

Prepare, Project, Present: Using Technology to Encourage Effective Presentations

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ABSTRACT

Presentations today increasingly utilize Slideware packages like Microsoft PowerPoint which allow for freedom over layout and slide content. Despite this freedom, however, audiences are not happy with the state of modern presentations. This paper describes research which will lead to more supportive presentation preparation software, which will improve communication between a presenter and his or her audience.

Author Keywords

Presentations, PowerPoint, Slideware, Speeches

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

SCENARIO

Roger sits in the front row of a packed room as he waits for his cue to begin his big presentation. Despite his nerves and the aching butterflies in his stomach, Roger focuses on positive thoughts. "I will do fine," Roger reassures himself. He has been preparing this presentation for weeks, and has made sure that everything he will need to say will be right up there on his PowerPoint slides. He even stayed up late last night to make sure that he was sufficiently prepared.

This presentation is an important one, and must go well. Among others, Roger's peers and supervisors are in attendance, so mistakes in this forum will not be taken lightly. As he approaches the podium, Roger sees the familiar face of his personal laptop, already displaying the first slide.

"Hello." Roger begins, calmly beginning his presentation. "Today I'll be talking about..."

Fifteen minutes pass. Roger has become comfortable and most of his nerves have subsided. Still, Roger has a strange feeling that the audience is not feeling a strong connection to his message. Everybody looks bored as they stare up at the bulleted screen. But wait, that just means they're paying attention, right?

Another 40 minutes pass, and Roger's talk is nearing its conclusion. He has caught a few people dozing, but for the most part the audience is still a room full of blank stares.

"Thank you for inviting me to speak today," Roger concludes, and immediately the room is empty. As he packs up his materials, a feeling of calm excitement rushes to the front of Roger's thoughts. "Phew!" he thinks to himself, "That went well!"

The audience members, on the other hand, are now on their way back to their offices, complaining to each other about how lacking the presentation was. They will never say it to his face, but Roger's big presentation was dull. Since they were so bored, they stopped paying attention to the main points. Most audience members would likely have a hard time summarizing what the presentation was actually about.

How did this miscommunication occur?

INTRODUCTION

Carrying out oral presentations is an old tradition, but one that is surprisingly difficult. Presentations in the form of speeches have been carried out for thousands of years. Transferring a message from one to many via oral means can be done skillfully, but tools can be used to make the task easier.

As technology has progressed, speechmakers, teachers, and others who regularly present information to audiences have moved quickly from photographic slide projection to overhead projection, and to the current presentation medium of choice: Microsoft PowerPoint. Each of these technologies aids a presenter in displaying visual information, in an attempt to make the details of a presentation more understandable to the audience.

As these technologies have progressed, more control has been granted to the presenter as he or she prepares the materials. With the photographic slide projector, information is generally passed to a graphic designer whose job it is to create the slides. Overhead projection changed this interaction, allowing anyone with access to a photocopier and transparent paper to make slides. Overhead projected slides also have the advantage of being editable at all times, even while a presentation is still taking place. If the presenter wants to add an illustration to a slide, all he or she needs to do is add it in on the fly. PowerPoint, the tool that has become ubiquitous in classrooms, lecture halls, and meeting rooms, is based on the slide metaphor that was physically embodied by its predecessors.

PowerPoint (as well as similar tools, which will hereafter be addressed as Slideware) is powerful because it enables effortless slide creation, and allows for arbitrary layout of text, images, videos, and other media. For these reasons, Slideware has become the main set of tools that presenters utilize when preparing for a presentation.

However, despite these advances in presentation technologies, results of studies carried out as part of this research project showed that audience members are not happy with the state of presentations today. Further research and interviews helped inform the creation of a design guideline for supportive presentation preparation software. This research and the design guidelines that it brought about are described below.

LITERATURE REVIEW

There is a dearth of technical or academic literature that has considered the use of Slideware as a communication tool. In an interview, one informant (Cliff Atkinson) went so far as to say, "There is no formal research basis to account for the way we use PowerPoint today." In saying this, Atkinson meant to explain that there has been no formal explanation that says standard, bulleted slides are the most preferable tool that can be used during or in preparation for presentations. Atkinson has written on the subject, and describes a Beyond Bullet Points [1] approach to formatting presentations. This method encourages presenters to consider using fewer words on slides, more images, and use the slides as storyboards, in order to craft an engaging, storylike presentation.

In a survey of Nonprofit Organizations and similar groups, Goodman found that 62% of presentations utilize Slideware and that only 34% of respondents said they usually or always learn something from the average presentation. At the same time, 46% of presenters rated their visual aids as good-to-excellent, while only 19% of audiences found the same value in visuals. [4]

Literature exists in many specialized fields that discusses the use of Slideware in the collegiate classrooms. Professors of Geography consider the merits and flaws inherent in the use of Slideware [12], and alternative

methods of visual display [6]. Meanwhile, teachers in the medical community have begun to use PowerPoint in the classroom, but offer advice to put it to its best use [3] [10].

Research has been carried out with regard to memory and learning, much of which may be applied to the design of new presentation planning software. Psychologists consider Working Memory [2], the type of memory that is used to manipulate newly acquired knowledge before it is stored permanently, in many different ways. The popular notion of learning stipulates that the more ways in which material is presented, the easier it will be for audience members to comprehend and retain a given informational item [7]. That is, if information is presented verbally *and* visually in the form of text, it will be easier for audience members to recollect this information. However, research by Mayer et al. has shown that in many cases, the inverse is true. Information should be presented via a single channel, rather than multiple [7] [9]. Mayer also surveys and tests the types of multimedia-based instruction methods that are currently used in order to consider which methods tend to work, and which do not, and then considers whether current models of instruction consider multimedia in a correct light [8].

Research related to the field of presentations and presentation media are varied, ranging from simple advice for carrying out more successful presentations to a few quantitative studies describing which methods are most successful. Though it is rare that these findings are utilized in the redesign of presentation software. The rest of this paper will describe further research and design work carried out to create a new model for presentation preparation software.

RESEARCH METHOD

A number of research methods were used in this project. First, a qualitative study method was created to assess a population's general feelings toward Slideware and related tools. Following this research, ethnographic explorations were carried out in various settings that relate to presentations, including local Toastmasters International meetings and a Sunday church service. Finally, interviews were carried out with experts in the field of presentation preparation in order to understand the opinions of professionals in the field. These research methods will be further described in this section.

Ambient Information Experiment

At the outset of this project, it was important to discover and document users' basic perceptions of Slideware and Presentation related topics. In the Ambient Information Experiment, data were to be collected in a natural and collaborative manner. Because it is difficult to collect data regarding Presentations in situ, it was important to receive input in a relatively non-invasive fashion. The goal here was to understand the thoughts of presenters and audiences so that more highly directed aspects of research could be carried out. If it turned out that people have positive or

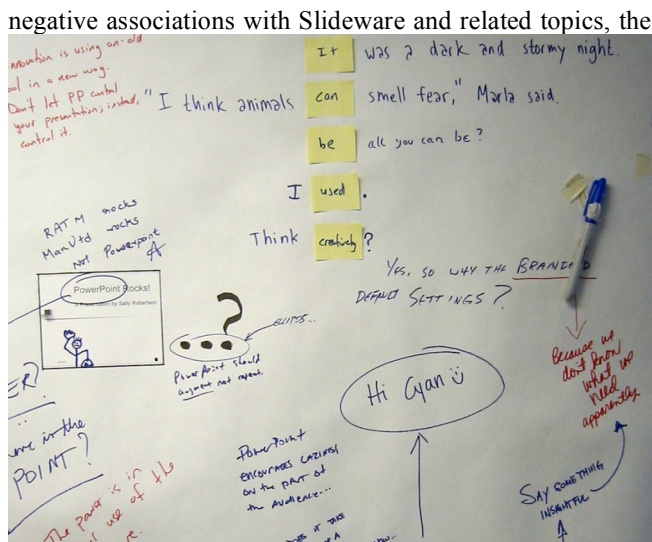


Figure 1. Comments on a “PowerPoint Rocks!” Information Space

project would be able to progress in a manner that explains these thoughts. The data gathering phase lasted for two weeks. Further methodology details are explained below.

For this experiment, large sheets of paper were hung throughout an academic department's main building. These sheets had short messages placed on them that were meant to probe the thoughts of passersby. Pens and post-it notes were also affixed to the posters so that it was easy for people to write responses without difficulty. The messages written on the posters by the researchers were large and graphical, so that they would be sure to be attended to. A sample of the probes that were written on the posters are below:

- PowerPoint Rocks! A presentation by Sally Robertson (overlaid on a standard Title Slide)
- BULLET POINTS...? (Preceded by an image of a slide with a lot of text)
- Presenting Information to others is like...?
- This class was BORING because...? (Followed by a picture of a sleeping student)
- Hey Professor: Did you use PowerPoint today? Why/Why not?

The posters were placed in hallway & classroom locations which made them highly visible and made their messages contextually relevant.

At the end of this experiment, there seemed to be a good amount of information garnered, nearly all of which affirmed the experiment's hypothesis: many people do not enjoy modern slide-driven presentations. Further insights gained in this research are explained in the Research Insights section of this paper.

Ethnographic Experiences

Toastmasters International

An ethnographic inquiry was held with two Toastmasters International club branches in Bloomington. Toastmasters is an organization that aims to improve members' speaking skills by making speeches in front of others, leading meetings, and offering constructive evaluations. In Toastmasters speeches Slideware is not used, though an interesting finding was that other visual aids were used to illustrate abstract points. The purpose of this ethnographic experience was to discover how skilled speechmakers, some of whom have been members of the club for over 10 years, carry out and prepare for presentations.

Good Morning Toastmasters

The first ethnographic experience was with a group called "Good Morning Toastmasters." The weekly, hour-long meeting is held with a standard Toastmasters format, including an introductory speech, main speech, education moment, topics speeches, and meeting evaluation. The prepared speeches ranged from 3 to 10 minutes each, and were about various topics, though all tied in to the day's theme.

IU UITS Toastmasters

The second ethnographic experience was with the "Indiana University (IU) University Information Technology Services (UITS) Toastmasters," who also have weekly hour-long meetings. This meeting was similar in structure to the other Toastmasters meeting, but had a far less active group of members. It was a little slower and less animated, though also less intimidating.

As stipulated by the main Toastmaster at this event, I played a central role in the meeting, participating as one of the main speakers of the day. I gave a ten-minute speech about this project and its background, and then held a focus group with the members. Again, a number of insights were garnered in this experience, and they are outlined in the Research Insights section of this paper.

Church Service Observation

As the project carried on, it became clear that there are many presentation styles and environments, some of which are routinely pleasing to audience members. One such environment is that of religious services. Many people participate in religious services one or more times each week, and continue to do so throughout their lives. At its most basic level, a religious service is nothing more than a presentation. It is a community leader transferring a message to the audience. I decided to study this environment in order to find out what makes it a successful presentation space. In order to not disturb the service, the audience and preacher at St. Thomas Lutheran Church in Bloomington, Indiana were observed. Significant occurrences were noted, and are explained below.

Expert interviews

Interviews were carried out with three presentation and Slideware experts. Two have written books on the subject and the other is well known for his powerful speaking style. These experts, as well as the methods utilized in interviewing them are described below.

Andy Goodman

Andy Goodman is a consultant for nonprofits, foundations, and government agencies. He aims to help groups make clear presentations, and has written a book on the topic, *Why Bad Presentations Happen to Good Causes: And How to Ensure they Won't Happen to Yours*. A detailed e-mail interview was carried out with Mr. Goodman over a 3 week period in order to understand his opinion on a number of insights that were gathered in the previously described observations.

Cliff Atkinson

Cliff Atkinson is a management consultant who focuses on presentation techniques. He recently completed a book on this topic, titled [Beyond Bullet Points: Using Microsoft PowerPoint to Create Presentations that Inform, Motivate, and Inspire](#). A telephone interview was carried out with Atkinson, and was focused on his opinions of current presentation practices.

Lawrence Lessig

Lawrence Lessig has been lauded for his gripping presentation style, dubbed the "Lessig Style" by many who have seen his presentations. The style is notable because it uses PowerPoint in an unexpected way. Slides are used to highlight particular words Lessig utters, in order to add emphasis to these terms. The presentations include hundreds of slides that are each viewed for very short periods of time. Lessig was interviewed via e-mail, and was questioned about his style, and design recommendations for new presentation software.

Research Method Conclusions

The research methods carried out in this project were meant to discover non-obvious insights in the world of presentations and Slideware. First, the Ambient Information Experiment aimed to discover general opinions about the state of presentations today. The ethnographic experiences were meant to shed light on a few situations where successful presentations are made. Finally, the interviews were carried out in order provide the project with solid, practical ideas from presenters who have been successful, and who teach others to present well. The insights gathered from these explorations are outlined below.

RESEARCH INSIGHTS

Immediately following each method of research, analysis was carried out to glean key insights from upon which design elements can be implemented. This section will report many of these insights, and how they might affect the design of presentation preparation software.

Ambient Information Experiment

A number of insights were garnered from this experiment. One finding is that a majority of the professors and lecturers who left comments preferred not to use Slideware in their lectures. Some general comments included the fact that PowerPoint constrains the flow of thought and minimizes, trivializes, & obscures the speaker's main points.

A second finding was that students tended to dislike the use of PowerPoint in the classroom. Many (~10) comments were made on this topic, erring toward the side of disliking PowerPoint. Comments ranged from PowerPoint's negative effects on society as a whole, to the fact that PowerPoint is often used as a crutch for nervous presenters. However, a separate insight was the reasons why students are bored in the classroom. As it turns out, boredom stems from many causes, including limited sleep, affective disorders (such as ADHD), dull material, and environmental hindrances (such as items blocking the projector screen).

These insights made it clear that people who regularly present and those whom they regularly present to dislike the use of Slideware. It is obvious, then, that an intervention is necessary.

Toastmaster's International Ethnographic Experience

A Good Presentation "Feels" Good

Presenters often receive feedback via qualitative means. A number of Toastmasters members said they rely on a "feeling" when it comes to feedback that was difficult for the members to describe, though many of them agreed that it was a real phenomenon. Some, however, reported to have trained themselves not to depend on this "feeling" of success or failure. One member reported that she has on many occasions felt good about a presentation as it was being carried out, only to find out afterward that some audience members were bored and confused by the material.

Current presentation software does not aid a presenter in evaluating his or her performance. Adding the creation of evaluations to the tool would not add much preparation time, but the quality of feedback would be much higher. This feedback could be used in future presentations in order to improve one's presentation skills.

Audience Expectations With Respect to Slideware

Many Toastmasters divulged that when they see a slideware presentation, they simply expect it to be boring. This makes them less likely to pay attention to the material, even if it is about something of interest to them. When the quality of a presentation is prejudged in this way, a presenter's abilities are greatly hampered. If an audience expects a presentation to be uninteresting before it begins, the presenter's job becomes increasingly difficult to carry out.

This is likely the most difficult problem for the designer of a new presentation preparation system. One

recommendation is to help the presenter to focus on the



Figure 2. Scene from an Good Morning Toastmasters Meeting

needs of audience members, rather than on the creation of simple slides. In fact, the presentation should always be focused on what audience members might need in order to help them understand and think deeply about the material that is being presented. Audience members are tired of standard slide-driven presentations, so should be supported by other tools.

Quality of Take-Away Materials

Slideware packages enable presenters to print paper copies of their slides, in order to give to audience members to take away as notes. These notes are also distributed to people who have not seen the presentation, but want to consider the material. Many Toastmasters took notice with this practice. While many felt that it was important to give materials to the audience that can be taken away from a presentation, copies of slides were not preferable.

The distribution of a presenter's detailed notes about a presentation would likely be more useful for audience members. Presentation software should better support the creation of such handouts, and not only the printing of presentation slides.

Church Service Observations

Stories Help Relate Material to the Audience

A key element found in the spoken material of a church service is the heavy emphasis on story-based lessons. Throughout the service, the preacher often told stories in order to relate the material to his audience that might otherwise seem outdated and strange. For example, the preacher, when referring to an ancient biblical text, brought up the issue of teen self-esteem, a seemingly unrelated topic. However, this was a topic that could be related to by an audience filled with a number of teens, as well as their parents.

Encouraging the use of stories in presentations is something that is currently not considered in Slideware today. Though this is something that could be supported in such a software package, whether through simple reminders that a story

may be applicable in a given situation, interactive lessons on how to successfully tell a story, or other means.

Supplementary Materials Guide the Audience

In the service, a small pamphlet was used to guide audience members as they followed along with the material. This was vital to newcomers, such as myself, and served as a reference point for songs, prayers, and speeches being made. This allowed for people to plan on when feedback might be given in the service. There were, for example, times when audience members could speak up, and the pamphlet allowed them to plan when the right time to speak would be.

Slideware display methods make it difficult and awkward for audience members to interrupt the presenter, whether they have questions, ideas, or other remarks. This makes the medium a one-way proposition, and hinders Audience-Presenter interaction. Perhaps through the design of better handouts, audience members would be more likely to interact with presenters.

DESIGN

The aforementioned insights were used to create a set of design recommendations for the creation of more supportive presentation preparation software. Ten key facets to this software were summarized in order to have a more informed design. Each facet is based on the previously described research, and leads to specific design recommendations for more supportive presentation software. The facets may be considered in the following order, and are meant not simply to guide software designers, but can be used as a guide to help presenters immediately. The steps are as follows:

- Assess the audience
- Identify key messages
- Relate messages to the audience
- Prepare a presentation evaluation
- Prepare learning aids and tools
- Make notes or notecards
- Prepare Take-away materials
- Practice
- Present the information
- Evaluate the presentation

An interesting fact to note is that current Slideware Tools only aid sufficiently in two of these facets: making notes, and actually presenting the information. In the other 8 areas, Slideware either does not serve the purpose, or does so in an insufficient manner. For example, Slideware *does* help a presenter create learning aids in the form of slides, but does not encourage the presenter to think of novel ways of presenting the material that might lead to better information comprehension by the audience.



Figure 3. Design Guideline

EVALUATION

This set of design recommendations has been evaluated with a set of peer designers. These designers were asked to comment on the recommendations and supporting data, in order to discover if the information *could* be used to create more supportive presentation preparation software. The results of these evaluation sessions have led to a number of slight changes in the way the information is presented, but the data and recommendations themselves have been comprehensible to all designers thus far.

[Add more examples to this when I pick up the notes on this from bloomington...]

FUTURE WORK

The most obvious next step for this research would be to continue this process into an interface design and prototyping stage. With the breadth of data and highly structured format of the design recommendations, it would be possible for a design team to consider each facet and create a software package to carry out the goals of the project. Following design and prototyping, presenters should test the system in order to assure that the assumptions being made are correct, and the tool is more

supportive to presenters in preparation. Finally, the tool might be compared to current Slideware packages via audience assessments of presenters who use each respective tools.

CONCLUSION

Presentations, as many implicitly believe, are not merely about slides or the bullet points placed upon them. Presentations are about transferring a message from a presenter to an audience. In order for the current state of presenting to improve, the way we think about presenting must be changed from its core. However, the onus for this is not solely on the shoulders of presenters, but audiences as well.

Audiences must demand effective communication and better presentations. It is important to discuss this topic with conference organizers, students, peers, and others that one works with. Above all else, one must demand greatness from him or herself in the presentation arena, with the help of well designed software. Together, we can learn a lot, but only if we make the effort.

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