

Internet and web technology: On-line information strategies

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Background: Educator and multimedia developer... for many years, trainer of health workers, especially rural or remote workers.

Author of Computer Basics for Health Practitioners (1996) and Guidelines for Computer Security at CQU (1996), adapted from the health agency guidelines prepared by COACH in Canada.

At Central Queensland University

Manager Health Science CAL Project

Chair CQU Computer Security Committee

Union negotiator for Intellectual Property Policy

Developer flexible teaching materials

Early adopter of on-line & web-based teaching

Internet and Web Technology: On-line information strategies

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These slides and their accompanying notes were delivered as the Closing Keynote address at the HISA/INTERACT '99 Health and Technology Conference in Melbourne, 2 Sep 99.

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- The Internet and health applications
- E-Commerce
- Developing a web site
- Legal Issues
- Strategic Planning



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READ THE CAPTION

As the last keynote speaker of the day part of my role is to tie things together, another part of my role is to identify future challenges.

I'm not going to dwell on technical details but I will try to show you some of the potential of the on-line technologies and some of the pitfalls.

I'll conclude with a brief discussion of some emerging legal issues and some strategies for anyone considering the use of on-line technologies.

Why Internet/E-Commerce?

- **Practitioner:**
Immediate submission or payment of accts.; integrated records & patient follow-up; on-line lab results; remote consultation; continuing education; advertising/promotion; E-mail/CMC
- **Consumer:**
Immediate submission of Health Fund accts; 2nd opinion (information); remote consultation; health/patient/carer education



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WHY

Remarkable convergence of needs and interests for both health practitioner and consumer.

In 1970s Canadian medical practitioners submitted their healthcare accounts via modem... dialback.

Discuss early experiences with Queensland lab results via diskette, now better security with on-line transactions... need for common data formats, standards.

Discuss my visit to the dentist and the on-line Medibank Private transaction... also chiropractor.

Thousands of sites on the web available to practitioners and consumers alike... illness/condition, treatment, etc. Discuss post-polio mailing list and sites.

Medical Advertising

- No testimonials
- No comparisons (I am better than you)
- No false advertising
- Media is irrelevant

[Medical Board of Queensland via Peter Adkins MD]



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A Diversion:

Queensland guidelines for advertising, other states are similar.

E-Commerce

- E-Commerce is here: EFTPOS, credit cards, ATMs, Health Fund payments, etc., plus on-line bookstores, airline bookings, etc. [Then why don't we use it for advertising, remote consultations, patient education...?]
- Security is an issue! [But why would you use a credit card for a purchase by phone but not on-line?]
- E-Commerce requires planning and is costly: development AND maintenance.



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WHY AREN'T HEALTH PRACTITIONERS USING THE AVAILABLE SYSTEMS MORE FULLY.

I acknowledge that commercial organisations are using the web and other systems, although perhaps not as wisely as they might but...

It's obvious that consumer and special interest groups are often more successful at using the available systems.

I suspect the problem is that E-Commerce requires extensive planning, and both the development and maintenance of systems are real overhead costs for practitioners who don't know how to manage their clinics, let alone their technology.

Discuss practice management... waiting times to see GP/dentist but also Rocky **orthodontic** practice.

Also technologies are changing too fast---e-mail & web replacing stand-alone systems & "telephone transmission" of print data. What will be next? Why should we change now when there will be something better along shortly?

One Person's Experience

- “I did not fully understand the scope of the project or its Phase 1 requirements.”
“There is no such thing as a trivial programming project.”
“Never underestimate your own ability to make any project at least 5 times more difficult than it needs to be.”

[Darnell Gadberry, “Web Site Follies” in “The Cutting Edge”, Computers and Society, June 1999, 35.]



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Health practitioners are not alone in being less than perfect with their planning. This example comes from a computer professional working with a client to develop a web-based information system. Discuss my own experiences...

It's all a matter of scale...

- “I've established a web site for my practice and spent \$1,000 for a good initial design. I know that I've got a big task ahead of me, so where can I learn enough about the web to maintain the site, particularly the weekly news update I've promised my viewers?”

[Discussion with client, Aug 99]



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So where do you start?

Be realistic about what is possible... for example, how often do you need to update the 'news' section of your web site?

Then recognise that no single individual is an expert at everything... seek qualified **And Experienced Assistance** (Your neighbour's 14 year old computer whiz is not necessarily the best place to start)

And learn enough about the technologies to work with your consultants/experts.

Web Site Follies - 1

- The web site lacks basic information about the organisation or service and/or contact details (eg no e-mail or phone/fax details)
- The web site is out-of-date. (critical when events are changing quickly). It's all relative--a few seconds for the Olympics, but how long for the AMA Executive?
- No URL/e-mail address in other media



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Many commercially prepared web sites include the name and contact information for the site designer but no contacts for the organisation itself.

Many sites fail to explain the purpose of the site, or the objectives of the site owners. This makes it very hard to assess the quality of information on the site.

Too many sites are out-of-date... I'm not complaining that the technology they use is out-of-date, rather that the content hasn't been updated for too long [Look at the "last update" info at the bottom of many screens].

This really is relative... just as with a book or journal, some information is timeless, other information must either be regularly updated or a CAUTION displayed to warn the viewer.

Billboards display URLs, but often articles in the trade journals provide neither URLs nor e-mail addresses.

Web Site Follies - 2

- Site hard to find
 - Images slow to load or inappropriate
 - No interactivity on the site
 - Confusing navigation--text, icons, buttons
 - Search function that doesn't deliver--
- T/F: "Your navigation system is at fault if the site needs a search function ". Anon



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Now to some design specifics... those 'gotchas' that irritate the viewer of any site.

Discuss finding the National Disability Advisory Council site... couldn't find on the government public information site using a variety of search strategies. Eventually found by browsing on the Minister's site (search by portfolio).

Password protected pages/reports on a 'public' site.

Large images... need professional tools/assistance to reduce size and complexity

Interactivity is more than animated advertising... eg virtual tour of new cars, educational games for diabetes carers, etc.

Finally, the need for search engines on a site is controversial... it's easy to find materials when you "think like" the designer. The best educators provide alternate resources to accommodate differing learner needs, the best web sites provide alternative navigation systems for differing viewer needs.

Web Site Follies - 3

- Good design, no content
- Good initial design, no follow-up
- Good design, no maintenance
- Design is too grand/complicated to implement or maintain
- Design (thus the site) is trivial
- Important organisation/topic but no site



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For a long time there were two kinds of sites...

-- great design but no content (only technical or artistic input)

-- boring design but content rich (little technical or artistic input)

That has changed somewhat but still far too many sites where the design promise has not been followed through or maintained.

Even Two Years Ago A Web Site Was An Option For An Organisation, Agency, Service Or Discipline But Not Today. Too Many People Expect To Be Able To Find You On The Web.

Design for the medium...

- **Media Rich**

- Millions of colours
- CDs (Director, etc.)
- DVD (Full screen video)
- Animation
- Interaction
- Unified design based on audience & content

- **Minimalist**

- 216 “Web Safe” colours (Debabalizer)
- Web delivery
- Vector graphics (eg Flash) and animation
- Interaction
- Unified design based on audience & content



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If you are designing an educational presentation for use in your waiting room or to be distributed on a CD-ROM you can use millions of colours, etc.

But even for a presentation such as this one, it makes more sense to restrict the images and colours to get the fastest possible display time.

The web, however, is currently constrained by the ‘bandwidth’, the capacity of the connection between the provider and the viewer.

You can use the same basic content in both media, however, the presentation must be different to be successful.

-- fewer colours and smaller images

-- web-based video still uses a ‘postage stamp’ sized image, CD delivery can be full-screen

How much resolution do we need to be effective?

--eg use still one or more photos and audio rather than video

Legal issues...

- In France “the use of a photograph of a private place and its dissemination for commercial purposes constitutes a breach of visual copyright”, but of a volcano?
- In Australia the system operator (ISP or in-house e-mail provider) is now legally liable (“publisher”) when users send/receive/store pornographic or defamatory materials.



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A couple of examples only...

Your site designer must know the legislative requirements for where you are working... eg

- intellectual property (use of images, product endorsements, confidentiality, etc.
- rules on advertising
- legal liability (provider of information and ‘product liability’)
- security of transactions

Fact or fiction... and liability?

- Worldwide rumours: Viagra, blue-lipped mussel enzyme, computer virus scares...
- “One of the strangest [Y2K] risks is the possibility of wide-spread panic inspired by people who fear the worst, even if the technology works perfectly.

[Peter G Neumann and Declan McCullagh, “Risks of Y2K” in “Inside Risks”, Communications of the ACM, June 1999, 42:6, 144.]



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Information on almost any topic is available globally and almost instantaneously... e-mail was used during the Russian Revolution of the early 1990s; but there are hundreds of web sites providing information on the current war in Kosovo and ‘hackers’... for example, the official NATO site was used to update the media rather than using press releases.

Virus scares often cause more problems, through the use of resources, than do the viruses themselves

“One of the strangest [Y2K] risks is the possibility of wide-spread panic inspired by people who fear the worst, even if the technology works perfectly. Many people are already stockpiling cash, food supplies, fuel and even guns.”

[Peter G Neumann and Declan McCullagh, “Risks of Y2K” in “Inside Risks”, Communications of the ACM, June 1999, 42:6, 144.]

FREE, Free, free...

- Free computers with ISP subscription
(advertisement)
- Net service free to users (newspaper headline)
- Free access is the new name of the Internet
game (newspaper headline)
- Free computers from Abcdef (newspaper headline)

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A modern myth or a fundamental shift in the way we get our information?

Free computers, set-top boxes on our TV?

Internet cafes and computers in municipal libraries will only reach a small number of people, often just those who are already users. How do the millions, indeed billions, of people in less developed countries than ours get access to the global information system?

Nothing is free... Advertising is one payment mechanism.

Strategic Planning... KISS

- Know what you want to do and why
- Start simply, with a good design
(Technicians, health professionals and managers are generally not good designers)
- Know how you are going to maintain the site before you start
- KISS... content rich, engaging (interactive), and up-to-date, but simple to use/maintain



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The web has been around for less than 10 years, electronic mail for about 30 years... we don't know what the next technology will be or how it will affect us.

Keep it simple and plan for change...