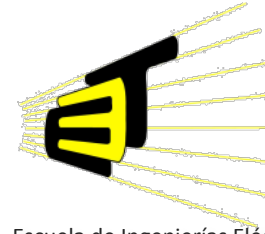




CONSTRUIMOS FUTURO

Trabajo de Grado 2

Sesión 1

Escuela de Ingenierías Eléctrica,
Electrónica
y de Telecomunicaciones

Prof. Daniel Alfonso Sierra Bueno, PhD.

dasierra@uis.edu.co**Especialización en Sistemas de Distribución de Energía Eléctrica – Cohorte III****Especialización en Telecomunicaciones – Cohorte XV**

Noviembre de 2014



CONSTRUIMOS FUTURO

Especialización en Telecomunicaciones

Especialización en Sistemas de Distribución de Energía Eléctrica

How to give a Presentation

Approach

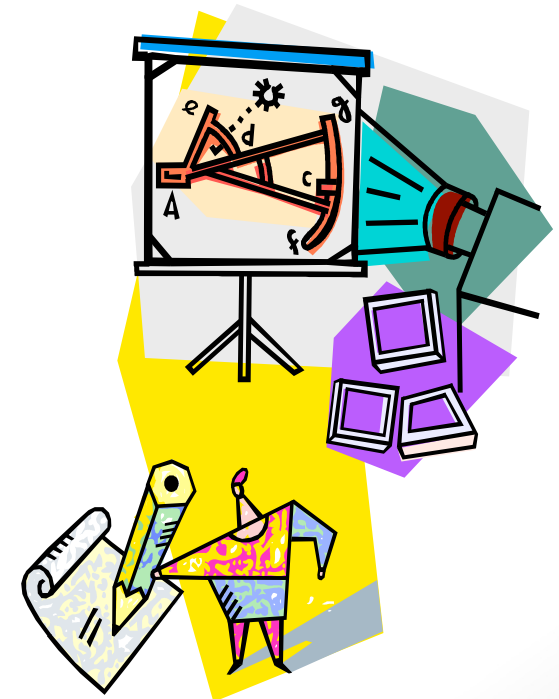


- **Concentrate on Practice**
 - **Writing (Graduation Work I)**

Good writing is essential in engineering

Good writing cannot compensate for a paucity of ideas or concepts
 - **Presenting (Graduation Work II)**

A poor presentation always exposes weaknesses



Presentations and Engineering



CONSTRUIMOS FUTURO

- **Good ideas will not be recognized unless they are effectively conveyed to other**
- **That's why good presentation skill is another prerequisite of a successful specialist**



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Why well constructed visuals are needed?

- They can make your presentation more:
 - Exciting
 - Effective
 - Memorable
- It is critical that presentations be properly *planned and prepared (rehearsed)* or they can become a liability rather than an asset



CONSTRUIMOS FUTURO

Oral presentations need to tell a story

- **To give a good talk, you need to understand the goal of the presentation:**
 - Why is the talk being given?
 - What is the purpose of the talk?
 - What is expected by the audience?
 - Who is in the audience?
 - What points do you want to make?
- **Most people preparing talks never ask these questions!**



CONSTRUIMOS FUTURO

Oral presentations need to tell a story

- **Similar to a written presentation...**
 - **Make the case: What?, why?, how?, how well?**
 - **Make the case in a logical order**

Except...

- **(usually) less time**
- **You control order and pace**
 - **Good:** you get to choose the order and give your personal interpretation
 - **Bad:** no fast forward or random access for listener who doesn't like your choices
- **Work on the story before the details!!!**

Making the Case



CONSTRUIMOS FUTURO

- **What is the key idea?**
 - Identifying and explaining the key idea is the hardest part of giving a presentation
 - Your visual presentation should emphasize the most important points and ideas
- **Why is it interesting?**
 - Why should the audience care?
 - What terminology will they understand?
 - What examples have meaning for them?
- *How was the idea explored*
 - *What was done to evaluate the idea?*
- *How well did it work?*
 - *Was it a good idea?*



CONSTRUIMOS FUTURO

Every point should serve a purpose

- **Think about purpose first**
 - Details of what to say should follow from purpose
- **Get rid of anything that does not serve a clear purpose**
 - **Throwing away material is hard!**
 - Deciding what to include is half of the problem. Deciding what to omit is the other half

Opening and Closing



CONSTRUIMOS FUTURO

- **Two crucial points: the beginning and the end**
- **Openings**
 - You have to bring your subject into a clear focus
- **Closings**
 - They expected you either to summarize or to give the final recommendations

Opening and Closing



CONSTRUIMOS FUTURO

- **Witty or chatty openings will be effective only if they are a natural expression of your personality**
- **Your best approach is to state your case and to establish good relations with the audience**
- **Closings can start with:**
 - “In closing, I have shown..!”
 - “I will now summarize...”
 - “In conclusion, I recommend that...”

Opening and Closing



CONSTRUIMOS FUTURO

- **Never give the impression that you are exhausted or apologetic, that you really have nothing more to say, and that you merely wish to thank the audience for its kind attention**
- **A good summary is important because the end of your talk makes a more lasting impression than the beginning**
- **If known, do not hesitate to acknowledge the limitations of your work or your results and to point out the aspect to be developed further**

How to talk



CONSTRUIMOS FUTURO

- **The audience has to think that you know what you're talking about**
 - Even if you don't...
- **The audience has to think that you care about what you're talking about**
 - Even if you don't...
 - Your attitude is another parameter of the speech that is quickly sensed by the audience
- **Your voice inflections give an added dimension to your work**
- **The audience has to be able to hear you**

How to talk



CONSTRUIAMOS FUTURO

❑ Talk to the back wall

- ✓ Volume
- ✓ Speak slowly in order to be understood
- ✓ Eye contact



How much time is available?



CONSTRUIMOS FUTURO

- **A few minutes:** One main point – make it good
- **Around ten minutes:** 2-3 closely related points
- **A few tens of minutes:** 3-5 closely related points, plus some elaboration
- **An hour:** One main point presently in-depth



Work out an explicit time budget

- **What are the main sections of your talk?**
 - Do these fit the main points you want to make?
 - Are they ordered appropriately?
- **How much time should be budgeted to make each main point?**
 - Do the number of slides for each section fit the time budget?

Practice, Practice, Practice



CONSTRUIMOS FUTURO

- **Out loud!!! – Realistic environment**
- **Actual presentation will take longer...**
 - ... unless you are really nervous, in which case it will go faster
- **Use slides as your outline**
 - Too distracting to have separate notes
- **Find your own best way to keep on schedule**
 - Try a stop watch...

Visual Aids



CONSTRUIMOS FUTURO

- **Emphasize key points**

- Outline of talk
- The purpose of the slides is to add interest and emphasis, not to compete with what you are saying
- Keep statements simple and to the point, using key words and phrases
- Use only essential information which supports your statements; for example, do not project all the statistics you are using. Pick only the key ones.

- **Attention preserver**

- Simplicity is a key to gaining your audience's attention and retaining their interest

Visual Aids



- **Graphics**
 - Use the visuals to reinforce, clarify, illustrate or highlight individual points
 - Visuals are illustrating, not repeating, your presentation
 - Experiment with a variety of layouts to determine the most effective ones. Remember that people retain information best through a picture or a chart than words
 - Consider audience size. Visuals must be prepared properly so that they are clear to even those at the back of a large room
- “If they simultaneously see it and hear it, maybe they’ll get the point...”

Pacing



CONSTRUIMOS FUTURO

- 1, 4 minutes per slide
 - Only the best speakers can effectively average one slide a minute
- Never put up a single slide for less than 60 seconds

Well, almost never

- ... and really never put up a slide for less than 30 seconds

Pacing



CONSTRUIMOS FUTURO

- **Are they still listening? You receive some feedback**
 - If the listeners are uneasy or sleepy, it is time to speed up your presentation and skip the boring details
 - If the listeners are waiting to catch any word, it is time to slow down your pace and, perhaps give more detail than you have planned
 - It is wise to allow extra time to define special terms in your talk because the audience, unlike readers, cannot stop to look up for definitions

What About Questions?



CONSTRUIMOS FUTURO

- **“Please hold questions until the end...”**
 - Allows you to control the pace (and make sure everything gets covered)
 - Many questions are not of general interest
- **“Please feel free to interrupt with questions”**
 - (May) help to avoid confusion
 - (May) make audience feel more appreciated

What About Questions?



CONSTRUIAMOS FUTURO

● Question will be useful:

- To clarify points
- To defend your work against criticism
- To receive comments and suggestion from the audience
- The discussion period also is interesting and an indicator of how well you have reached the audience

What About Questions?



CONSTRUIMOS FUTURO

● About the questions...

- You should be ready to tolerate “show-off” comments from the audience
- When you receive a question from the audience, repeat it for all to hear (this will give you some time to think)
- Respond honestly
- If the question raises a very controversial point, do not allow yourself to go into a defensive stand. You can suggest to discuss it later (via email, or during the coffee break) with out involving the audience

Order, Number is Right?



CONSTRUIMOS FUTURO

- **Don't include slides not likely to be used**
 - “Since I'm running out of time...”
 - Backup slides are OK, just don't make them part of the normal talk
- **Don't skip back and forth between slides**

A single theme per Slide



CONSTRUIMOS FUTURO

- To include three or four ideas in a single visual usually detracts from your presentation and is apt to confuse your audience
- First line (usually) gives topic of slide
- A bulleted structure (usually) helps

Limit each item to a line or two

You don't need to write in complete sentences

You certainly shouldn't write in complete paragraphs!

Limit each slide to



CONSTRUIMOS FUTURO

- **A half dozen or so entries**
- **10 total lines of text**
 - Use large type fonts
 - No more than seven words per line
 - Avoid complete sentences. Bulleted phrases instead.
 - Make sure type is well spaced and not crowded
 - Eliminate words that do not add meaning, for example: the, an, etc.

Limit each slide to



CONSTRUIMOS FUTURO

- **Fonts (*clear and easy to read*)**
 - Arial, Verdana (**Not** Courier)
 - **44 pt** to **32 pt** (occasionally 24 pt)
- **Use only one typeface per visual**
- **Add variety by using different sizes and bolding title lines**

Example



CONSTRUIMOS FUTURO

- ***“For the sake to make the steady-state error be zero”*** (note the hyphen, Well done!)

It is too complicated

“To make the steady-state error zero”

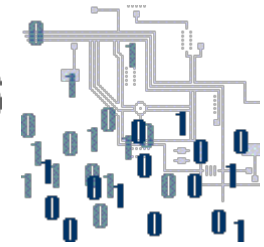
Visually Appealing, but
not distracting

- Audience needs to pay attention to you, not the slide



CONSTRUIMOS FUTURO

10784.36
5x9=1
2.719372



**Visually Appealing, but
not distracting**



CONSTRUIMOS FUTURO

- **Sometimes it useful to sequentially display bullets**
 - Emphasize sequential ordering of items
 - Keep audience from reading ahead
 - Don't overuse this feature!!!
- **Sequential highlighting of a graphic**

Visually Appealing, but
not distracting



CONSTRUIMOS FUTURO

- Animations other than simple appears
 - Visually distracting
 - Don't contribute to an *understanding of the talk*

Background, Colors



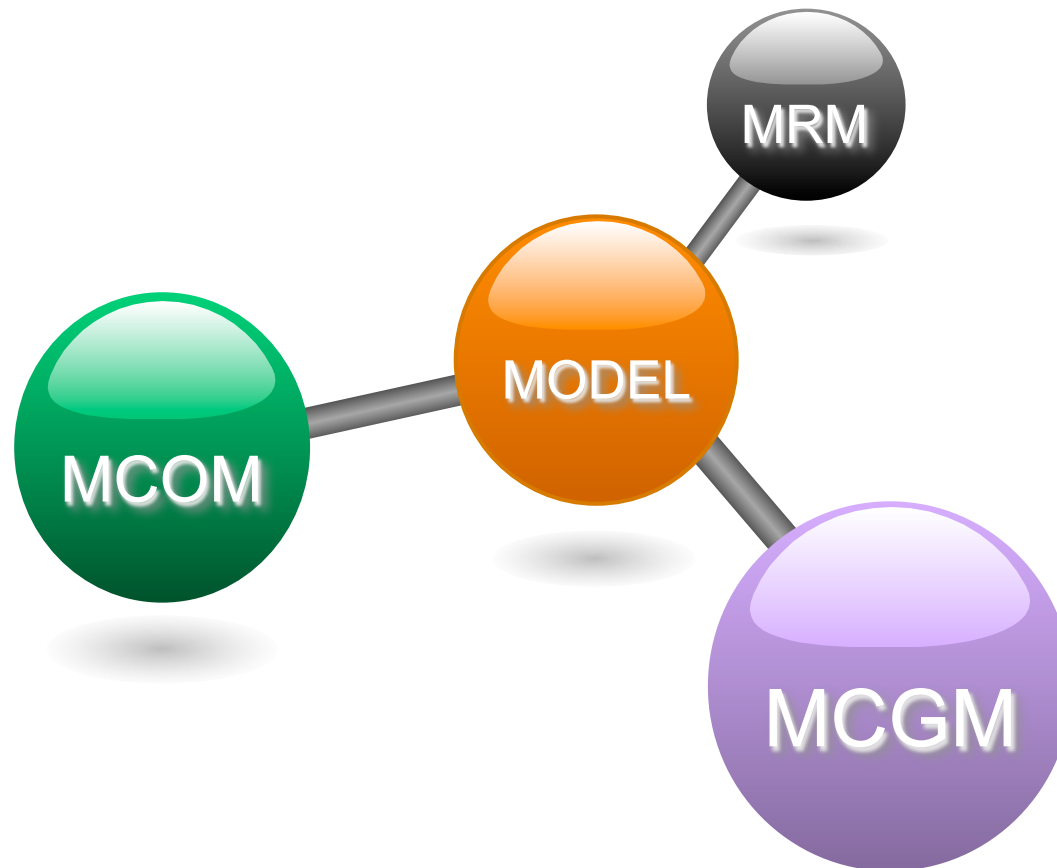
CONSTRUIMOS FUTURO

- **Recommendation: dark text on a white background**
 - Good in lighted room
 - Keeps audience awake!
- **Make sure it's readable when projected, not just on a PC screen (images sometimes look worse)**
- **Gently shaded backgrounds look good**

Background, Colors



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Nicely offsets colored graphics

Background, Colors



CONSTRUIMOS FUTURO

- **Carefully check grammar and spelling**
- **Be consistent in grammatical construction of lists; for example, use all verbs or use all noun phrases**
- **Avoid long phrases, acronyms and nonstandard terminology**
- **Avoid formulas/equations unless fundamental to the discussion**

What about “branding”?



- Slides often contain text or graphics indicating author affiliation and/or title of talk
 - Use this sparingly
 - Visually distracting
 - Often uninformative
- Avoid commercial endorsements
 - IEEE restricts the display of the logo of the company/ university with which the presenter is associated to the first slide or visual (usually the title slide)

Power Point is not the only option



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- **PDF has several advantages**

- **Portability!!**

- Options:

- **PDFscreen**

- <http://river-valley.com/download/>

- **CutePDF Writer**

- <http://www.cutepdf.com/download/CuteWriter.exe>

- **Other Options**

- **Impress – Openoffice: <http://es.openoffice.org/>**

- **LaTeX (Beamer) for technical stuff**

- <http://rua.ua.es/dspace/bitstream/10045/26839/1/Creando-presentaciones-con-beamer.pdf>

- **Prezi (<http://prezi.com/>)**

General Recommendations



CONSTRUIMOS FUTURO

- **Worry about how badly the projector will mess you up**
 - Pay attention to screen resolution
 - You may not be using your own laptop when you do the presentation
 - Moving between PCs almost always causes problems
- **Do not use more than one font or a FEW colors (*no more than three colors per visual or slide*)**

General Recommendations



CONSTRUIMOS FUTURO

- **Consider handing out copies of your visual presentation. Be sure to have sufficient quantity available for your audience**
- **Do not use figures from the printed paper or scanned from hard copies of documents**
- **Do not duplicate information**
- **Proofread very carefully**
 - Try to have someone else proof in addition to yourself
 - It is hard to overlook errors when they are magnified in front of an audience
 - Remember, even a small error in such a focal part of your program can undermine the credibility of your entire presentation

General Recommendations



CONSTRUIMOS FUTURO

- **Test your presentation ahead of time**
 - Check the facilities/presentation equipment and the room aspect/layout
 - Make sure it is easy to read from an appropriate distance, and that everything is in the proper order
- **Be conservatively dressed**
- **Natural gestures of the kind you normally use in conversation will help**

General Recommendations



CONSTRUIAMOS FUTURO

- **Make some prior contact with the members of the audience**
 - **What does one talk about?**
 - One can summarize the results;
 - explain how this talk relates to other talks in the session;
 - or how it relates to the keynote speech of the conference;
 - or even tell a story of how one got interested in this particular topic, etc.

General Recommendations



CONSTRUIMOS FUTURO

- **Never turn your back to the audience, talk to the audience, not to the viewgraphs**
 - Maintain eye contact with the audience throughout the talk
 - Address different parts of the room as the talk progresses
 - Distribute an occasional direct glance at people in various parts of the room
 - This means that the room should remain lit (most overheads will still be readable with the room lit)
 - It is a bad idea to speak in a dark room in which the only thing visible is the screen (the contact with the audience will be lost)

General Recommendations



- **Pointing to features on the screen help to focus attention and adds life to your talk**
- **Start off slowly before you build up to your normal speaking pace**
 - At rates higher than about 160 words per minute your articulation begins to lose precision

Some Examples



CONSTRUIAMOS FUTURO

● Title Slides

- They are used to emphasize important points or introduce new topics
- The best titles are one or two simple lines in large type



Some Examples



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PROPOSED COMPUTER INTEGRATION PROJECTS FOR 1991

Including Other Division Plants For 1992

Originally submitted
on March 12 and amended partial on
March 15 – But, not approved

(Draft Plans not for release to outside organizations)

<Example of a Bad Title Page>

Some Examples



CONSTRUIMOS FUTURO

● Text or Word Slides

- They are used to make statements of facts or objectives
- They should avoid complete sentences
- They should emphasize or highlight key points
- They use a build sequence to focus audience attention and to keep members of the audience from reading ahead
- The key rule for text slides is readability



Some Examples



CONSTRUIMOS FUTURO

PROPOSED PROJECTS

- **DEVELOP GUIDELINES FOR**
 - Integrated control and monitoring systems
 - a) Metering
 - b) Distribution
 - COMPUTER SYSTEMS UPGRADES
(Limited to previously approved work)
 - Computerized Plan Procedures
(LANs used in emissions trading)
 - Perimeter Lightning
 - Fully automated plan concepts
- **DEMONSTRATE EPRI COMMUNICATION GUIDELINES
(with Electrical System Division)**

Due Dec. 12, 2007 – Final Report, January 1, 2008
- **DEVELOP SUPPORTING TECHNOLOGIES FOR:**
 - Automation software development and maintenance
(CAD/CASE)
 - Improved sensor, valve, and actuators design
 - Intelligent Control Systems Gain Tuning

<Example of a Bad Text Slide>

Some Examples



CONSTRUIAMOS FUTURO

GUIDELINES FOR COMPUTER SYSTEM INTEGRATION & COMMUNICATION

- **Guidelines for process computer equipment upgrade**
- **Apply EPRI IUC guidelines (with Electric System Division)**

<Example of a Better Text Slide>

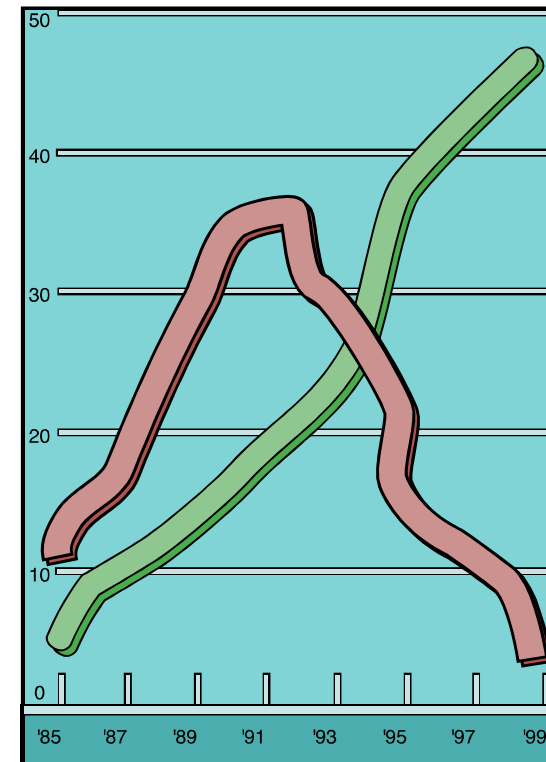
Some Examples



CONSTRUIMOS FUTURO

● Line Graphs

- They are ideal for illustrating trends or performance over time
- Include specific data to demonstrate milestones or emphasize individual points of interest of discussion
- In black and white line graphs, no more than three different lines of distinctly different lines types (i.e., dashed, solid) should be used in the graph
- Clearly label the axes
- In color slides, lines of the same or similar colors must be avoided

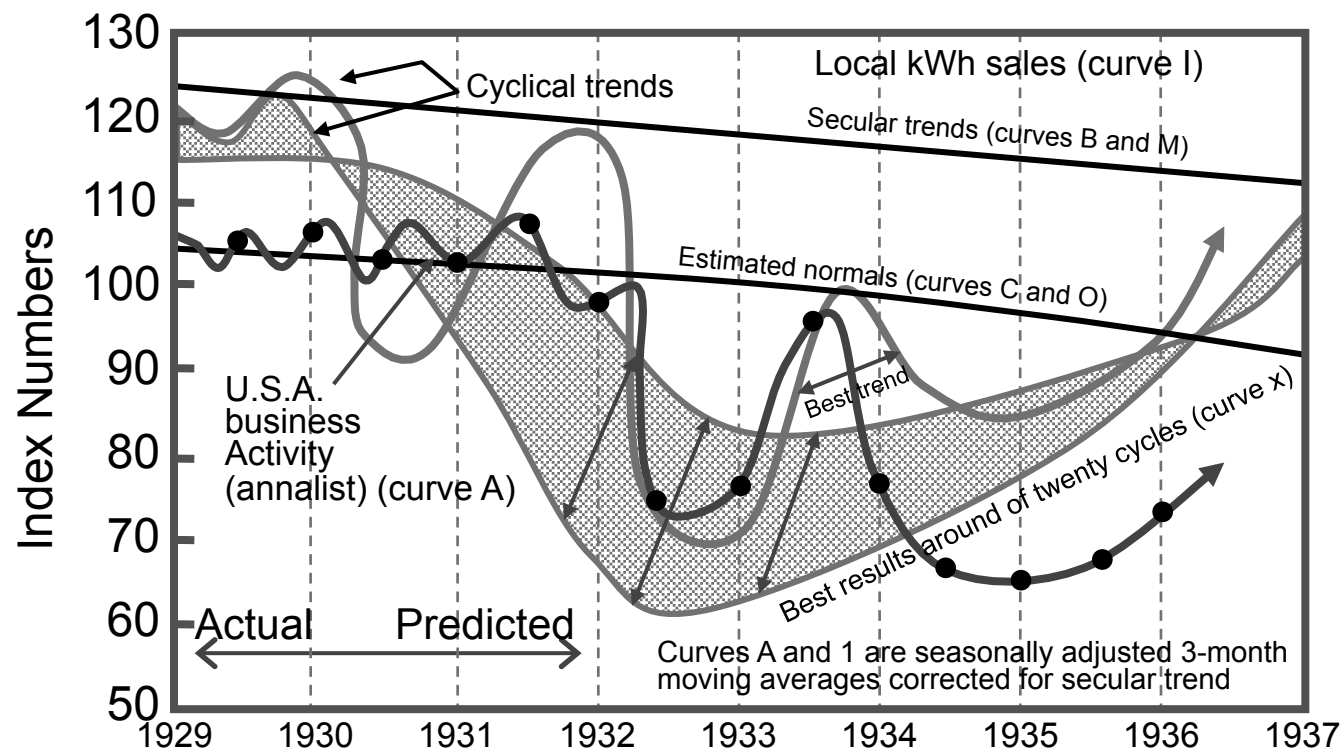


Some Examples



CONSTRUIAMOS FUTURO

LOCAL kWh FORETOLD BY NATIONAL BUSINESS CONDITIONS



Note: This chart is a continuation from article of Electric World for December 16, 1938, where curves A, B are explained in detail. The 1934 prediction of the kWh index bases on the lag phenomenon of local kWh behind business activity

<Example of a Bad Illustration>

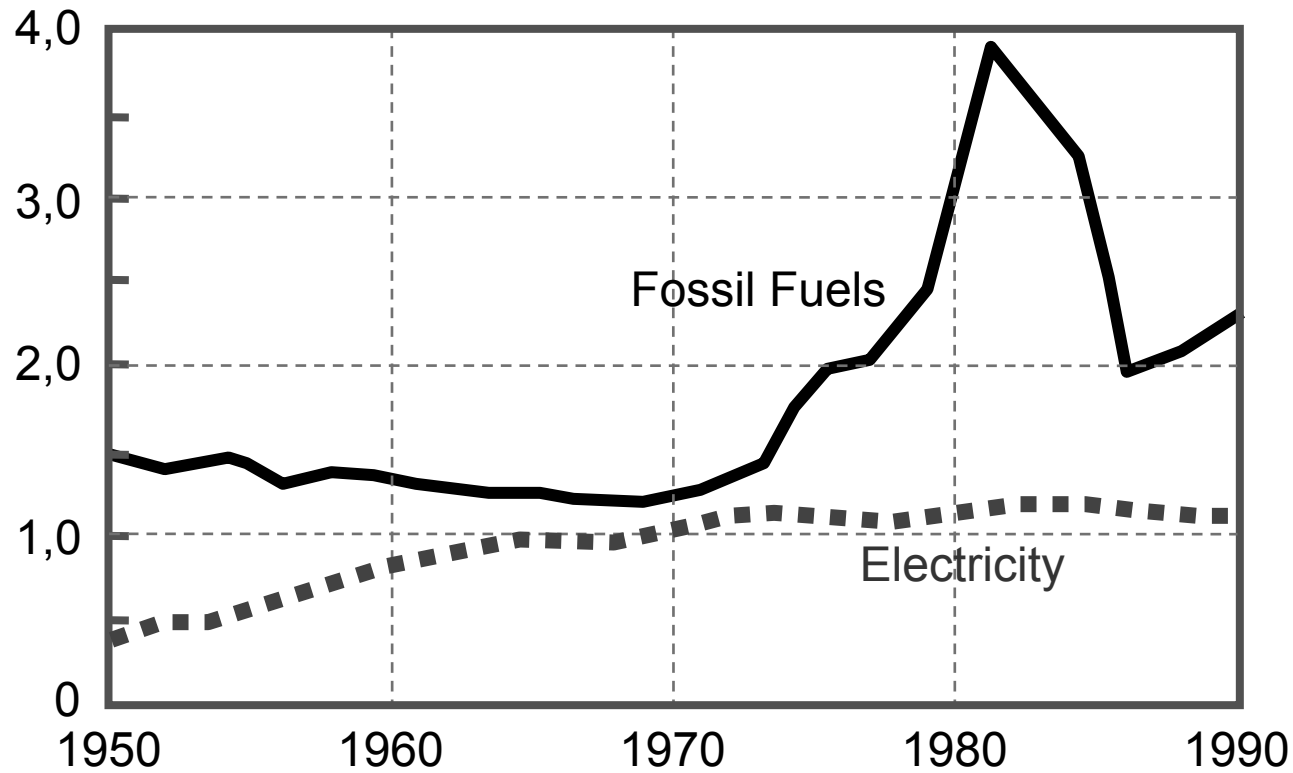
Some Examples



CONSTRUIMOS FUTURO

ENERGY PRICE TRENDS 1950-1990

Indexed Price



Source: U.S. Bureau of Economic Analysis

<Example of a Good Illustration>

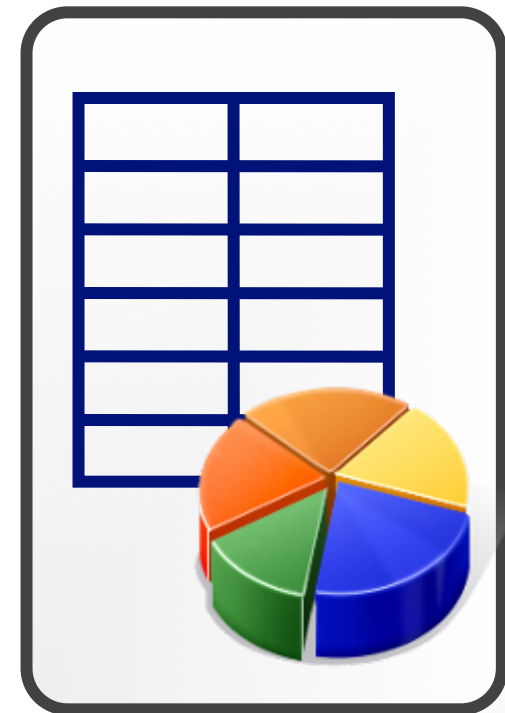
Some Examples



CONSTRUIAMOS FUTURO

● Tabular Charts

- They are used to show raw data and numerical relationships
- They should only depict a few simple break-downs of the data and not attempt to illustrate each component in great detail



Some Examples



CONSTRUIMOS FUTURO

THERMAL ENERGY OPERATIONS TOTAL

k	COGEN	E/S	USE	WASTE	REVENUE
1	4 666,67	0,01	190,84	4 475,83	- 1 470,00
2	4 666,67	0,01	190,84	4 475,83	- 1 470,00
3	4 666,67	0,01	190,84	4 475,83	- 1 743,68
4	8 000,00	0,01	190,84	14 784,83	- 2 520,00
5	14 666,67	0,01	190,84	14 784,83	6 737, 23
6	14 666,67	0,01	190,84	14 784,83	5 422,34
7	14 666,67	0,01	190,84	14 784,83	3 537,65
8	14 666,67	0,01	190,84	14 784,83	649,98
9	14 666,67	0,01	190,84	14 784,83	3 587,45
10	14 666,67	0,01	190,84	14 784,83	- 971,23
11	4 666,67	0,01	190,84	4 475,83	- 1 470,00
12	4 666,67	0,01	190,84	4 475,83	- 1 470,00
NET REVENUE FOR SPPF =					\$ 8 757,29

<Example of a Bad Table>

Some Examples



CONSTRUIAMOS FUTURO

COMPARISON OF MECHANICAL EQUIPMENT IN PASSIVE & CONVENTIONAL BWR

COMPONENT	PASSIVE BWR	CONVENTIONAL BWR
Pumps	11	41
Valves	171	204
Fans	6	30
Safety-grade Pumps and Valves	136	185

<Example of a Good Table>

Some Examples



● Bar Graphs

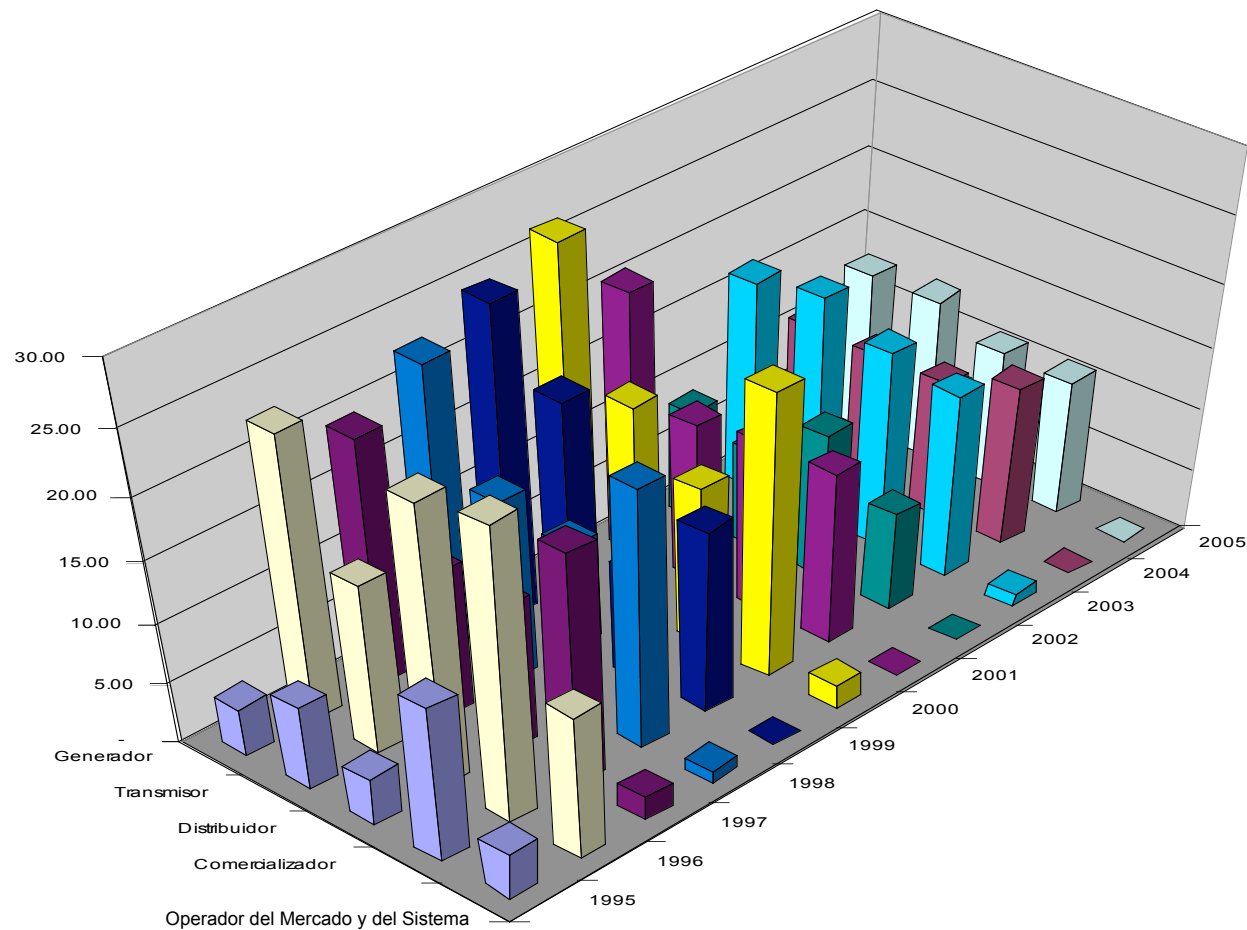
- They are used to show absolute data or relationships and comparisons
- Include values and use scales that easily show measures
- Simplicity is the key



Some Examples



Tendencias Generales de la Regulación Colombiana



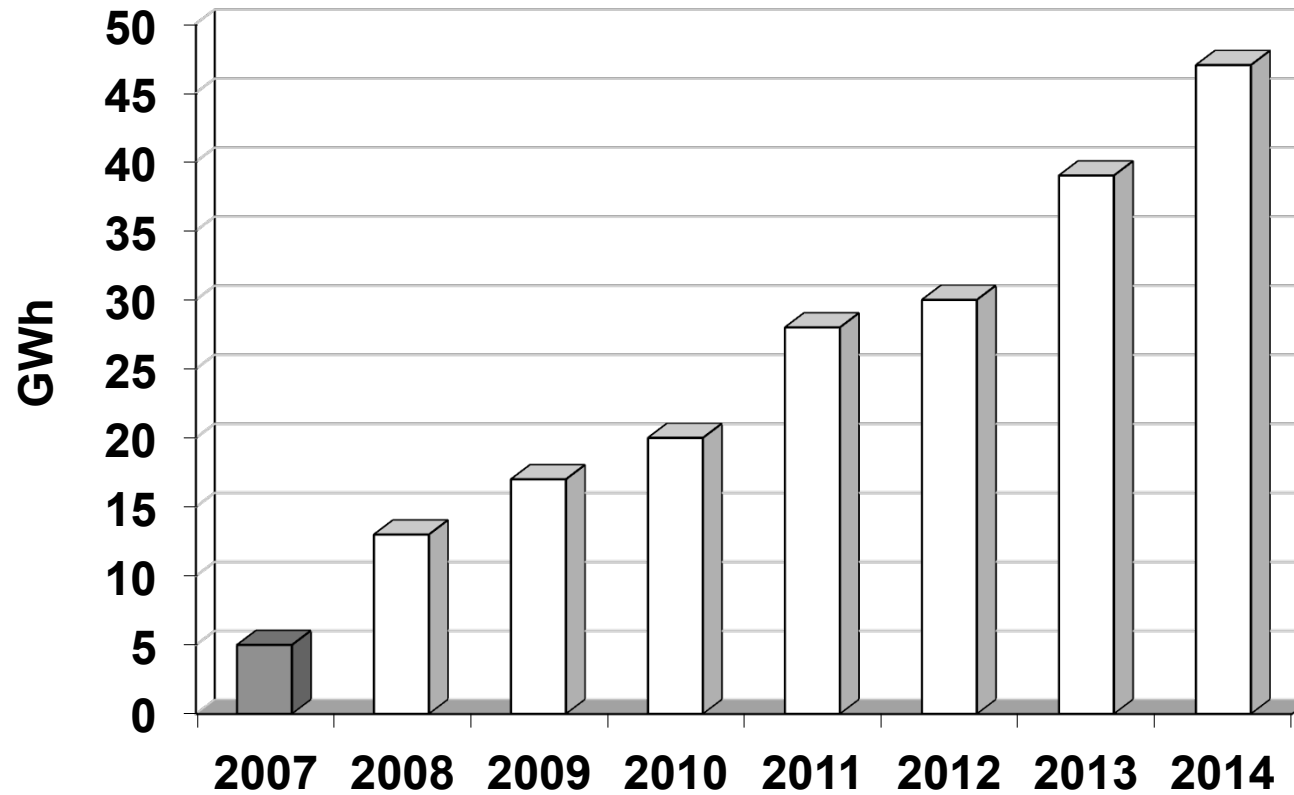
<Example of a Bad Illustration>

Some Examples



CONSTRUIMOS FUTURO

ENERGY RECEIVED FROM NON-UTILITIES BY THE ELECTRIC UTILITY INDUSTRY



<Example of a Good Illustration>

Some Examples



CONSTRUIAMOS FUTURO

● Pie Charts

- They are best for showing percentage relationships or comparisons of parts to a whole
- The data for a pie chart should always total 100%
- No more than eight (8) segments per chart are recommended

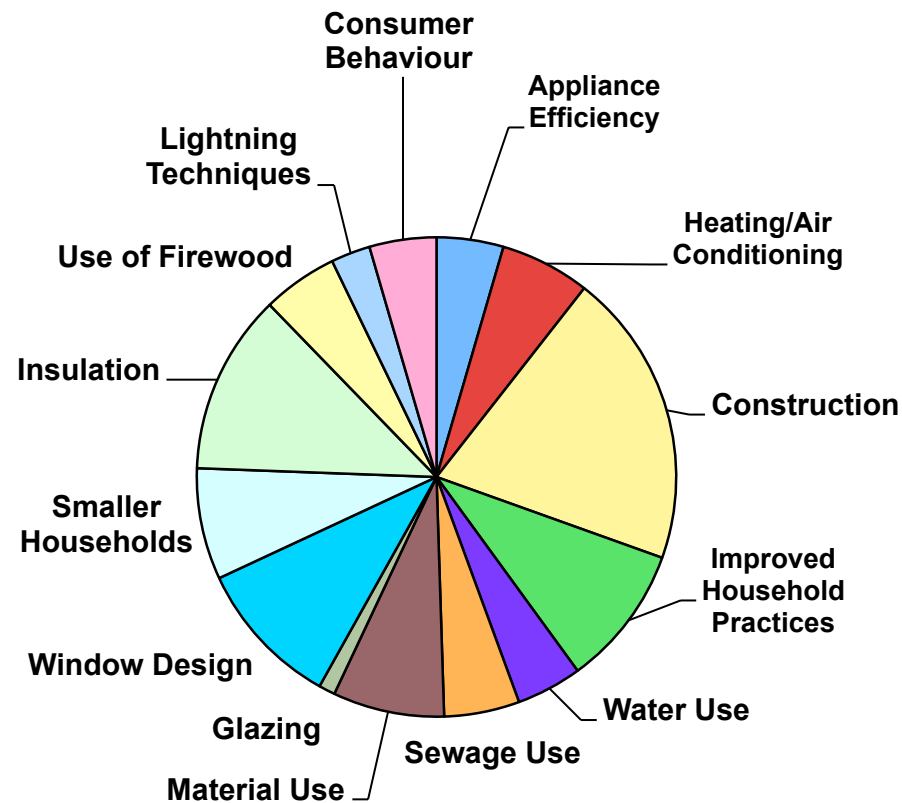


Some Examples



CONSTRUIMOS FUTURO

SOURCES OF REDUCTION OF U.S. HOUSEHOLD ENERGY USE (1972-1984)



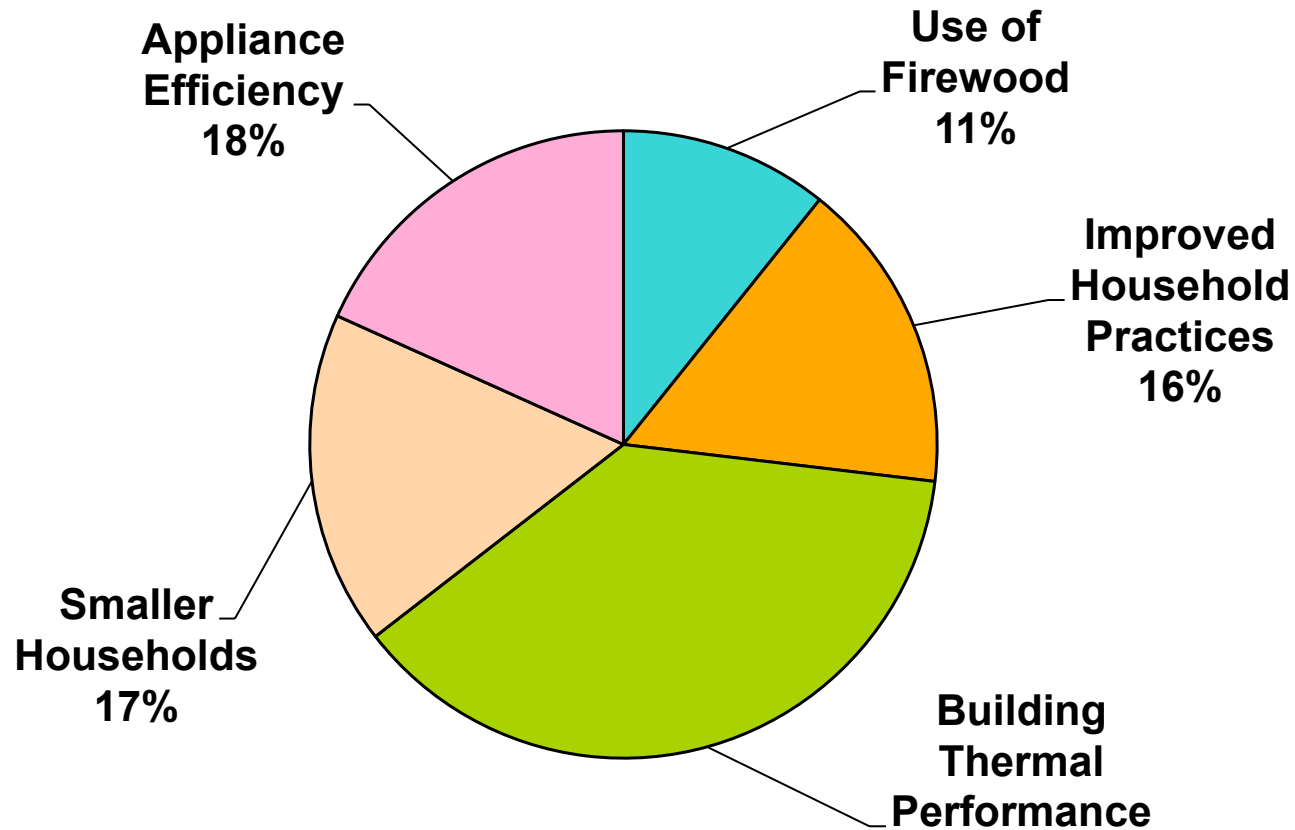
<Example of a Bad Illustration>

Some Examples



CONSTRUIAMOS FUTURO

SOURCES OF REDUCTION OF U.S. HOUSEHOLD ENERGY USE (1972-1984)



<Example of a Good Illustration>

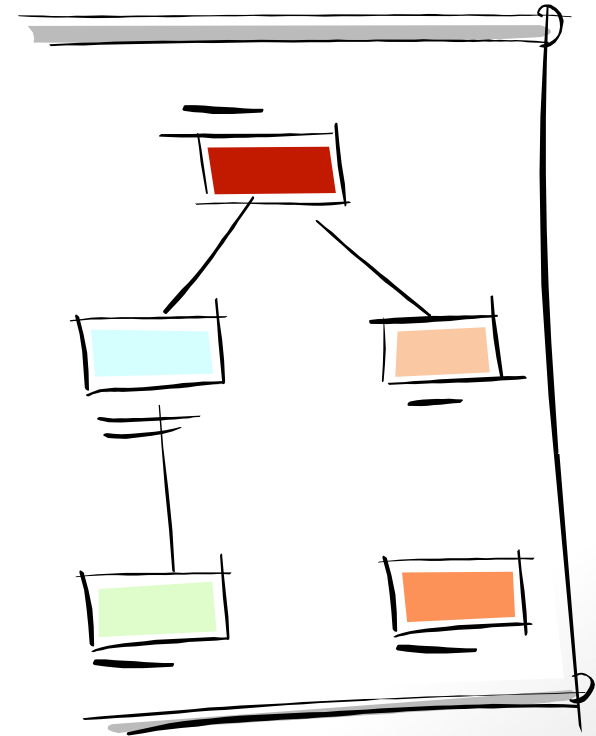
Some Examples



CONSTRUIMOS FUTURO

● Block diagrams or Process Diagrams (Flowcharts)

- They are excellent for relaying comparative relationship and structural designs
- From illustrating company management, equipment, or networking configuration, graphics of this kind can show how each piece contributes to the whole
- Avoid overcrowding; it complicates this kind of visual
- Limit your chart to no more than ten (10) graphic elements connected by lines or arrows

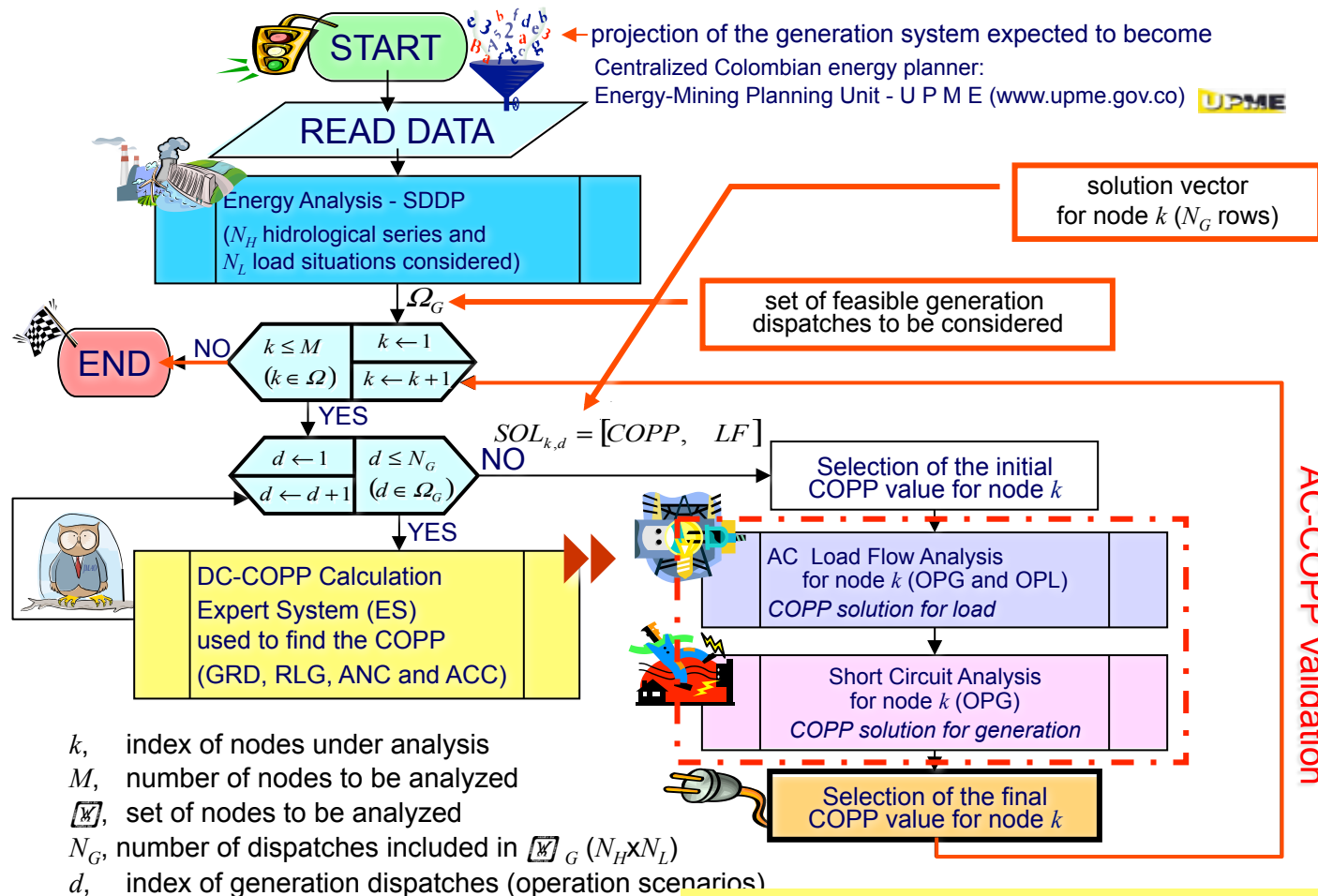


Some Examples



CONSTRUIMOS FUTURO

METHODOLOGY DESCRIPTION



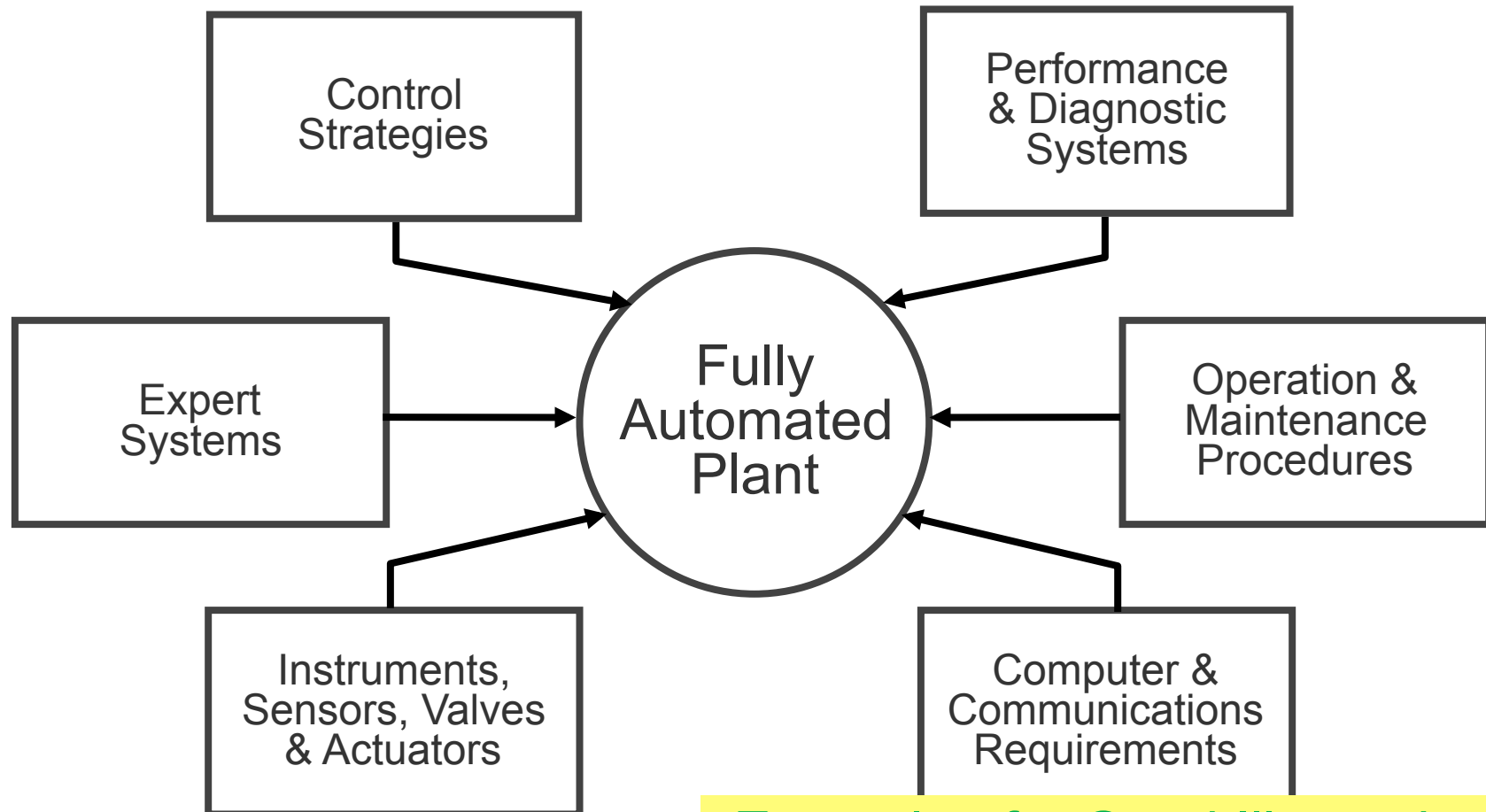
<Example of a Bad Illustration>

Some Examples



CONSTRUIMOS FUTURO

COMPONENTS OF FOSSIL PLANT AUTOMATION



<Example of a Good Illustration>

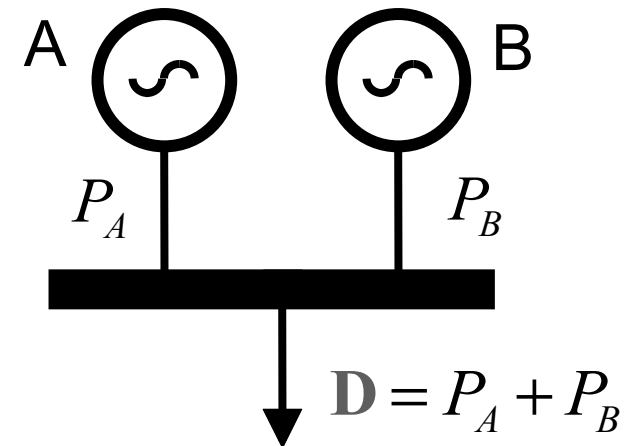
Some Examples



CONSTRUIMOS FUTURO

● One-line Diagrams

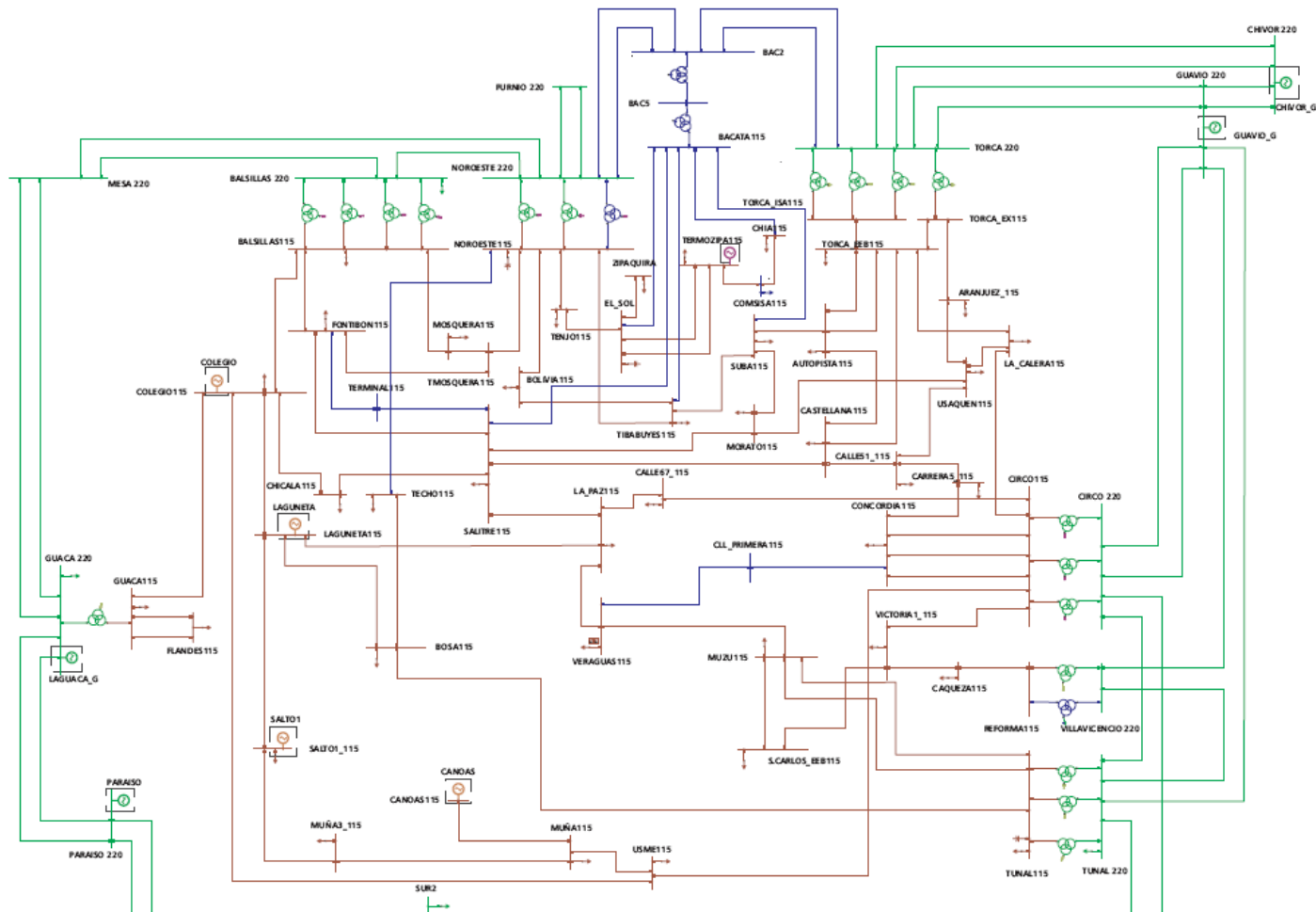
- You should limit applying these to needed segments of a system to make them legible to the audience



Some Examples



DIAGRAMA UNIFILAR DEL ÁREA DE BOGOTÁ

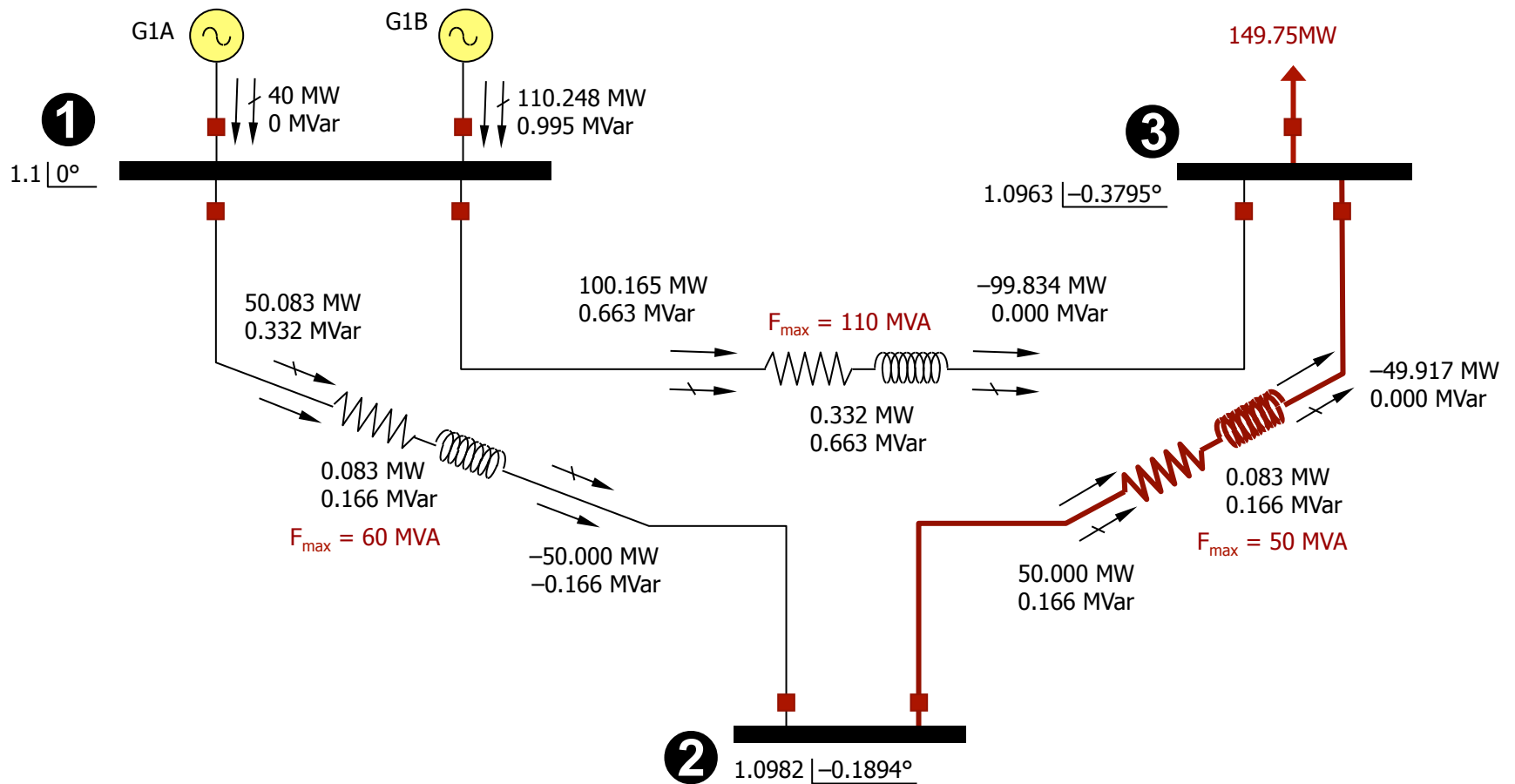


<Example of a Bad Illustration>

Some Examples



RESULTS FOR THE EXISTING SYSTEM



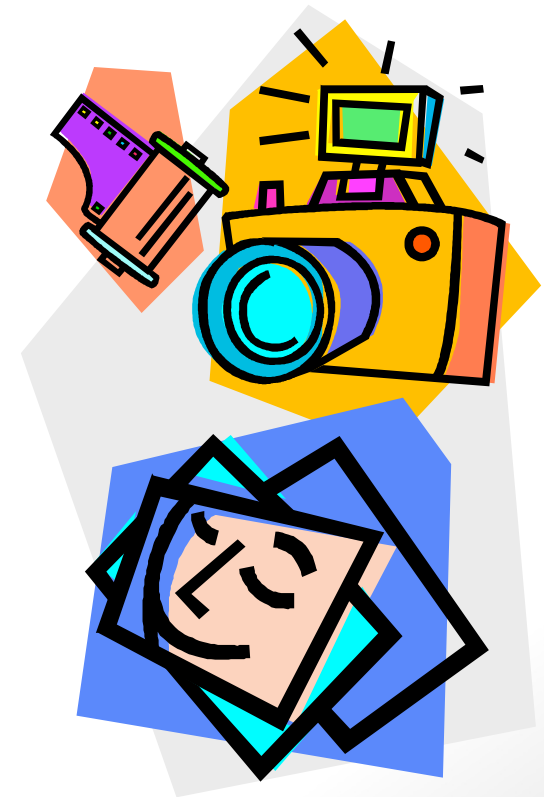
<Example of a Good Illustration>

Some Examples



● Photographs

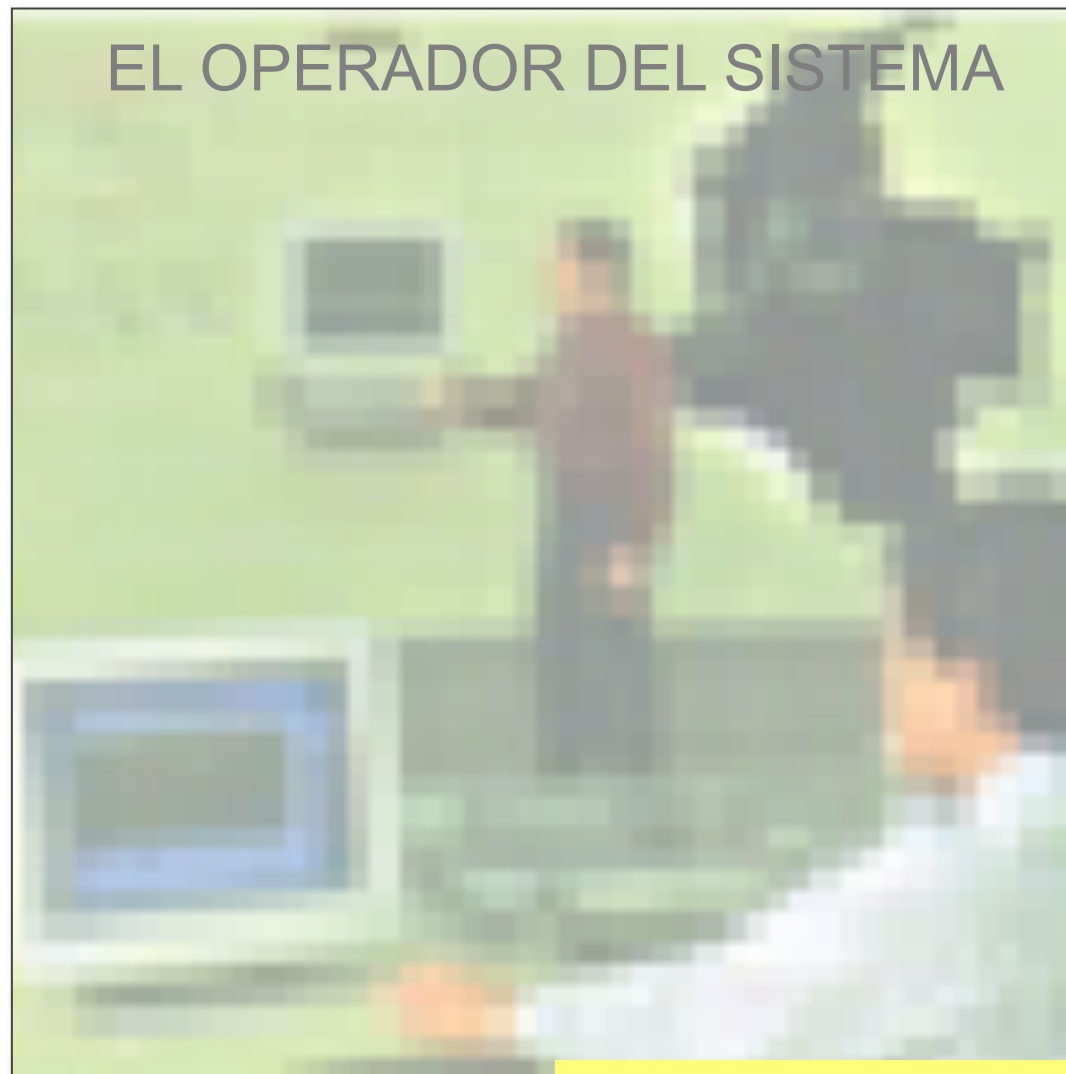
- Good quality photographs in a slide add a dimension of realism to presentations
- They must be relevant and clear
- Photographs of details must be accompanied by an image showing the context of the detail
- They must show high color contrast
- No vendors names should be highlighted and no vendors overlays (text) should be superimposed on the photograph



Some Examples



CONSTRUIMOS FUTURO



<Example of a Bad Illustration>

Some Examples



CONSTRUIAMOS FUTURO

Managed Spot Power Markets

PRESENTACIÓN DE XI COMPAÑÍA DE EXPERTOS EN MERCADOS S.A. E.S.P. - OCTUBRE DE 2005



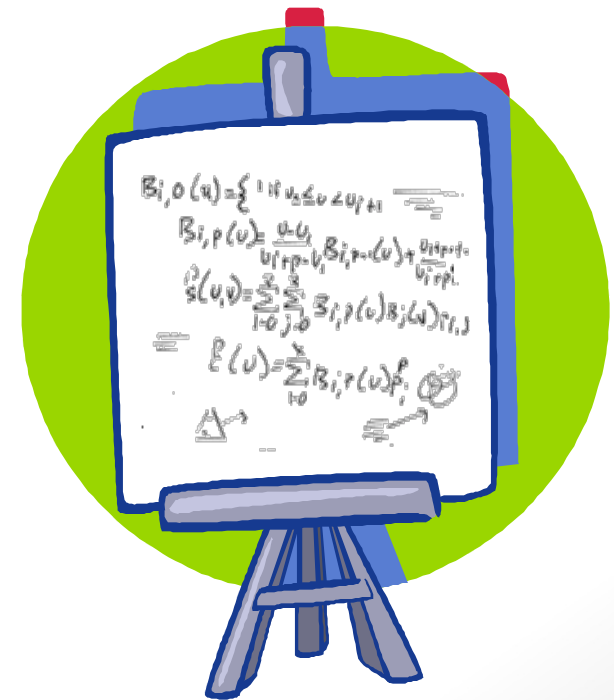
<Example of a Good Illustration>

Some Examples



● Equations

- They should be included just if they are absolutely necessary to develop the ideas in the presentation
- In general, the audience is not interested in equations neither following the proof of a theorem nor the derivation of an equation
- The author should state the result and refer the interested listener to a proof elsewhere
- It is more important to explain the meaning and the use of the results



Some Examples



SENSITIVITY TO SERIES SUSCEPTANCE

$$\frac{\partial W_{st}^*}{\partial B_{st,lk}} = -S_{\text{base}} \left[\begin{aligned} & \left(\pi_{\rho Qst,i}^* - \text{Sen} \theta_{st,lk(i)}^* \cdot \pi_{Sst,lk(i)}^* \right) \frac{V_{st,i}^{*2}}{\text{sq}(tp_{st,lk}^* | i)} \\ & + \left(\pi_{\rho Qst,j}^* - \text{Sen} \theta_{st,lk(j)}^* \cdot \pi_{Sst,lk(j)}^* \right) \frac{V_{st,j}^{*2}}{\text{sq}(tp_{st,lk}^* | j)} \\ & - \left(\begin{array}{l} \pi_{\rho Qst,i}^* + \pi_{\rho Qst,j}^* \\ -\text{Sen} \theta_{st,lk(i)}^* \cdot \pi_{Sst,lk(i)}^* \\ -\text{Sen} \theta_{st,lk(j)}^* \cdot \pi_{Sst,lk(j)}^* \end{array} \right) \cdot \frac{V_{st,i}^* V_{st,j}^*}{tp_{st,lk}^*} \text{Cos}(\delta_{st,i}^* - \delta_{st,j}^* + \text{sp}(\alpha_{st,l}^* | i)) \\ & + \left(\begin{array}{l} \pi_{\rho st,i}^* - \pi_{\rho st,j}^* \\ -\text{Cos} \theta_{st,lk(i)}^* \cdot \pi_{Sst,lk(i)}^* \\ +\text{Cos} \theta_{st,lk(j)}^* \cdot \pi_{Sst,lk(j)}^* \\ -\pi_{FAst,lk(i)a(i)}^* \\ +\pi_{FAst,lk(j)a(j)}^* \end{array} \right) \cdot \frac{V_{st,i}^* V_{st,j}^*}{tp_{st,lk}^*} \text{Sen}(\delta_{st,i}^* - \delta_{st,j}^* + \text{sp}(\alpha_{st,l}^* | i)) \end{aligned} \right]$$

<Example of a Bad Illustration>

Some Examples



CONSTRUIAMOS FUTURO

BENEFIT/COST RATIO FOR AN EXPANSION OPTION

$$A_{lk} = - \frac{\sigma_{lk}}{IA_{lk}}$$

Sensitivity of the total annual operation cost with respect to the installation of the expansion option of type k in the corridor l [\$/]

Annuity equivalent to the cost of the transmission expansion option of type k in corridor l [\$/]

<Example of a Good Illustration>



CONSTRUIMOS FUTURO

Fin de la Presentación

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