientific Presentations

Roger Wattenhofer

Let's start with some general points:

- Who gives the **best talks** in the world? My personal opinion: Stand-up comedians! My dream presentation could go through as stand-up comedy, less funny and more informative! Still, they often inspire me regarding presentations. For instance, why do comedians almost never use slides? Maybe slides are not so important.
- If you can pull off to give a talk **without slides**, you will be admired! Don't hesitate do use the blackboard (if one exists) for some parts of your talk.
- That said, slides do help **the rest of us**. Below is some advice specifically for slides.
- Do not explain every **detail** of the work. You give an exciting talk, not a talk that lists everything that was done.
- Your talk should have parts that can be fully understood by the audience. Maybe (hopefully) there is not enough time to show every detail? Or maybe the details of some part are just tedious, but not really interesting? It is okay to **sketch** some parts only. If some aspect is only presented on a high level, make sure that the audience understands that you simplified for the sake of presentation.
- **Examples!** Some folks may misunderstand the last point as not presenting any detail at all. Actually, even some of our undergrads have started giving management style talks when presenting their theses! This is of course is a big no-no when it comes to science and technology. You definitely *must* present the most interesting aspects of the work! What are the motivating examples? What are the examples that render a naive approach impossible? Why does the model need this strange additional assumption? Where is the struggle and why? What is the most surprising part of the work? Your talk should be full of these examples, in my opinion. Instead of explaining a dry model, explain a problem in a natural way, and then explain the model along examples.
- The ultimate example is the **demo**. Most audiences love a great demo. Don't wait with your demo until the end of your talk. A demo could also be at the very beginning of your talk, or in the middle, or throughout your talk.
- **Know your audience.** A lecture to a bunch of students is different from a conference talk. Is your audience waiting for your talk (job interview presentation), or is it sitting there for three days already, listening to one bad talk after the other, desperate for something different?
- I sometimes have the feeling that especially PhD students feel most comfortable when they can **show off their genius**. Sometimes I think PhD students want their audience to *not* understand the talk, since this makes them look smarter?!? Or did they just forget that most people in the room did not spend the last year of their life on the topic, so basically they present the talk to themselves? It may be okay to lose a certain fraction of the audience from time to time for a bit, it is totally not okay to lose 50% of the audience during 50% of the talk.
- Use **metaphors**. A metaphor is a glorious thing!
- If possible, **interact** with your audience!
- Be **on time**. Actually, don't mind finishing 1' early. Nobody is going to be mad.
- Be **funny**.
- Be **deep**.
- Don't be **boring!**

About slides:

- Slides help, as some ideas are more easily explained with a **picture**. Actually, some of the best stand-up comedians do use slides in their shows, e.g. Ricky Gervais or Demetri Martin.
- Slides should be as simple as possible, they should have **one** quote, **one** picture, **one** figure. Sometimes **two** of these do make sense (picture and quote, or two figures that need to be compared, etc.).
- Currently, I promote a **basic style** regarding slides: Just a plain single color (white or black) background, one basic font (e.g., Calibri, Helvetica), no silly repetitive background style (just because PowerPoint says so), no index regarding the talk (just because Beamer says so).
- I also do not use **page numbers** anymore, but that's disputable. If you want to use page numbers, please do not write "Page X out of Y" (especially if Y is a lot bigger than X).
- Do *not* show **your name**, affiliation, title of the talk, etc. on every slide. It is just ugly. Show this information on the first slide and on the last, so that people know how to contact you. Apart from the information you want to convey on your slide, your slide should be empty.
- Be careful about (bullet pointed) **lists**. Lists are a great tool for summarizing some vaguely related aspects of a topic; this text is a list after all. However, if a slide uses a list, often there is something wrong. If you have a slide with a list, think carefully whether all these points need to be one one slide. Maybe it is also possible to replace the list with a single picture, and then explain all the items of the list as aspects of the picture.
- More generally, be careful about **text**. A single word or two words on a slide are more powerful than a paragraph of text. Again, there are exceptions, e.g. a famous quote. There is no reason to have your audience read every word you say. (I know that the habit of putting large junks of text on the slide is popular among students that feel insecure regarding their language skills; no matter how bad your English is, I personally think it is better to just put the most difficult technical terms on the slide, and not a transcript of what you are actually going to say.)
- Some claim that each slide should take **2 minutes**. This stupid rule is one of the reasons why so many talks are boring. I do not mind if you spend 15 minutes on one slide (actually, I do not even mind if you have no slides at all!). I also do not mind if you show a slide for 5 seconds only. The 2 minute rule usually makes presenters fill their slides with content until they can spend 2 minutes on each slide, which is in contradiction to the one item per slide rule above. Slides are not a replacement for text.
- Only do **overview slides** after you motivated your talk. I personally stopped using overview slides at all. I think they are almost always boring. Have you ever seen Steve Jobs doing an overview slide ("First I give an introduction to Apple, then I present some sales data, and finally I present this new gadget called iSomething!")? Steve Jobs however often did the *opposite* of an overview slide, he surprised the audience with "There is one more thing!". However, it is certainly good to bring structure in your talk: "after we discussed X, you may be wondering about Y. So let's talk about Y!"
- What is the **best tool** to prepare slides? PowerPoint, Google Slides, Keynote. Prezzi is a tool that naturally supports many of the points made above.