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# 90F. Web Homepage Design: An Analysis of New Zealand's Top 50 Web Sites

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## ***Abstract***

The gateway to any Web site is its homepage. Thus the design of the homepage is critical to make a positive first impression and to guide the visitor through the site. The purpose of this study is to analyze the homepage on New Zealand's top 50 Web sites to assess their compliance with internationally recognized standards for Web homepage design. Twenty-four Web homepage design criteria in three areas – page design, navigation, and usability – are applied to the homepages using observation as the research methodology. New Zealand homepages are well designed in criteria such as text font, color, and highlighting for emphasis. NZ homepages also meet international standards for logo placement, provision of navigation links, and avoiding the use of frames and popup windows. On the other hand, there is room for improvement in homepage layout, link descriptions and color, and provision of site maps and privacy policies.

## ***Keywords***

Web design, page design, navigation, usability, homepage, record analysis

## **1. Introduction**

It is truly impossible to estimate the impact of the World Wide Web on business, education, government, and society. Web technologies have changed the ways in which organizations are created and developed as well as how products and services are delivered. The Web has permanently adjusted business patterns and consumer ways of living because of new developments in information retrieval, sales and advertising, distribution channels, customer support, and many other areas (Peterson, Balasubramanian, & Bronnenberg, 1997).

Electronic commerce has become a competitive necessity in business operations, so it is critical that Web site designers, Web masters, and, especially, Web site owners recognize the attributes of good Web site design to ensure Web sites accurately and effectively deliver information or services to customers and other target audiences. For commercial businesses, competitors are only a mouse click away. Businesses are more likely to lose customers if their Web sites cannot attract and hold a visitor's attention. Thus, effective Web site design becomes crucial as the customer has the opportunity and the ease of going elsewhere.

At the heart of effective Web site design is the homepage. A homepage is the gateway for exploration of the Web site and is considered a prominent landmark in a site (Powell, 2002). Its primary goals are to inform the visitor about the purpose of the Web site (Nielsen & Tahir, 2001) and to guide the visitor through the Web site. A homepage tends to set the tone and theme of the Web site (Zhang, Keeling, & Pavur, 2000). Typically, a homepage receives

more page views than any other page on the site and it often contains more links to other pages than any other page on the Web site. While a homepage is not the only pathway visitors use to enter a Web site (e.g., visitors may enter through other pages from search engines or other Web sites), if visitors are confused or don't find what they want, they will go to the homepage (Nielsen, 2002). For all these reasons and more, the homepage is a Web site's most important page and its design is critical to the success of the site.

The purpose of this study is to examine how well desirable and internationally recognized Web design features are incorporated into the homepages of New Zealand's top 50 Web sites. The study will focus on three Web design areas: page design, navigation, and usability.

The sample is from New Zealand, but the lessons learned are relevant to any business with a Web site, any Web site designer, and all Web masters. The results will raise the awareness level of Web site owners as to what is good Web page design and encourage them to be more demanding of their Web site designers. This study is also of interest to researchers because the study can be easily replicated in other countries, regions, industries or communities to produce highly relevant research and gain high visibility of the research effort.

The following section describes the 24 homepage design criteria – in page design, navigation, and usability – that are examined in this study, based on an extensive review of the Web design literature. The methodology section discusses how these criteria were applied in an analysis of New Zealand's top 50 Web sites. The results section summarizes this analysis and provides a "Web design grade card" that assesses overall design performance. Implications for industry and suggestions for further research conclude this paper.

## **2. Criteria for Assessing Homepage Design**

Successful homepage design is mostly about meeting user expectations (e.g., finding help where they expect it, to have important text highlighted) and complying with widely recognized standards for Web design (e.g., avoid use of frames, provide a site map, include a tag line). Studies of Web page design over the last decade or more have revealed common standards and nearly universally accepted guidelines for homepage design, navigation, and usability. Web page designers such as Powell (2002), Cato (2001), Fleming (1998), and Nielsen (2000) have authored books on the subject based on commonly accepted practices in the profession. Other studies have offered empirical evidence of successful Web page design criteria from users' perspectives (e.g., Borges, Morales, & Rodriguez, 1996; Brinck, Gergle, & Wood, 2002) or by expert review (e.g., Nielsen & Tahir, 2001). Research studies similar to this study have been conducted for US state government homepages (Ryan, Field, & Olfman, 2002) and voluntary sector organizations in Canada (Cukier & Middleton, 2003). The current study utilizes landmark homepage design research conducted by Jakob Nielsen and Marie Tahir (2001) to identify 24 criteria that characterize good homepage design. Those criteria are briefly described in this section.

### **2.1 Page Design**

Page design features represent elements that affect how Web sites look and feel. These elements might be text, images, tables, font, color, and layout. According to Nielsen and Tahir (2001), eight determining factors of successful homepage page design are:

### ***2.1.1 Page layout***

The entire page should be visible without regard to the horizontal size of the visitor's browser window. Frozen page layout assumes a certain window size and either there will be a large blank spot on the right (window too large) or the visitor must scroll horizontally to see all the content (window too small). Liquid page layout, adjustable according to the size of the visitor's browser window, is best.

### ***2.1.2 Advertising***

Although advertisements are successful money earners for many Web sites, there should be a maximum of three advertisements on the homepage (Nielsen & Tahir, 2001). Additional ads clutter the page and visitors are not likely to pay attention to the individual ads.

### ***2.1.3 Body text typeface***

Although serif fonts (e.g., Times, Palatino) are easier to read in print, sans-serif fonts (e.g., Arial, Helvetica) are preferred on Web sites because they provide a more contemporary looking style and serifs do not render well on low-resolution computer screens (Nielsen & Tahir, 2001).

### ***2.1.4 Frames***

Web designers uniformly reject the use of frames because frames can be confusing to users (Koyanl, et al., 2003), cause usability problems (Nielsen & Tahir, 2001), and make the homepage difficult to read by search engine spiders.

### ***2.1.5 Text hierarchy***

Plain text is boring to view and read. Different fonts or different sized fonts should be used to distinguish main text, headings, title, and emphasize the importance of a sentence or short phrase from the surrounding text (Koyanl, et al., 2003).

### ***2.1.6 Background color***

Color is an important element in Web page design and should be used to (a) increase readability and usability (Ivory and Megraw, 2005); (b) inform, entertain, or even evoke subliminal feelings in the visitor (Powell, 2002); and (c) attract a visitor's attention. However, textual content should be presented using black for body text and white as the background. This combination ensures the maximum possible contrast and the highest possible readability (Nielsen & Tahir, 2001).

### ***2.1.7 Body text color***

As noted immediately above, black is the preferred color for text.

### ***2.1.8 Tag line***

A tag line is a phrase or sentence that clarifies the purpose of the Web site and differentiates the company from its competition (Nielsen, 2001). For example, Wine Searcher declares itself to be "the resource for locating and pricing wines". It is vital to include a tag line on the homepage so visitors know what the company behind the Web site is about.

## **2.2 Navigation Design**

Navigational features guide the Web site visitor in ways that help them achieve their goals for visiting the site. Navigation features should be easily accessible and intuitive in order to insure visitors can find what they want and stay on the site to explore more (Navarro & Khan,

1998). Other, general advice for effective navigation is to remain consistent, provide feedback, be easily learned, provide visual aids, and support users' goals and behaviors (Fleming, 1998). The seven navigation criteria examined in this study are highly recommended features for homepage navigation from Nielsen and Tahir (2001):

### ***2.2.1 Navigation scheme***

There should be a dominant navigation scheme on the homepage that continues throughout the site. For example: navigation bar or tabs across the top (Nielsen, 2000), a navigation column usually on the left-hand rail (Nielsen, 2000) or categories in the middle of the page (Nielsen & Tahir, 2001).

### ***2.2.2 Search box***

There should be a search box and it should be placed high on the page, preferably in the upper right or left corner.

### ***2.2.3 Width of search box***

Visitors should be able to enter a long query in the search box and see the text without scrolling through the search box. The width of the visible search box should be at least 25 characters, 30 characters is even better.

### ***2.2.4 Footer navigation links***

In addition to an overall navigation scheme, there should be a footer at the bottom of the page that provides useful links such as a contact link. This is important because if, after reading the page, the visitor hasn't found what he/she is looking for, a footer navigation bar will assist the visitor in knowing where to go next.

### ***2.2.5 Site map***

There should be a site map and a "Site Map" link should be prominently displayed for visitors to see.

### ***2.2.6 Navigational feedback***

Most navigation features guide the visitor to where they want to go, but navigation features that tell the visitor where they are (e.g., breadcrumb navigation) is also essential (Instone, 2003).

### ***2.2.7 Link description***

The name of links should be concise and clearly identify the content of pages that they link to (Borges, et al., 1996). A clearly described link is scannable, enables the visitor to distinguish between links and informs the visitor what will happen if they click on that link. Clearly labeled links are most critical on homepages because the homepage serves as the portal to the site and thus tend to have more links that are used more often than is typical on other site pages.

## **2.3 Usability Design**

The purposes of usability design are to communicate to visitors in one short glance where information can be found, how the site can be used and what tasks or functions the site provides. From a visitor's perspective, Web usability needs to ensure visitors experience satisfaction instead of frustration (Shneiderman & Plaisant, 2004). From an organization's

perspective, Web good usability results in reduced support costs, higher productivity, and increased profitability from maximizing the potential audience or customer base.

Like navigation, usability can differ in terms of visitors with different knowledge levels, language skills, and motivations and abilities (Becker, 2004), but some Web-wide standards are emerging that satisfy the information needs of most individuals. According to Nielsen and Tahir (2001), the following nine usability standards apply to the homepage:

### ***2.3.1 Logo placement***

Common practice on Web sites dictate that the organization's logo should be placed in the upper left corner. This is consistent with the practice in most cultures of reading left to right, so the most critical information is presented first.

### ***2.3.2 Help placement***

A "help" link should be available and widely accepted practice, including the ubiquitous Windows Office menu, indicates that most visitors will look for help in the upper right corner.

### ***2.3.3 Link color***

Many Web designers (e.g. Fleming, 1998; Nielsen, 2000) have pointed out that it is important to distinguish the color of links that users did visit and the color of links that have not been visited in terms of Web usability. A homepage should allow link colors and show visited and unvisited links. A standard practice is purple for visited links and blue for unvisited links.

### ***2.3.4 Page length***

Long screens take a long time to load and, like the front page of a newspaper that tries to put essential information "above the fold", one or two full screens is preferred, rarely should a homepage be longer than three screens.

### ***2.3.5 Sign-in label***

If a site provides protected content, either include the word "account" in the name of this link or call it "Sign In."

### ***2.3.6 Privacy policy label***

If a site collects data from users there should be a privacy policy and it should be linked to from the homepage and labeled as "Privacy Policy".

### ***2.3.7 Company information label***

A homepage should always have a link that easily directs the visitor to information about the company that owns the Web site, usually labeled "About Us" or "About [company name]."

### ***2.3.8 Popup windows***

Popup windows should not be used because they: (a) can frustrate the visitor and thus distract from usability; (b) hide homepage content; and (c) users are likely to quickly dismiss them as ads.

### ***2.3.9 Alternative text***

Alternative text uses the <Alt> tag to provide information about an image, either for a visitor who does not download the graphics or, more commonly, text that appears when a user puts

the mouse on top of an image or a picture. Alternative text tags on images and icons are highly recommended.

These 24 criteria in page design, navigation, and usability form the basis for the analysis of homepage design. The research method and homepage site selection process is described in the following section.

### 3. Research Methodology

Observation is the systematic process of recording the behavior of people, objects, and occurrences as they are witnessed, usually in a way that allows some type of learning and/or analytical interpretation (Ghuri & Grønhaug, 2005). As a research methodology, observation is planned and recorded systematically (Zikmund, 2003) to collect original data at the time when events occur, and not depend on reports by others.

Record analysis, a non-behavior observation technique, will be used in this study to record how the 24 Web design criteria identified in the previous section are represented in New Zealand's top 50 Web sites. The observational methodology is well suitable to collect data for this research because: (a) all information required to conduct the analysis is available from the 50 Web site homepages; (b) direct observation is an efficient and effective way to record the desired information; (c) first-hand information can be collected in a natural setting (i.e., Web browser on a typical personal computer); and (d) Web design features on Web sites do not require inference to be identified. In this study, observation provides a "written photograph" of the situation under study, a key description of the application of observation as a research methodology (Erlandson, Harris, Skipper, & Allen, 1993).

#### 3.1 Homepage Selection Procedure

The 50 New Zealand Web homepages analyzed in this study are selected from the Top 100 list of New Zealand Web sites from [www.ranking.com](http://www.ranking.com). Ranking.com determines Web site ratings by measuring traffic metrics such as unique visitors, page views, and link popularity of a Web site ("About Us", n.d.). Thirty-nine of the Web sites are from the Top 50 list at ranking.com (eleven sites in the Top 50 list were duplicative of other sites and so were excluded). To make up the difference, eleven additional sites were selected from the Top 100 because they represent a well-known New Zealand company or represent a certain type of Web site (e.g., [www.search.co.nz](http://www.search.co.nz) is a well-known search engine site). Table 1 shows the name, URL, and type of site for all homepages examined in this study.

<u>Name</u>	<u>Homepage URL</u>	<u>Type of Site</u>
Air New Zealand	<a href="http://www.airnewzealand.co.nz">www.airnewzealand.co.nz</a>	Airline
ANZ National Bank	<a href="http://www.nationalbank.co.nz">www.nationalbank.co.nz</a>	Bank
ASB Bank	<a href="http://www.asb.co.nz">www.asb.co.nz</a>	Bank
Bank of New Zealand	<a href="http://www.bnz.co.nz">www.bnz.co.nz</a>	Bank
ClearNet (TelstraClear)	<a href="http://www.clear.net.nz">www.clear.net.nz</a>	Internet service provider
Courier Post	<a href="http://www.courierpost.co.nz">www.courierpost.co.nz</a>	Courier
Dick Smith	<a href="http://www.dse.co.nz">www.dse.co.nz</a>	Electronics retail
Enternet Online	<a href="http://www.citynews.co.nz">www.citynews.co.nz</a>	Online press
Findsomeone	<a href="http://www.findsomeone.co.nz">www.findsomeone.co.nz</a>	Dating
Geekzone	<a href="http://www.geekzone.co.nz">www.geekzone.co.nz</a>	IT service
Global Home Loans	<a href="http://www.globalhomeloans.co.nz">www.globalhomeloans.co.nz</a>	Loan company
Harcourts International	<a href="http://www.harcourts.co.nz">www.harcourts.co.nz</a>	Real estate, sales, and rental
Holiday Homes Plus	<a href="http://www.holidayhomesplus.co.nz">www.holidayhomesplus.co.nz</a>	Tourism

ihug	www.ihug.co.nz	Internet service provider
iSERVE	www.iserve.co.nz	Web services
Job Stuff Online	www.jobstuff.co.nz	Job seeking / recruitment
Kiwi Bank	www.kiwibank.co.nz	Bank
Loyalty New Zealand	www.flybuys.co.nz	Loyalty card / incentive buying
Massey University	www.massey.ac.nz	University
New Zealand City	www.nzcity.co.nz	Online press
New Zealand Government	www.govt.nz	National government
New Zealand Herald	www.nzherald.co.nz	Newspaper
New Zealand Lotteries	www.nzlotteries.co.nz	Lottery gambling
New Zealand Post	www.nzpost.co.nz	Postal service
New Zealand Racing Board	www.tab.co.nz	Sport gambling
New Zealand Tourism	www.tourism.net.nz	Tourism
NZgirl	www.nzgirl.co.nz	Online community
Old Friends	www.oldfriends.co.nz	Online community
Orcon	www.orcon.net.nz	Internet service provider
PN Personnel	www.pnpersonnel.co.nz	Job seeking / recruitment
Rental Home	www.rentalhomesplus.co.nz	Real estate, rentals
Scoop Media	www.scoop.co.nz	Online press
SearchNZ	www.searchnz.co.nz	Search engine
Seek	www.seek.co.nz	Job seeking / recruitment
Smile City	www.smilecity.co.nz	Loyalty card / incentive buying
Stuff Online	www.stuff.co.nz	Online press
Telecom	www.telecom.co.nz	Telecommunications
Telecom White Pages	www.whitepages.co.nz	Directory service
Telecom Yellow Pages	www.yellowpages.co.nz	Directory service
Television New Zealand	www.tvnz.co.nz	Television
Trade & Exchange	www.te.co.nz	Classified ads
Trade Me	www.trademe.co.nz	Auction
UBD Directories	www.ubd.co.nz	Directory service
University of Auckland	www.auckland.ac.nz	University
University of Otago	www.otago.ac.nz	University
Vodafone New Zealand	www.vodafone.co.nz	Telecommunications
Wairarapa Times-Age	www.times-age.co.nz	Newspaper
Westpac	www.westpac.co.nz	Bank
Wine Searcher	www.wine-searcher.com	Search engine
Xtra	www.xtramsn.co.nz	Internet service provider

**Table 1:** New Zealand's Top 50 Web Sites

The homepages of these 50 sites were viewed, measured, and downloaded for subsequent analysis on 17 September 2006. The 24 Web design criteria highlighted in the literature review were applied to each homepage, as described in the next section.

#### 4. Analysis of Homepage Design

The results presented in this section analyze the Web page design according to the criteria outlined above. Space limitations prevent the inclusion of the site-specific data here (the evaluation matrix is 50 rows and 24 columns), but these are available from the authors.

<u>Criteria</u>	<u>Summary results</u>
<u>Page Design</u>	
Page layout	90% of NZ homepages used frozen layout; 10% used liquid layout



Advertising	20% had no ads; 30% had one ad; 18% had two ads; 18% had three ads; 14% had four or more ads
Body text typeface	94% used sans-serif font; 6% used a serif font
Frames	86% did not use frames; 14% used frames
Text hierarchy	98% used graduated levels of text on the homepage; 2% did not use a text hierarchy
Background color	86% used white; 8% used blue; 4% used brown; 2% used black
Body text color	78% used black for text; 14% used blue; 4% used white; 2% used grey; 2% used green
Tag line	60% had a tag line (placement varied significantly); 40% did not have a tag line
<u>Navigation</u>	
Navigation scheme	50% used tabs for navigation; 38% used a left-hand rail; 12% used another scheme
Search box	16% did not have a search box; 28% put the search box in upper right corner; 22% put the box in upper left; 18% put the box in upper middle; 16% put the box in the lower right or left corner
Footer navigation links	76% included footer navigation links; 24% did not
Site map link	32% included a site map link; 68% did not
Width of search box	54% had a search box less than 20 characters; 18% had a search box 20-30 characters wide; 8% had a search box greater than 31 characters; (20% did not have a search box)
Navigational feedback	50% provided navigation feedback; 50% did not
Link description	84% did not have link descriptions; 16% did
<u>Usability</u>	
Logo placement	82% put the logo in upper left corner; 12% placed it in the upper middle; 6% put the logo in upper right corner
Help placement	16% put "help" in the upper right corner; 8% put "help" in the upper left corner; 8% put "help" in the upper middle; 12% put "help" elsewhere; (56% did not have a help link)
Link color statement	14% used purple for followed links; 12% used other colors; (74% did not use a color link statement)
Page length	72% had homepages 1-2 screens long; 10% were 2-3 screens; 4% were 3-4 screens; 14% were more than 4 screens;
Sign-in label	36% used "login" as the sign-in label; 10% used "my account"; 6% used "sign in"; 2% used "your account"; 2% used another label (42% did not have a sign-in feature on their homepage)
Privacy policy label	26% used "privacy policy"; 10% used "privacy"; 8% used something else; (56% did not have a privacy policy label, perhaps because there is no need for one)
Company information	38% used "about us"; 22% used "about [company name]"; 4% used "about"; 2% used "company information"; (34% did not have a company information link)
Popup windows	0% of the sites used pop-up windows
Alternative text	76% of homepages used alternative text with their images; 24% did not

**Table 2:** Homepage Design in New Zealand's Top 50 Web Sites

From the results in Table 2, one can extrapolate that a typical homepage in a New Zealand Web site would use frozen layout, sans serif fonts, black text, white background, navigation tags, a text hierarchy to show graduated levels of text on the site, and so forth.

But how do these results for New Zealand's top 50 Web sites compare with internationally accepted standards for homepage design? To address this question we have taken the recommendations of Nielsen and Tahir (2001) in their landmark study on homepage design and issued a "grade card report", shown in Table 3. The grade is somewhat subjective, but takes into account the percentage of sites complying with recommended standards (or not) as well as the importance of the criteria (e.g., using a text color other than black is considered to be a "more forgivable offense" than using frames). Comments in Table 3 also make reference to the "international study" conducted by Nielsen and Tahir (2001) as they applied these 24 criteria to 50 international, well-known homepages (e.g., Amazon.com, Asia Cuisine, BBC, IBM, Wal-Mart) in their landmark study.

<u>Criteria</u>	<u>Grade</u>	<u>Comment</u>
<u>Page Design</u>		
Page layout	C	Almost all (90%) NZ homepages used frozen layout. Although this is the norm in NZ and internationally (82% used frozen layout), liquid layout is preferred to accommodate different-sized screens of users.
Advertising	B+	Seven homepages (14%) had more than 3 ads, the recommended maximum; 50% had one or no ads, in part because external advertising would be inconsistent with the purpose of the site and/or the organization.
Body text typeface	A	Almost all (94%) homepages used a sans-serif font, the recommended font because of its contemporary style and readability on low-resolution screens.
Frames	D	Frames were used on 14% of NZ homepages, much higher than in the international study (4%) and disregarding almost unanimous advice in the Web design community to avoid frames for numerous reasons.
Text hierarchy	A+	Almost all (98%) showed graduated levels of text on the Web site, which is highly recommended to facilitate visitor reading and scanning of information.
Background color	A	Most (86%) used white background, the strongly preferred color for homepage backgrounds.
Body text color	A	Most (78%) used recommended black text. Overall, 72% of New Zealand homepages featured black text on white background, exactly matching the comparable international study (72%).
Tag line	B	Over half (60%) of homepages had a tag line, but placement varied significantly. A tag line in the top third of the first screen is recommended.
<u>Navigation</u>		
Navigation scheme	A	Tabs and left-hand navigation rail schemes are preferred; 50% of NZ homepages used tabs (30% internationally) and 38% (30% internationally) used a left-hand rail.
Search box	B	A search box is nearly a necessity, according to Nielsen and Tahir and 16% of NZ homepages don't have one (14% internationally). Search box placement (68% in upper portion of the page) is recommended practice and consistent with international practice (67% in upper portion of page)).
Footer navigation links	A	Three-quarters (76%) of homepages have footer navigation links (80% internationally), which are highly recommended.
Site map link	C	Only 32% included a site map link, much lower than international study (48%).
Width of search box	C	Nielsen and Tahir recommend a search box be at least 25 characters wide; few NZ homepages matched that and 20% did not have a search

		box at all.
Navigational feedback	C	Only half (50%) of NZ homepages provided navigation feedback, which is highly recommended to tell visitors where they are in the Web site.
Link description	D	Only 16% provide descriptions of links, which are highly recommended to advise visitors where the links lead.
<u>Usability</u>		
Logo placement	A	All 50 NZ homepages had logos and 82% placed the logo in the upper left corner, as recommended and consistent with international practice (84%).
Help placement	C	Most (56%) NZ homepages do not offer help to visitors. International practice suggests that help is essential if the site offers a number of advanced and complex features, which reflects most sites in this study. More significantly, most sites that offered help (63%) did not put "help" in the upper right corner, which is international practice in most desktop applications and dialogue boxes.
Link color	D	Three-quarters (76%) of NZ homepages did not distinguish between a visited link and an unvisited link. This is recommended practice and 74% of homepages in the international study did so.
Page length	B	The good news is that 72% of NZ homepages were no more than 2 screens, which is the maximum length by international practice. The bad news is that 14% were longer than 4 screens, almost an acceptable practice according to international standards.
Sign-in label	C-	Of those sites with sign-in labels (58% of total), most (62%) used the least preferable label of "login". Using "account" in the label is preferred but few sites (12% of total) did so.
Privacy policy label	C	Most (56%) NZ homepages do not indicate a privacy policy, which is highly recommended (only 14% in international study did not have privacy policy link on the homepage).
Company information	C	Two-thirds (66%) of NZ homepages included a company information label, compared to 84% in the international study. Furthermore, only 22% used the "About [company name]" label, which is the recommended standard.
Popup windows	A+	None of the NZ homepages used pop-up messages.
Alternative text	B	Three-quarters (76%) of NZ homepages used alternative text with their images, which is recommended practice.

**Table 3:** Grade card for homepage design in New Zealand's top 50 Web sites

A review of this table shows that homepages on New Zealand's top 50 Web sites perform well on some widely recognized and highly recommended homepage design criteria – black text on white background, the use of a text hierarchy to highlight key text, placement of the company's logo in the upper right corner, and no use of popup windows. On the other hand, the Web sites don't do well in some important areas – too many homepages used frozen layout and frames and not enough homepages included a site map, navigation feedback (e.g., breadcrumb navigation), help, an easily understandable sign-in label, and information about the company. Overall, homepages on New Zealand's Top 50 Web sites did best in page design and poorest in navigation.

## 5. Conclusion

The purpose of this study – to examine how well desirable and internationally recognized Web design features are incorporated into the homepages of New Zealand's top 50 Web sites

– has been fulfilled in a variety of ways. First, the objective analysis in Table 2 summarizes the status of homepage design on New Zealand's top 50 Web sites. Second, the data in Table 2 are objectively analyzed in light of design recommendations from the literature and the results of a comparable international study in Table 3. Third, Table 3 also includes a subjective summary analysis of overall homepage design performance.

The target audiences of this study – Web page designers, Web masters, business owners, and university researchers – have also benefited in several ways. First, every reader is now better informed about the characteristics of excellent homepage design and what are New Zealand's top 50 Web sites. Second, almost every designer and business owner will be rushing to their Web site to examine how well their homepage compares in these design criteria, and looking to make improvements for the benefit of their customers and their organization. Third, university researchers and students are now aware of a stream of research that is relatively easy to do, has high relevance for the business community, and will be of interest to the business and popular media. This study has examined New Zealand's top 50 Web sites, but comparable studies can be done in different countries, regions, industries, and communities.

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