

## ***Presentation Design***

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*Engineers are often called upon to conduct oral presentations. These may be small and informal, as would be an update to fellow team members, or may be involved affairs such as a design review or presentation to customers and management. All presentations must be extremely clear, concise and easy to follow, and generally take a great deal of careful planning and preparation.*

### **Project activities in which presentations are useful:**

- \* -All crucial junctures in the project where information is to be shared and feedback received, especially during design reviews

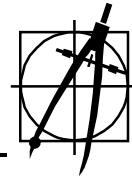
### **Other tools that are useful in conjunction with presentations:**

- \* Design Reviews
- \* Effective Meetings
- \* Eliciting Customer Input
- \* Presentation Aids
- \* Presentation Logistics and Delivery

## **Introduction**

A presentation is a means of transferring knowledge. The methods by which this transfer occurs are varied and by no means limited to a lecturer addressing an audience. The most common methods of presentation include:

- **Illustrated Presentations.** This type of presentation involves a verbal presentation supplemented by various aids and is the most common method used. Illustrated presentations are a good choice when the audience has limited knowledge on the topic, however little interaction is afforded by this method.
- **Team Presentations.** This method is similar to illustrated presentations with two or more speakers presenting. This approach is effective for lengthy presentations or when presenters are strong in their individual areas of speciality. Team presentations require more planning and co-ordination, and may suffer if there are differences in styles or conflicting messages.
- **Technical Demonstrations.** Demonstrations are usually presented to teach the audience how to use an item such as a piece of equipment or a tool. They are typically conducted with smaller groups so that the audience has a chance to actively participate. Technical demonstrations require careful planning, checking of equipment and practice to ensure a smooth presentation.



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- **Discussions.** Although not always thought of as presentations, discussions are an interactive means of sharing information with the presenter serving as a facilitator. This is a method to be employed when the audience is knowledgeable and can contribute to a productive outcome. Discussions should involve a limited number of participants and require a strong facilitator to ensure that a few individuals are not permitted to dominate.
- **Brainstorming, role-playing and case studies.** These three methods are also presentation methods that are often used. For more details on these methods, refer to the *Technical Presentation Workbook* by Sullivan and Wircenski.

### ***Key to Successful Presentations***

The key to a successful presentation is preparation. Audiences can tell if a presentation has been well prepared and will regard this preparation as acknowledgement of the value of their time. Moreover, preparation will have a significant impact on the degree of nervousness felt by the presenter. Jeff Radel of the University of Kansas uses the following anecdote to describe the preparation process of a presentation:

*“A colleague of mine has likened the process of developing a talk to that of preparing for a backpacking expedition. Plan ahead, review your goals, and plan for emergencies. At some point after you are fully prepared, open the backpack and remove between 1/3 to 1/2 of its contents. Then shoulder the pack and head for the hills - there will be more spring in your step, and it will be easier to recover if you stumble”.*

### ***Presentation Aids, Logistics and Delivery***

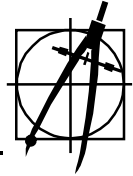
Information and guidance on presentation aids, logistics and delivery are presented in other tools. This division is made because the designer of the presentation, the developer or selector of presentation aids and the person actually delivering the presentation may not be one in the same. Additionally, a single presentation may be delivered over and over again to similar audiences, and therefore it is mostly the logistics and delivery information that needs to be revised.

## **Application of Presentation Design**

### ***Preliminaries***

Preparation is the first step towards a good presentation. It leads to a more crisp, focused and seamless presentation, and increased credibility with the audience. Experts suggest that 20 minutes to an hour should be spent preparing for each minute of a presentation.

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This means that a 15 minute presentation will take anywhere from 5 to 15 hours to prepare.

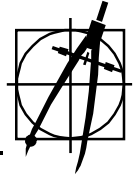
Who, What, When, Where, Why and How?

Before planning the presentation in detail, take the following items into consideration:

- **Who?** Consider the people in the audience. For instance, are they customers, colleagues, technical specialists or the general public? What level of knowledge does the audience have about the topic? How large will the audience be? Are there any topics you should avoid?
- **What?** Be clear about the topic and scope of the presentation. If the presentation is being made at the request of others, be sure to ask about the objectives of the presentation and clarify expectations.
- **When?** Set a time for the presentation including the start and end time. If not dictated, decide on the length of the presentation. If an interactive format is going to be used, allot enough time to allow for this interaction and still complete the presentation on time. For lecture formats, be sure to schedule time at the end of the presentation for questions and answers. Always remain cognizant of the time during the presentation. Audiences tend to become annoyed and stop paying attention if presentations go over time.
- **Where?** Consider where the presentation will take place, as this will affect the planning of your presentation, including the method of delivery and presentation aids. For example, an auditorium would not be an ideal venue for a discussion or demonstration; therefore another method should be employed or a new location sought.
- **Why?** Every presentation must have a purpose and this purpose should be kept in mind throughout the entire preparation and delivery process. Is the purpose to educate, inform, discuss, problem-solve, entertain, etc.?
- **How?** Presentations can be formal or informal. Consider whether the presentation will be an illustrated lecture with a question period, a discussion, a demonstration, or a combination. A design review might involve a short illustrated presentation and a demonstration of the product followed by a lengthy discussion.

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## ***Designing the Presentation***

### **Presentation Content**

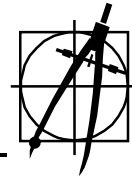
Presenters sometimes try to present information that would be better suited to another format such as a written document. It is important that the message to be delivered suits the medium. Another common mistake made by presenters is trying to present too much in a restricted amount of time. The presenter may know a great deal within the topic area but only a few key areas can be effectively communicated and retained by the audience during a presentation. The following steps outline how to go about selecting the content for a presentation:

1. List all of the ideas that could be talked about considering the audience characteristics (e.g., general public versus technical specialists). A user of a product may not be concerned with the characteristics of the materials and manufacturing processes selected.
2. Evaluate these ideas with respect to what is important to the audience at the current point in time.
3. If more than 5 to 6 ideas remain, combine ideas into broader topics. For example, if explaining how a product was designed, the steps of reviewing customer requirements, evaluating the existing situation, and researching applicable standards could be gathered under the general heading of obtaining requirements.

### **Organizing the Story**

Once the topics of a presentation have been identified, they must be organized in a manner that supports the objectives of the presentation. Start out by reviewing the list of topics or ideas, then determining which should be presented first and why. Once the first topic is identified, consider which topic should logically follow. Likely, the emerging organization will follow one of the standardized informational patterns. These different patterns are suited to different purposes.

- **Chronological.** Topics presented in time-order or as a series of events are effective for presenting historically or evolutionary related topics. For example, if talking about transportation, one might start with the horse and buggy, proceed to motorized travel and conclude with air travel by jet.



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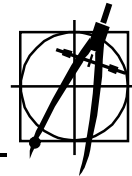
- **Sequential.** A step ordered presentation is used when topics must follow one another in sequence. This type of organization is often used for demonstrations or operational instructions. For example, if describing how to start a car, it is important that the ignition be started before placing the car in gear.
- **Compare & Contrast.** This approach is useful when presenting ideas to be evaluated against a standard. Comparing and contrasting a new product design against a legacy design helps demonstrate the advantages of the newer item.
- **Spatial Pattern of Organization.** This approach identifies relationships of items in terms of their position relative to one another. It is useful when discussing layouts (e.g., buildings, production lines).
- **Persuasion.** If the purpose of a presentation is to influence the audience, using a persuasion format can be effective. The presenter first outlines the negatives of the existing condition or solution then presents the benefits of the proposed solution. To add credibility to the argument, it is important to map the problem to the proposed solution to help the audience understand how it is going to work.
- **Pattern of Elimination.** This approach is another means of influencing the audience and begins with an outline of the criteria against which a number of options will be measured. Each option is presented in turn, usually beginning with the least preferable option and ending with the option that best satisfies the outlined criteria. It is extremely important that all possible options are presented. If an audience member proposed an option that has not been considered, the credibility of the presentation suffers greatly.

### **Creating a Set of Notes**

After the presentation topics have been selected and organized thus creating an outline, the next step is to develop a set of presentation notes. These notes will guide both the creation of presentation aids and the delivery of the presentation. The creation of these aids is addressed in the tool *Presentation Aids*.

A well-developed set of notes may contain:

- key points, words or phrases
- questions to ask
- reminders to present certain aids or write something on a white board
- activities to initiate



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Presentation notes can be written on standard paper, index cards, overheads, a flip chart, or a page from a document on which notations have been made and highlighted. The method selected will depend on the needs of the presenter as well as the environment of the presentation (e.g., lighting). Paper and cards allow the presenter to carry the notes around the room but there may be a temptation to fidget with the notes or get them out of order. Overheads and flip charts allow the audience visibility into the outline of the presentation. This may or may not be desired, and it may require the use of supplementary personal notes for the presenter containing prompts, etc. Further disadvantages are the need to return to the front of the room to change to the next slide or page and the inability to add last minute notes.

Some presenters will use a copy of a document on which they make notations, or highlight key words and phrases. These types of notes are quick to develop but may be difficult to reference during the presentation and provide a temptation to read to the audience.

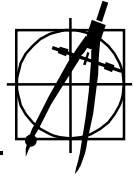
Some presenters will create a formal set of notes that include a complete outline of the presentation including date/time information, details regarding the audience, a description of the equipment and materials required, and any other notations that provide important information. Not all presenters will require this level of detail but it may be helpful if a team presentation is being made, or if there is a chance that the presenter may not be available and will ask another expert to speak in his or her place.

The following steps can be followed to develop presentation notes:

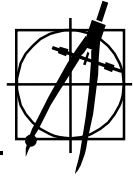
1. Double space presentation notes to make it easier to read and also provide space to make last minute notations.
2. Highlight key words or phrases by using a larger font, different colour, underlining, or by using a bold or italic font.
3. Divide the note page into two columns. The left column will be used for key points while the right column will contain various types of reminders and prompts.
4. Divide topic into a number of main points. These points are recorded in the left-hand column. They should express in as few words as possible and should not exceed a couple of lines to reduce the temptation to read the notes.
5. Divide points into subpoints. Again, use as few words as possible. The intent is just to provide guidance and make sure important points are not forgotten.

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6. Add reminders and prompts to the right-hand column. These might be reminders of which aids to use, questions to ask, or discussions or activities to initiate. If technical jargon or acronyms are used, prompts to define these terms should be included.



## References

Radel, Jeff, *Preparing an Oral Presentation: Suggestions and Strategies for Scientific and Academic Settings*, University of Kansas.

[www.kumc.edu/SAH/OTEd/jradel/Preparing\\_talks/TalkStrt.html](http://www.kumc.edu/SAH/OTEd/jradel/Preparing_talks/TalkStrt.html) (Retrieved

February 1, 2000)

Sullivan, Richard L. and Wircenski, Jerry L., *Technical Presentation Workbook: Winning Strategies for Effective Public Speaking*, ASME Press, New York, 1996.

[ISBN 0-7918-0040-7](#)

Woodson, Thomas T., *Introduction to Engineering Design*, McGraw-Hill, Inc., U.S.A., 1966. [ISBN 07-071760-5](#), pp. 347-350.

*Making More Effective Technical Presentations: Presentation Design*. Video narrated by Connolly, James E., Department of Rhetoric, University of Minnesota.