exploring the content page of WWW

Special project
A brief study done on the Internet.
March 11th 98.

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Guide - **Prof. Ravi Poovaiah**

IDC, IIT, Powai.

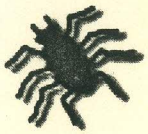
Approval

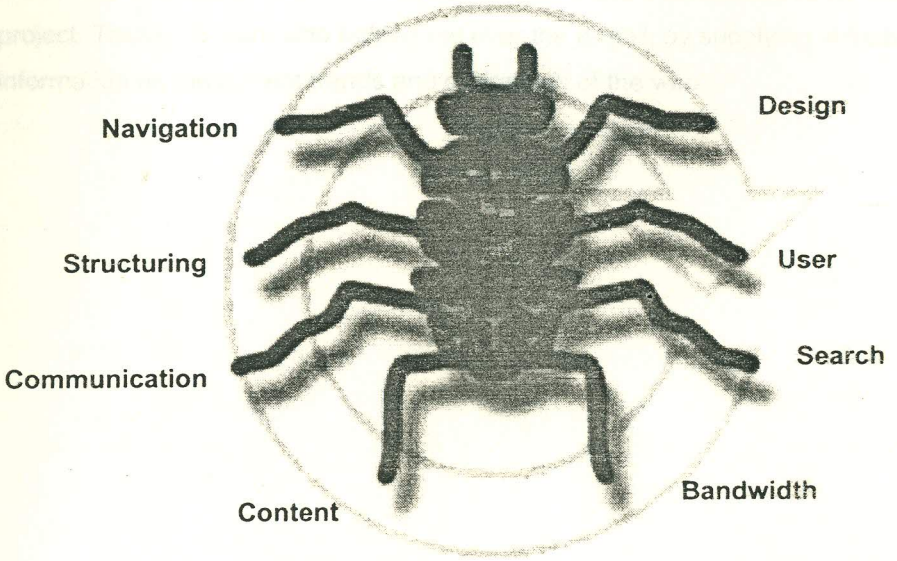
This Special project entitled
`Exploring the Content page of the Web',
is hereby approved as partial fulfilment for the degree of Master of Design.

Guide:.....

Internal Examiner -1:.....

Internal Examiner - 2:.....





The **content communicated** through proper **structuring** and organization of information, which with able **navigation** is aided with good **design**, where the **user** is **searching** for something with limited **Bandwidth**.

Acknowledgement

Inspiring people to work, make them realize the **potential** of **design** irrespective of the media has always been his attitude. The latest trends being the **electronic** design, Prof. Poovaiah came up with few related topics. Not knowing much about the **World Wide Web** and foreseeing the challenge of the hidden design potentials in it, I decided to work on them. My sincere thanks to him and for his ever inspiring nature.

I also thank the people of IAT who allowed me to use their resources for this project. Thanks to Ram who helped me over the e-mail, by supplying valuable information on the current trends and operations of the web.

Welcome to the **World Wide Web**. It has `**X**' information, and it's **content** has to be designed to address the **users** need.
But **how** is this really done? And **what** does it really contain? A **search** to find the answers in this special theme.
The next few pages not only discuss what is content, but also why it is important, which **aspects** have been focused, along with some design **principles** and many dos' and don'ts' aided by few **alternatives** and then concluded. They are all aspects of one topic – **the content**!

The general opinion is that web sites are boring, badly designed and low in editorial content. **But then why does this really happen?** Or so we should believe. Instead, one should consider the widespread gloom of homepages a real challenge.

Simply inserting dates and putting information into the website is not enough. **The World Wide Web has logic of it's own**. The primary goal is to inform the masses. This information can be in many forms … news, magazines, advertisements, training and just anything you want to know about everything digital.

It's a new **challenge** for the whole design industry to involve in this **innovative media application**.

The exponential growth of the internet has resolved in an unprecedented number of people using the on-line medium for a variety of purpose – **research**, **entertainment**, **commerce**, or **education**.

More and more people's lives and **careers** depend on the integrity and **accessibility** of these **information technology** structures.

The act of design always presupposes a set of unresolved conditions with a given context.

At an abstract level, cultural biases, aesthetics ideologies, and perhaps the hegemony of market place expectations can offset design decisions, finally there is the level of common physical realities.

In addition, each design discipline carries a time bound **tradition** and **sensitivity** to the manifold **context** within which designers practice their crafts.

Aesthetics

The design is the **identity**, **marketing** materials, and the user's **interface**, which is needed to reflect **efficiency**, **clarity** and **immediacy**.

The challenge is there to design a minimal set of solutions to **communication** problems, but to also imbue the design within **clarity**, **humor** and **universality**.

A large-scale study at Ohio State University juxtaposes the inventions of web designers with the experiences of Internet users. When analyzing select websites, the text persons described their opinions by means of a special technique involving collage, images and words.

Users want, quite literally, interactive, fresh, and yet simple and uncomplicated websites in which they could immerse themselves and forget as far as possible that they were sitting in front of a PC.

Knowledge of your audience

Identifying and understanding your target **audience** are among the most important first steps when you start designing your product. To create a product that people can and will use, study the people who make up your target audience.

It's useful to create **scenarios** that describe a typical day in the life of a person you think uses the type of product you are designing. Think about the different work places, tools and **constraints** and **limitations** that people deal with. You can also visit actual work places and study how people do their jobs.

Analyze the steps necessary to complete each task you anticipate people wanting to accomplish. Then design your product to facilitate those tasks, using a step-by-step approach by thinking of how a person might get from one place to the next in a logical fashion.

Involve users throughout the **design process** and observe them working in their environment. Use people who fit your audience description to test your **prototypes** and development products. Listen to their **feedback** and try to address their needs in your product. Develop your product with people and their **capabilities**, not computers and their capabilities, in mind.

Accessibility

The program should be **accessible** to everyone who chooses to use it. There are likely to be members of your target audience who are different from the **`average'** user that you envision. Users will undoubtedly vary in their ages, styles and abilities. They may also have physical or cognitive **limitations**, linguistic differences or other differences you need to consider.

Identify how the individuals in your **target audience** differ and what special needs they may have. Make it easy for users to interact with your product using different inputs and outputs.

Make your application accessible to people around the world by including support for worldwide capabilities in your designs from the beginning of your **development process**. Take stack of the cultural and linguistic needs and expectations of your target audience.

The focus

Studies were made on few of the following issues of the content page of Internet. Understanding the **structures** in the web and how really **organization** in this content page goes was the very focus of the project. Studying how **hierarchy** of information is achieved at every level of **communication** and information distribution. An attempt was also made in order to suggest an **alternative** wherever possible. How to **represent** what is hidden inside became the secondary task. Users find it difficult to **navigate** and it brings up real **confusion** as to what path they should take. If the user wants to **search** some information how should he go about it?. These and some other questions regarding web answered by means of **exploration** in existing websites.

The following page gives a small brief of how this was done.

How

Going through many **interesting** and few uninteresting sites made up all the explorations on the net. **Explorations** at every level of information **structure** its **content** and **design** organizations were made. **Problems** encountered were noted down and possibly given an alternative. All the **dos'** and the **don'ts'** are **categorized** later in these pages as to give a clear-cut idea of the exploration.

Besides exploring the websites, **books** and **magazines** were referred as guiding tools towards this project. **Research** papers, few that were encountered while surfing were not only beneficial to the project but added value to the explorer.

The next page talks about the design **principles** that should be observed while designing a website.

Principles of web page design

A web page application should be:

Effective -- because its content is sound and satisfies viewers' wants and needs;

Affective -- because appears to a viewer's emotional state, is attention getting, stimulating and interesting; and

Efficient -- because viewers can navigate the assemblage of pages with a minimal amount of time and effort to get the information they want.

Four interacting stages of Design -

I PREPARATION

II DESIGN

III IMPLEMENTATION

IV MAINTENANCE and CONTINUAL IMPROVEMENT

Pre-Preparation Assumptions

Viewers operate in a context:

Technological

Psychological

Sociological

Economic

Viewers have cognitative limits (Magical 7 +/- 2)

Chunking!!!

Viewers have various kinds of information needs:

Internal or Problem Specific

Conversational

Reference

News

Cultural

Viewers come to a page with different predisposition:

Questions to be answered

Requests for information

Desire to do something

Desire to be entertained

Assumptions to be tested

General feelings of wants or needs

Vague ideas

The information and links on web pages can be organized in at least 5 different ways:

Category

Time

Location

Alphabet or by sequence

Continuum or by a measure

Viewers should be able to:

Know where they are in the system of pages at all times
Understand the information function or purpose of each page
Know what actions they can take on each page
Know what actions they can not or should not take on each page
Know what will happen if they take a given action -- mapping
Take any action naturally and easily
Navigate pages gracefully to find the page they want

Designers design web page applications so that presenters and viewers can communicate and reach mutual understanding with each other -- their intentions and their mental models begin to coalesce.

Preparation Stage

1. Ideation Phase

Determine presenter's intent and model
Determine viewers' intent and model
Collect the entire "Information Domain" from available sources:
Ideas
Facts
Text
Tables
Images, Photos, Graphs, Drawings
Sounds
V ideo
Points of Persuasion or Argument
Scripts, Applets or Common Gateway Interface

2. Identification Phase

1. Decide what information is to be included and what is excluded
2. Create an exhaustive list of all information objects in the domain
3. Identify the information STEWARDS of each object
4. Secure stewards' approval as to information
    - Type Wording
    - Accuracy
    - Clarity
    - Completeness, Breath and Depth
    - Timeliness and Changability
    - Proprietariness and Confidentiality
    - Considerations of organizational prestige, image or presence

Design Stage

Incorporating Aesthetics with Informational Considerations

Iterate between analysis and composition in sequence:

Text Only --->Text and Images ---> Linkages ---> Multimedia

Analysis Phase

Consider each information object.

What is the key idea?

Is it expressed well? With the appropriate media?

If all of the information a viewer needs is not contained in this object is it possible to link to a source that contains it?

How does the viewer experience the information element?

What does the presenter really want the viewer to know or feel after being exposed to this element?

Does it satisfy viewers' wants and needs?
Does it facilitate information accommodation or assimilation or both for viewers?
The analysis phase yields an agenda consisting of the medium and design of the individual information objects that are to be conveyed to viewers.

1. Composition Phase

Composition is the process of translating objects into groups of text and graphical symbols for presentation, collecting objects onto pages, determining the actions and functions that required by viewers to access the information they want, and establishing the overall "look and feel" of the assemblage of pages.

Actions and functions include arranging and ordering the symbols to manage dependencies among the pages, ensuring consistency in content and presentation, defining navigation paths, developing the controls necessary to facilitate interaction and navigation.

Prepare a STORYBOARD.

A STORY BOARD is a series of pictures and words that depicts what viewers will see and what they can do on every page. It is generally based on one or more scenarios describing how a viewer enters the home page , traverses the assemblage of pages, and what happens until the viewer exits the site.

Implementation Stage

1. Prepare images as gif's or jpeg's and place in a directory.
2. Code HTML documents.
3. Test and refine documents.
4. Review with presenters and stewards.
5. Secure approval to implement.
6. File Transfer Protocol (FTP) to the server.

Maintenance and Continual Improvement Stage

NO WEB APPLICATION IS FINISHED FOREVER!

Provide methods and procedures for keeping information and pages current.

Make the updating of information easy.

Be prepared to accommodate new aesthetics, ideas, and approaches as they appear.

Be prepared to accommodate to new technological platforms as they become available.

The following few pages then talks about the findings of this **exploration**. It mainly talks and informs about the content of the **focus** in the project in detail.

Structuring

Structuring is done because the user should get exposed to **information** in **progression** and in a specific procedure. Due to structuring it is easy to categorize and chunk information according to its hierarchy and present it to the user.

Structure **controls** the flow of information. It also checks the **quantity** of information in one given **chunk**.

Structure can be done in several ways. The information is broken down into pieces according to their **hierarchy** and importance.

Structure is a grid that shapes up information as a whole into small chunks if information for the **easiest access** for the user.

In simple words a good structure allows the user to access information smoothly (links) and with best understanding.

The focus

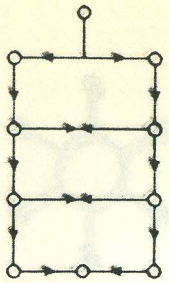
Studies were made on few of the following issues of the content page of Internet. Understanding the **structures** in the web and how really **organization** in this content page goes was the very focus of the project. Studying how **hierarchy** of information is achieved at every level of **communication** and information distribution. An attempt was also made in order to suggest an **alternative** wherever possible. How to **represent** what is hidden inside became the secondary task. Users find it difficult to **navigate** and it brings up real **confusion** as to what path they should take. if the user wants to **search** some information how should he go about it?. These and some other questions regarding web answered by means of **exploration** in existing websites.

Structure and organization

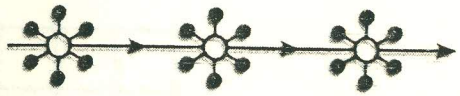
The basic **information** Design is based on the ways you **structure** your content. There are various ways of structuring the information.

- **Linear structure** – In this type, the information is structured in a linear fashion. Every point is **followed** by another.

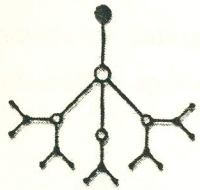
exploring
the content page of
www



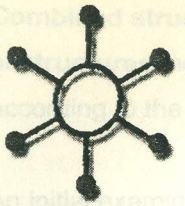
Parallel structure – In this case, user can follow one path across the levels or he can **go across** the information at every level.



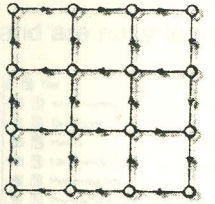
Nodal structure – In this type of structure, there are **chunks** of information. While navigating through the information, user **follows** these chunks.



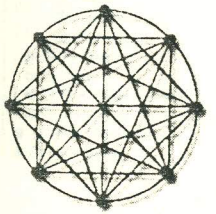
Tree structure – In tree structure the information is further **branched** out as it **progresses** down the levels. It is commonly used structure for information **hierarchy**.



Single frame structure – In this type the entire information is linked to the root. User can access to any part of information **directly**; but everytime have to come back to the **root** for a new path.



Grid structure – In this kind, the information is linked like a **grid**. User can go across the **categories** of information at every level and vice-versa. It is like an information spread across the campus.

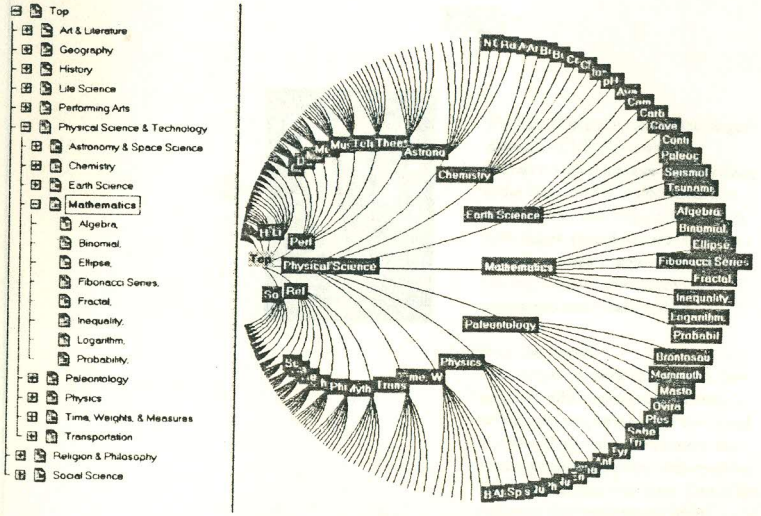


Network structure – In this case, any part of the information is **linked** with all other parts of information. Conceptually it is like a **net**, but is a very **complex** structure in terms of information chaos.

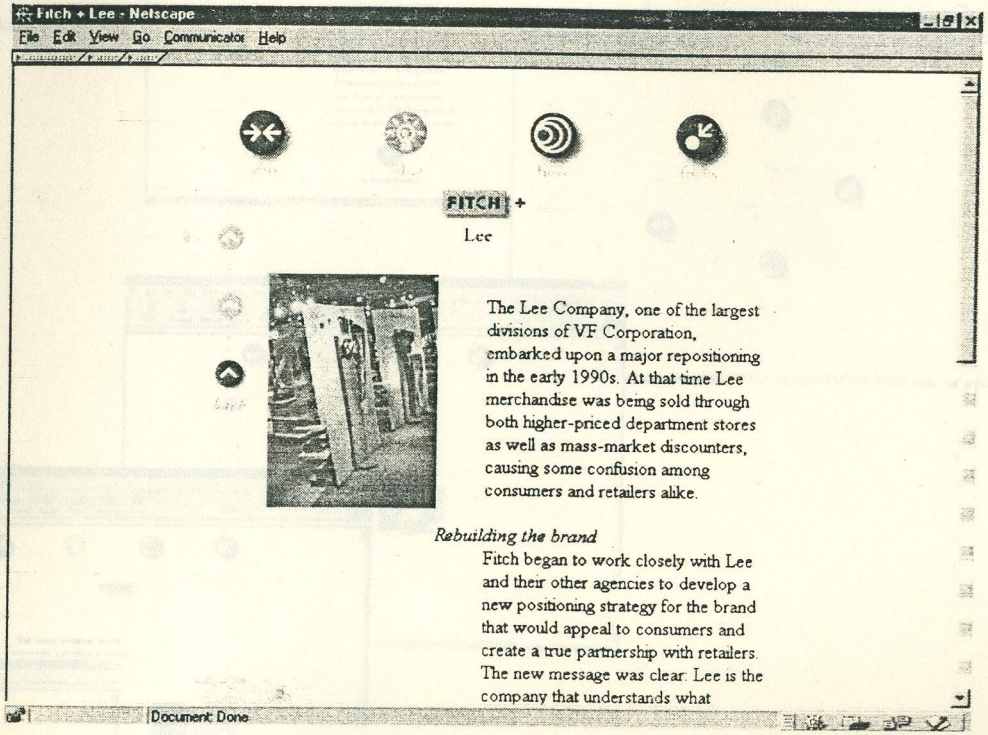
Combined structure – Very clear from its name, it is a **combination** of all kinds of **structures** mentioned above. It facilitates the structuring of information according to the **necessity** of the chunks of information.

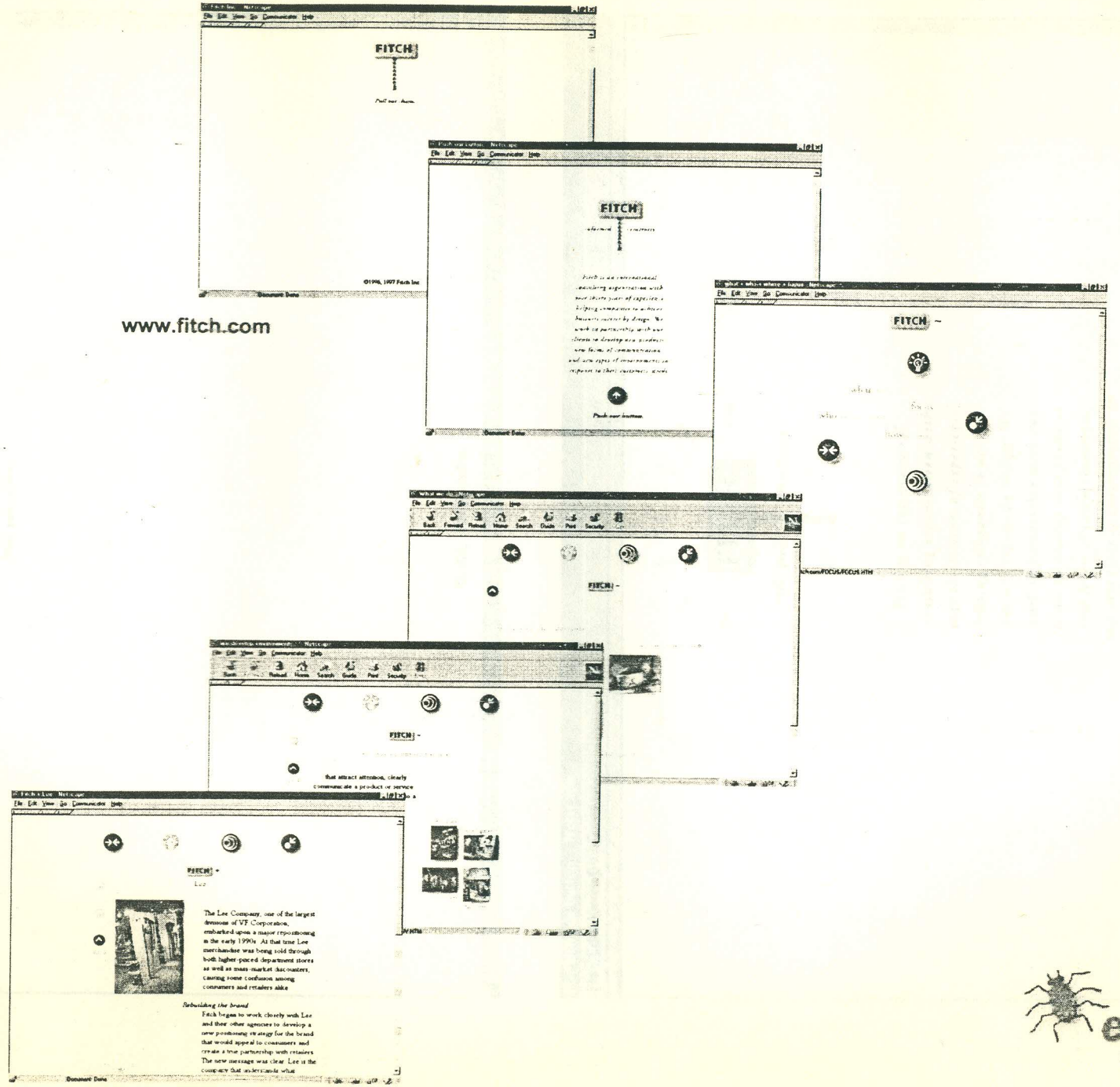
An initial examination of Tree navigation and structuring. The following diagram shows a **hierarchical** tree UI (left) and the **Hyperbolic** Browser (right) used in experiment conducted at the Microsoft research lab in Aug 97.

The research also analyzed different types of structures, which help in retention and are easy to navigate.



Many example ranging from **complex** structures were explored in the project, but an interesting structure was experienced with www.fitch.com, which is demonstrated in the coming page. The structure so simple that even the **layman** can access through all the available information without any problem in terms of navigation and getting a thorough understanding of the content.





www.fitch.com

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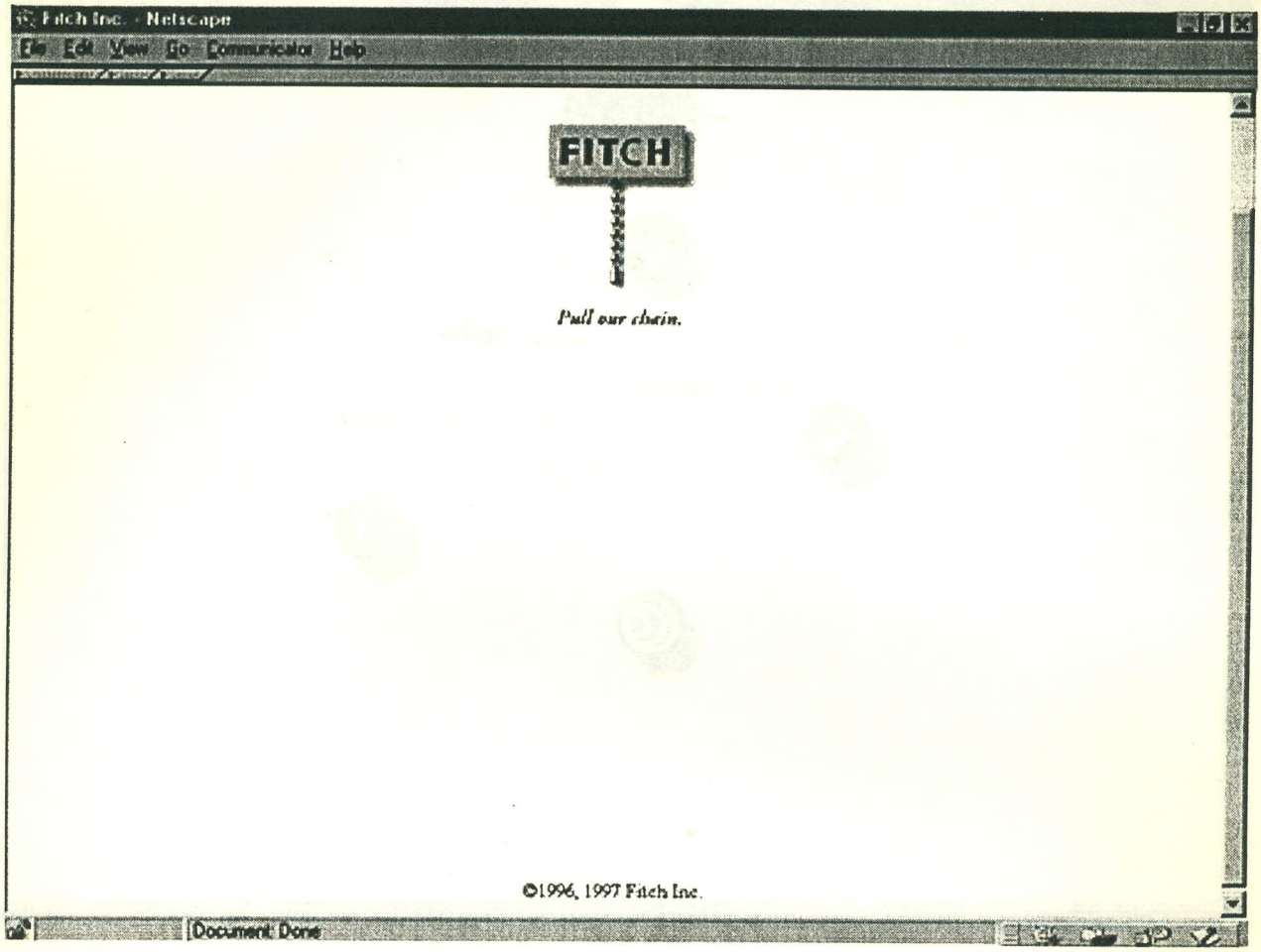
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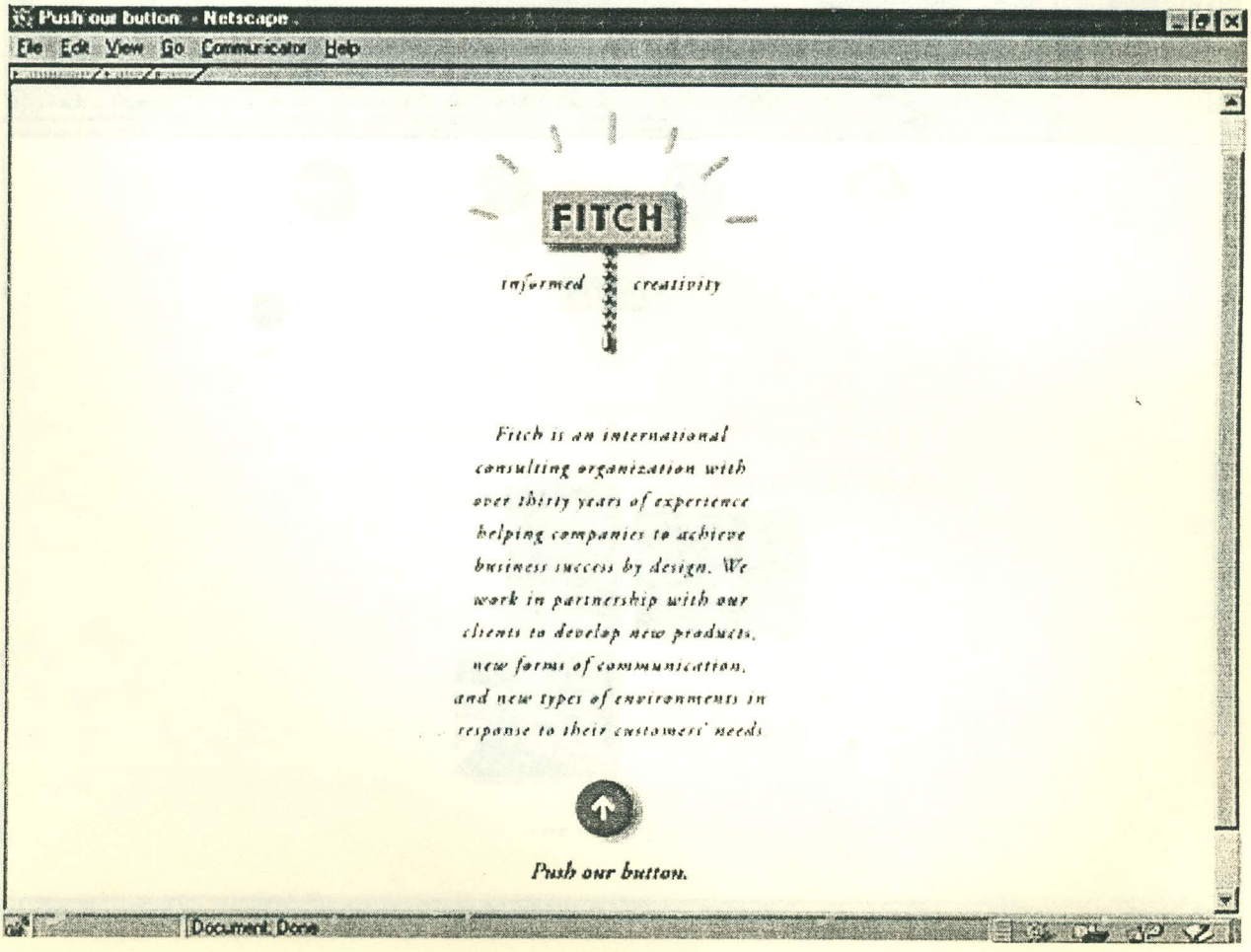
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informed creativity
Fitch is an international consulting organization with over thirty years of experience helping companies to achieve business success by design. We work in partnership with our clients to develop new products, new forms of communication, and new types of environments in response to their customers' needs
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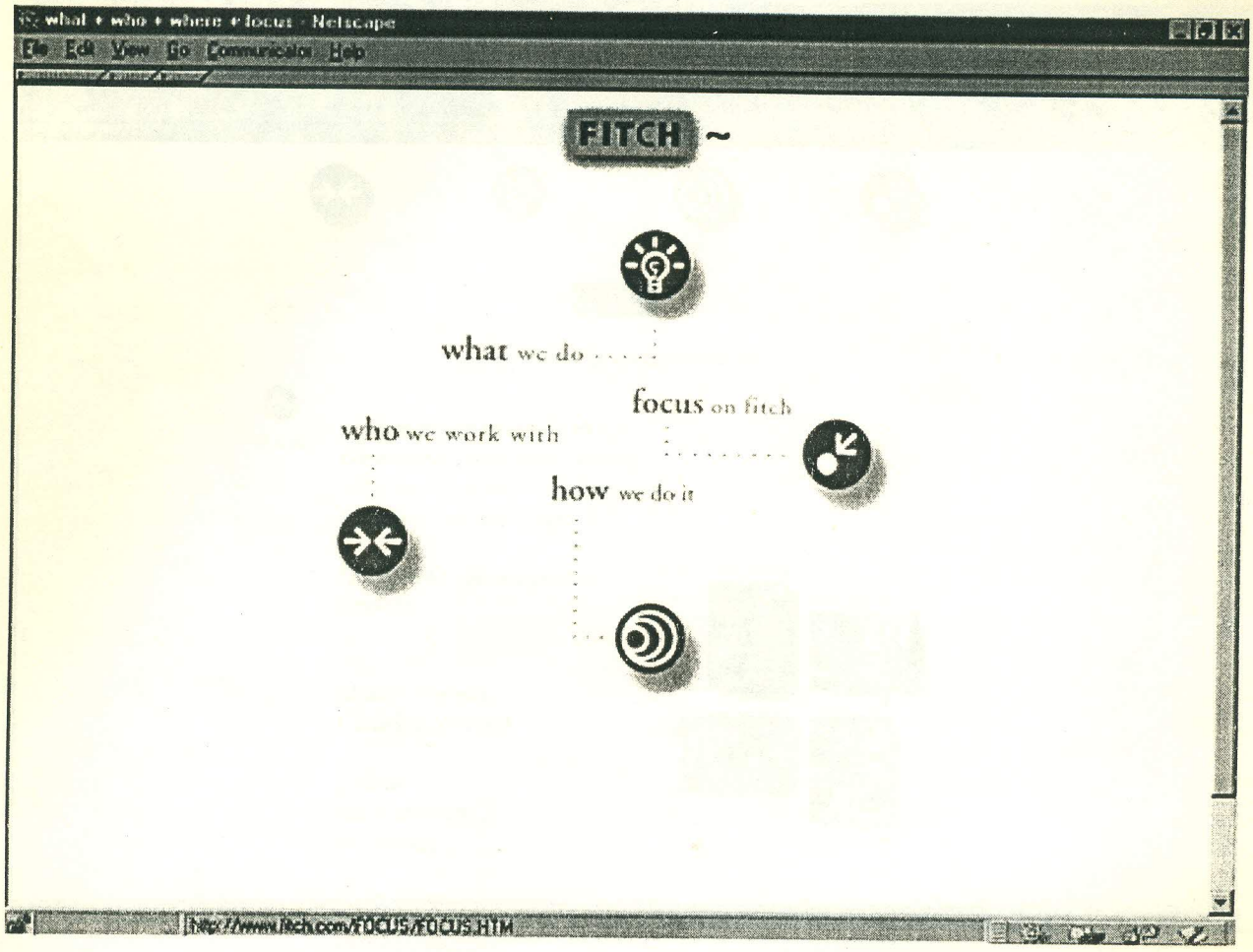
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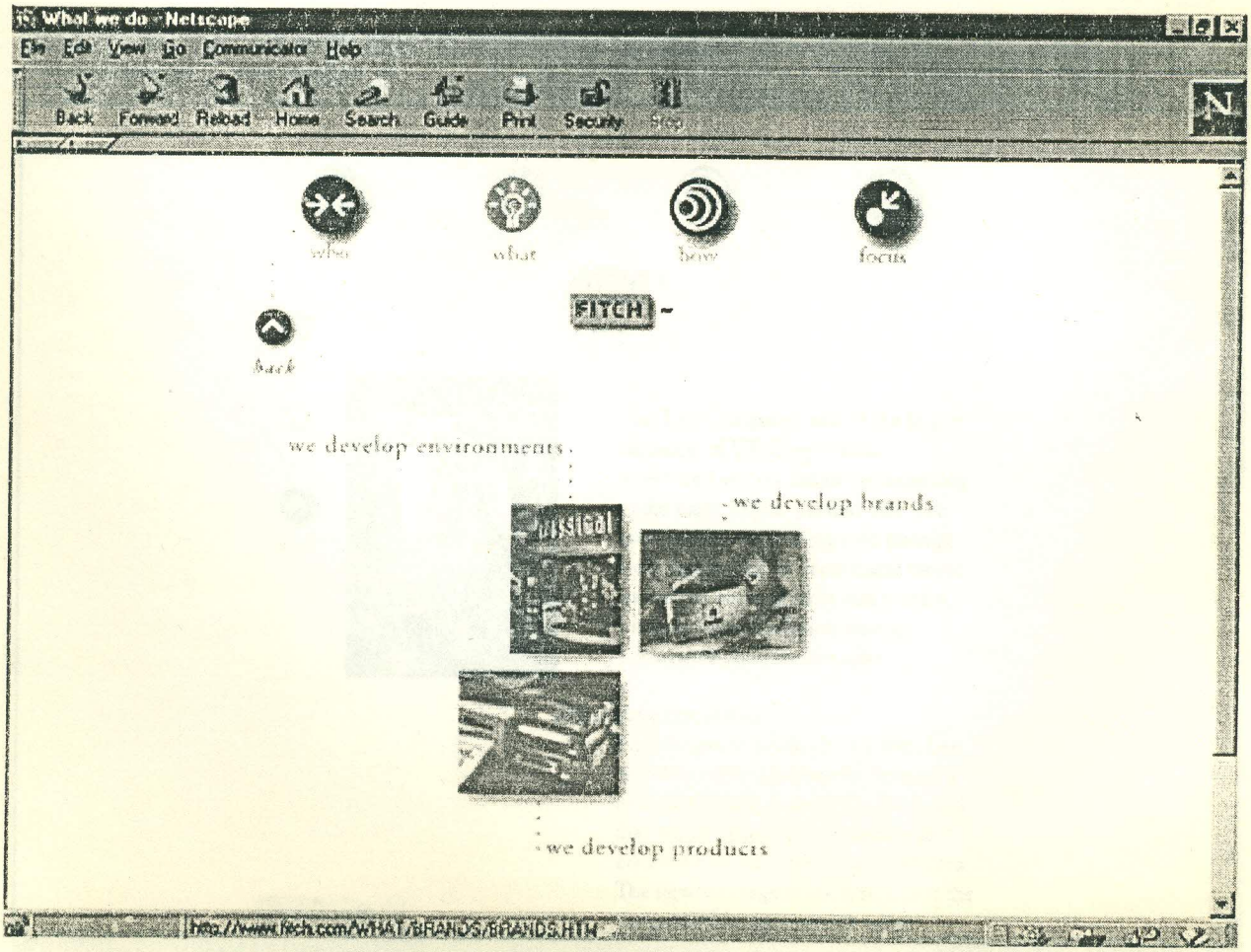
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we develop environments . . . . . .

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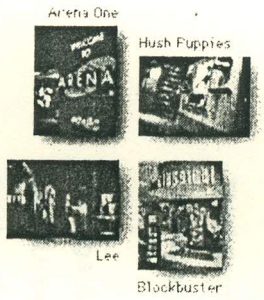
. . . that attract attention, clearly communicate a product or service offer, and positively contribute to a company's overall image.

Our interdisciplinary process involves:

Discover:
Market research
Consumer research

Define:
Retail strategy
Positioning



http://www.fitch.com/CSTUDIES/ARENAONE/ARENAENV.HTM

Fitch + Lee - Netscape

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back

The Lee Company, one of the largest divisions of VF Corporation, embarked upon a major repositioning in the early 1990s. At that time Lee merchandise was being sold through both higher-priced department stores as well as mass-market discounters, causing some confusion among consumers and retailers alike.

Rebuilding the brand

Fitch began to work closely with Lee and their other agencies to develop a new positioning strategy for the brand that would appeal to consumers and create a true partnership with retailers. The new message was clear: Lee is the company that understands what

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Organization of the content

Any **information** structured or unstructured needs to be presented. Content organization plays an important role here. Once the information is ready, the challenge lies as to how we **present** that information to the target audience; may be one by one or two at a time or the whole in one go.

The information is at its best **presentation**, when it is exposed keeping in mind **hierarchy** and the importance of the information.

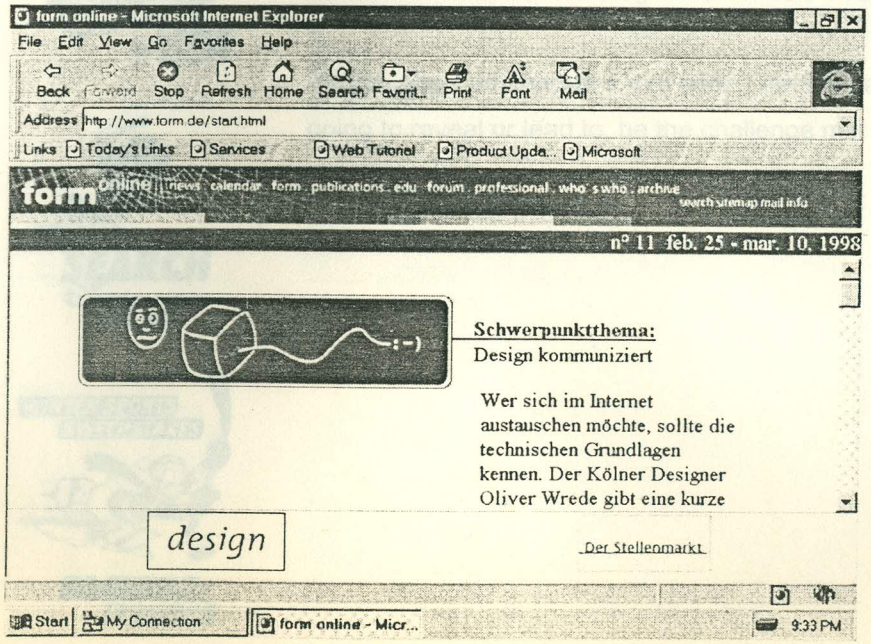
An **organized** content is always pleasing to the eyes and is easy to **access** and read. Unorganized on the other hand is less **interesting**, jarring to the eyes and most confusing.

Content organization can be achieved by number of ways. It only takes the understanding how you want to put it. **Good composition** (understanding and good use of grids), good utility of **colour, lines** and use of other fundamentals of information theory **grouping** and **placement** to mention few contribute to a good content organization.

Organization of the content

Interestingly all try to put the content in an organized form. Though this organization highly depends upon the **content** and the subject you are handling, one thing is sure, if you look at this example of organizing the content. It's the on-line magazine site for FORM... www.form.de interesting experimentation and skillful use is **observed** throughout the site.

The **content** is organized on the top corner as to get the attention of the viewer. All the information is fitted nicely in those coloured stripes. Each piece of information is given a specific **colour**, which goes, throughout the site. It is also interesting to see the **sitemap** were the same colours come and guide you to specific information you want. There is a search facility along with reference to the address and the email.



Representing what is inside

Content, which is **organized** or structured, is obviously not going to be visible in one go. But it is necessary for the user to know, understand what is it that he is going to see next.

There are several ways in which the inner **content** can be presented. It can be either by listing them out, or by giving separate headings and accompanying them with **visuals** (ambience) or by simply putting it in to **words** and making it clear to the audience.

Which path to take

Most of the time user gets lost in the whole information **space** and **bombardment**. If he is not guided he feels insecure and it is likely that he quiets.

Design plays an important role here. Leading each **link** properly to what it is going to reveal or lead to, be the challenge met by very few web sites.

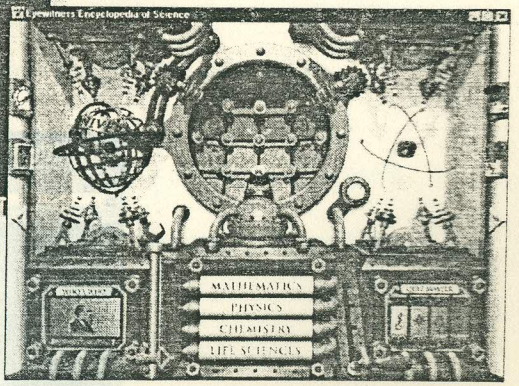
Representing what is inside

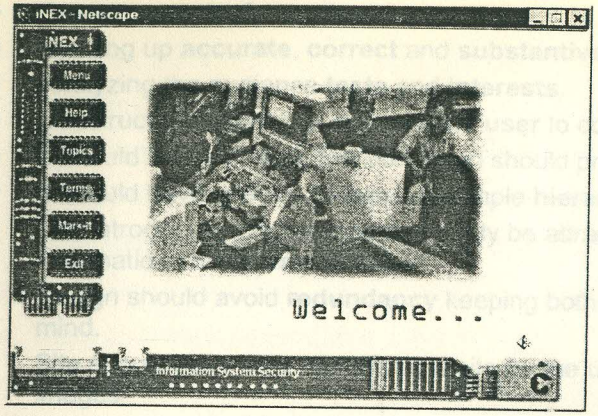
Letting the user know where exactly he is, is the most challenging task for the web designers.

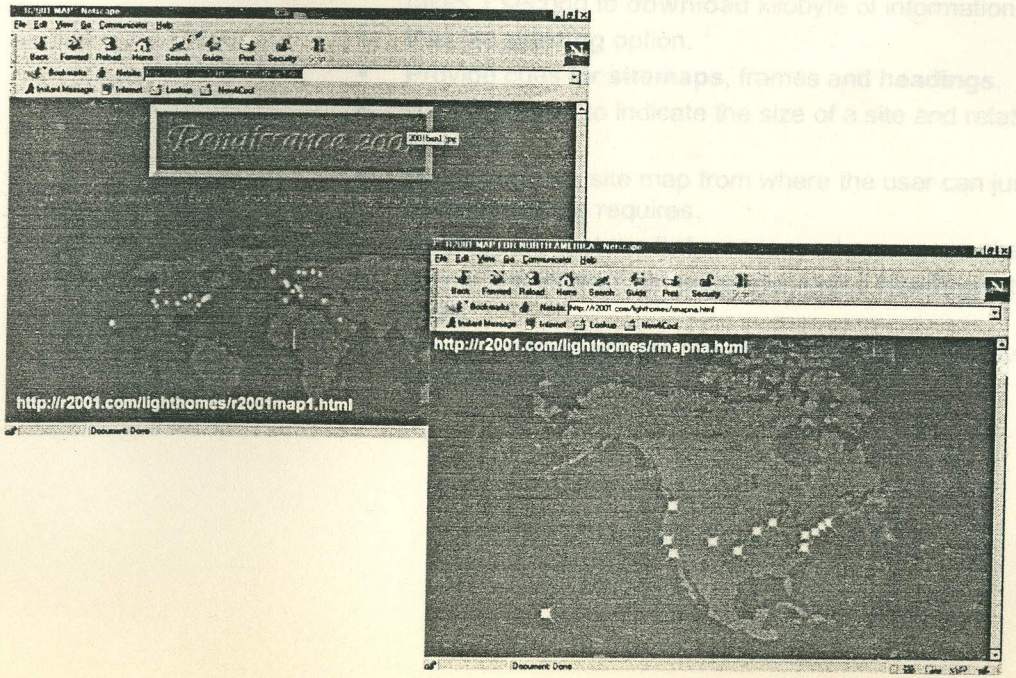
Where I am? Behavior indicates users don't know where they are in the structure of the website.

How can I get to other places? People don't know as to exactly how they can navigate to another place in a particular site.

Where can I go? People get lost sometimes just because there are no clear indications for them to navigate.







Site design

- Provide meaningful **content**.
- Building up **accurate**, **correct** and **substantive** information.
- Analyzing the audience **tests** and **interests**.
- Construct a content that compels the **user** to come back.
- It should be very much functional and should provide a **service**.
- It should have uniform design and simple **hierarchy** in structure.
- The introductory pages should not only be attractive but also have structured information for the **user** to know.
- Design should avoid **redundancy** keeping both aspects of text and images in mind.
- Site should have only **text version** site for the user who has no access to the images.
- Larger the site more the **sub-menus** to avoid confusion.
- The content page should not exceed 50 KB of information size. On average it takes 1 second to **download** kilobyte of information.
- Provide **printing** option.
- Provide cues for **sitemaps**, frames and **headings**.
- Use **sitemaps** to indicate the size of a site and relationship of the information available.
- Make links in a site map from where the user can jump to whichever **information** he requires.
- Making sure that the **links accessed** even once change their colour.
- Do not link information under numerous **headings**, but should be in **logical spot.**
- Simple Imagemaps for **graphical navigation** for the user to enter the site wherever he feels to.

Navigation

- Follow **three-click** rule for quick **accessibility**.
- Disclose the structured information in **progressions** giving proper headings and titles to each.
- Providing two levels of **navigation** for larger sites.
- Avoid navigation through only **images**; should possibly give links to the label or **headline** or the title to which the image and the links is all about.
- Avoid **links** within text ... this disturbs the flow of the reading.
- Keep no links to **incomplete** pages.
- Links should clearly mention it's **content**.
- Distinguishing **features** between visited and non-visited sites.
- **Annotate** all links to large files. (mention the content)
- Separate out links from the **main text**.
- Don't provide **external** links in the **content** page or for in the first few pages of the site.

Page layout

- Avoiding **scrolling** in the content page. If not place all the links and content on the top edge of the page.
- Place page title both in the **title bar** as well as in the content page.
- Provide links to **home**, **search** and **sitemaps** without excluding the copyright page and email link for the webmaster.
- The content page or the **homepage** should be in one page.
- As far as possible **categorize** short pages from the long pages.
- For **specific** information give links to several short pages.
- For understanding an **entire concept**, place all content information in one single page including internal links and sub-topics.
- Provide long pages for which you want readers to **print** and read it in leisure.
- Use **grids** to make similar pages have similar look and feel, which also ensures consistency.
- Use of **tables** also aids to align objects, texts and images creating vertical and horizontal space and control over these elements.
- Fill only 30 percent of the space in order to leave sufficient **breathing space**, which makes the visual content, more inviting and comfortable.
- Use of proper horizontal and vertical spaces to ensure logical groups or chunks of information for the user. **Chunks** of text, images, and headings following in one category.
- Use **proximity** as the design principle whenever an image represents or follows a given information.
- Avoid **horizontal** rules to avoid prominent **breaks** in flow of information.
- Avoid **vertical** scroll as far as possible and eliminating use of **horizontal**.

Page titling and headings

- Titles helps in not only **identifying** a page but also making it more unique and meaningful.
- Titles helps the user when he has to **scan** through the given lot of **information** or when he enters the **search** engine for some particular information.

Frames and windows

- Frames are to **divide** screens, so that each of them operates individually.
- One can create more number of frames but then it has to undergo **extensive usability testing**. Increase in the number of frame increases scrolling and intern getting confused. This also gives rise to problems of printing and bookmarking a given frame and page.
- Use multiple but **simple** windows for added **functionality**. These may contain menus to navigate or some detail information or just an illustration.

Pop-up text

- Design frames so that a **link** from the main content page displays small amount of **pop-up text** in a smaller frame.
- The **disadvantage** is that this reduces the content window size.

Graphics

- Design graphics that make the intended **meaning** clearer.
- It should have a purpose, act as a **value addition** and pleasure.
- Using text with graphics is to **communicate** the intended meaning.

If only visuals are used to communicate, then it has to undergo extensive usability testing.

Use alternative text for images

- For those whom have their **graphics** turned off.
- Internet Explorer shows text unlike Netscape as an **alternative** for images.
- **Phrase** the alternative text in such a way that goes with the related **associated** paragraphed text of the site and to which that particular image relates.
- Include these phrases in the search engine's **search list**.

Use of images for navigation

- Graphics helps visitors to **conceptualize** the site and it's organization.
- Graphics are used to **represent** content areas.
- Most often users or the visitors become familiar to the site just because of the **visuals** and not text.
- **Consistency** can be brought in, by using same images for the same content areas throughout the site.

Graphics for titles

- **Graphic images** representing text can be used instead of regular images so that they don't change.
- This gives an additional **quality** and **character** to the site.Graphics for listing
- To create **atmosphere**.
- Bring in an **organization**.
- Helping the user to **associate** and **identify** certain issues in the site.

Using thumbnails

- Providing facility of thumbnails for the user to view and **download** larger images if necessary.

Using interlaced GIFs

- Though the download time for all images of equal size is the same, **Gif** images appear on the screen **instantaneously** and then get sharper unlike non-interlaced which come part by part and give a feel as if they take **longer time to load**.

Using transparent images

- This gives an added **advantage** of using images on patterned or coloured background.

Image titles

- Image titles should be included in **metatags** so that a search engine can find.

Backgrounds

- Low intensity or light **coloured** backgrounds ensures **readability**.
- Patterned backgrounds and **watermarked** text should be avoided.

Colours

- Bringing in high contrast increases **readability**.
- Avoid use of too many **colours**.

Text

- **Sanserif** fonts are high in **readability**.
- **Bold** text should be used for **emphasizing** or highlighting information.
- **Italics** should be avoided, as it is very difficult to read online.
- **Underlining** should be avoided as it is mistaken for links.

Readability

- People read **off-line**, so design a direct and shortest link to text.
- Care should be taken that the linked text is **precise** and short.
- Text should be **bulleted** and help to scan information quickly.
- It should highlight certain **chunks** of information.
- Text can also be used as **labels** for certain images and chunks of information.

Animation

- Us of animation should be **minimum** and as per **requirement**.
- Avoiding **repetition**.

Netiquettes

Update information at regular intervals and a footer note for the same.

Enough **text** accompanying images to ensure that the user has something till the images **download** completely.

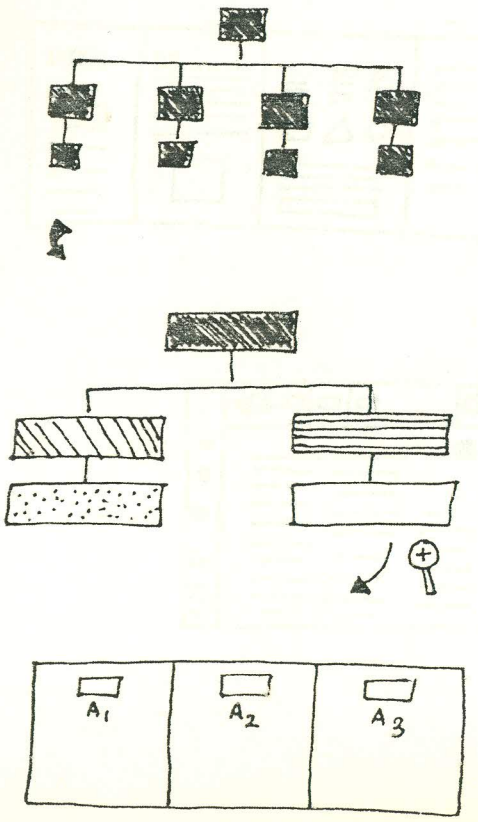
Alternative thinking

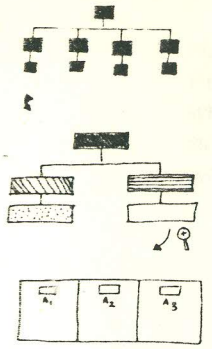
Structural level

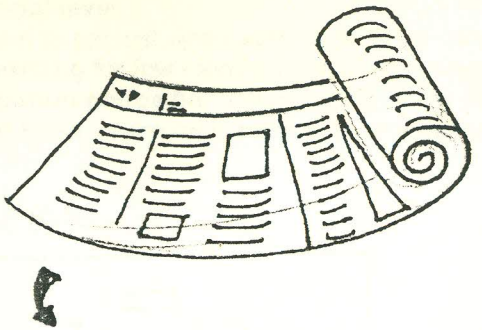
Why not and **experiment**! This is how most of the things evolve on this planet. After brainstorming and exploring variety of sites of various contents, and understanding their respective structures gave birth to various other conceptual ideas.

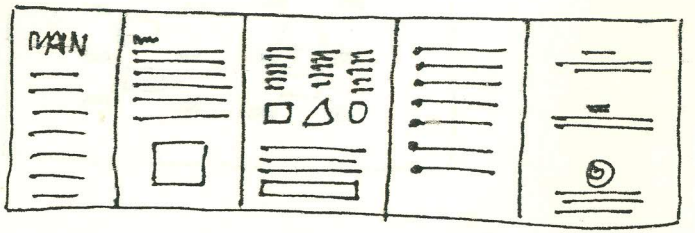
Some of them were sketched...

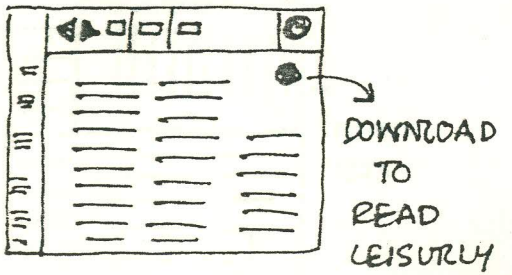
1) Combining and parting
2) Paper role concept
3) Download





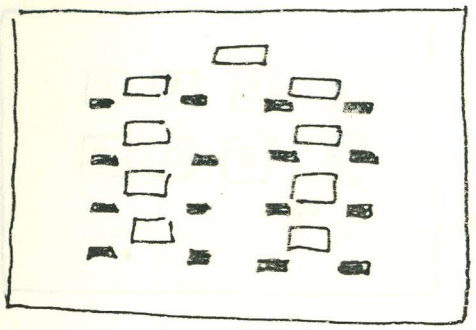




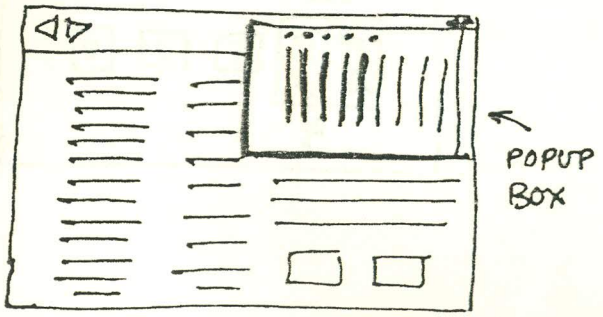


Navigational level
People tend to get lost while **surfing** and exploring sites. A concept of **sitemaps** which is existing for few months now, it was taken further to a structured sitemap and **navigation gauge** bar. It has the capability of taking the user anywhere he wants and know where he is exactly, but he has to contribute an extra click.

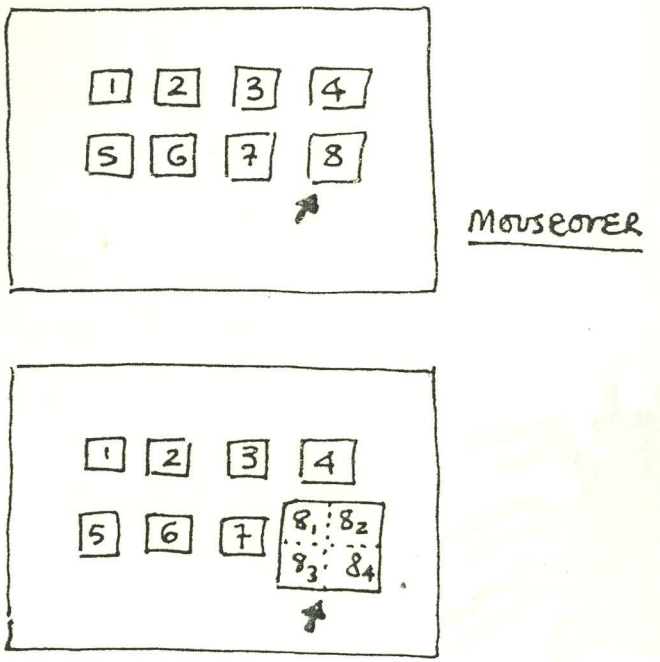
SITEMAP



NAVIGATION GAUGE



Organizational level
Why go in, lets get out? This **concept** gives a chance to the user to not dig information but attend information as it gets **revealed** to him with some clicks and **mouseover** commands.



Conclusion

Taking this opportunity of getting entangled into the webnet and having exposed to the various aspects of **structuring**, **organization** of the **content**; to just serve the information to our customers (users) in the right way still being the **challenge**; attaching the enemy before it attacks remains the aim.

exploring
the content page of
www

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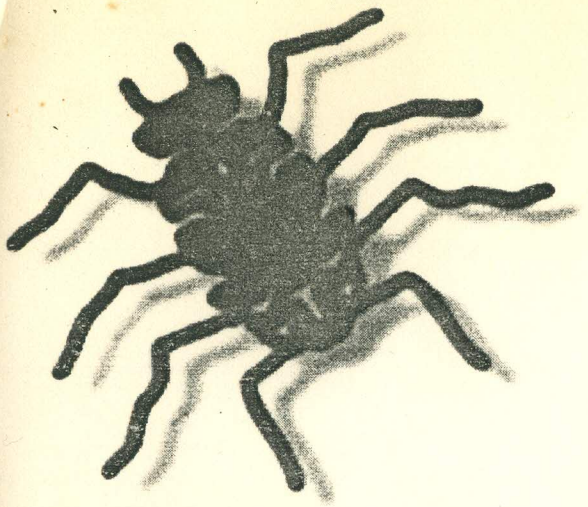

Visited sites

http://www.cnet.com/ – technology magazine
http://www.yahoo.com/ – indexed content
http://www.cnn.com – newspaper
http://www.lycos.com – search engine
http://www.cs.uh.edu/~clifton/index.html – encyclopedia
http://www.slate.com/ – political magazine

http://www.commarts.com – online magazine
http://www.form.de – online magazine
http://www.microsoft.com – Business and products
http://www.disney.com – children
http://www.pratt.edu – education
http://www.vivid.com – design firm
http://www.yasrajfims.com – entertainment

Glossary

Internet Literacy

ADN
(Advanced Digital Network) -- Usually refers to a 56Kbps leased-line.

Applet
A small Java program that can be embedded in an HTML page. Applets differ from full-fledged Java applications in that they are not allowed to access certain resources on the local computer, such as files and serial devices (modems, printers, etc.), and are prohibited from communicating with most other computers across a network. The current rule is that an applet can only make an Internet connection to the computer from which the applet was sent.
See Also: HTML , Java

Archie
A tool (software) for finding files stored on anonymous FTP sites. You need to know the exact file name or a substring of it.

ARPANet
(Advanced Research Projects Agency Network) -- The precursor to the Internet. Developed in the late 60's and early 70's by the US Department of Defense as an experiment in wide-area-networking that would survive a nuclear war.
See Also: Internet

ASCII
(American Standard Code for Information Interchange) -- This is the de facto world-wide standard for the code numbers used by computers to represent all the upper and lower-case Latin letters, numbers, punctuation, etc. There are 128 standard ASCII codes each of which can be represented by a 7 digit binary number: 0000000 through 1111111.

Bandwidth
How much stuff you can send through a connection. Usually measured in bits-per-second. A full page of English text is about 16,000 bits. A fast modem can move about 15,000 bits in one second. Full-motion full-screen video would require roughly 10,000,000 bits-per-second, depending on compression

Bit
(Binary DigIT) -- A single digit number in base-2, in other words, either a 1 or a zero. The smallest unit of computerized data. Bandwidth is usually measured in bits-per-second.
See Also: Bandwidth , Bps , Byte , Kilobyte , Megabyte

BITNET
(Because It's Time NETwork (or Because It's There NETwork)) -- A network of educational sites separate from the Internet, but e-mail is freely exchanged between BITNET and the Internet. Listservs, the most popular form of e-mail discussion groups, originated on BITNET. BITNET machines are usually mainframes running the VMS operating system, and the network is probably the only international network that is shrinking.

Bps
(Bits-Per-Second) -- A measurement of how fast data is moved from one place to another. A 28.8 modem can move 28,800 bits per second.
See Also: Bandwidth , Bit

Browser
A Client program (software) that is used to look at various kinds of Internet resources.
See Also: Client , URL , WWW , Netscape , Mosaic , Home Page (or Homepage)

Byte
A set of Bits that represent a single character. Usually there are 8 Bits in a Byte, sometimes more, depending on how the measurement is being made.See Also: Bit

CGI
(Common Gateway Interface) -- A set of rules that describe how a Web Server communicates with another piece of software on the same machine, and how the other piece of software (the "CGI program") talks to the web server. Any piece of software can be a CGI program if it handles input and output according to the CGI standard.
Usually a CGI program is a small program that takes data from a web server and does something with it, like putting the content of a form into an e-mail message, or turning the data into a database query.
You can often see that a CGI program is being used by seeing "cgi-bin" in a URL, but not always.
See Also: cgi-bin , Web

cgi-bin
The most common name of a directory on a web server in which CGI programs are stored.
The "bin" part of "cgi-bin" is a shorthand version of "binary", because once upon a time, most programs were refered to as "binaries". In real life, most programs found in cgi-bin directories are text files -- scripts that are executed by binaries located elsewhere on the same machine.
See Also: CGI

Cookie
The most common meaning of "Cookie" on the Internet refers to a piece of information sent by a Web Server to a Web Browser that the Browser software is expected to save and to send back to the Server whenever the browser makes additional requests from the Server.
Depending on the type of Cookie used, and the Browser's settings, the Browser may accept or not accept the Cookie, and may save the Cookie for either a short time or a long time.
Cookies might contain information such as login or registration information, online "shopping cart" information, user preferences, etc.
When a Server receives a request from a Browser that includes a Cookie, the Server is able to use the information stored in the Cookie. For example, the Server might customize what is sent back to the user, or keep a log of particular user's requests.
Cookies are usually set to expire after a predetermined amount of time and are usually saved in memory until the Browser software is closed down, at which time they may be saved to disk if their "expire time" has not been reached.

Cookies do not read your hard drive and send your life story to the CIA, but they can be used to gather more information about a user, than would be possible without them.
See Also: Browser , Server

Cyberpunk
Cyberpunk was originally a cultural sub-genre of science fiction taking place in a not-so-distant, dystopian, over-industrialized society. The term grew out of the work of William Gibson and Bruce Sterling and has evolved into a cultural label encompassing many different kinds of human, machine, and punk attitudes. It includes clothing and lifestyle choices as well. See Also: Cyberspace

Cyberspace
Term originated by author William Gibson in his novel Neuromancer the word Cyberspace is currently used to describe the whole range of information resources available through computer networks.

Domain Name
The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general. A given machine may have more than one Domain Name but a given Domain Name points to only one machine. For example, the domain names:
matisse.net
mail.matisse.net
workshop.matisse.net can all refer to the same machine, but each domain name can refer to no more than one machine.
Usually, all of the machines on a given Network will have the same thing as the right hand portion of their Domain Names (matisse.net in the examples above). It is also possible for a Domain Name to exist but not be connected to an actual machine. This is often done so that a group or business can have an Internet e-mail address without having to establish a real Internet site. In these cases, some real Internet machine must handle the mail on behalf of the listed Domain Name.
See Also: IP Number

E-mail
(Electronic Mail) -- Messages, usually text, sent from one person to another via computer. E-mail can also be sent automatically to a large number of addresses (Mailing List).
See Also: Listserv , Maillist

Ethernet
A very common method of networking computers in a LAN. Ethernet will handle about 10,000,000 bits-per-second and can be used with almost any kind of computer.

See Also: Bandwidth , LAN

Finger
An Internet software tool for locating people on other Internet sites. Finger is also sometimes used to give access to non-personal information, but the most common use is to see if a person has an account at a particular Internet site. Many sites do not allow incoming Finger requests, but many do.

Fire Wall
A combination of hardware and software that separates a LAN into two or more parts for security purposes.
See Also: Network , LAN

FTP
(File Transfer Protocol) -- A very common method of moving files between two Internet sites. FTP is a special way to login to another Internet site for the purposes of retrieving and/or sending files. There are many Internet sites that have established publicly accessible repositories of material that can be obtained using FTP, by logging in using the account name anonymous, thus these sites are called anonymous ftp servers.

Gateway
The technical meaning is a hardware or software set-up that translates between two dissimilar protocols, for example Prodigy has a gateway that translates between its internal, proprietary e-mail format and Internet e-mail format. Another, sloppier meaning of gateway is to describe any mechanism for providing access to another system, e.g. AOL might be called a gateway to the Internet.

Gigabyte
1000 Megabytes
See Also: Byte , Gigabyte

Home Page (or Homepage)
Several meanings. Originally, the web page that your browser is set to use when it starts up. The more common meaning refers to the main web page for a business, organization, person or simply the main page out of a collection of web pages, e.g. "Check out so-and-so's new Home Page."
Another sloppier use of the term refers to practically any web page as a "homepage," e.g. "That web site has 65 homepages and none of them are interesting."
See Also: Browser , Web

Host
Any computer on a network that is a repository for services available to other computers on the network. It is quite common to have one host machine provide several services, such as WWW and USENET.
See Also: Node , Network

HTML
(HyperText Markup Language) -- The coding language used to create Hypertext documents for use on the World Wide Web. HTML looks a lot like old-fashioned typesetting code, where you surround a block of text with codes that indicate how it should appear, additionally, in HTML you can specify that a block of text, or a word, is linked to another file on the Internet. HTML files are meant to be viewed using a World Wide Web Client Program, such as Netscape or Mosaic.
See Also: Client , Server , WWW

HTTP
(HyperText Transport Protocol) -- The protocol for moving hypertext files across the Internet. Requires a HTTP client program on one end, and an HTTP server program on the other end. HTTP is the most important protocol used in the World Wide Web (WWW).
See Also: Client , Server , WWW

Hypertext
Generally, any text that contains links to other documents - words or phrases in the document that can be chosen by a reader and which cause another document to be retrieved and displayed.

Internet
(Upper case I) The vast collection of inter-connected networks that all use the TCP/IP protocols and that evolved from the ARPANET of the late 60's and early 70's. The Internet now (July 1995) connects roughly 60,000 independent networks into a vast global internet.
See Also: internet

Intranet
A private network inside a company or organization that uses the same kinds of software that you would find on the public Internet, but that is only for internal use.
As the Internet has become more popular many of the tools used on the Internet are being used in private networks, for example, many companies have web servers that are available only to employees.
Note that an Intranet may not actually be an internet -- it may simply be a network.
See Also: internet , Internet , Network

IP Number
(Internet Protocol Number) -- Sometimes called a dotted quad. A unique number consisting of 4 parts separated by dots, e.g.
165.113.245.2
Every machine that is on the Internet has a unique IP number - if a machine does not have an IP number, it is not really on the Internet. Most machines also have one or more Domain Names that are easier for people to remember.
See Also: Domain Name , Internet , TCP/IP

ISDN (Integrated Services Digital Network) –
Basically a way to move more data over existing regular phone lines. ISDN is rapidly becoming available to much of the USA and in most markets it is priced very comparably to standard analog phone circuits. It can provide speeds of roughly 128,000 bits-per-second over regular phone lines. In practice, most people will be limited to 56,000 or 64,000 bits-per-second.

ISP
(Internet Service Provider) -- An institution that provides access to the Internet in some form, usually for money.
See Also: Internet

Java
Java is a network-oriented programming language invented by Sun Microsystems that is specifically designed for writing programs that can be safely downloaded to your computer through the Internet and immediately run without fear of viruses or other harm to your computer or files. Using small Java programs (called "Applets"), Web pages can include functions such as animations, calculators, and other fancy tricks.
We can expect to see a huge variety of features added to the Web using Java, since you can write a Java program to do almost anything a regular computer program can do, and then include that Java program in a Web page.
See Also: Applet

Kilobyte
A thousand bytes. Actually, usually 1024 (2^10) bytes.

LAN
(Local Area Network) -- A computer network limited to the immediate area, usually the same building or floor of a building.
See Also: Ethernet

Leased-line
Refers to a phone line that is rented for exclusive 24-hour, 7 -days-a-week use from your location to another location. The highest speed data connections require a leased line.
See Also: 56k Line , T-1 , T-3

Login
Noun or a verb. Noun: The account name used to gain access to a computer system. Not a secret (contrast with Password).
Verb: The act of entering into a computer system, e.g. Login to the WELL and then go to the GBN conference.
See Also: Password

Megabyte
A million bytes. A thousand kilobytes.
See Also: Byte , Bit , Kilobyte

MIDI
MIME
(Multipurpose Internet Mail Extensions) -- The standard for attaching non-text files to standard Internet mail messages. Non-text files include graphics, spreadsheets, formatted word-processor documents, sound files, etc.
An email program is said to be MIME Compliant if it can both send and receive files using the MIME standard.

When non-text files are sent using the MIME standard they are converted (encoded) into text - although the resulting text is not really readable.
Generally speaking the MIME standard is a way of specifying both the type of file being sent (e.g. a Quicktime□ video file), and the method that should be used to turn it back into its original form.
Besides email software, the MIME standard is also universally used by Web Servers to identify the files they are sending to Web Clients, in this way new file formats can be accommodated simply by updating the Browsers' list of pairs of MIME-Types and appropriate software for handling each type.
See Also: Browser , Client , Server , Binhex , UUENCODE

Modem
(MOdulator, DEModulator) -- A device that you connect to your computer and to a phone line, that allows the computer to talk to other computers through the phone system. Basically, modems do for computers what a telephone does for humans.

Netiquette
The etiquette on the Internet.

Netizen
Derived from the term citizen, referring to a citizen of the Internet, or someone who uses networked resources. The term connotes civic responsibility and participation.

Netscape
A WWW Browser and the name of a company. The Netscape (tm) browser was originally based on the Mosaic program developed at the National Center for Supercomputing Applications (NCSA).
Netscape has grown in features rapidly and is widely recognized as the best and most popular web browser. Netscape corporation also produces web server software.
Netscape provided major improvements in speed and interface over other browsers, and has also engendered debate by creating new elements for the HTML language used by Web pages -- but the Netscape extensions to HTML are not universally supported.
The main author of Netscape, Mark Andreessen, was hired away from the NCSA by Jim Clark, and they founded a company called Mosaic Communications and soon changed the name to Netscape Communications Corporation.
See Also: Browser , Mosaic , Server , WWW

Network
Any time you connect 2 or more computers together so that they can share resources, you have a computer network. Connect 2 or more networks together and you have an internet.
See Also: internet , Internet , Intranet

Newsgroup
The name for discussion groups on USENET.
See Also: USENET

Password
A code used to gain access to a locked system. Good passwords contain letters and non-letters and are not simple combinations such as virtue7. A good password might be:Hot$1-6
See Also: Login

Port
3 meanings. First and most generally, a place where information goes into or out of a computer, or both. E.g. the serial port on a personal computer is where a modem would be connected.
On the Internet port often refers to a number that is part of a URL, appearing after a colon (:) right after the domain name. Every service on an Internet server listens on a particular port number on that server. Most services have standard port numbers, e.g. Web servers normally listen on port 80. Services can also listen on non-standard ports, in which case the port number must be specified in a URL when accessing the server, so you might see a URL of the form:
gopher://peg.cwis.uci.edu:7000/
shows a gopher server running on a non-standard port (the standard gopher port is 70).
Finally, port also refers to translating a piece of software to bring it from one type of computer system to another, e.g. to translate a Windows program so that is will run on a Macintosh.
See Also: Domain Name , Server , URL

PPP
(Point to Point Protocol) -- Most well known as a protocol that allows a computer to use a regular telephone line and a modem to make TCP/IP connections and thus be really and truly on the Internet.
See Also: IP Number , Internet , SLIP , TCP/IP

Router
A special-purpose computer (or software package) that handles the connection between 2 or more networks. Routers spend all their time looking at the destination addresses of the packets passing through them and deciding which route to send them on.
See Also: Network , Packet Switching
Security Certificate
A chunk of information (often stored as a text file) that is used by the SSL protocol to establish a secure connection.
Security Certificates contain information about who it belongs to, who it was issued by, a unique serial number or other unique identification, valid dates, and an encrypted "fingerprint" that can be used to verify the contents of the certificate.
In order for an SSL connection to be created both sides must have a valid Security Certificate.
See Also: Certificate Authority , SSL

Server
A computer, or a software package, that provides a specific kind of service to client software running on other computers. The term can refer to a particular piece of software, such as a WWW server, or to the machine on which the software is running, e.g.Our mail server is down today, that's why e-mail isn't getting out. A single server machine could have several different server software packages running on it, thus providing many different servers to clients on the network.
See Also: Client , Network

TCP/IP
(Transmission Control Protocol/Internet Protocol) -- This is the suite of protocols that defines the Internet. Originally designed for the UNIX operating system, TCP/IP software is now available for every major kind of computer operating system. To be truly on the Internet, your computer must have TCP/IP software.
See Also: IP Number , Internet , UNIX

Telnet
The command and program used to login from one Internet site to another. The telnet command/program gets you to the login: prompt of another host.

Terabyte
1000 gigabytes.

Terminal
A device that allows you to send commands to a computer somewhere else. At a minimum, this usually means a keyboard and a display screen and some simple circuitry. Usually you will use terminal software in a personal computer - the software pretends to be (emulates) a physical terminal and allows you to type commands to a computer somewhere else.

URL
(Uniform Resource Locator) -- The standard way to give the address of any resource on the Internet that is part of the World Wide Web (WWW). A URL looks like this:
http://www.matisse.net/seminars.html
or telnet://well.sf.ca.us
or news:new.newusers.questions
etc.
The most common way to use a URL is to enter into a WWW browser program, such as Netscape, or Lynx.
See Also: Browser , WWW

USENET
A world-wide system of discussion groups, with comments passed among hundreds of thousands of machines. Not all USENET machines are on the Internet, maybe half. USENET is completely decentralized, with over 10,000 discussion areas, called newsgroups.
See Also: Newsgroup

WAN
(Wide Area Network) -- Any internet or network that covers an area larger than a single building or campus.
See Also: Internet , internet , LAN , Network

Web
WWW
(World Wide Web) -- Two meanings - First, loosely used: the whole constellation of resources that can be accessed using Gopher, FTP, HTTP, telnet, USENET, WAIS and some other tools. Second, the universe of hypertext servers (HTTP servers) which are the servers that allow text, graphics, sound files, etc. to be mixed together.

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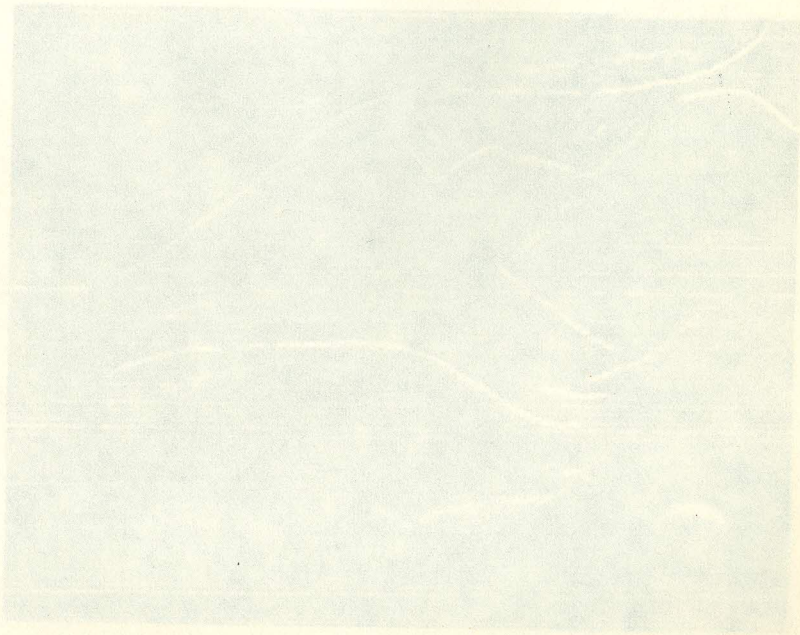

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