Visualizing Information for Advocacy

An Introduction to Information Design

This manual offers an introduction to information design. It is intended to provide NGOs with a useful and powerful tool for advocacy and research.

The manual was written and designed by John Emerson, Principal at Apperceptive LLC. http://backspace.com, http://apperceptive.com

It was coordinated and produced by the Tactical Technology Collective. http://tacticaltech.org

Thanks to Caroline Kraabel, as well as Colleen Macklin, Jane Pirone and Jesus Farcierth of Parsons the New School for Design for their comments and help.

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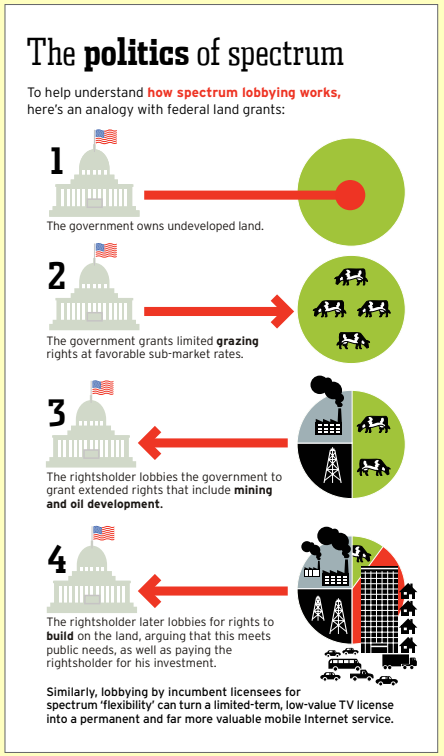
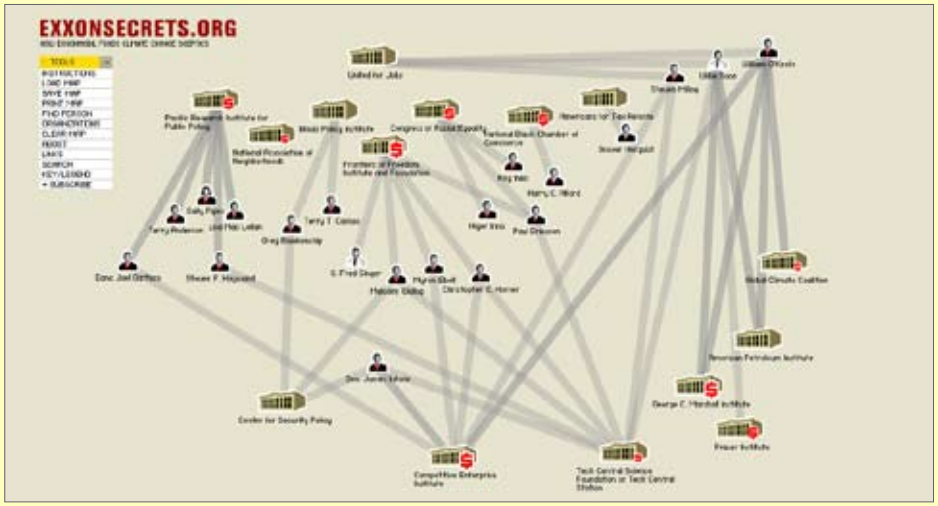
» On the cover: Illustrations designed by Nigel Holmes for the *Citizens Guide to the Airwaves* use different types of land use as a metaphor for how the U.S. government mismanages licensing of the public radiofrequency spectrum to private corporations. See pages 36 and 37 inside for more on this example.



Contents

Just Vision tells the stories of Palestinians and Isaelis working together for peace. Instead of presenting a single account of the history of the conflict, the site hosts a collaborative, subjective timeline composed of personal recollections. See http://justvision.org

A project of Greenpeace, Exxon Secrets charts funding by the Exxon Foundation to institutions and individual "climate change skeptics" working to undermine solutions to global warming and climate change. The interface makes it easy to visualize and navigate the research. See http://exxonsecrets.org



Introduction

Advocacy organizations tend to collect a lot of information.

They often package this information into detailed written reports. While these reports support policy recommendations and are valuable reference tools, they may not be the most effective way to make an impact within a campaign.

We live in an information-rich environment and in our daily lives constantly receive messages conveyed through design. Many of these messages seek to influence as well as inform, serving a variety of commercial and non-commercial interests. How do you make your message heard?

Your campaign has vital information on an urgent issue.

How do you tell your story effectively?

How can NGOs make their messages as attractive and compelling as other, competing, information?

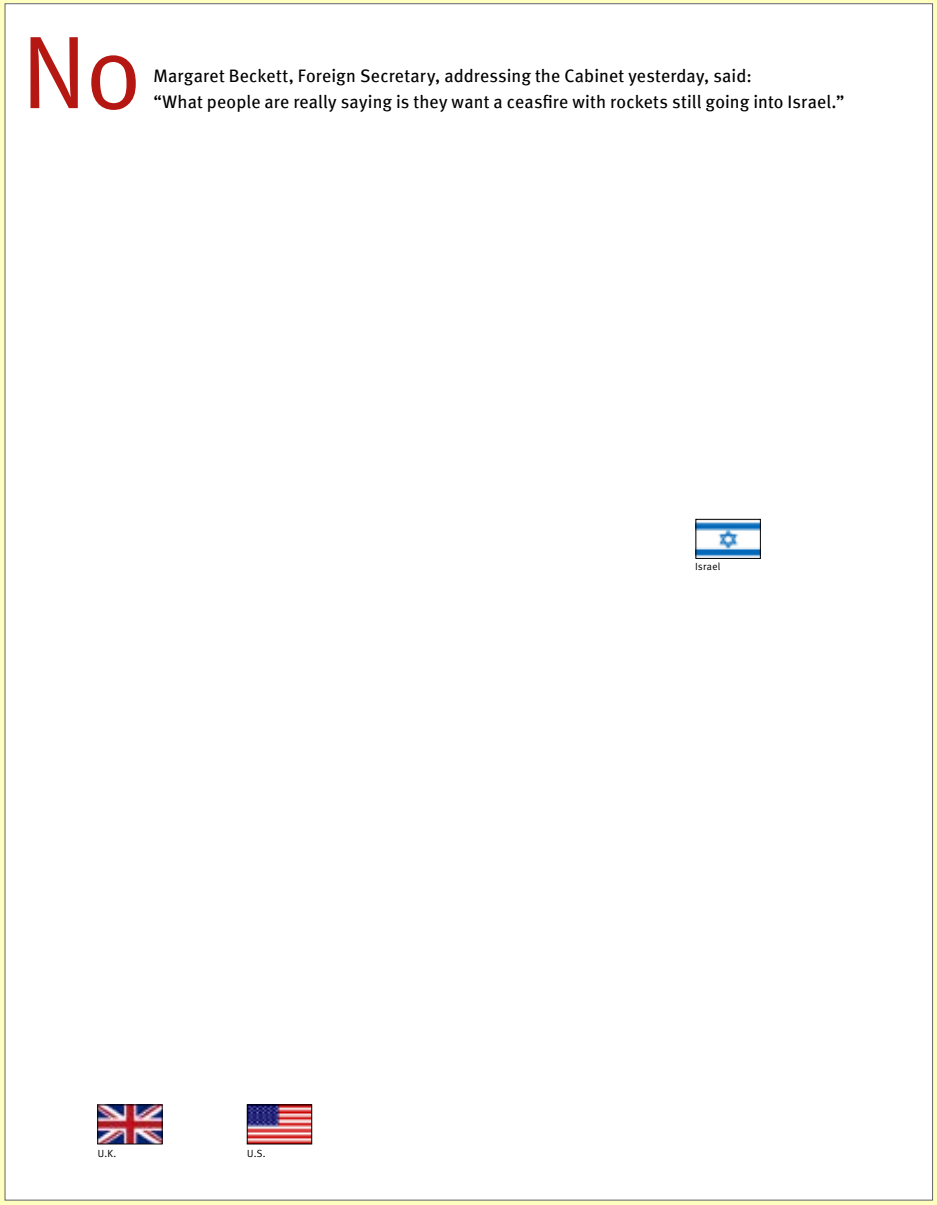
By using information design.

Information design can help tell your story to a variety of constituencies. You can use it as an advocacy tool, for outreach or for education. You can facilitate strategic planning by making a visual map of a given situation.

This pamphlet is divided in two parts: first an overview of information design, what it is and how it can be used for social change, followed by some basic principles, tips and advice to help you get started.

The examples included in this pamphlet were made by advocacy organizations, media companies and individuals around the world. The graphics show some of the many ways information can be designed and how information design can be used in your campaign.

Middle East Crisis: Who backs an immediate cease-fire?



This editorial information graphic ran on the cover of the *Belfast Telegraph* in July 2006. It dramatically illustrates the world reaction to the Israeli bombing of Lebanon.

At a glance, it effectively shows the stark contrast between the majority and the minority — and invites examination of the relationships between the countries in the minority.

What is Information Design?

Information design uses pictures, symbols, colors, and words to communicate ideas, illustrate information or express relationships visually.

Effective design is not just a matter of making text pretty or entertaining, but of shaping understanding and clarifying meaning.

Information design adds *seeing* to reading to make complex data easier to understand and to use.

It can help illustrate complexity, showing relationships between ideas or actors, or providing a snapshot of changing systems.

It takes many forms and appears in many media. Some familiar forms include charts, graphs, maps, diagrams or timelines. These can be big or small, simple or complex, published in print or electronic media.

Information design can help you present your information in a clear and compelling way, persuasively convey facts or ideas or discover something new in your data.

Information Design Tells a Story

Information design tells a story with pictures.

It can tell "how many?" "when?" or "where?" It can show trends over time, compare elements or reveal hidden patterns.

Information design brings form and structure to information.

It is not the same as graphic design, nor is it only about making something aesthetically pleasing. It's not about branding, style, making a glossy product or something that looks "corporate."

Information design is about making your data:

Clear

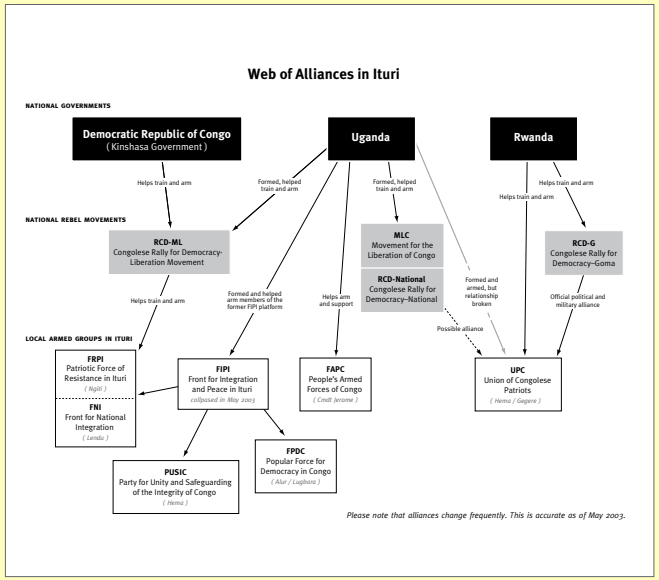
It makes complex information easier to understand.

Compelling

Visuals grab people's attention.

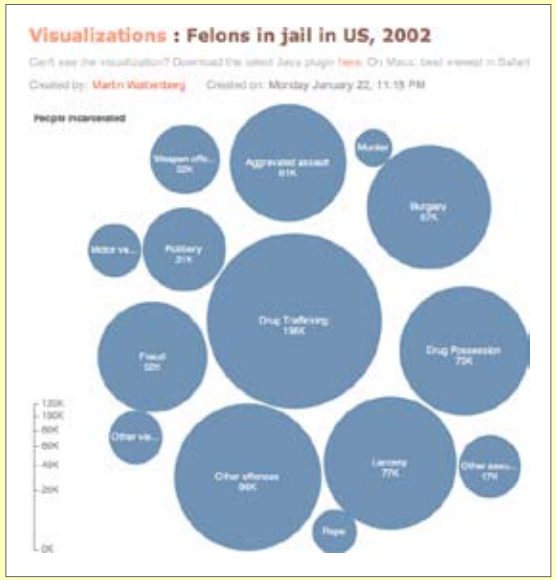
Convincing

People who might not be persuaded by raw numbers or statistics may be more likely to understand and believe what they see in a chart or graphic.



The July 2003 Human Rights Watch report *Ituri: "Covered in Blood," Ethnically Targeted Violence in Northeastern Congo* implicates national governments in local violence.

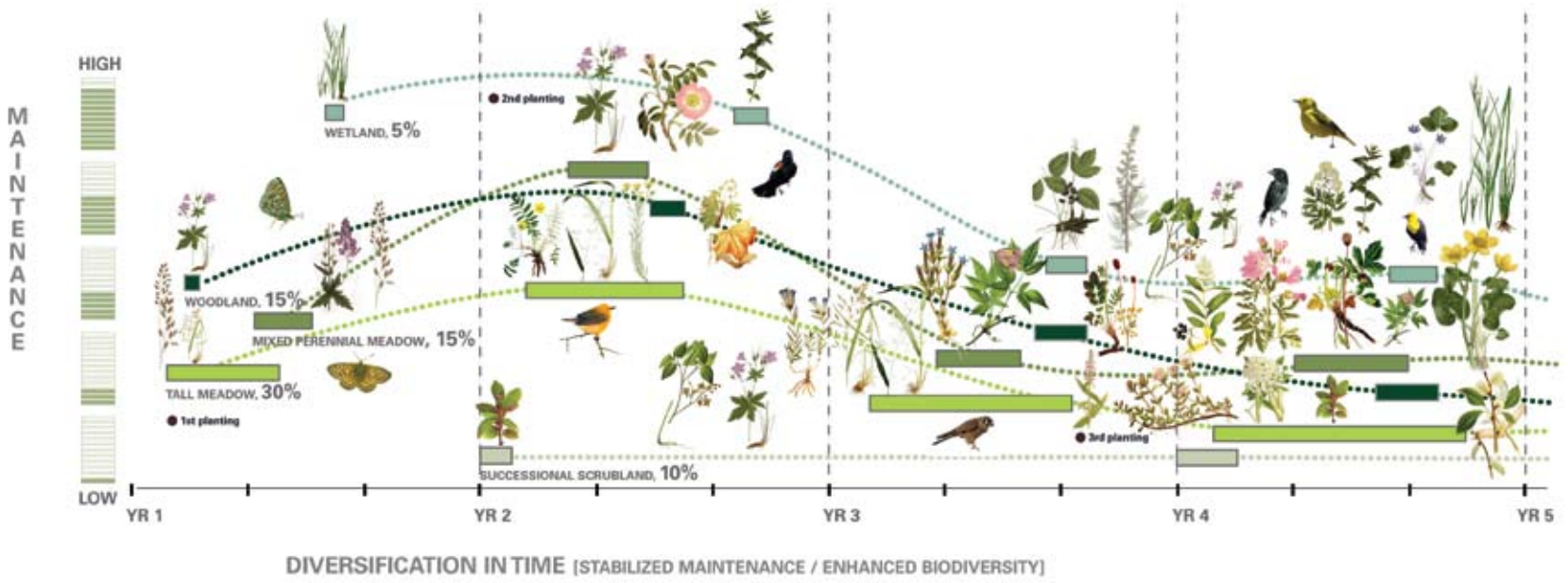
The accompanying diagram illustrates government relationships, trade, and training of armed political groups in Ituri.

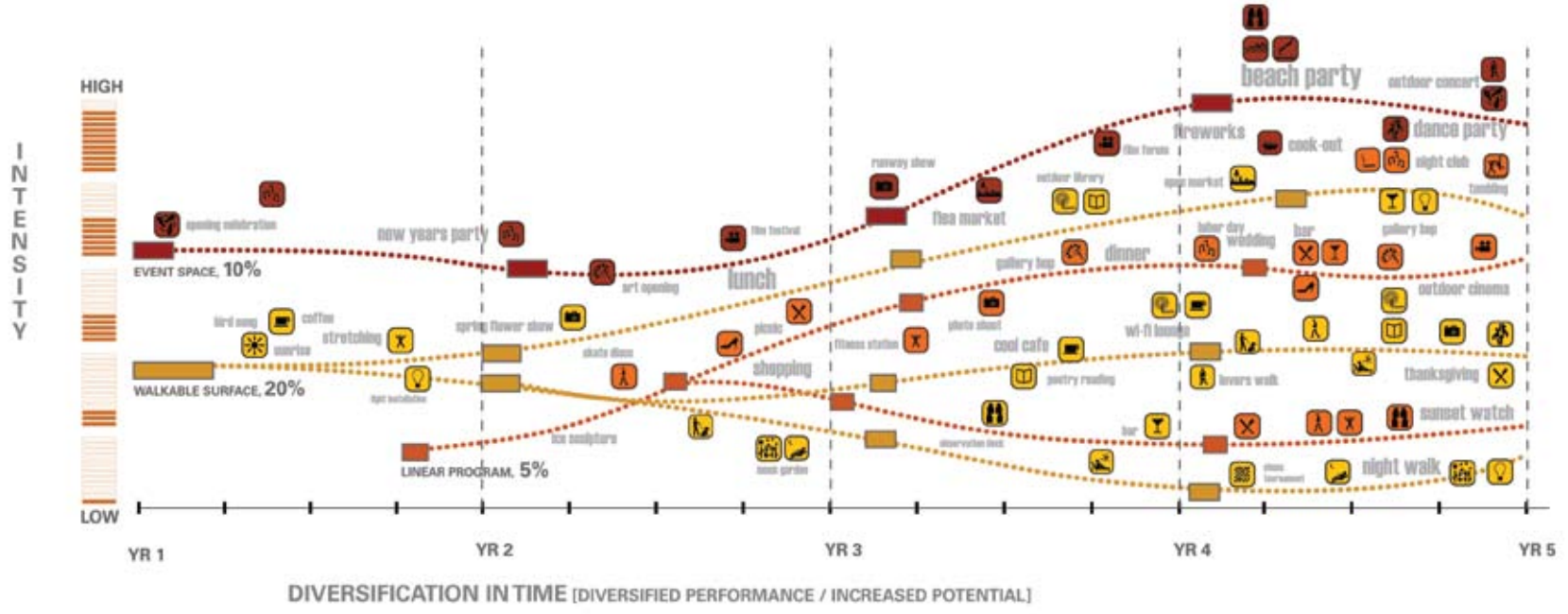


This graph generated on the web site Many Eyes shows the large number of prisoners jailed on drug-related charges in the United States.

It allows the reader to compare the number of people jailed for drug charges versus those jailed for other offenses.

It reveals the disproportionate impact of drug laws, and points to a failure of mandatory sentencing legislation.





The Highline is an abandoned elevated-train railway which runs along the edge of New York City. The railway was neglected for decades and was slated for demolition when a coalition formed a campaign to save the unique structure and convert it into an innovative, elevated public park.

As part of its strategy, the coalition to save the Highline held a series of open meetings where they used a wide variety of photos, illustrations and diagrams to present the audience, the media and public officials with a vision of how the park could be revitalized and developed.

The two timeline graphics shown here were a part of these presentations. Designed by the landscape architecture firm Field Operations, the graphics artfully evoke the evolution of flora and fauna, and public usage, over the course of four years.

After years of campaigning, the coalition has successfully won the legislative and financial support needed to save the Line and start converting it into 1.5 miles of new public space.

How Can You Use Information Design?

Here are just a few ways you can use information design:

Tell Your Story

- To your constituencies
- To funders
- To government officials
- To the media
- To other organizations
- To the general public

Analyze Your Data

- Discover hidden patterns
- Find trends in changing systems

Make a Plan

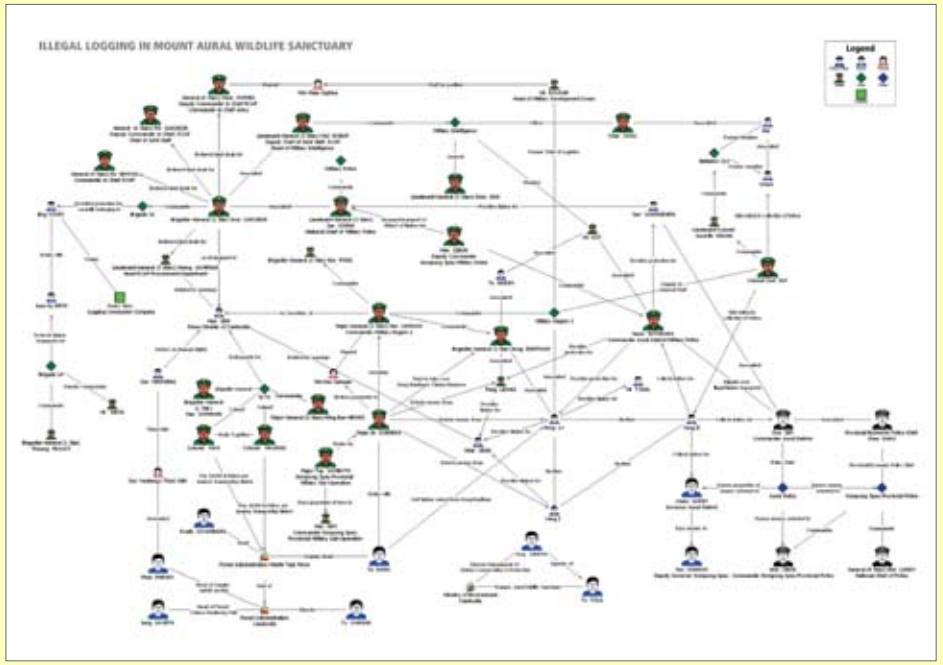
- Analyze relationships of power
- Illustrate social networks
- Find out where your issue has the most impact
- Project future trends

Make Information Visible

- Show influence and causality
- Illustrate the consequences of specific choices
- Compare and contrast

Simplify and Clarify

- Illustrate analysis of an abstract idea
- Show the flow of a process or changing system
- Make your conclusions visible and easy to navigate
- Show structure and order in apparently chaotic data



The 2004 Global Witness report on corruption and extortion affecting Cambodia's forest sector, entitled *Taking a Cut*, uses two different types of graphics to provide an overview of individuals with command responsibility and personal relationships with illegal logging syndicates. ⌃⌃ The chart above illustrates specific relationships between individuals. ⌄⌄ The list view presents the officials in order by rank from the National Government to the Military to the local police and local Government. Six months after being implicated in the report, the World Bank announced an investigation of its Forest Concession Management and Control Pilot Project in Cambodia.

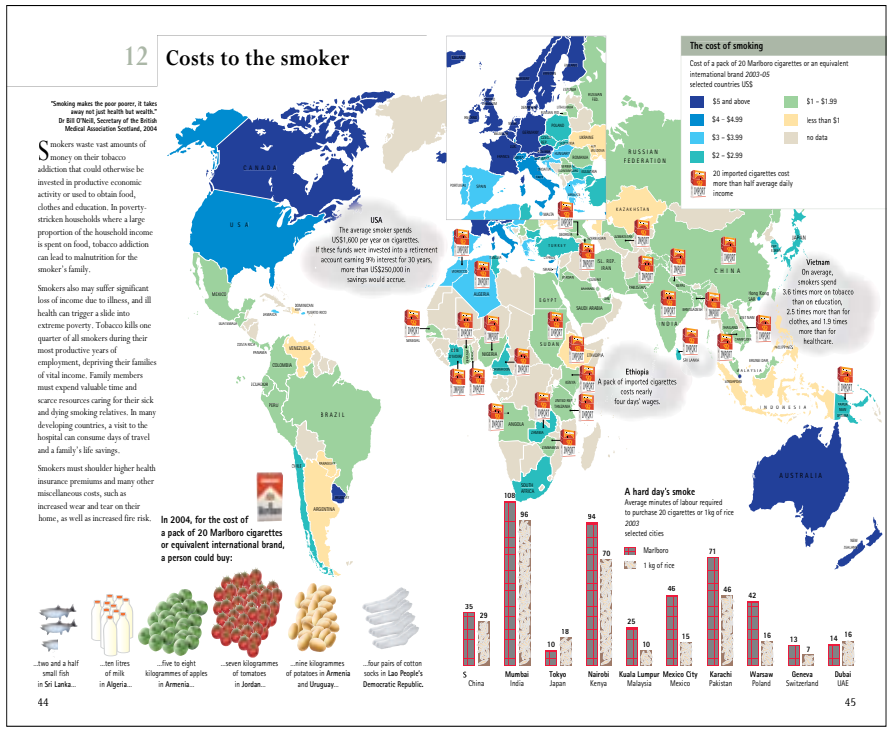
Download the complete report at http://globalwitness.org

Information Design for Advocacy

In a campaigning context, information design can transform raw data into a powerful advocacy tool to motivate an outcome.

Graphics can tell your story in a compelling, immediate and powerful way to move your intended audience. Information design can simplify and summarize a complex story — and add impact.

Information design should be considered within your overall strategy for achieving policy change or increasing awareness. When and how you use information design will depend on the information you want to convey and the context in which you work.



The Tobacco Atlas is a publication of the World Health Organization designed to influence national policy. The map contextualizes data to give it more impact. It shows places in the world where the cost of 20 cigarettes is higher than half an average days income and compares the cost of a packet of cigarettes to locally available produce. See http://who.int/tobacco/statistics/tobacco_atlas/en/

Information Design for Analysis

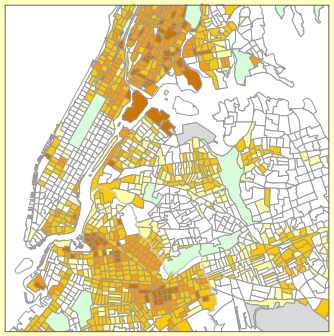
Information design can be integrated into the research process by illuminating data visually, or providing a neutral platform with which to identify trends or targets.

Translating data into a visual format may help reveal patterns that might not otherwise be apparent. Representing data visually on a chart or graph can reveal wider trends and unexpected clusters around specific demographics, geographies or time-periods.

Using information design to examine larger networks and systems can complement and provide context to individual case studies and testimonies.

Mapping Poverty in New York City

From a case study produced by the Community Mapping Assistance Project (CMAP):

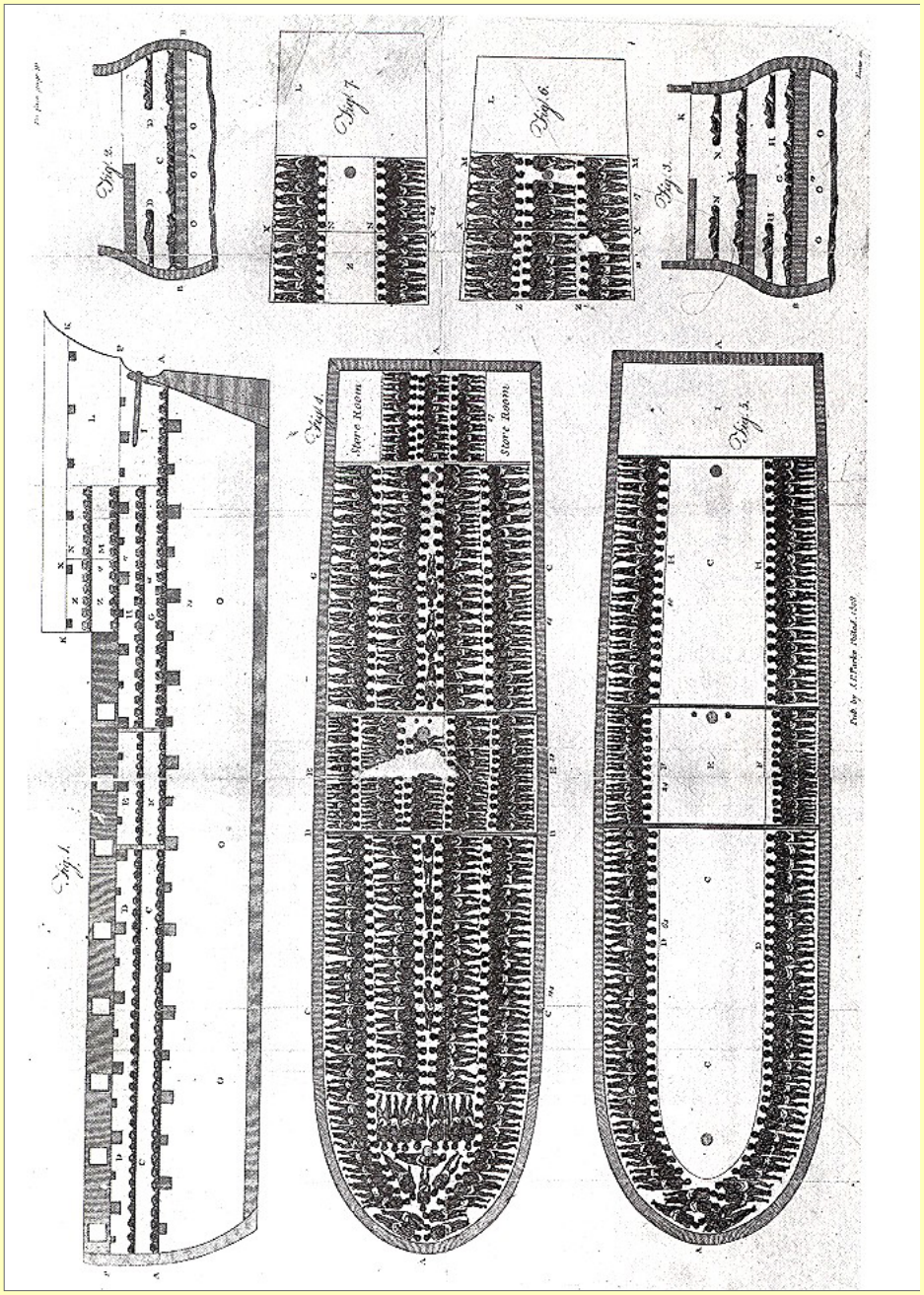


"[The Robin Hood Foundation] used CMAP's expertise with Census data to identify which of many possible measures of poverty would best reveal the answers they needed. Next, CMAP staff organized the data in the ways most relevant to the foundation's planning process, including breakdowns by age, race, ethnicity and single parent household. Finally, CMAP produced a series of maps for study and display that illustrated the geographic relationship between the foundation's current funding sites and current patterns of poverty.

What the maps revealed was striking, prompting Robin Hood to initiate a major redirection of resources. The maps enabled the board to visualize the complexity of focusing Robin Hood's grants where in the city they can do the most good. In addition to their use in planning, the maps have become a vital tool for orienting staff and donors. They visually convey complex information to all kinds of people, making the point forcefully and immediately. As a result, Michael Weinstein says, program officers 'don't even talk to me about a new project unless it starts with Bed-Stuy, or one of the other high poverty areas where we need to increase our impact.'"

Source: http://www.cmap.nypirg.org/case_studies/CS2/robin_hood_case_study.pdf

Historical Examples of Information Design and Advocacy



Information design is not a new communication technique. These historic examples, from campaigns for social change, show information design applied to analysis and advocacy respectively. In both cases, information design was used to tell a powerful, persuasive story on behalf of a cause.

» In 1859, physician John Snow mapped deaths from a devastating cholera outbreak in London to determine its cause. Snow gathered data by talking to local residents. His map revealed a pattern of infections around the Broad Street water pump. Despite skepticism, he collected enough evidence to prompt officials to shut down the pump, after which the epidemic quickly ended. Snow's work promoting the idea that the disease was spread through contaminated water became a major turning point in the history of public health.

« Thomas Clarkson's 1786 "Essay on the Slavery and Commerce of Human Species" influenced the abolition movement in England. This diagram shows how hundreds of enslaved Africans were crammed into ships. The image and accompanying description of the conditions shocked and appalled readers. The slave trade was abolished in British empire by the Slave Trade Act in 1807.

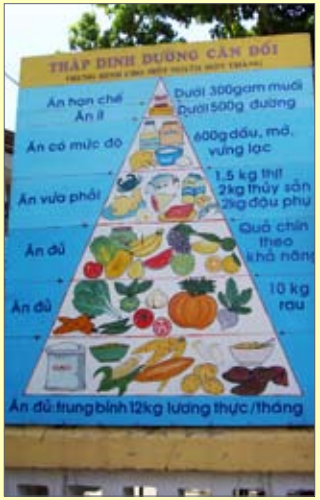
The images clarify key concepts in an experiential, and in the case of the slave ship image, highly emotional way. These two examples show how vital information can be presented powerfully and accessibly. They also remind us that strong design does not require high technology or expensive computer software.

Information Design for Consumer Education

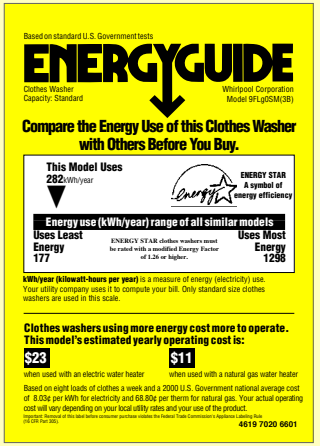
Information design acts as a force for change when making information visible at the point of action.

For example, consumers change their purchasing decisions when presented with informational graphics about a product's health impact, energy efficiency or other long-term costs.

» The food pyramid is a classic information graphic promoting public health. The graphic makes it easy to understand the relative quantities of food types required for a healthy diet. Shown here, a painted mural at a school yard in Hue, Viet Nam.



» » The Hannaford Brothers chain of markets in the U.S. rate the health benefits of the foods on their shelves with a system called Guiding Stars.



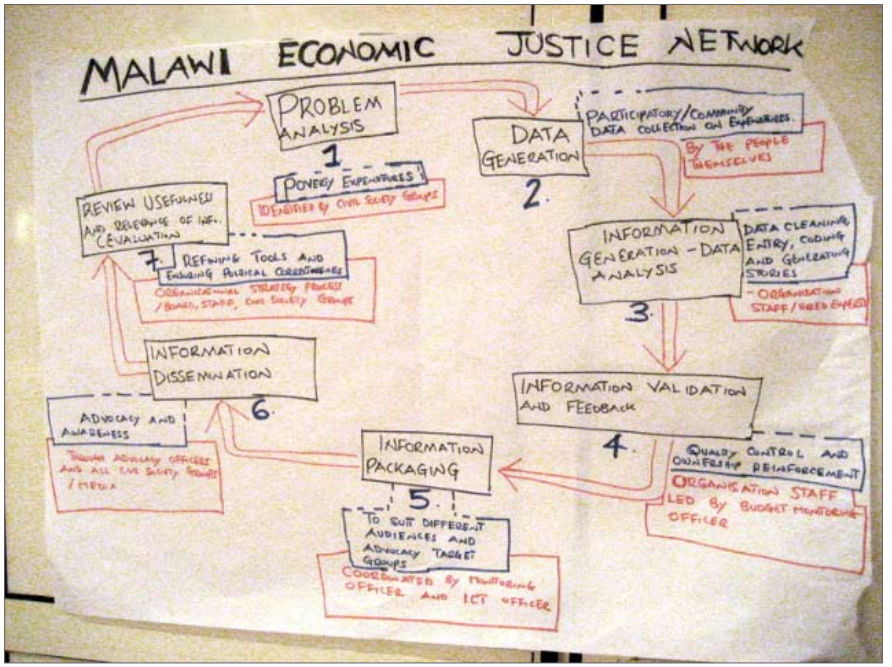
» Labels designed by Burkey Belser for U.S. government agencies inform consumers at the point of purchase about energy efficiency and nutrition.

Information Design for Strategy

NGOs can also use information design *internally* to help with their planning and self-assessment.

For instance:

- Mapping places and issues of significance can help groups to pinpoint where and how they should focus their efforts.
- Creating diagrams of advocacy targets and constituencies, and of their relationships, can help to illuminate strengths and weaknesses and thus how best to organize supporters or apply political pressure.
- Charting the flow of information within an organization can reveal bottlenecks and opportunities.



In a September 2006 workshop, members of the Malawi Economic Justice Network made this map of information's life-cycle in their campaign, in order to identify how information flows through their organization.

Tactical Mapping for Analysis and Planning

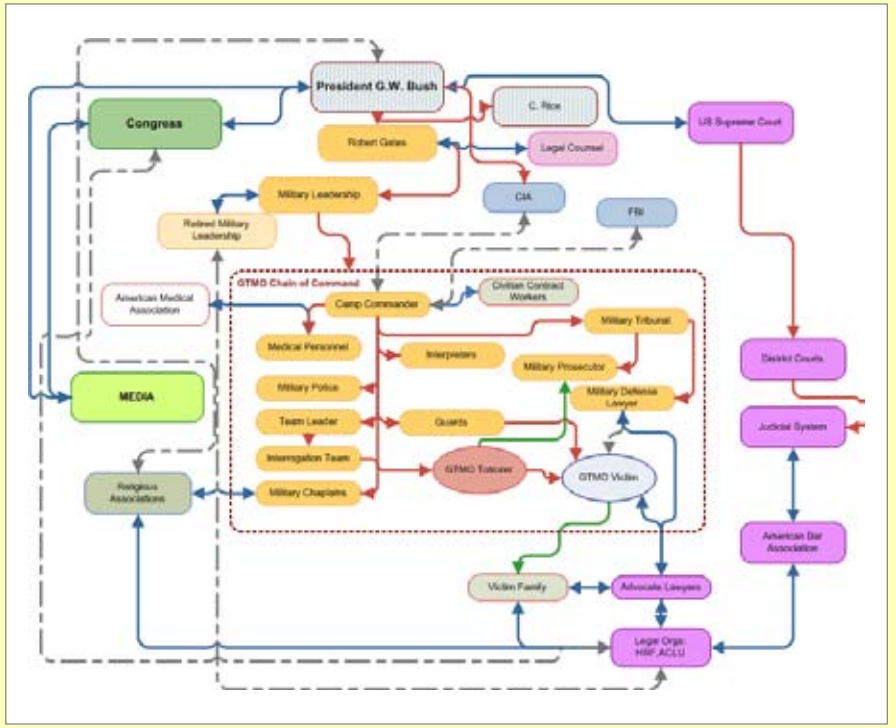
Tactical mapping is a visualization exercise used to analyze circumstances surrounding an issue and to form a strategic plan.

Tactical maps clarify the relationships between the parties in a given situation. They can be used to identify:

- Which key relationships need to be affected to move your strategy forward
- What tactics are currently being used or potentially available
- How these tactics might affect key institutions, relationships, social groups and contexts that you want to target
- Which key groups, relationships or contexts are not affected by current tactics
- What tactics might be brought into play to engage targets that are not currently affected
- Who are your potential allies for building a more comprehensive and effective strategy

A tactical map on domestic violence in the process of being created.

Sticky notes and marker on a white board provide a flexible, changeable surface on which to develop a map in progress.



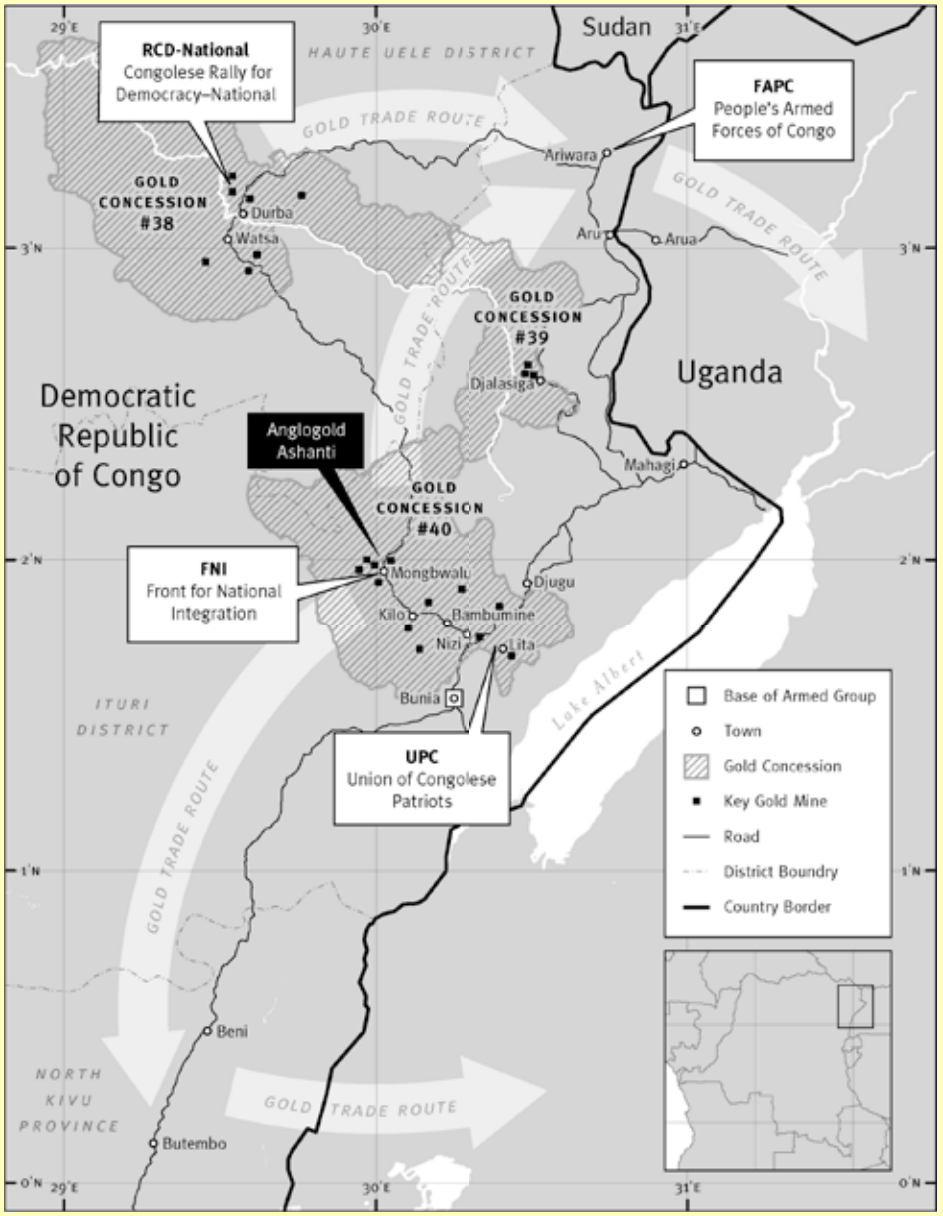
Tactical map on torture by U.S. military in Guantamo Bay.

To create a tactical map, start by identifying a human rights issue. The affected community is drawn in the center. From there, identify the individuals and organizations that affect the situation. Then draw direct and indirect relationships, with arrows showing who has influence over whom. Identify your allies and opponents.

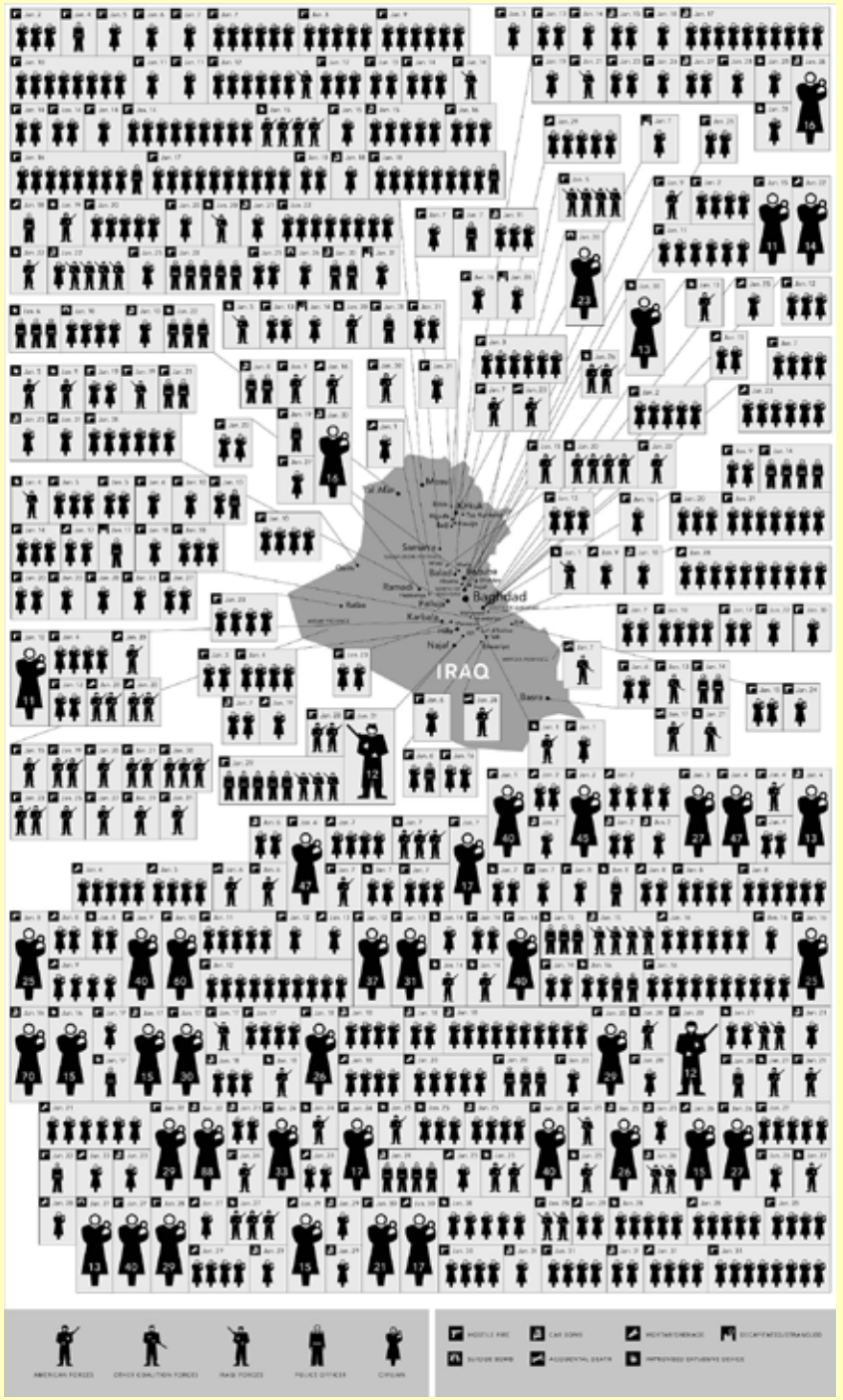
With this in place, you can start devising a strategy. Examine what connections and resources you already have. With a strategic goal in mind, you can determine tactics you have access to or would like to explore.

Both paper and interactive versions of the map allow the users to manipulate the map dynamically, changing and moving actors to visually represent different relationships and scenarios.

For more information on tactical mapping, visit http://www.newtactics.org/main.php/TrainingTools



In 2005, the Human Rights Watch report *The Curse of Gold* documented how the gold trade fueled massive atrocities in northeast Congo. It included the map above, which illustrated the relationships between local paramilitary groups, international corporations benefitting from access to gold rich areas, and local towns where people suffered from ethnic slaughter, torture and rape. See http://hrw.org/reports/2005/drc0505/



This graphic, designed by Adriana Lins de Albuquerque and Alicia Cheng, ran in the *New York Times* in February 2007 to illustrate Iraqi civilian deaths in the month of January. The figurative depictions give a better sense of the magnitude of the tragedy than would a simple list of names or numbers. The use of the map illustrates the lack of safety and security across the entire country during the U.S. occupation.

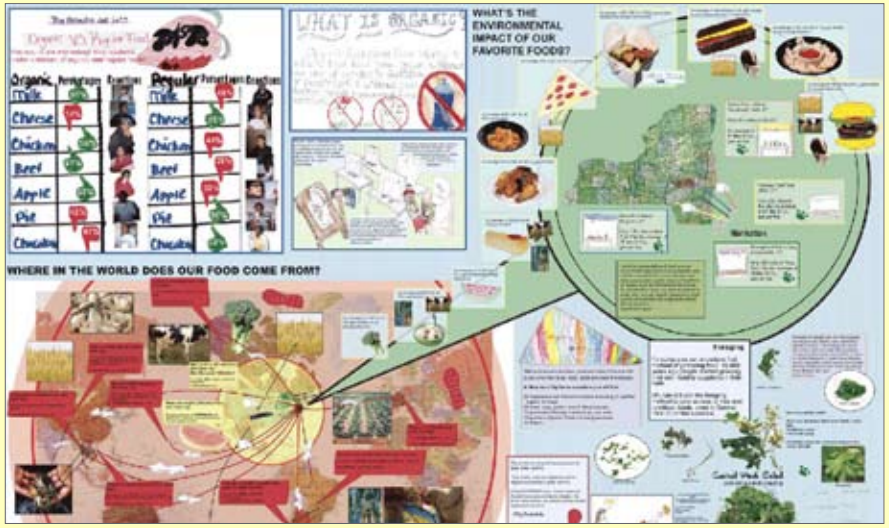
How to Begin

There are many ways to tell a story or to present data. How do you know what kind of presentation to use?

The main thing to consider is: how will your information design be used?

Is it for planning? Or advocacy? Are you trying to tell a specific story? Or are you trying to create a more neutral map to guide a process of discovery?

Keeping your purpose in mind can help guide your development process as well as your decisions about the most effective format and medium. The following pages focus on practical tips, suggestions and things to bear in mind when creating your information design.



The design process itself can be as illuminating as the final product. Students in New York City worked with artist Amanda Matles and the Center for Urban Pedagogy to investigate and map the sources of their favorite snacks and the resources required to bring them to their neighborhood in East Harlem. The conclusion? That kids can reduce their environmental impact by buying foods grown close to New York City. See http://anothercupdevelopment.org/projects/detail/41

Planning Your Information Design

What kind of data is best presented as a chart, as a diagram or as a map?

Maps are useful for showing spatial issues or locations. Charts are useful for showing quantities and trends over time. Diagrams and flowcharts may best illustrate processes or relationships.

How do you know what information to focus on and what to exclude?

Some key questions are:

- What story do you want to tell?
- To whom?
- How do you want to reach them?

What is your overall strategy for change?

Consider your overall campaign — and how your information graphics fit within the context of your communications strategy and overall advocacy campaign.

What is your desired outcome?

Determining this will help determine who your audience is, and what you want them to do.

What will move your constituency or target?

Consider the story you are telling as well as the tone, style, and format of your message. How it will be read by your target audience? Does your audience have a prior interest in your subject or are you trying to reach a new audience?

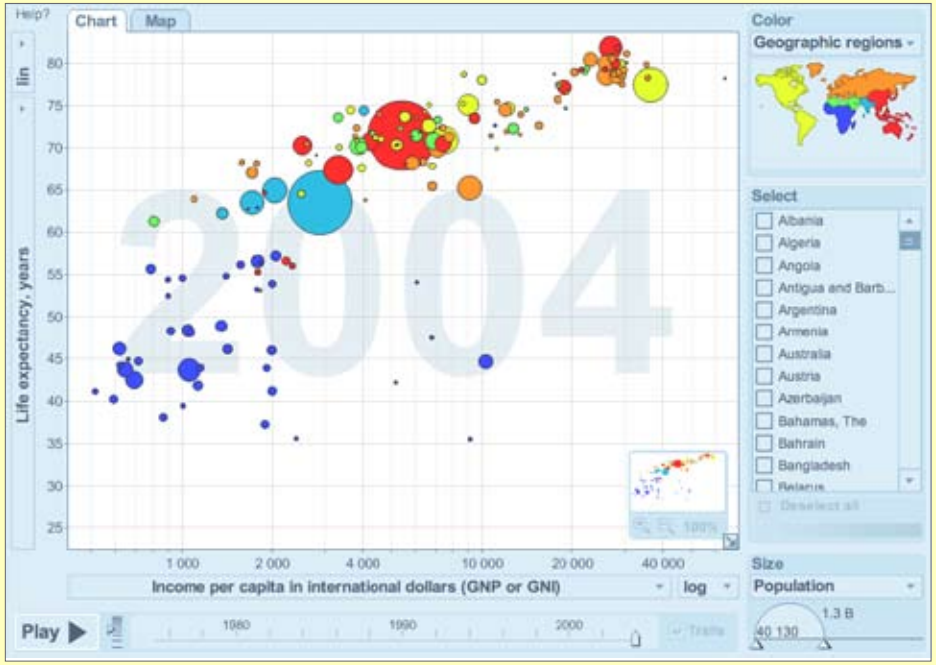
Different audiences may respond better to different graphic treatments — for example a campaign targeting youth, a rural population or government officials.

Design for your audience, not for you.

If your audience doesn't get it, it's no good for you. Identifying your audience will help determine the tone of your language and the format of your publication.

A user-centered design process starts with lots of questions, rather than answers. The key is identifying the user's perspective at the outset.

Don't let your design reflect your institutional structure or bias. Design has a tendency to reflect bureaucracy, especially in NGOs.



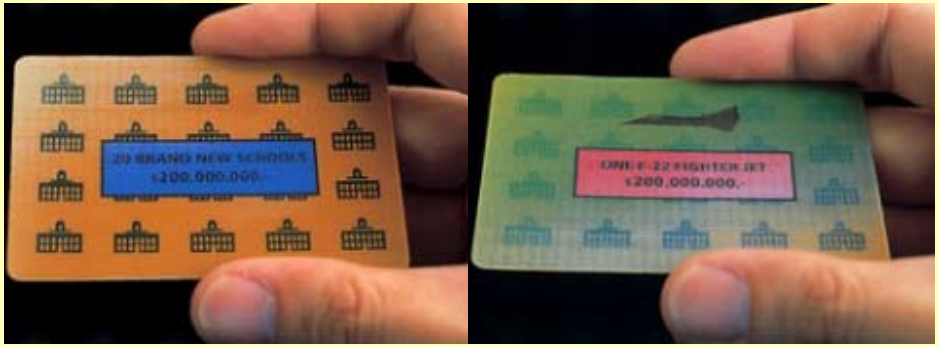
Gapminder is a non-profit venture in Sweden developing software tools to visualize human development. The interactive Flash application displays statistics from the UNDP Human Development Report. Animated charts help show trends over time; for instance seeing the rich getting richer while the poor grow poorer.

The bubble plot above displays several kinds of data at the same time. The vertical and horizontal axes compare income per capita and life expectancy. The size of each population is represented by the size of the relevant bubble. Colors on the bubble chart correspond to geographical regions, below. See http://gapminder.org.

Direct Visual Comparison to Illustrate Contrast

» In September 2006 Amnesty International published satellite images of the Porta Farm settlement in Zimbabwe to show the destruction of more than 850 houses and structures, practically all of which are absent from the center image.

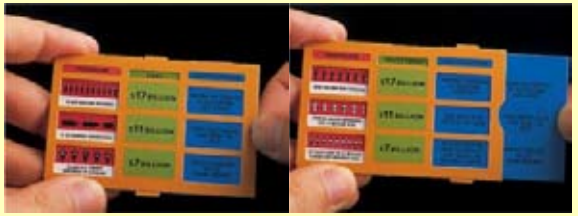
The third image indicates the center points of the destroyed structures.
See http://news.amnesty.org/pages/zwe-080906-news-eng. Images © DigitalGlobe, Inc.



Interactive, printed cards for a campaign by TrueMajority examine the enormous budget of U.S. military and reveal how the money could be better spent. The campaign urged Congress to reallocate 15% of military budget to education and health care. The cards were designed by Sagmeister, Inc.

« The image on the card above changes as it is turned and viewed from different angles. The images compare the number of schools that could be built for the price of a single fighter jet.

» Pulling the blue card to the right reveals a second layer of pictures and text, describing an alternative budget.



Assessing Your Data

What information should I collect?

Do you have what you need to tell your story? We require a context to understand the meaning and importance of facts. It's often easier to remember a story than to remember raw data.

What types of information do I have?

Information design can illuminate quantitative or qualitative data.

Do I have information worth using?

One way to assess this is to try to put yourself in the place of your audience. Is your information persuasive?

What is my key message or desired outcome?

Are you trying to project a holistic picture of a situation? Or one specific aspect of it? You may not need to include everything in a single graphic. It may be more effective to create multiple graphics.

What can I leave out?

Prioritize the importance and usefulness of your data. What is the key message, what is the most important thing? Without sacrificing clarity, simplify and decide what to remove.

When planning your information graphics, you may discover that the data you have is not sufficient. You might need to collect additional data, for instance, if you are comparing your data to information from another source.

For example, you may have data relating to populations that you work with directly, but people in other areas might be affected as well. Taking the time to amass this additional information may improve your graphics considerably. The process of assessing your data and designing your graphics may raise useful questions about the larger geographic, demographic or policy context of your organization and your data — it may even extend the scope of your work.

Sorting and Sketching

Card Sorting

One of the first steps in organizing information according to topic or theme. Card Sorting is an exercise used by designers and information architects to help structure data in groupings that make sense.

To start, put notes on a wall describing aspects of your information. Arrange these notes freely into shapes and clusters that make sense. Rearranging these clusters should help you start to form an organizing scheme that you can use as the basis for your initial designs.

Personas & Scenarios

Now try putting yourself in the role of your audiences. Identify your various constituencies. What are they looking for? What is their point of view? What do they already know about the issue? In what context will they read your graphics? How much time do they have? Are they more likely to be reached by posters, reports, or other media? Distill this information into profiles of "typical" users. These profiles and scenarios should help inform how your design should be structured.

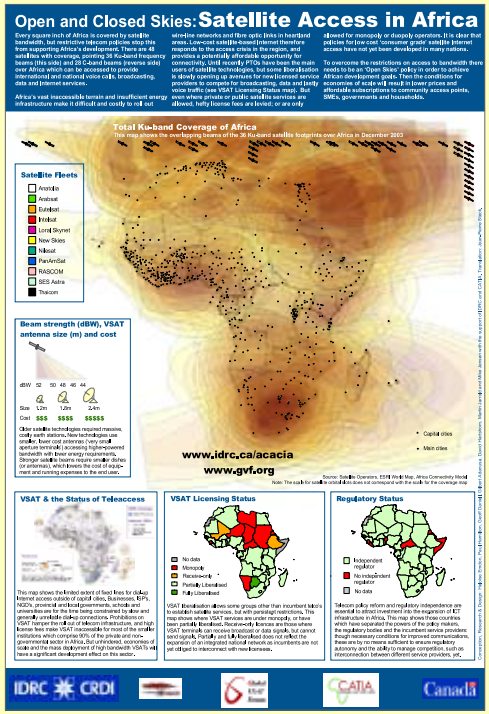
Sketching

Finally, before turning to computer software, sketch your idea on paper or on a white-board. Think in broad strokes at first, saving detail for later. Sketching out your ideas first will help you think outside the confines of the page or the screen. It will free your ideas from the limitations of your design program and tools.

Card sorting and sketching are also useful for testing your assumptions and your design with a test audience before investing time and resources in producing final, polished graphics. Testing with a rough draft allows you to make changes to your graphics quickly and cheaply, and to test several variations without having to redo expensive production work.

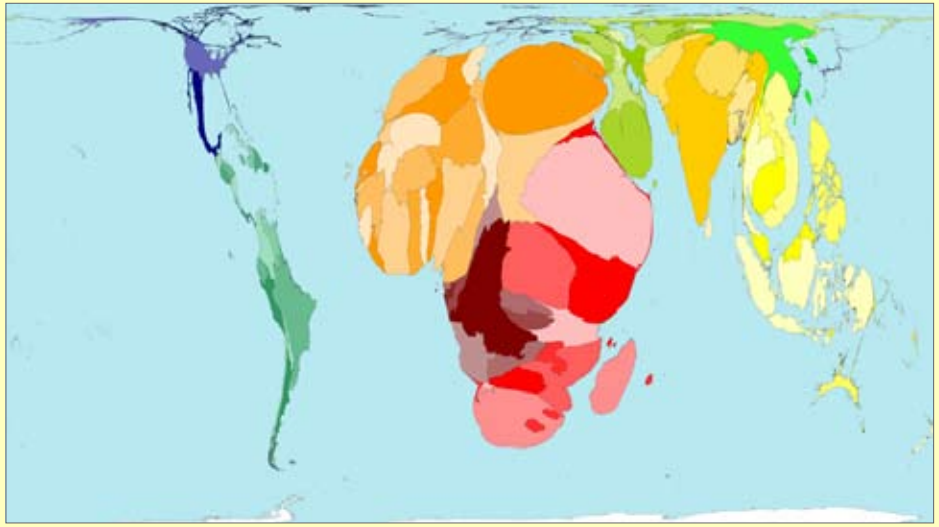
Mapping and Advocacy in Africa

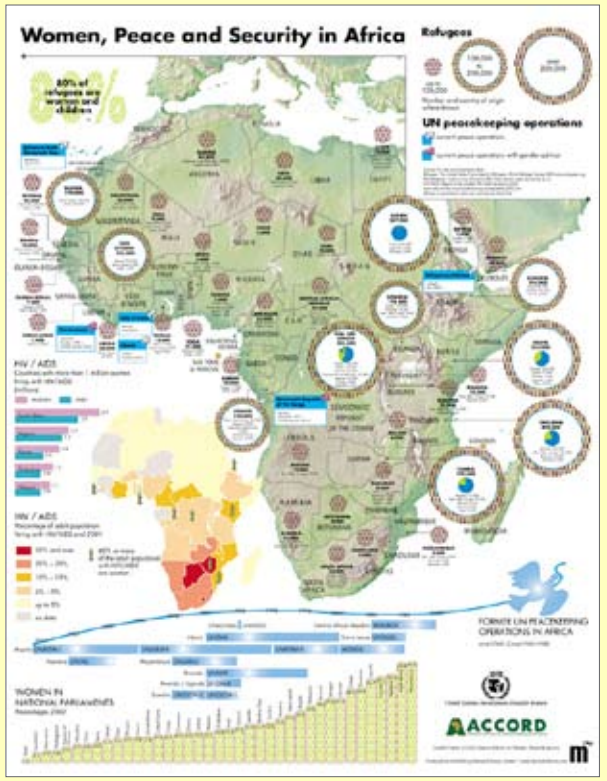
Maps are a useful way of representing data – and there are many ways to use a map.



« A map of satellite coverage of Africa published by the International Development Research Centre reveals that policy not technology holds back greater connectivity. The map illustrates the conclusion that "Every square inch of Africa is covered by satellite bandwidth, but restrictive telecom policies stop this from supporting Africa's development." See http://www.idrc.ca/en/ev-53486-201-1-DO_TOPIC.html

» A cartogram is a cross between a map and a diagram. Cartograms distort the area of a given country to represent data. Worldmapper displays a collection of cartograms illustrating a variety of economic and social indicators in dramatic global patterns. The map below shows the proportion of all children worldwide with evidence of trachoma, or "blinding disease." See http://worldmapper.org





« This poster, published by Myriad Editions for UNIFEM, charts the impact of war and peace on women in Africa, illustrating the refugee population, statistics on HIV/AIDS, current and former UN peacekeeping operations, and the growing number of women in parliament.

» The interactive map at http://kitab.nl/tunisianprisonersmap plots prisons in Tunisia with links to audio and video to expose the stories of prisoners, their cases and the brutality of the Tunisian police. The map uses Google Maps to plot the data and YouTube to host the audio and video files. The government of Tunisia is notoriously secretive about its penal system.

Assessing Your Media

What is it for? How will it be published or distributed?

Media formats vary widely in cost, reach and audience. What medium works best for your campaign, your audience and for your graphics?

Graphics that work well in one medium may not be as effective in another. Pamphlets, posters, web sites, video and other media each have their strengths and weaknesses for conveying information.

Will people be able to stop and read the graphics? Or will it fly by in a few seconds? A faster medium may require a simpler, bolder approach. A slower medium may allow for more detail and density of information.

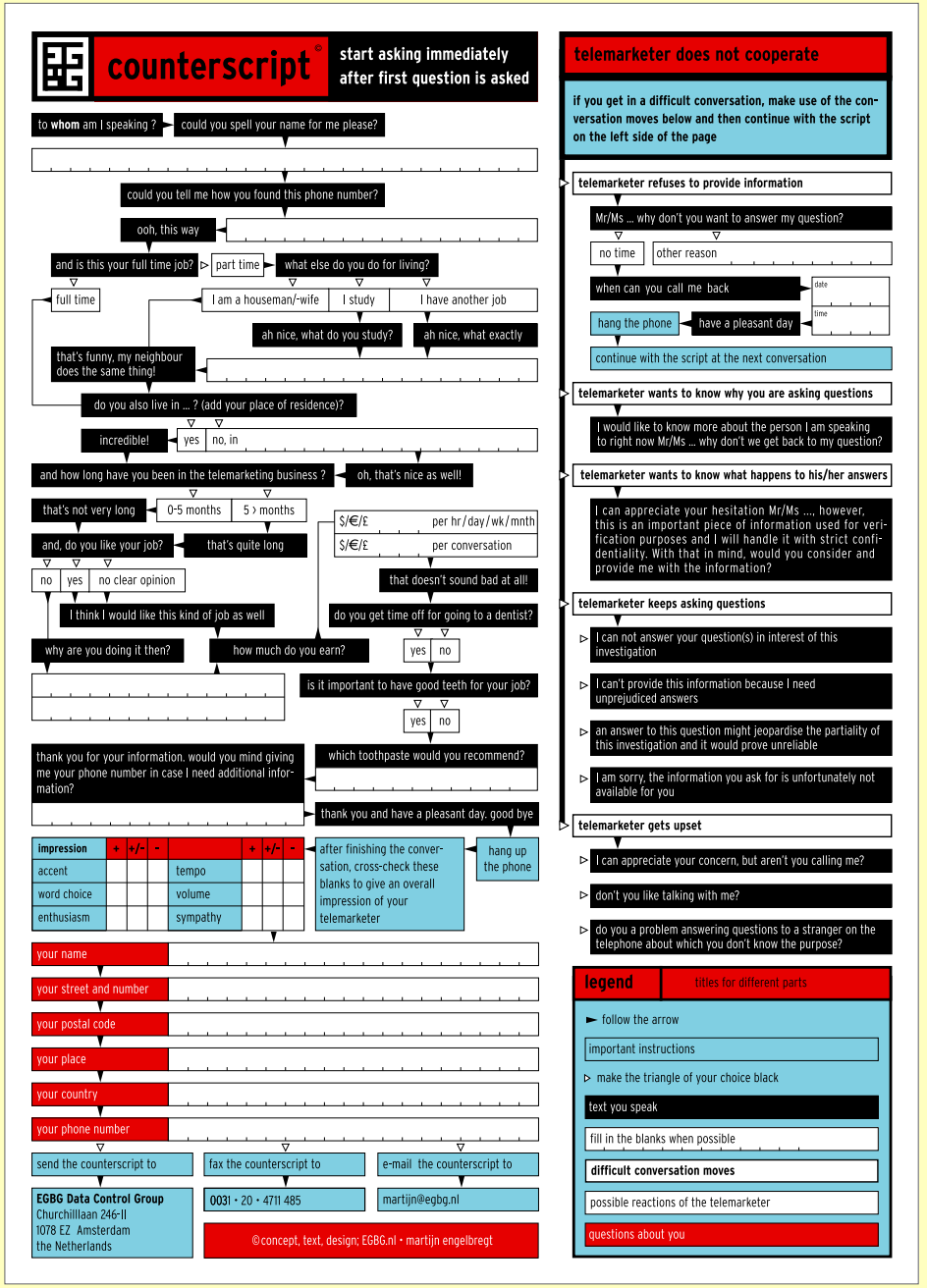
The medium in which you design your graphics is usually not the medium in which you finally publish your graphics. Information is read differently at different sizes. Colors and grays also render differently in different media. Where possible, it is always best to test your graphics in the final size and format in which they will appear.

How will your design live over time?

While graphics may be targeted towards a specific moment in a campaign, they often live on. Posters, for instance, may be ephemeral, printed quickly and cheaply to promote an event, but they can also linger on walls for days, even years. Beautiful posters are often kept and cherished, even becoming an iconic part of a movement's history. Posters illuminate the history of many struggles.

Printed reports and other publications may also have a long shelf life. With this in mind, be careful when printing web addresses that may not last as long as the document that contains them. Consider how graphics or web pages will live on.

One benefit of online information is that it can be kept up-to-date. A consequence of this is that readers may expect the data to be current. As such, it is helpful to show a visible date stamp that indicates when the page or data was last updated.



A combination chart, form and script walks the reader through the process of gathering information used to combat invasive telemarketers in the Netherlands. The layout makes the otherwise tedious task fun.

On Paper

Printed graphics can be bold and simple or complex and detailed. Print can convey more detail and provide the luxury of time for viewers to study the graphics. Print can be distributed in person at an event or location, via postal mail, or posted to the walls of an urban environment.

Black-and-white printing on paper is cheaper to produce than color, but limits the amount of visual information. Some printing methods (like photocopying) may not produce subtle ranges of grays.

Printing methods and materials also make a statement about your work and your organization. Materials and techniques — visibly cheap or luxurious printing or paper, the use of recycled paper or soy-based inks — as well as the location and conditions under which your graphics are produced are also part of the story your graphics tell.

On Screen

Television, computer screens, video and slide projectors are very different from print. Screens are generally much lower resolution than print and do not offer a large area. Larger type, fewer words, and simpler imagery work best in these media.

Depending on your constituency, publishing on the Internet may have a broader reach than printed matter, though this requires web access to publish and does assume a web-connected constituency.

Both the sequence of screens and the printed pages of a brochure or book can selectively reveal information bit by bit over time to build your story progressively. However, the web also makes it possible to design interactive graphics that allow users to explore your data in a non-linear sequence, or perhaps to filter the information they are accessing. The addition of audio to interactive or video graphics creates a more immersive and emotional experience.

Posters and Stickers

The size of your final publication also determines the amount of information you can convey. Smaller formats like postcards and stickers may be cheaper to print and easier to distribute than larger formats. Given the smaller format, images should have a very simple and direct message.

Posters provide the luxury of space to display a range of information and fine detail. Posters may also be viewed from a distance as well as close up. This provides an opportunity to catch readers from afar and draw them in. This is not a reason to fill the space with information, but rather to consider the hierarchy implicit in your material and how different levels of information will be revealed as your reader approaches.

Information can be conveyed through the context of a design. This campaign promoting breast cancer awareness in Brazil placed stickers on fruit reading "You see? It is easy to do auto-examination." The sticker makes an analogy between self-examination and how shoppers routinely examine fruit. The campaign was developed by the advertising agency JWT for Hospital do Cancer, Sao Paulo.

Designing Your Graphics

Innovative design ideas come from embracing your constraints. Being obliged to adjust your graphics to your medium of publication, budget and technology of reproduction may lead you to discover unexpected opportunities.

Color

While color can be used to convey additional layers of meaning and emotion, black-and-white may be more cost-effective and more readable at high contrast. Color also disappears when photocopied or printed in black-and-white. When designing your graphics, consider using contrasting thicknesses, tints, line styles or shapes first, before considering color.

You don't have to use all the colors of the rainbow. Instead, choose a limited color scheme that relates to your data. Make sure colors vary in intensity, not just hue — some of your readers may be color-blind.

Typography

Use text in a way that makes it readable. Placing text over a patterned background or photograph is a difficult art. Use headlines that draw the readers' eye and entice them to read more.

Structure

The way information is presented and organized is as important as the content. What information is presented first? How will your reader's eye move across the design? Structure your design so that the most important information is the most prominent. Consider using a visual hierarchy to capture the reader's attention and direct it across the page. Most people start reading at the top of the page and move in the direction their language is read.

Elements

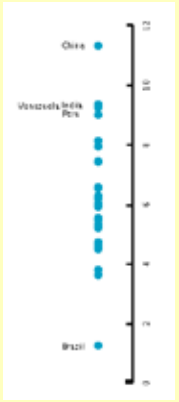
The style of your elements can convey meaning. Objects can be differentiated by size, color, pattern, and placement. However, too many styles may clutter the page. Thin lines are generally preferable to thick lines, which may compete with text and other information.

Technology

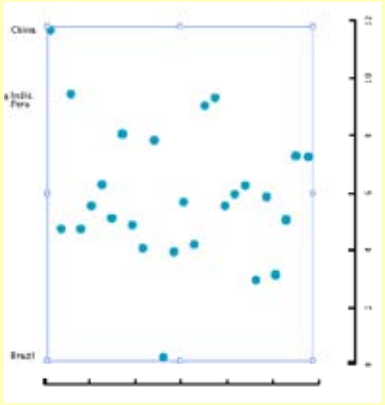
Computers are great for producing professional-looking graphics, but you don't necessarily need a computer to create great design. Designing graphics with pen, paper or collage can be fast and inexpensive.

Charts can focus on one type of information, or can display multiple kinds of information at one time.

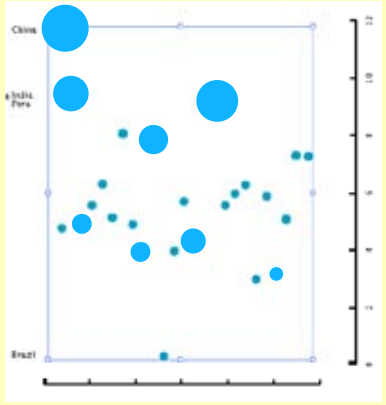
These sample charts show a few possibilities for combining one, two, three, and four types of data using position, size, and color.



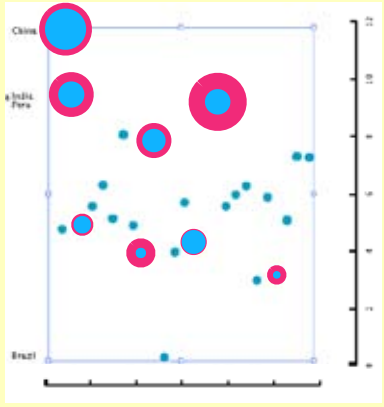
Data along a single axis reveals where data clusters and shows the range of a measurement.



Data plotted on two axes make a comparison. For instance showing GDP vs. life expectancy in different countries.



To reflect additional information, such as the relative size of a country's population, increase the size of your data points.



Here color reveals a fourth variable. In this case, population divided by demographic or gender.

Clarifying Your Graphics

Design that is easy to understand can be better evaluated for its credibility. Below are a few principles, suggestions, and questions for improving your information graphics.

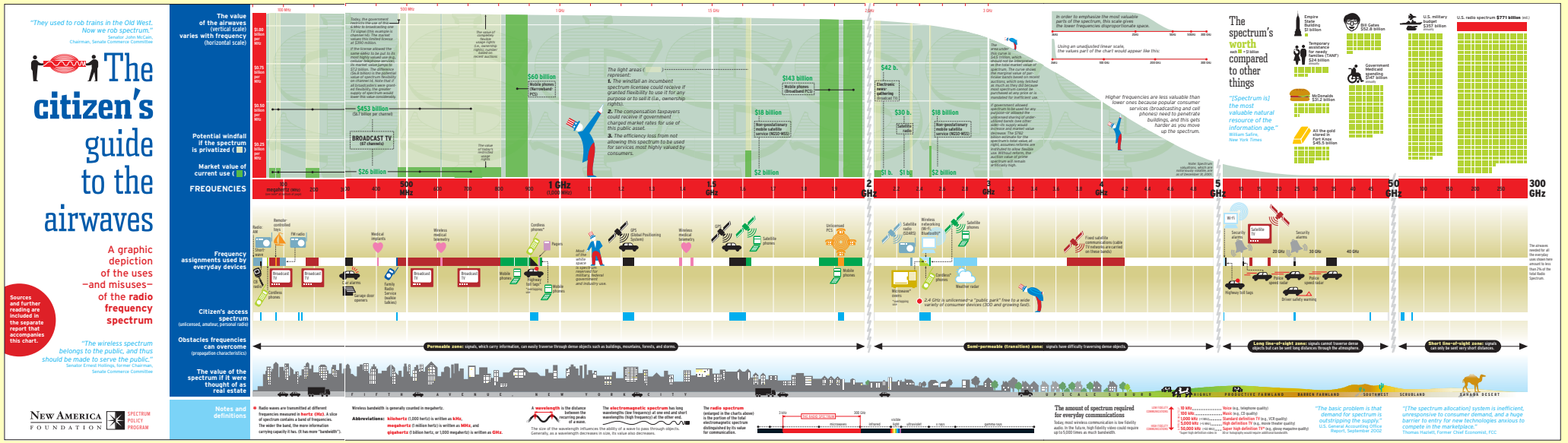
- ***What is most important?*** If some information is more important to your story than other information, consider giving it greater prominence. This can be done with size, color, line, bold or other type treatment.
- ***Keep it simple.*** What you leave out is as important as what you leave in. Every element you add to a page competes with every other. Is everything in your graphic crucial to the story you are telling? Without sacrificing clarity, consider removing detail.
- ***Show comparisons, contrasts, and differences.*** This is both a vivid way of displaying information and a primary way we perceive and understand information. Visible variation can convey meaning.
- Is the ***language*** clear and easy to understand?
- Is the choice of ***typeface*** clear and legible at a glance? The size and style of your text can also convey information, but should not be at the expense of clarity.
- ***Is your title clear?*** Is it easy to understand? Does it convey the story you are telling?
- Do your graphics require a ***legend*** to label the patterns and symbols you use?
- ***Is your documentation clear?*** Listing your data sources makes your data authoritative and verifiable. Disclosing funding sources for your campaign or project also creates transparency and credibility.
- Consider the limitations and opportunities inherent in your ***medium of publication.***

More Tips

Here are a few more tips for data presentation:

- ***Sketch out ideas on paper first***, before you turn on the computer. All graphics used to be drawn by hand. Software reduces creativity; good graphics are created despite your software.
- People will look at your pictures before they read your text, if they read it at all. Graphics have to be self-contained. ***Put your conclusion right there in the caption.***
- ***The graphic has to tell a story*** (if it doesn't, don't use it) and your job is to keep redesigning it until the story is as clear as possible.
- ***Show the actual data***, as much as you can. People can deal with much greater information density than you think. Your job is to help them see the patterns in the data, but…
- ***Show as few non-data elements as you can***. Remove boxes, lines, colored backgrounds, grids, shadows, and other decoration, except where it's essential to understanding the data. If you can't remove it, fade it out or make it smaller, thinner, or dotted.
- ***Minimize the number of steps required to interpret your graphic***. Don't put required information in the text that could go in the caption, or in the caption if it could go in a key, or in a key if you could just label the points or lines directly.
- ***Provide context***. Always use a scale and give sources. Six small, related graphs juxtaposed in the space we'd usually use for just one provide more than six times as much content.
- Learn some ***basic typography*** and a graphics application like Illustrator, Photoshop, or Free Software tools like GIMP or Inkscape. It's not hard to find tutorials, and they're wonderful transferable skills.

Adapted from Mike Dickison's Tip List, http://numberpix.com/2007/02/mikes_tip_list.html



The *Citizen's Guide to the Airwaves* was published by the New America Foundation to educate the public, media and political leaders about the value and mismanagement of the nation's radiofrequency spectrum.

Designed by Nigel Holmes, the guidebook is full of illustrations depicting economic, social and political aspects of spectrum policy and is accompanied by a color poster with a visual map of the spectrum. The Foundation describes the airwaves as: "the most valuable natural resource of the information economy."

The pamphlet uses a variety of graphics and techniques within a consistent overall style to tell many different stories which explain various aspects of the issue.

See http://www.newamerica.net/publications/policy/citizens_guide_to_the_airwaves

The **Map of Tashkent** was part of an advocacy campaign by Human Rights Watch (HRW) around the European Bank for Reconstruction and Development's (EBRD) decision to hold its annual meeting in Tashkent, Uzbekistan in 2003. Countries hosting the meeting historically stand to gain significant investment and international legitimacy. The goal of the HRW campaign was to move the Bank to link human rights progress to the decision to hold the meeting in Tashkent. The campaign included letter-writing, media advocacy, coalition-building with other NGOs and personal meetings with EBRD officials in 2002 and 2003.

Realizing that participants would be anticipating information about Tashkent and that the Uzbek government would be promoting their country, HRW worked with a graphic designer to develop an alternative map of Tashkent. The map mimics the style of tourist brochures, marking out tourist sites as well as locations where human rights violations had taken place in the city.

By linking data from HRW's research to data about well-known tourist sites, the map invited the target audience to take a walk through the campaign's data. The map was posted online as well as printed and distributed to the meeting's attendees.

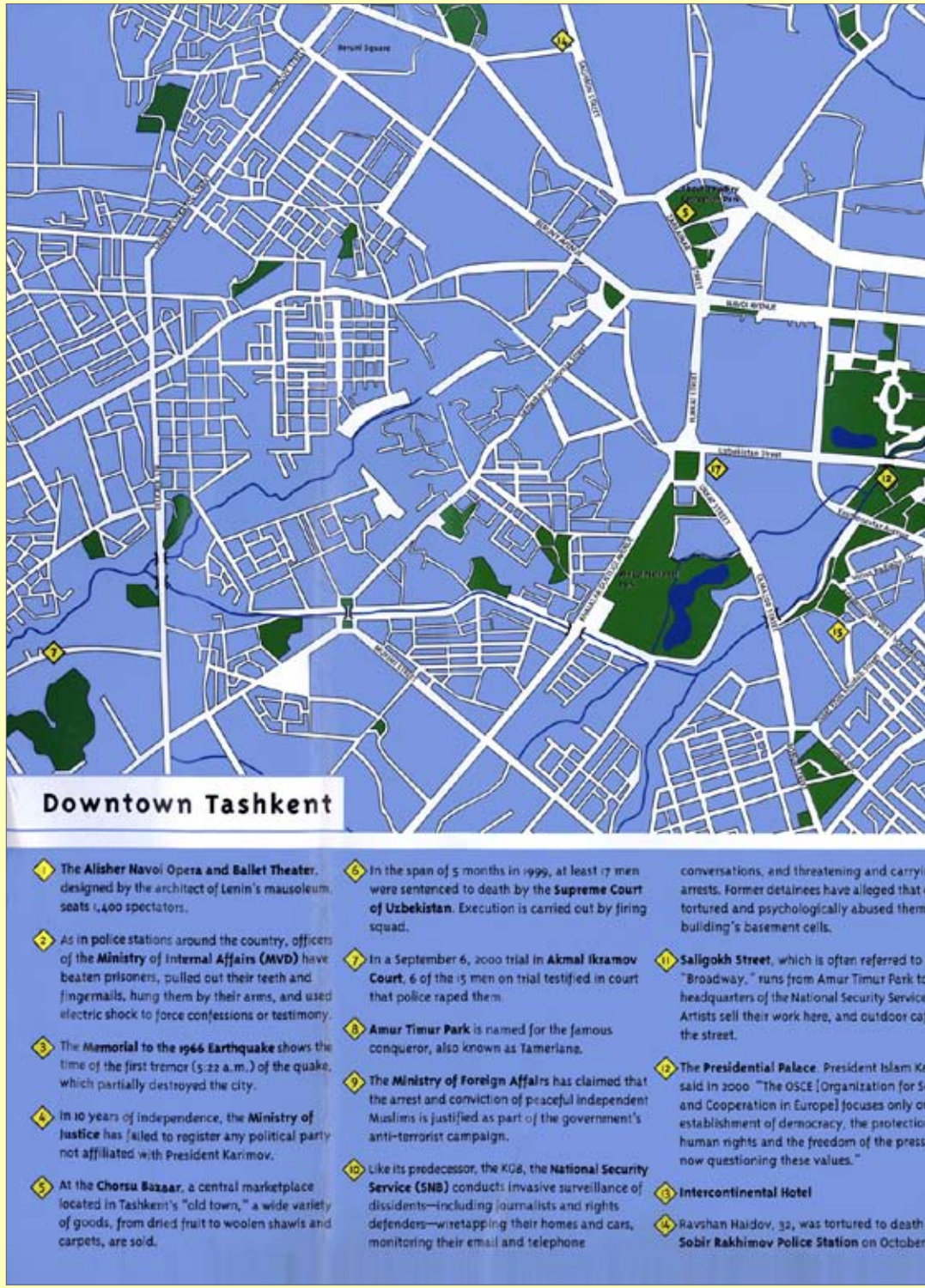
As a result of the campaign, the Bank faced public criticism for its decision to hold the meeting in Uzbekistan. On its web site, HRW notes:

"The Bank's annual meetings usually center on investment opportunities in the host country. But this year, the coalition's campaign turned the meeting into a debate of the Uzbek government's poor human rights record and the Bank's commitment to addressing these concerns.... In keynote speeches, broadcast live on Uzbek television, EBRD President Jean Lemierre and U.K.'s then-Development Minister Clare Short emphasized the need for the Uzbek leadership to make progress on human rights. They raised in particular the recent recommendations by the U.N. Special Rapporteur on Torture, which found torture in the country to be 'systematic.' This amounted to a public scolding of President Karimov's broken promise, and it did not go unnoticed. As Lemierre and Short delivered their critical speeches, President Karimov removed his headphones and demonstratively covered his ears."

See http://hrw.org/campaigns/uzbekistan


HISTORY AND SIGHTS

NOT TO BE MISSED


Downtown Tashkent

1 **The Alisher Navoi Opera and Ballet Theater**, designed by the architect of Lenin's mausoleum, seats 1,400 spectators.

2 As in police stations around the country, officers of the **Ministry of Internal Affairs (MVD)** have beaten prisoners, pulled out their teeth and fingernails, hung them by their arms, and used electric shock to force confessions or testimony.

3 The **Memorial to the 1966 Earthquake** shows the time of the first tremor (5:22 a.m.) of the quake, which partially destroyed the city.

4 In 10 years of independence, the **Ministry of Justice** has failed to register any political party not affiliated with President Karimov.

5 At the **Chorsu Bazaar**, a central marketplace located in Tashkent's "old town," a wide variety of goods, from dried fruit to woolen shawls and carpets, are sold.

6 In the span of 5 months in 1999, at least 17 men were sentenced to death by the **Supreme Court of Uzbekistan**. Execution is carried out by firing squad.

7 In a September 6, 2000 trial in **Akmal Ikramov Court**, 6 of the 15 men on trial testified in court that police raped them.

8 **Amur Timur Park** is named for the famous conqueror, also known as Tamerlane.

9 The **Ministry of Foreign Affairs** has claimed that the arrest and conviction of peaceful independent Muslims is justified as part of the government's anti-terrorist campaign.

10 Like its predecessor, the KGB, the **National Security Service (SNB)** conducts invasive surveillance of dissidents—including journalists and rights defenders—wiretapping their homes and cars, monitoring their email and telephone conversations, and threatening and carrying out arrests. Former detainees have alleged that they were tortured and psychologically abused there, in the building's basement cells.

11 **Saligokh Street**, which is often referred to as "Broadway," runs from Amur Timur Park to the headquarters of the National Security Service. Artists sell their work here, and outdoor cafés line the street.

12 The **Presidential Palace**. President Islam Karimov said in 2000 "The OSCE [Organization for Security and Cooperation in Europe] focuses only on the establishment of democracy, the protection of human rights and the freedom of the press. We are now questioning these values."

13 **Intercontinental Hotel**

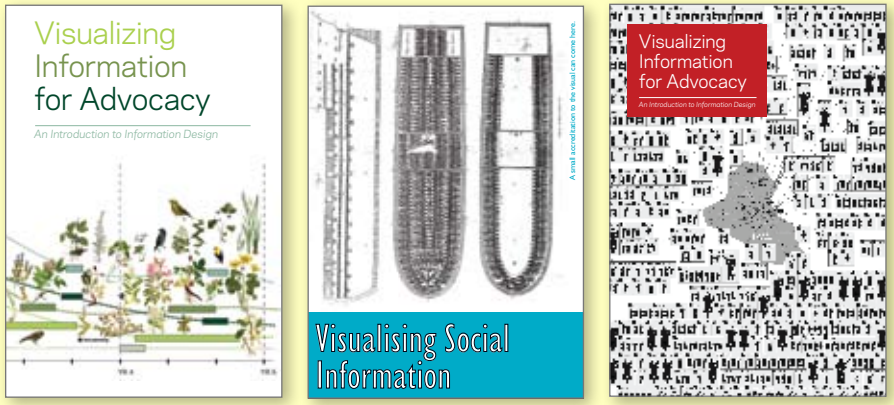
14 Ravshan Haidov, 32, was tortured to death at the **Sobir Rakhimov Police Station** on October

Evaluate and Iterate

How do you know if your graphics are working? Just ask your audience. Testing your graphics with even a small number of typical users can provide useful insight for revising and improving your work.

For instance, the meaning of images is often a matter of interpretation. An image in one context may have an entirely different meaning in another. The representation of ideas, individuals or groups of people may be affected by assumptions and pre-conceptions. As with any visual representation, different communities may ascribe different meanings to the same image. One way of addressing this is to test your design with a sample group from your audience. Testing can be as simple as showing your design to your audiences, soliciting their feedback and revising your graphics accordingly.

Information design is not just presenting information in a pretty way, but making it easier to understand and providing new routes to understanding. Your audience completes the design, bringing their interpretation and taking action. Cycles of testing and revising your graphics bring your audience into the design process and help ensure your design meets your goals.



Above, alternative cover designs tested while producing this report. Each mock-up employs a good example of information design, but the one that was chosen for the cover best achieves a combination of simplicity, clarity and visual narrative.

Additional Resources

Dickison, Mike. *Pictures of Numbers*. Illustrated techniques for improving your data graphics. http://www.numberpix.com

Emerson, John. *Social Design Notes*. Writing and clippings on design and activism. http://backspace.com/notes

Friendly, Michael and Daniel J. Denis. *Milestones in the History of Thematic Cartography, Statistical Graphics, and Data Visualization*. An extensive catalog of visualization techniques used throughout history. http://www.math.yorku.ca/SCS/Gallery/milestone

IDEO Methods Cards. Tips and techniques for user testing. http://www.ideo.com/methodcards/MethodDeck/index.html

Krygier, John and Denis Wood. *Making Maps, A Visual Guide to Map Design for GIS*. The Guilford Press; New York, NY. http://makingmaps.owu.edu

Lengler, Ralph and Martin J. Eppler. *A Periodic Table of Visualization Methods*. http://www.visual-literacy.org/periodic_table/periodic_table.html

Lindenbaum, Stephanie. *Mapping for Advocacy, Case studies*. April 2006. http://www.soros.org/initiatives/information/focus/communication/articles_publications/publications/gis_20060412

Many Eyes. A web service allowing users upload and render their data in a variety of interactive, visual formats. http://services.alphaworks.ibm.com/manyeyes/browse/visualizations

Moere, Andrew Vande. *Information Aesthetics*. A gallery of dramatic experiments in the translation of data into images. http://infosthetics.com

Nielsen, Jakob. Writings about usability and user-centered design. http://useit.com

Swivel. A web service for uploading, visualizing, and sharing data and designs. http://swivel.com

Tufte , Edward. Author of several beautiful, informative books on information design. http://www.edwardtufte.com

Williams, Robin. *The Non-Designer's Design Book: Design and Typographics Principles for the Visual Novice*. Peachpit Press; September, 2003.

Free Software Tools

Below is brief list of Free Software and Open Source tools you can download or use online to help with your information graphics. Once you've planned your graphics, these tools can help render, polish and prepare them for printing.

OpenOffice

OpenOffice is an office productivity suite. It includes a word processor, spreadsheet, presentation manager and drawing program. OpenOffice also works with a variety of file formats, including those of Microsoft Office and open formats such as .odt. OpenOffice runs on Linux and Windows and on Mac OS X under X11.
http://openoffice.org

NeoOffice

NeoOffice is a fully-featured set of office applications (including word processing, spreadsheet, presentation and drawing programs) for Mac OS X. Based on OpenOffice, NeoOffice has integrated dozens of native Mac features and can import, edit and exchange files with other popular office programs such as Microsoft Office.
http://neooffice.org

Ajax13

Ajax13 is a web-based Office Suite that allows you to create and share documents, spreadsheets and presentations. Ajax13 also has a sketch tool to do basic diagrams and a media player. The tool supports files in a variety of formats.
http://us.ajax13.com

InkScape

Inkscape is a vector graphics editor with capabilities similar to Illustrator, Freehand or CorelDraw. It supports rendering of shapes, paths, text, markers, clones, transparency, transformations, gradients, patterns and grouping. Available for Windows, Linux and Mac.
http://inkscape.org

PDFCreator

PDFCreator is a free tool to create PDF files from nearly any Windows application that can print.
http://sourceforge.net/projects/pdfcreator

Scribus

Scribus can be used to create layouts for newsletters, stationery, posters, training manuals, technical documentation, business cards and other documents that need flexible layout or sophisticated image handling. It has precise typography controls and image sizing not available in current word processors. Available for Windows, Linux and Mac.
http://www.scribus.net

The Gimp

GIMP is the GNU Image Manipulation Programme. Typical uses include creating graphics and logos, resizing and cropping photos, changing colors, combining images, removing unwanted image features and converting between image formats. GIMP can also be used to create animated images. GIMP is a powerful image editor supporting advanced image editing, manipulation and professional graphics creation. For Windows, Linux and Mac.
http://gimp.org

GimpShop

GIMPShop is a version of the GIMP image editor modified to be more user-friendly for Photoshop users. The interface is adapted to look and feel more like Photoshop and act more like a single, unified program. Available for Windows and Mac.
http://gimpshop.com

You've got data, now what do you do with it?

How do you tell your story effectively?

How can you move your audience?

If you would like to send us examples of your information design or learn more about information design, please write to *infodesign@tacticaltech.org*