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Electronic design and publishing for Mexican textile exhibition

Maria Andrea Robledo Arcos

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A Thesis Submitted to the Faculty of the College of Fine and Applied Arts in Candidacy for the Degree of Master of Fine Arts.

Electronic Design and Publishing for the Mexican Textiles Exhibition.

Mara Andrea Robledo Arcos

May 1990
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This project would not have been possible without the support of RIT faculty and staff. I would like to express gratitude to:

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Raúl, my beloved companion, for all his love, patience and understanding, especially when my frustration with the computer was devastating.

But above all, to my mother for her support and friendship and for showing me the importance of having goals and the strength & perseverance to reach for them.

Thank you all.

Mara A. Robledo
As a visual communicator I always look for new tools and techniques to enable me to better communicate ideas.

I chose the Macintosh computer system for the Mexican Textiles Booklet. First, it is a relatively new technology that is changing the field of design and publishing. Second, I believe it will help meet project deadlines, and make more effective use of available budgets.

The objective in producing this booklet is to acknowledge the richness and brilliance of the Mexican Indian's perception of textile design, color, and form.

To design and produce this booklet without turning it into a "computer-ized piece" was a challenge. It represented a constant evaluation of the initial objective against the computer's seductive possibilities.

In the end, it is not the hardware, nor the software which makes electronic design & publishing a success story. It is the designer's abilities and sensibilities that overcomes and controls the power of this new electronic technology.

The information contained here is the result of a project developed for the Mexican Textiles Exhibition as a Thesis requirement for the MFA degree in Computer Graphic Design.
Introduction

"Toward the Electronic Studio"

This Report is written to introduce Graphics Designers and Visual Communicators to the use of the Macintosh computer for the design and print production processes. For this computer has changed not only the way traditional design is done, but in addition, has created new styles, new typesetting methods and typographic looks. Above all, it has modified the design and print production processes!

By using Design methodology the designer recognizes the communication problems as well as visual elements, materials, and tools that can be used to solve the problems. As any Graphic Designer knows good design is timeless. Good design is always an appropriate tool to solve the problem at hand. In addition, the tools the designer uses should be invisible in every good design.

This thesis project is about design methodology. Its main objective is to incorporate the computer as a new tool at two different levels; the computer as a visualization tool, and the computer as a production tool. But only as a tool, and therefore, an invisible one.
"A peculiar development is taking place in American Publishing. It is the shift on the part of publishers and scholars alike, to an information mode in place of a knowledge search. In part, this is the inevitable outcome of the computer revolution." 

The new information technology permits a higher level of interational involvement. One can confirm or disconfirm exact information, test propositions, and develop comparabilities. The use of computers tend to increase the importance for decision and action of quantitative, and technical criteria.

New forms of interactive communication such as videotex, permits even higher levels of retrieval, storage, and utilization of information by a wide number of people who in the past have been largely passive recipients of such information. The new information technology encourages active, rather than passive, public involvement.

According to Irving Louis Horowitz, in His book "Communicating Idas" the components of the new technology are:

1) increased amount of information available
2) necessity of active role of the participant
3) corresponding capacity for confirmation and verification of information to an extent previously unavailable
4) public, rather than privileged access
5) redefinition of the structure of information.

Within a few years, millions of office workers and free lancers, will be able to capture, store, change, merge, send, receive, and display words, pictures, graphs, illustrations and any other image in ways unimaginable. The abrupt abundance of information creates the basis for a system overload with information pollution. Therefore effective visual communication is becoming more and more important. Is my firm believe that Graphic Design skills are more necessary than at any other times.
Different Environments

Electronic Publishing.

Electronic Publishing is the computer assisted creation, management, manipulation, and integration of text and/or graphics information for subsequent printed copy to a variety of output devices. Its objective is to provide readable images of "type-set quality" from electronic information to a variety of output devices, while maintaining the integrity of format and content.

There are 3 different types of systems in electronic publishing:

1) Host-based publishing
2) Workstation-based publishing
3) PC-based publishing

1) Host-based publishing systems run on mini or mainframe computers. They are dedicated exclusively to the job of publishing. Their industry environments are typically the consumer publishing markets (newspapers and magazines). Their main focus is on increased productivity of document production.

2) Workstation-based publishing systems run on high-powered workstations that are exclusively dedicated to publishing. They handle specialized jobs and offer On-line mass storage (internal disk of 80 MB or more, and or network access to high-volume file servers.)

3) PC-based publishing systems are dedicated exclusively to the job of publishing. Within its environment, these PC systems focus on a single task within the document production cycle. They rarely manage the entire document production process. It is within this category that the desktop publishing DTP systems find their niche. They are used to perform electronic publishing tasks as well as other applications (word-processing, illustration, spreadsheets, etc.)

They are used mostly for small to medium publishing jobs. These systems are sold unbundled so users can build their own configurations based on budgets.
Many articles, and books, have been written about the new technology known as Desktop Publishing, and how traditional publishing and design have changed since then.

Desktop publishing, What is it? At its simplest: DTP is the use of personal computers to make up pages of text and graphics interactively. DTP allows its users to create and produce documents in-house inexpensively, quickly, and without the need for skilled staff. In theory, any operator or officer of a corporation can become a professional publisher.

With a DTP system, the typical user can produce just about anything: newsletters, memos, reports, brochures, overheads, transparencies, charts, etc. The computer offers many options but it does not offer any suggestions as to what is an effective design. The average desktop publication is poorly designed and visually unappealing; its computer origins are more noticeable than the message.

DTP will continue growing at a rate of 24% per year for the next several years, and it should not be ignored by graphic designers. It is a new branch of the graphic arts field that requires a careful marriage into existing market structures and the graphic design platform seem to be the best suitable. But this relationship will be successful only if the designer is able to differentiate between print design and production. With technology blurring these traditional distinctions this awareness is becoming an essential task for any computer graphic designer.

"With no doubt, over the next few years, graphic design consumers are going to be adding tremendous pressure on their design firm to begin using computers and doubtless the constant pressure for cost reduction is not going to end in the near future". 2
It is not the computer production but the design process that will make communications effective and successful.

The designer's typographic and page layout skills will determine the speed, efficiency and ease of use.

---

**DTP Chronicle**

The term desktop publishing was proposed and adopted on January 1985, by Paul Brainerd, president of Aldus Corporation, who was one of the pioneers in the field. A year earlier Apple Computer introduced its Macintosh computer, but at that time there was no output printer that could reproduce its extremely developed text and graphics capabilities. When Apple introduced the LaserWriter printer some exciting developments took place. Among these were Adobe's special language (PostScript) which permit the Mac to talk with professional-quality typesetting machines as well.

By that time several companies agreed to work together and took seriously this new technology. Linotype Company, a manufacturer and distributor of typesetting equipment, made its typefaces available to Apple and created the new Linotronic 300 typesetter to output Mac documents. International Typeface Corporation also allied and agreed to provide its typefaces. Finally what was left was the design of a page composition program to merge graphics and text. This program was called PageMaker, developed by Aldus. Paul Brainerd then proclaimed the beginning of the era of desktop publishers. ■
Electronic Design

Due to the introduction of the Macintosh computer, there are now page-layout and publishing systems designed to assist art directors and designers in their creative and production processes. Rather than just creating art; comping and layout are possible using real dimensions, type, photos, and art. These systems eliminate many traditional tools such as scissors, T squares, pens, rulers, markers, and press-type. Many time-consuming and expensive processes such as photo-stats, traditional typesetting, and paste-up are also eliminated.

Technology has already changed the way people think about graphic design, and regularly influences the entire design process. Personal computers were viewed simply as a more efficient tools for doing jobs that used to be done by hand. Technology was looked for to speed up creative work, provide a more efficient method to generating design alternatives, and streamline the production process. It is not surprise, computers do not function this convenient and magical way. Technology has its own complications and substantial limitations.

Some designers have taken these obstacles in stride, and simply return to the boards whenever technical shortcomings interfere with creative development or production. This is a healthy attitude. No tool serves all purposes. If this approach is not taken soon, the designer will find himself adjusting design standards to suit technological limitations. An unqualified devotion to computers will limit artistic vision, creative alternatives and restrict option.

Designers committed to working with computers must spend a substantial portion of the work keeping up with technological developments. Reading, as well as many hours on the computer, learning and experimenting with new products become a must. Graphic designers should begin to investigate the visual language of computers, to identify, eval-
Visualization Vs. Production

uate, and explore the elements that make up this language. The graphic potential of computer design is just being investigated and is the job of the designer learning how to apply it to the design process.

2 different approaches:

SKOLOS, WEDELL, + RAYNOR
A graphic design/photography studio located in Charlestown, MA. Despite working in a small design firm with 3 Macintoshes, the SW+R staff is savvy about a variety of computer systems, from PCs to workstations, and staff members are enthusiastic about designing on a computer.

SW+R uses the Macintosh mostly for conceptualizing designs; the majority of production mechanicals are still created traditionally on the drawing boards. The staff views computers as tools for design development, providing a fast and flexible way to work out a concept. Because they have made a modest investment in computer equipment their inventory is small, lacking some basic tools, they return to the traditional drawing board once the concept has been completed and is ready for production.

SW+R’s most complex designs are often produced without the computer. But for some jobs, the designers paste photographs enlarged or reduced with a copy machine onto a laser-writer-produced page, or tape acetate copies onto the Mac screen in order to preview a concept.

MacWEEK
At MacWeek you will have to look hard to find an X-acto knife, or a waxing machine, or anything resembling a pasteup operation. QuarkX-Press, with advanced desktop publishing and page-layout capabilities, is changing traditional publications jobs.

Reporters use Microsoft Word to compose articles. The text is exported to copy editors in flat ASCII format. These stories as well as line art, photographs, and other page elements all end up in the manager edi-
The Design Process

tor department, where four copy editors use XPress to specify typefaces, write headlines and captions, and combine all the elements on electronic dummies. After a page is ready, the final prefilm proofing step is to print it on a 300-dpi laser printer for examination. Because of the prepress capabilities of QuarkXpress any page can be changed at any time. This flexibility is a tremendous boom to the publishing efforts.

"At present, (February '89) the art department still marks some process color on tissue overlays and sends mechanical art to a film house, where the final separations are made. But MacWEEK has completely produced two large supplements using the prepress capabilities of QuarkXPress to create negative film." 4

Historically graphic design has had a symbiotic relationship with prevailing technologies. Both computer science and graphic design are process oriented, applying analytical and synthetic principles to generating and organizing information. The graphic designer is concerned with achieving effective communication by exploring, analyzing, and systematically coordinating structural, esthetic, and semantic relationships.

Mary Jones in her article "The Synergism Between Visual Communication and Code" notes that "the skills of the designer can be divided into two general categories: Judgmental and mechanical. The judgmental, or decision making stage, is characterized by experimentation and change.

"Decisions made and remade concern not only how something should look, but whether it is effective communication. This requires extensive thought and visual exploration.

The second category, mechanical functions, involve putting the elements together to produce the communication." 5
According with this concept, for the designer, the computer represents the newest and fastest tool for conceiving, developing and reproducing printed output.

Now let's examine how the computer interacts at the design process in those two different stages.

Judgmental, Visualization, or Conceptualize phase:

The designer has to be able to previsualize the final solution, with all the effects from beginning to end. Previsualization can be defined as the awareness of how the final piece will look like, with all the processes and their effects merged together, before they are actually completed. The designer is asked to conceptualize the solution and then form a specific picture in mind that is true in all details. The abstract becomes a reality in the mind of the designer, while it is still unformed in the actual production stage.

Visual problem solvers imagine and construct their words in either two or three dimensions. They apply non-verbal rules to the order of things and work in a manner that often does not follow a prescribed sequence. Many operations are performed gesturely and reflexively, rather than with a set of specific definitions.

At the Judgmental category the computer allows the transition process for visual exploration. This is the process of changing from one state, form, or activity into another. "For the designers of a visual composition, the transition from one element to another is controlled by placement (a selective process), and position (the arrangement of individual elements in relation to each other and to the overall frame in which they occur). Transition is only quantifiable as an interval of change from one state or position to another. It connects various aspects of the space/time flow and enables us to examine a particular phenomena."
The Design Process

Production, Mechanical, or Elaboration Phase:

In this phase the designer is finalizing the concepts and making them fit. Once the comprehensive pieces are approved; graphics, photographs, type styles, and copy are put together into a final form. This format will be used as the mechanical for reproduction.

Most graphic designs contain type and graphics. Type may be used to describe and inform, or used as decorative or graphic elements. The difference between them are significant in intention and message. Type and graphics are elements handled differently, in concept as in production, most of the time they are produced and reproduced by two different departments. Type is set at typesetting houses and always return to the design studio to be proofed and placed in the right position along with the graphics or/and photographic images.

The computer allows the manipulation of text and graphics at different levels and allows the designer to have more control over the production of them interactively.
Design elements

The **Sun** was found in *Azcapotzalco, D.F.* and now is in the National Museum of Mexico.

**FONTs:**

With the computer the designer can determine text attributes, typographic style (italic, bold, condensed, etc.) and use specialty faces, decorative, symbols, logos, dingbats. It also enables the designer to create new fonts, or modify one or more individual characters of an existing form. With the appropriate software, the designer can control character fit by controlling and adjusting spacing, kerning, tracking, line spacing etc.

**GRAPHICS:**

The computer allows the generation or acquisition of illustrations and other digital images and graphic forms in different ways; clip art, freehand art, scanning/digitizing, still video, and more. Another powerful tool for the designer is graphic image editing. Graphic images can be manipulated in a variety of ways, including pixel addition or deletion, image flipping, inverting, scaling, stretching, color correction and more.
Selecting The Right Tools

It is getting tougher to choose page composition software than it used to be. Technology and competition are pushing the industry closer together, rather than farther apart. For the PC environment and for their richness of features, control over text and typography, support of a variety of graphics formats, and a host of other refinements, Ventura and Page Maker remains the forces to be reckoned with.

In Macintosh desktop publishing environment there are 3 page layout programs contending for market; PageMaker, QuarkXPress, and Ready,Set,Go!.

PageMaker pros.
Version 3.01

PageMaker design capabilities are; its user interface, based on paste up board style, which encourages experimentation with various graphic and copy elements. It offers features that make longer documents more practical.

Copy can flow from column to column and from page to page. The nicest features are its ruler guides, double-page spreads and the Undo command.

PageMaker is definitely a designer's tool for its fantastic freedom in the experimental steps involved in designing a document , as opposed to producing it (an important distinction.) PageMaker's freedom makes it attractive for doodling.

Its flexibility includes the capability of changing the initial page to a taller or wider one, and then back to the initial, all with a few clicks of the mouse and without loosing the objects, blocks of text, type, scans, other imported artwork or PageMaker graphics. All these elements can be selected (Including selecting more than one object with the shift key) cut, pasted or dragged all over the page, or be left in the background desktop (that is like the edges of the drawing board) to be picked up for use as needed on any page.
Production is not the mission for PageMaker, which is less fun than design, but it has nice functions that make the work more precise. Snap-to-rulers and snap-to-guides toggles throw graphics and text blocks onto the page with great precision, without the necessity of specifying numerical position coordinates.
The most valuable production quality in PageMaker is its reliability at output time. The program rarely suffers from font ID conflicts that result from font substitution or other troubling weirdness when a file is sent to an output service bureau.

PageMaker cons.
The worst drawbacks in PageMaker are its typographic controls. It lacks:
- true baseline-to-baseline leading
- real track kerning
- type in quarter-point increments
- horizontal scaling for type and graphics
- user control of superscript/subscript size and position
- true em and en dashes and hyphens and indents
- Drop Caps must be broken into three pieces; the letter itself, the indented text to the right of the cap, the rest of the paragraph

Any late changes to the rules or drop caps, since they would all be isolated elements, would have to be manually moved each time
- PageMaker controls word spacing for entire text files only
- It can not make individual paragraphs within a story slightly looser or tighter
- It does not allow mixed specs in a style.

Quark XPress pros.
Version 2.1
XPress’s typesetting capabilities are invaluable once initiated in the editing process.
Leading controls up to thousandth of a point. Enlarging or reducing type’s point size in 1/4 point increments. Tracking and kerning up to hundredth of em. Expanding and condensing font width by 25-400 percent increments, to eliminate any windows, poor text wraps, bad hyphenation, or poor alignment.
For jobs were alignment is so important XPress' system of numerical coordinates for every element makes alignment a snap. Grids are easily standardized. Columns start at the same vertical distance; pages remain the same length.

With XPress' coordinate system, elements can be created aligned in any size view. Its "ShowMeasurements" feature provides another shortcut to perfect alignment, were numerical values are more accurate than mouse positioning.

XPress allows to creation of templates for different sections in the same document. Rather than having to continually look up styles for headlines, captions, credits, etc, simply format them with style sheets. The style sheets can be applied to empty text boxes on default pages or templates, for example, so when text flows it will be formatted correctly.

XPress' spell checker catches the run-together words and extra letters that were inadvertently introduced while correcting the copy. Quark also offers the option of creating auxiliary dictionaries were the specialized words and terms can be included.

XPress allows horizontal typeface scaling. It creates and saves kerning pairs for any typeface. Its hyphenation and justification controls allows a person to determine how many hyphens are going to be in a row as well as define and save multiple H&J specifications.

Wrapping text around any graphic - no matter how irregularly shaped- is another nice feature of this program. The outset for the runaround can be specified also. Keyboard shortcuts for increasing and decreasing font size and leading in one-point increments and kerning and tracking by 10/200 or 1/200 of an em-space.

Mouse shortcuts to select words with 2 clicks, lines with 3, paragraphs with 4 and text with 5 are another nice interface that really saves time in a long run.
QuarkXPress cons.

- Speaking of rulers, XPress creates horizontal guides, but when the text boxes are selected the rulers disappear behind them.
- Creating Drop Caps and having text rag around them is as painful procedure as in PageMaker.
- XPress lacks pasteboard
- Elements can not be taken or pasted in two different pages
- It has no facility for selecting and grouping objects
- Despite its excellent word processor feature, it is not recommended to enter text.

The program picks up most, but not all, of the characters input when rewriting in the screen.
- Style sheets do not always work consistently, text already formatted in another style and reflowed into a new text box with other style does not always work.

Ready,Set,Go! pros.

Version 4.5
Ready,Set,Go! often seems like a cross between QuarkXPress and PageMaker. Like in XPress boxes must be drawn before importing text or pictures but like PageMaker each of these objects is an independent entity.

In Ready,Set,Go! elements can be created across facing pages and multiple documents can be opened at a time. Objects can be positioned with much more precision than dragging them with mouse, by clicking twice in any element a dialogue box lets specify the object's exact location and dimensions. Unique to Ready,Set,Go! is its alignment command which align multiple objects along various axes, and it supports snap-to alignment guides which can be dragged from the vertical and horizontal rules. Ready,Set,Go! has master pages to set up elements that will repeat themselves on every page of a document.

It supports text and runaround, text will flow around irregularly shaped pictures and force text in one box to
runaround text in another. This is done with a new feature, the various vertical text alignment option. Text can also be vertically justified either by feathering (space is expanded equally between every line to make the text fill the box) or by paragraph spacing (only the space between paragraphs is expanded).

Another new tool is a miniature representation of a page. The page order can be rearranged by dragging thumbnails around, and cut, copy paste them by using standard editing commands. Double click on any thumbnail returns directly to that page.

*Typesetting controls.*

Ready,Set,Go! 4.5 offers the finest control over font size specifying type size in increments of up to .01 point, as well as leading controls. Ready,Set,Go! also has a sophisticated options for handling text spacing by kerning individual pairs in .001 em increments. Its control tracking increments in the same amount. The spacing between words can be controlled too.

*Word processing.*

Ready,Set,Go! has respectable word-processing capabilities built in, like the search and replace feature. It has a competent spell checker, and in addition text can be changed to all caps, lowercase or initial caps.

**Ready,Set,Go! cons.**

- Each page and each column have to be created individually before flowing text into it. This represents a tedious an time consuming process in long documents.
- Ready,Set,Go! has nothing like XPress' font scaling, squeezing or stretching a font horizontally.
This project was produced entirely using the Macintosh computer platform.

Using a Macintosh IIcx with 80 Megabytes of memory and 4 Megabytes RAM.
For Proofing purposes a Laser Writer II at 300 dpi (dots per inch) was used. The Linotronic 500 high resolution laser imagesetter as a final output device for text and graphics.

Color images were scanned and separated in the traditional way using a high quality scanner, Hell 900 and stripped together with the film resulting from the imagesetter.

The software selected was a broad selection of different programs that proved to be the best suitable for each task at the moment of the project's development.

Word processing: Mac Write 5.0 and Mac Write II
Page Layout: Ready, Set, Go. 4.5
Illustration: Freehand
Image input: Hyperscan and Adobe Streamline
Image and Documents management: Hypercard
Defining Methodology

This Design Methodology will answer the “who, what, how, why” questions to start the creative process of Design.
Before going further into the methodology it is important to identify the elements involved in the process.

A) Communicator
This comprehends concrete information about the client. The Institution, single person or group that wants to communicate something through the designed piece. Its economical, political and social characteristics will be considered.

B) Codes
Codes are the design elements and the format the message is going to have. Codes make possible the communication between transmitter and receiver. It is how the elements are going to be combined within the messages. (type, photo, film, illustrations...)

C) The Design
The designed piece is the group of signs and symbols arranged in a certain way to communicate the message. It contains the semantic and the aesthetic of the message.

D) Means and resources
Communication means are different forms and formats to transmit messages; press, video, radio, film. Resources are technological facilities available and suitable for each message.

E) Reference
The reference is the topic, the issue or statement the communicator wants to communicate. It is the content of the message.

F) Reference frame
Background and reality that characterizes the environment in which the communication is going to take place. This element will determine the comprehension level of the message.

G) Audience
Group of people that will receive the message. It has to be identified and analyzed to determine how the communicator will use means and codes.
Design Methodology

Audience may respond as:
1- the terminal point of the communication process or
2- participative element having a critical response to the message.

H) Socio-economic formation
This is a very important factor in the design process usually the less considered by designers. The awareness of each country (or state) culture and values is decisive for the message effectiveness. A design for USA won't be effective in Japan or Mexico.

<table>
<thead>
<tr>
<th>WHO?</th>
<th>Case: Analysis of the client and his codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOW?</td>
<td>Hypothesis: Analysis of the codes, the design theory, the means and resources, and the socio-economic formation.</td>
</tr>
<tr>
<td>WHY?</td>
<td>Evaluation: Evaluate all the elements together.</td>
</tr>
<tr>
<td>WHEN?</td>
<td>Development: Using the means and resources to fulfill the project and distribute to the audience.</td>
</tr>
</tbody>
</table>
Body of Work

Electronic Design & Publishing for the Mexican Textiles Exhibition

From the preceding chapters it can be noticed how the design process, at the concept and production phases involve many elements that may force the designer to deal with technical as well as aesthetic problems. The challenge of this project was to master and utilize the capabilities of the new technology but at the same time doing it without compromising the effectiveness of the design.

Case:
- Client
The client is FONART. The Mexican National Foundation for the Arts. This Institution is supported by the Mexican Government to promote and preserve the Mexican Indians crafts. It constitutes a distribution source within the country and establishes exportation agreements with other countries. Its purpose in this project is:
To acknowledge the richness and brilliance of the Indian perception of design, form and color.
To constitute a record of a Mexico that is beginning to disappear and that tomorrow may exist only as a memory.

Problem:
- Reference
Table of contents
1) Introduction
2) History
3) Indian Clothing from Codices
4) Women's art
5) Meanings and Philosophy of weaving
6) Meanings of form and color
7) Textile designs
8) Today
9) Conclusion

- Reference frame
This project is a complimentary literature for a contemporary and old Mexican textile exhibition at some galleries and museums in USA.
Concept Phase

• Audience
General museum audience. Well educated people (High school graduated at least).
Working male and female in an age range of 25 to 65, with an interest in art and culture, and an interest in textile and/or design.
Foreign visitors also have to be considered as regular audience in this place.

Hypothesis:
• Resources
The equipment available to print this piece is a 2 unit sheet-fed Heidelberg press which maximum paper size is 21 1/2" - 28 3/8" and maximum printing area 20 1/2" - 27 3/8".
The paper available; Champion coated paper in standard size 25 x 38 inches and color linen paper 19 x 25 inches.

Format considerations:
- a) visual appeal
- b) standard shelf sizes
- c) paper and press sizes

To satisfy the previous considerations, I utilized a format based in the Golden Section.
Measuring the largest size to fit in standard shelves, 12" I determined the smaller side by applying the golden proportion (1.6180). The resulting format is 7.5 x 12".

This format worked well with the paper size, and minimized paper waste.
Standard paper size (25" x 38") cut in half gives two (19" x 25") paper pieces that will fit in the press. The selected format fits 4 times in a 19" x 25" paper.
• Codes
35% body text and 65% graphics with color photography.

Visual considerations:
a) From the audience point of view: Although the audience is used to read, a higher percentage of text, a large number of international visitors may be attracted by the visual imagery even though English is not their language.

b) From the Reference point of view: Is more effective to present a great variety in forms, patterns and designs of Mexican textile in a visual rather than textual form.

Type considerations:
Type should give an old and traditional flavor because weaving in Mexico is a very antique tradition. At the same time it should give a contemporary feeling to represent Mexican traditions of weaving as a current craft. Garamond for text block is modern with classical qualities as serifs and strokes. Bodoni for headlines because it offers a nice angular appearance that relates with the geometrical textile designs.

Bauer Bodoni

ABCDEFghijklmnopqrstuvwxyz
1234567890 &%$

Garamond light

ABCDEFghijklmnopqrstuvwxyz
1234567890 &%$
The Golden Section is in essence a formula that says that the lesser dimension is to the greater as the greater dimension is to the whole.

The Golden section is usually expressed as $A:B = B:(A+B)$, that is $A$ is to $B$ as $B$ is to $A+B$.

The rectangular extension of the square within the golden rectangle forms another golden rectangle. This proportion is reflected in nature as shown in the construction of the chambered nautilus sea shell. This amazing proportional arrangement of the golden section is reflected throughout nature.

Binding

The wire binding relates with the garment stitches.

The opening format corresponds to the HUIPIL garment that is woven in thirds and then sewn together from the sides.
Grid:
The use of a grid system provides a convenient method for design layout. Art and type are easily positioned by establishing the format of the page. The creation of the grid is just as an outline, it may change as a writer develops his thoughts, the grid also begins in a preliminary form.

The construction of a grid presupposes an understanding of measurement systems. There are basically three systems in use: American-British, metric, and the pica system. A combination of these systems is frequent, so an understanding of each one is necessary. (Appendix A)

There is a forth system unique to the computer, the pixel system. This system is based on a coordinate system of locating a point in the screen, and therefore, the page. The most practical application of using the pixel system would be in using a page description language, such as Postscript. To position text or graphics on the page, the coordinate location must be specified. It is very important to identify the location of the zero reference point in every page layout, and illustration programs.
In this project the construction of the grid had a very important role. It was necessary to create a system that could be able to carry the same grid structure between different programs, from the page layout to the illustration and back. The Macintosh proved to be a convenient tool for this task. By setting up a master page in Ready Set Go, through its very flexible grid design function, the grid was traced and imported to other programs via the scrapbook. After analyzing the design and graphics to be included in the booklet, a grid was defined. Two to four columns and a diagonals (that corresponds to the recurrent diamond shape in the textile) for positioning text, headlines and graphics. (Appendix B)

The figure shows two versions of the grids. The top row are the grids designed in Ready, Set, Go. The bottom row are the same grids, pasted through scrapbook as background elements, in Freehand.

This figure shows the grid setup dialogue box in Ready, Set, Go! where all the grids were created in a very flexible fashion.
Word processing was done using MacWrite 5.0 wordprocessor. Once the copy was ready for correction, the editor received a printout and the electronic file in a floppy disk. The copy editor could choose marking-up the material either in the printed piece or in the electronic document, but for the purposes of this project, all corrections had to be done electronically and returned already corrected to a floppy disk.

When the work file was going to be opened the dialogue box said that the application for that file was missing. The reason? simply, the editor corrected the copy in his MacWrite II wordprocessor, where he could easily open a MacWrite 5.0 document, but as he saved it with the corrections, this document became a MacWrite II file. Older versions can not access files from latest versions. The problem was solved with CanOpener. This desk accessory allows to get inside Macintosh files, even if the original application is missing, even though the files damaged can not be opened within the application itself. Then the corrected copy was copied and pasted again directly to Ready, Set, Go!

CanOpener retrieves pictures, text, and sounds so they can be copied, and pasted into other programs. It reads text as ASCII text. It reads PICT, PICT II, EPS, and MacPaint formats.
A large number of prehispanic elements, signs and symbols were gathered throughout the research process. It was nearly impossible to keep track of all the variations and sizes of each element. An Image management system had to be created in order to better handle the information, and at the same time have immediate access to the images to be positioned, scaled, cropped, copied, and/or pasted.

The Hypercard application offered the best solution to both problems. All the images were scanned through Hyperscan interface using the Applescanner. Although the quality of the images were not very sharp, Hyperscan manipulates images just as black & white bitmapped rather than smooth grayscales, it gave the stone-texture characteristic of the prehispanic elements.

To have a better idea of all the elements stored in the archives, Hypercard allows to print several cards from a stack. From HyperCard the images could be exported for positioning in either Ready, Set, Go!, or Freehand, and arranged in the page layout. These programs allow scaling and cropping of images without deformating the original characteristics of them.

**stone walls patterns**
As it explained before, the images used for the Mexican Textile Book required a stone-like and textile-like texture approach that was solved with Bitmap graphics from Paint and HyperCard programs. At some point, these jagged bitmapped images did not have the smooth quality that Object-based elements have. In order to get an object-based image from a bitmap one, the autotrace application Adobe Streamline was used.

Typically, autotrace applications use mathematical routines to determine the boundary between an image and its background. This boundary path is then traced with a line.

Adobe Streamline has controls for setting the distance between points along the path, and for determining a smooth line or a sharp corner, or for specifying the smallest element to be found. There are also options for specifying the line weight and how closely to match the bitmap image. Once all the specifications have been set in the dialogue box, the image to be autotraced is selected with a marquee tool and in seconds the object-based image is there, ready to be used.
Visualization

Visualization is probably the computer function most overlooked by users. This is why the Mexican Textile Booklet Cover was taken aside to develop the visualization approach rather than the production one involved in the rest of the booklet.

**FULL COLOR COVER**

The binding considerations affected directly the cover design. The binding system as well as the format were meant to communicate the idea of the Mexican garment Huipil. Therefore the cover had to function similarly, showing its colorfull characteristics and dynamic patterns. In order to achieve the best representation of the textile treaths detail, the highest quality reproduction method was required. The 4x4" color transparency would be scanned in the Scitex System to be outputed at 133 lines per inch.

For visualization and design purposes, a low resolution scan was made for the Macintosh. This color image was used just to position the textile image with other elements, as color blocks, typography and graphics. Several alternatives were tried, combining colors, type styles and sizes. None of them were meant to be reproduced by the computer, they were checked for accuracy and approved from the monitor screen. (Appendix D)

Once the cover was approved, a laser printer printout was made for positioning only. The color photography was then separated. Typeset typography was reproduced in positives to later form the final negatives to be proofed and finally printed in a single sheet-fed press.

The results of this approach was a tremendous saving in design materials, time, as well as flexibility and options in the design process.
## Pica Conversion Table

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Apendix B

Diamond shapes from Mexican Textli Designs.

"xicalcoliuhqui"
Appendix C

Printout from the image archive through Hypercard
Different stages of the cover's visualization process.

1. Original Idea, (print made from the computer monitor)
2. 1st Correction, (print made from the computer monitor)
3. 2nd Correction & Final version of the booklet's cover, (print made from the computer monitor)
4. Final version of the booklet's cover, (print made from the original booklet)
Endnotes


Bibliography

Books


Periodicals


Documents

NCGA '89 Conference Proceedings, Vol III