Design for Content Management

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Introduction

This White Paper is adapted from a series of outline-form notes I prepared for Content Managers, tasked almost exclusively with web site maintenance for large corporate clients. It is based on my own education in Communication Design at the Nova Scotia College of Art and Design; subsequent teaching at the College, professional experience and assorted readings.

The hand-outs were explicitly designed to facilitate note-taking during training lectures, rather than to function as stand alone documents, and much of the language employed is a transcription of my own notes, taken from the aforementioned sources. I am distributing them ‘as is’, because I think there is enough information here to be of value in pointing readers in the right direction.

The series proceeds from the concrete and specific (including typesetting skills), to the abstract and conceptual. Even though content managers may not participate in creative direction, it is extremely important for them to understand the conceptual underpinnings of a given design, in order to effectively incorporate changes and additions.

Content management performed without such awareness can inflict harm to both the communication of the content, and the overall impression that is simultaneously communicated to the audience (the meta-message).

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Legibility Factors:

Typeface (“Font”)

Medium & environment

Scale

Contrast

Spacing - leading, letterspacing, wordspacing, kerning, margins, gutters (between columns), etc.

Measure (line width)

Page Layout (organization)

Consistency and convention
Technical Model of Communication:

**TECHNICAL MODEL OF COMMUNICATION**

**SENDER** → **MESSAGE** → **RECEIVER**

**SHARED SIGNS** (conventions)

![Diagram of technical model of communication]
“Sign” is a decision whether or not some ‘thing’ is a sign. Every ‘thing’ is potentially a sign. Communication is an exchange of signs (language = anything that signifies). Communication happens between people; interpretation is required.

“Message” is a construction of signs, which by the act of interpretation produces meaning. The ‘content’ is the literal message (usually), but the total package – content and presentation – always communicates a ‘meta-message’, whether or not the sender intends it.

Communication Design addresses the identification and rhetorical form of the meta-message.

Graphic Design/Web Design etc. addresses the tangible production of the communication.

Each of these designs presents a different ‘meta-message’;
(left to right) public educational, consumer product, and internal corporate.
Design ‘Process’:

• Evaluation -
  What is the requirement?

• Planning and Organization -
  How to go about creating the design? Inventory content, determine scope, timeline, budget, delivery medium etc.

• Asking Questions and Investigation -
  Who is the audience, what is the ‘meta-message’?
  Research existing solutions within the industry sector.

• Imagination
  - Constraints and affordances (based on preceding steps).
  - Don’t ‘reinvent the wheel’!
  - The purpose of design is to effectively communicate the client’s content (including meta-message) to the target audience, not the designer’s or the client’s self-expression.

• Modelling and Manipulation -
  thumbnail sketches and other visualizations, interactive mockups etc.

• Realization and Presentation

* The terminology “Pragmatic, Semantic and Syntactic” derives from the ancient Greek art of Rhetoric, applied to the modern communications theory, “Visual Rhetoric”. Rhetoric is not the final expression of an argument, it is the development of the argument by a process of analysis.
Legibility

1. BACKGROUND

Character elements & size terminology (handout)

- x-height
- ascenders & descenders

Type measurement (units) —

- Point & Pica system
- European (modern) — metric (mm)
- Screen (digital display) — pixels (Mac = 72 ppi, Windows = 96 ppi).

Most sw will translate on the fly. Possible confusion with base resolution of document.

Page elements terminology (handout) — some terms carry-over into web site design.


“IBM has an ongoing relationship with a big-client marketing firm. This big-client market-
ing firm is primarily trained in print design. [...] And so you copy ibm.com, other design-
ers copy you and the virus of print design is desseminated throughout the corporate web.”

- but see www.ibm.com/easy
  e.g. www.aiga.com, www.gdc.net

Unlimited choices, ignorance = problems with client interactions etc.

Mechanics of measuring legibility: speed & comprehension;
saccadic movements; ‘word-pictures’.


“x-height”: The Cochin sample (above left) is 48-points, and
the Times Roman (right) only 39.5-points. Note also the differ-
ence in widths of the two settings (bars).

Helvetica x Arial x Trebuchet x Verdana x

Times NR x Georgia x Courier New x

x-heights of fonts for screen display (HTML).
II. FACTORS

**Typeface** ("font")

"body" vs. "display" typefaces.

*body text* must above all be legible.

*display typefaces* can play an important role in defining/supporting "meta-message".

relationship between display and body text (layout, spacing etc): 'gestalt'.

word recognition — distinctive shapes anchored by certain characters. many ‘novelty’ font
designs actively defeat this!

‘quality’ fonts vs. cheap imitations.

**Medium & Environment**

*Print* — paper, texture and quality, ink bleed, 'show-through' (contrast)

*Screen* — dot pitch. crt vs. lcd (flat panel/laptop). crt monitor configuration: flat or
bulging, shadow-mask or aperture grill. refresh rate. resolution. video card. anti-aliasing of
text. “worst common denominator” — graphic artists typically work with optimal equip-
ment and viewing conditions; end-users seldom do!

*Animated text* — effects of compression, delivery medium (e.g. NTSC interlaced video)

*Environmental* lighting conditions. Glare, contrast.

**Scale**

bigger does not equate to more legible.

distance of reading.

end-users' vision.

hierarchy (including scale) defines order of reading, ability to find information.

Very important!

**Contrast & color**

Strongly affected by medium & environment.

Avoid white-on-black for body text, very tiring to read.

**Spacing**

*Kerning* — adjust space between letter pairs. Percent of "em" (= type size). Commonly
required for display type. Aim is to achieve an *optically* uniform whitespace among all the
characters. Fonts sometimes come with pre-defined kerning pairs, but these are usually
optimal at body text sizes only. Numerals almost always require kerning, even body text.
Can’t be applied in *HTML* – big disadvantage with *HTML*-defined headings.

*Letter-spacing, Word-spacing and Tracking* — adjustments of spacing between all selected
characters, words or both. Tracking is easily abused as a kind of styling, but can sometimes
improve legibility if done right. Letter- and word-spacing are better for body text, but
sometimes are useful for display text.
Leading — space between lines of type. Default in sw is 120% of type size — usually not enough for optimal legibility, depending on measure (line width) and x-height. Less relevant for display text, in some cases ‘negative’ leading can improve appearance at no cost to legibility. Defined in css using "line-height".

Margins & gutters — can critically affect legibility. Mechanics of reading — eye must be able to find the next line intuitively! ‘White space’ is an important page design element.

Measure (line width)

Critical factor in legibility that is often overlooked.

Optimal width for body text 8 –11 words, or 1.5 ‘alphabets’ (39 characters) — may vary somewhat, depending on other factors.

Justification (alignment)

Left-justified is most legible, ‘ragged’ pattern makes it easier to track reading position. ‘Force-justified’ is frequently used for newspaper columns to fit greater quantities of text, and requires elaborate word- and letter-spacing, and hyphenation algorithms to work correctly. Abused in ‘desktop publishing’ and web design.

Consistent alignment is best, but mixed justification may sometimes be required, e.g. in web forms design.

Page Layout

gestalt, ‘the whole enchilada’

2D design. “Greeking” text to see the page as an abstract design (formerly used in visual ‘roughs’).

Individual textblocks may be legible, yet page navigation is illegible — fails ‘appeal’ test.

Quantity

The more text, the more critical all factors affecting legibility.

Consistency and convention

Context – what does the target audience expect to see? Convention is culture-specific.

Text may require editing, especially page titles, subheads and navigation labels (hyperlinks, buttons) for web sites.

Consistency improves overall navigation and legibility.
Character Terminology

- arm
- ascender
- bowl
- bar
- counter
- descender
- ear
- link
- loop
- serif: bracketed and unbracketed
- shoulder
- spine
- spur
- stem
- stress
- stroke
- swash
- tail
- terminal
**Typography**

“Typographer” (Middle Ages) was historically the person who set type and also knew how to organize type matter on pages. Mainly produced “broadsheets” and books. Professional prestige – allowed to carry weapons.

Problem of organizing pages became more complex with the Industrial Revolution – increased trade, new formats (e.g. catalogs), advertising etc. Typesetters were unprepared to cope with this change and designers got involved. Europe, ‘applied arts’ (respectable); North America, a step-child of ‘fine arts’ (less status). Training became more specialized. Designers moved into a vacuum – professional rivalries with typesetters, gradual acceptance and cooperation.

Today there is excellent cooperation between professional designers and typesetters, but anyone can perform typesetting. The experts are competing with amateurs.

**Type Classifications (broad categories)** in chronological order of appearance


**Transitional** – Between extremes of Old Face and Modern. Still has bracketed serifs but finer, more contrast, vertical & horizontal stress. Baskerville, 1757.

**Modern** – refinements based on improvements in paper quality (less pressure, better contrast) Bodoni, 1788. Extreme contrast, plain serif (no bracketing), vertical stress (no slant).

Type samples: (left to right), Garamond 1549; Caslon 1739 and Bodoni 1794, from University of Florida Rare Book Collection (www.uflib.ufl.edu/spec/rarebook/art3283c/index.htm). Note use of joined character “ligatures” (Garamond & Caslon), “f” for “s” and contractions (Caslon).
Industrial Revolution


Egyptian (square serif) – Grab attention (compete with other posters). Century Expanded, 1894. Extreme distortions to fill space.


Typeface variations

Pre industrial revolution; Roman, Italic (slanted ‘version’ – different designer, similar weight & style, e.g. Garamond & Granjon).

Modern; type families, e.g. Univers – range of weights, light, regular (medium), bold, extra-bold, ultra-bold and of widths, condensed, regular, extended, etc.

Typesetting technologies

Handsetting (character by character). subdivided trays – 1 char/sec.

Mechanical (Monotype, linotype) – 5 char/sec.

Computer – 3,000 char/sec.

Invention of type

1045 – China moveable type (ceramic). Bi Sheng.


“Hot” (metal) type

1822 – 1st type composing machine

1855 – Linotype. Typewriter-style keyboard. Cast type in lines.

1877 – Monotype. Two machines: keyboard to perforated paper tape, tape fed into casting unit; individual characters, more easily corrected.
“Cold” type

1950’s – Phototypesetting, hand-moved filmstrip, form or disk to expose photo paper. Used for display type by design studios.

1970’s – 2nd-generation: electric keyboards producing a perforated paper strip, type produced in ‘galleys’ (long rolls of body text), ‘pasted-up’ with halftones & line art to make pages that were photographed. Varityper (variable-space typewriter; a cheap form of typesetting). Proprietary mainframe computer systems for large newspapers – ‘desktop publishing’ is a direct descendant of these systems.

Transfer type e.g. Letraset, used more for ‘comping’ (mock-ups) display type, than actual typesetting. Slow; alignment and spacing very tricky – but it replaced hand tracing!

3rd-generation, computer typesetting, electronic pagination sent direct to film (imagesetting).

1985 – ‘Desktop publishing revolution’ Apple’s “Macintosh” computer (WYSIWYG), the laser printer, Adobe Postscript (page description language) and Aldus Pagemaker page layout software.

Metal plates with light-sensitive, acid-resistant emulsion exposed through film of text and images to produce actual printing plates (offset printing). Multiple plates for different colors (process and spot-color) printed sequentially in ‘registration’ (alignment).


Typesetting for screen

HTML, word-processing, ‘presentation’ (Ppt) – based on typing, not typesetting. Page design is difficult, unintuitive and unstable.

Communication Theory

Two main ‘schools’ (theoretical systems):

1. “Process” school – communication is a transmission of messages. Social sciences, psychology; acts of communication’.

2. Semiotics – communication is the production and exchange of meaning. Linguistics and the arts (e.g., Umberto Eco, “The Name of the Rose”); works of communication. “Semiology”; English medical term for the study of symptoms.

“Semiotics can be defined as a science that studies all possible varieties of signs and rules that govern the production, transmission, exchange, generating, interpretation [etc.] of information.”

![Diagram showing Dualistic and Triadic approaches]

Hypothetical design problem (packaging for a CD), ‘What is music?’

- Dualistic: ‘pitch + duration = music’; basis for setting-up a design process.
- Triadic: interpret the particular music as a sign. Traditions of music packaging, according to genre. Think semiotically to maintain options. Typography, imagery, color as signs.

Types of signs

Symbol – a sign that refers to a given object because of a “rule”. Relation is arbitrary, e.g. red = stop, green = go (traffic lights).

Index – refers to the object by having been physically affected or generated by it, e.g. smoke = fire, broken glass = accident.

Icon – Picture element, relationship of expression and content is the visual similarity, e.g. Churchill’s two-finger “V” for “victory” (the same gesture was adapted during the 1960’s as a symbol of “peace”).

Codes = sign systems, e.g. languages. All languages which are in use change.
Distinctions

Relationship between a sign and others (especially similar ones) in the same system; how it is different.

We use ‘signifieds’ to categorize reality so we can understand and talk about it, e.g. Inuit have 80 words for “snow”.

Paradigm is a set of signs to choose from.

Syntagm is the message created from the chosen signs.

All messages require selection from a paradigm and combination into a syntagm.

Denotation is the common-sense, obvious meaning of the sign.

Connotation is the subjective formation and interpretation of the sign, according to cultural and emotional (etc.) values.

“Where there is choice there is meaning, and the meaning of what was chosen is determined by the meaning of what was not.” – importance of making distinctions when communicating.

Advertising as a ‘battle of lifestyles’ (consumer identification through choice) – Coke vs. Pepsi (etc.). How distinctive are they (product and marketing), and why does it matter?

Yet another model (Jakobson 1960)

Constitutive factors of communication:

emotive – relationship of message to addressee; emotions, attitudes, status, class.

conative – effect of message on addressee.


phatic – “Hello, how are you.”, open channel & confirm communication is taking place.

metalingual – identify the code being used.
poetic – relationship of message to itself; aesthetic embellishment.
contact – physical channel, psychological connections

Noise and Redundancy

Noise is anything that negatively impacts on the transmission/reception of a message.

Redundancy is a strategy to overcome noise through predictability and repetition, often including additional cues intended to defeat possible varieties of noise. Conventionality is a kind of redundancy.

Entropy is the opposite of redundancy; an entropic message is unpredicatable, will not be repeated and therefore is more likely to be missed or misunderstood. Assumption that audience is motivated to overcome noise. Skillful communicators orchestrate redundancy and entropy to achieve better impact with target audiences.

Rhetoric (next week)

1. verbal art of persuasion
2. invention of organizing principles, answer to technological fragmentation, tool for creating disciplines, arts, systems & methods.

“moral emblem”, middle ages = classic [modern] advertisement layout. image-headline-text. Up to 18th c., rhetoric was main system of all European formal teaching.

Literature and “liberal arts” became isolated; scientific analysis came to the fore.

Separation of invention & disposition (science) from the rest of rhetoric (art).

Technology comes between observer & reality.

Rhetoric is uncertain; communication model(s) strive for scientific certainty.

The purpose of rhetoric is action. Design as the result of rhetorical action.
Visual Rhetoric

Inference and deduction – how we 'think' (interpret signs into syntagms).

Abduction (hypothesis). Suggests something may be. Most useful for design.

observation: Event drew a large audience.
rule (supposed): The event was announced on the radio.
case (probable): Many people listen to the radio.

Induction. Shows something actually is operative. The 'scientific method'.

case: The event will be announced on the radio.
observation: Station cxyz has higher ratings (most listeners).
rule (probable): Make sure events are announced on cxyz.

Deduction. Proves something must be. Rules-based.

rule: Cxyz has the most listeners.
case: The event was announced on cxyz.
result: The event will have a large audience.

Content and form


Five ‘canons’ of rhetoric

Invention – argumentative, persuasive core of rhetoric, “discovering the best available means of persuasion” – Aristotle. Research and modeling phases of the design process.

Arrangement – order of arguments. Temporal (debate), hierarchy (design).

Style – appropriateness for audience, appeal. Virtues, levels and qualities of style; and “figures of speech” (naming the ways content and form can be configured in an argument).

Memory – not memorization (i.e. of speeches), but ability to respond through knowledge of the subject and modes of argument/persuasion.

Delivery – public presentation; craft, quality (e.g. typography, compression).

Persuasion (appeals)

Logos – reason (informative, ‘plain facts’). Cause and effect, comparison, etc.

Pathos – emotion (vehement, arousing).

Ethos – ethics (charming, attractive).

Schemes and Tropes – categories of ‘figures’

Schemes alter sequence of elements to affect rhythm (addition, omission, inversion).

Tropes alter the reference of elements (substitution).
Metaphor (trope)

Literal – expressing the unfamiliar in terms of the familiar. Paradigmatic units.
Common in advertising; an event or object is set up as a metaphor for a product (less
useful for other design applications). Everyday metaphors – “Time” as a metaphor for
“money”, e.g. “saving time”, “wasting time” etc.

Metonymy (trope)

Make a part stand for the whole, e.g. a photograph stands for (a kind of) ‘realism’.
Syntagmatic (the audience completes the syntagm). Works indexically, but based on
arbitrary selection. This selection is disguised or ignored, thus metonyms can be made
to appear as natural indexes, e.g. people tend to interpret a news photo or video to
stand for the whole event, rather than an editorial selection.

Some other rhetorical figures

Schemes: Amplification: expansion of the subject through repetition, scale, alternate views
(etc.).

Antithesis: opposition, or contrast of ideas or words [/signs, visual elements] in a bal-
anced or parallel construction.

Apposition: adjacent element in a paradigm (similar but distinct).

Chiasmus: two corresponding pairs arranged not in parallels (a-b-a-b) but in inverted
order (a-b-b-a)

Ellipsis: omission of something that may be assumed (in context).

Parenthesis: insertion of something that doesn’t belong in the paradigm, interrupting
normal syntactical flow.

Tropes: Euphemism: substitution of an agreeable or at least non-offensive expression for one
whose plainer meaning might be harsh or unpleasant.

Hyperbole: exaggeration for emphasis or for rhetorical effect.

Irony: expression of something which is contrary to the intended meaning; the words
say one thing but mean another. Hyperbole and Litotes are kinds of irony.

Litotes: understatement, for intensification, by denying the contrary of the thing
being affirmed. The opposite of hyperbole.

Oxymoron: apparent paradox achieved by the juxtaposition of words which seem to
contradict one another.

Personification: attribution of personality to an impersonal thing.

Synecdoche: understanding one thing with another; the use of a part for the whole,
or the whole for the part. A form of metonymy.

– see http://humanities.byu.edu/rhetoric/silva.htm for an exhaustive list.

‘Visual Rhetoric’ is the application of classic rhetorical structure to design.
The full page ad on the left does not use any meaningful rhetorical figure or clear appeal; there is no conceptual hook on which to focus our interest. The ad on the right relies on the appeal of ‘logos’, which would be undermined or negated by introducing superfluous metaphors or other figures.

This ad (from a two-page spread) uses the rhetorical figures of metaphor, metonymy & synecdoche, hyperbole, ellipsis and amplification.
Parenthesis: what is the toaster doing there?

Antithesis: “handicapped” and “athlete”. Note the extreme visual contrast between the athlete’s arms and legs.
What are some of the rhetorical figures employed in these staged photographs and photomontages?
Abduction, Induction and Deduction (theory of Charles Peirce).
http://seamonkey.ed.asu.edu/~behrens/asu/reports/Peirce/Logic_of_EDA.html#logical

**Abduction** looks for a pattern in order to suggest possible explanations or solutions (hypotheses) to a problem. But its objective is to determine which ones to test, not which one to use. The result of abduction is (only) ‘plausible hypotheses’.

**Result:** Many people attended an event.

**Hypotheses:**
1) The event was on a Saturday.
2) The event was held in a large arena.
3) The event was publicized.

**(Probable) case:** The publicity was effective. (this is still just a hypothesis!)
- The case was inferred from the result and (several) hypotheses, leaving a single hypothesis that can either be applied as a rule in future situations ‘as is’ (not recommended), or tested. The rejected hypotheses aren’t invalid, but are deemed less important or promising for further investigation.

**Deduction.** After suggesting a plausible hypothesis by abduction, the next stage is to refine it with deduction. Deduction takes an existing hypothesis as its premise, and does not identify new ones. Deduction tests a hypothesis by applying it to new (or other) cases. Because it is self-referent, deduction is a necessary, but not a sufficient condition of knowledge.

**Rule:** TV is the most effective publicity medium.

**Case:** (If we) run more TV spots...

**Result:** ...Even more people will come to the next event.
- A rule is deduced from a result, given a (particular) case. In the example, the result is conjecture, based on the (unproven) rule – it ignores a number of other important factors and may well turn out to be faulty reasoning. This is frequently encountered in poorly designed communications, and highlights the self-referential, delusional nature of deduction when it is applied in the absence of abduction and induction.

**Induction** depends upon reproduceable results to ‘prove’ a hypothesis; i.e. the hypothesis can be applied to different cases, for (usually) the same result. However, this supposes a finite number of cases – there is no way of knowing whether it would remain operative for n additional cases.

**Case:** The event was publicized on TV, and a web site.

**Result:** Most people saw the event publicity on TV.

**Rule:** More people watch TV than surf the Internet.
- Given a case and a result, I infer a rule.

“At the stage of abduction, the goal is to explore the data, find out a pattern, and suggest a plausible hypothesis; deduction is to refine the hypothesis based upon other plausible premises; and induction is the empirical substantiation. [...] In short, abduction creates, deduction explicates, and induction verifies.”

“Abduction is a type of critical thinking; deduction and induction are types of symbolic logic. All three modes of inference must be used together.”
The Design Process

**Evaluation** – what is the requirement?

Request from client or PM (formal or informal), or RFP (always formal). Is it do-able?
Meeting/managing client expectations – who’s in charge?

**Planning and organization**

Concrete objectives (functional requirement for the design), scope (quantity and varieties of content, treatments), budget and due date. Scaling design to budget and timeline. Project Plan – design dev. schedule, milestones (with client approvals), assumptions, architecture (flow chart inventory of screens with navigation).

**Asking questions and investigation**

Industry/market research. Consult with client: what is the client’s ‘argument’ (marketing message), how do they want to be positioned in the market, who is the audience? Pragmatic, semantic, syntactic.

**Imagination**

Inference and deduction applied to ‘discover’ plausible treatments.

**Modelling**, sketching and prototyping.

Aim is to create *low-cost representations* of design variations, to aid development, and for client approval of a creative direction.

Concept development is more thorough with ‘thumbnail’ sketches on paper, to quickly generate and evaluate a large number of concepts.

Digital sketching facilitates rapid development, since builder files can be easily changed and adapted to production. Assemble visual content, e.g. logos, photos etc. then begin playing with position, scale, color and typography.

*HTML* body text, form elements should be set using tables to precisely control measure (width) of text settings.

Avoid pursuing designs that will be difficult to produce, update or expand.

**Realization**

Refine and polish sketches for client presentation – typography, spacing, color scheme etc. A good test of visual design effectiveness is how long it takes to build an identical functional prototype. Be prepared to explain the design at various stages to the client. Design alternatives should all offer plausible solutions, and be evenly developed. Avoid ‘hard-selling’ a preferred solution; discuss the pro’s and con’s of each approach. Expect change requests.

**Delivery** and follow-up

Instructions for production artists must be very clear and obvious; a *Style Guide* may be required for large projects. Check production against the original designs and specs. Explain to the client that ‘improvisations’ may degrade the design.
"User Interface" specs provide an incomplete description of the requirement (VIA Rail RFP for ticket kiosks). The entire, 40-page document had to be read carefully to find important additional clues, including multimedia capability, accessibility, and many interesting marketing and 'POS' (Point Of Sale) design issues.
This Style Guide (above) includes HTML examples, to facilitate application of specs to complex forms. In the absence of designer oversight and under severe time constraints, developers ignored key design specs, resulting in poor production quality.

Site architecture (left). Use a simple presentation, so the client can understand the architecture ‘at a glance’, and easily spot errors and omissions.