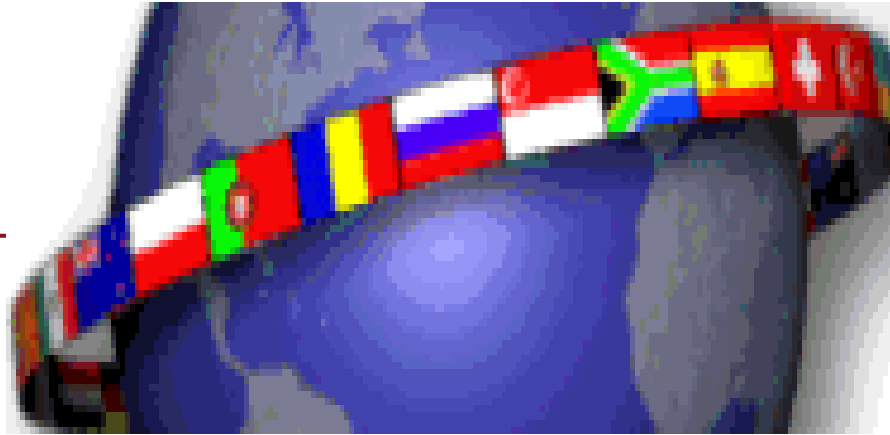


Internet Programming

Globalization

Dan Brandon, Ph.D., PMP



■ What is I18N and/or L12N ?



Wait....



Don't look ahead, until
you have your answer !

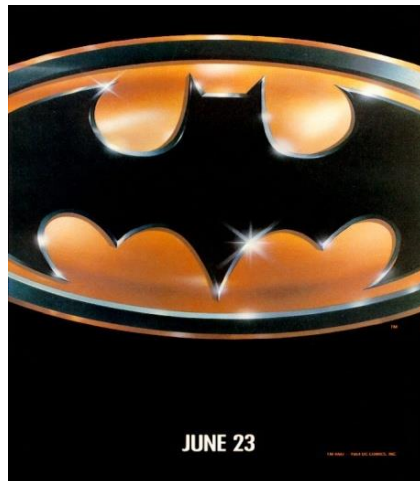
Globalization



- According to Computerworld: “Globalization is the marketing and selling of a product outside a company’s home country.
- A similar term to ‘globalization’ is ‘internationalization’ (shortened to **I18N** in today’s Internet jargon).
- ‘Localization’ (shortened to **L12N** in Internet jargon) is the **recommended method** (from a business perspective) of implementing a global web presence

“National Convergence”

- Since the end of the Cold War (tearing down of the **Berlin wall**), the world has been rushing toward ever-higher levels of national convergence, with capital markets, business regulation, trade policies, and the like becoming similar
- It's an era of **Internet (1994), NAFTA (1992), World Trade Organization (1995), the Euro (1999), the emergence of China** and much more
- **“The world has not witnessed such a dramatic change in business since the Industrial Revolution”**



- What % of the world's online population (internet) is outside of the US ?



- For today's US domestic average web site, what % of the “hits” come from foreign visitors ?



■ What % of US small to mid size companies export overseas ?



Wait....



Don't look ahead, until
you have your answer !

Global “Factoids”

- About 80% of the world's online population is residing outside of the United States
- Today's average web site gets 30% of its traffic from foreign visitors
- However, today **only 1% of small and midsize American businesses export overseas** – huge growth potential once smaller companies can understand global business

Foreign Subsidiaries

- Foreign subsidiaries of US companies are outperforming their domestic branches (in regard to profits) by a ratio of ?????
 - 2 to 1
 - 3 to 1
 - 5 to 1
 - 10 to 1
 - Domestic branches are performing better

Wait....



Don't look ahead, until
you have your answer !

Foreign Subsidiaries (con't)

- In the last decade, domestic profits of US companies increased about 20% while those of their foreign subsidiaries increased almost 200% (**10 to 1**)
- Thus today's business needs are forcing organizations to do business outside of their home country, and/or using foreign resources, and often in multiple countries

Is GM a US Company ?



Dan Brandon, Christian Brothers
University, Memphis, TN

US Companies ?

- **Budweiser**
- **Alka-Seltzer**
- **Good Humor**
- **Gerber**
- **7-Eleven**



Wait....



Don't look ahead, until
you have your answer !

US Companies ? (con't)

- Budweiser is owned by Anheuser-Busch InBev N.V., a **Belgian and Brazilian** company with headquarters in Leuven, Belgium. Its U.S. operations include managing 12 breweries plus hops farms, malt plants, barley elevators and a rice mill
- Alka-Seltzer is owned by Bayer AG, a **German** pharmaceutical company. It operates multiple sites all over the U.S. for administration, marketing, research and development and manufacturing
- **British and Dutch** Good Humor-Breyers, operates out of Unilever's U.S. headquarters in Englewood Cliffs, N.J.
- In 1994 Gerber merged with Sandoz Laboratories, which would merge with another company in 1996 to form Novartis. In 2007, the company sold off Gerber to the **Swiss** multinational Nestlé for \$5.5 billion
- Perhaps no convenience store chain in the U.S. is as well-known as 7-Eleven, originator of the Slurpee and the Big Gulp. It operates over 7,000 stores throughout the country, but nearly twice that amount is found in **Japan**, home of chain owner Seven & I Holdings Co.

Global Cities

- What are the largest cities in the world ?



Wait....



Don't look ahead, until
you have your answer !

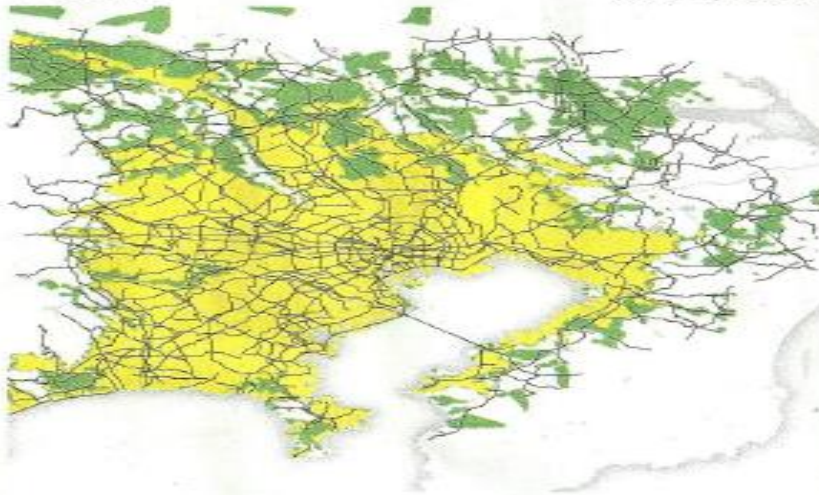
POPULATION RANK

POPULATION IN 1990

IN 2020

1 - TOKYO

32.5M / 37.4M



2 - DELHI

9.4M / 30.3M



3 - SHANGHAI

8.6M / 27.1M



4 - SÃO PAULO

14.8M / 22.0M



5 - MEXICO CITY

15.6M / 21.8M



6 - DHAKA

6.6M / 21.0M



7 - CAIRO

9.9M / 20.9M

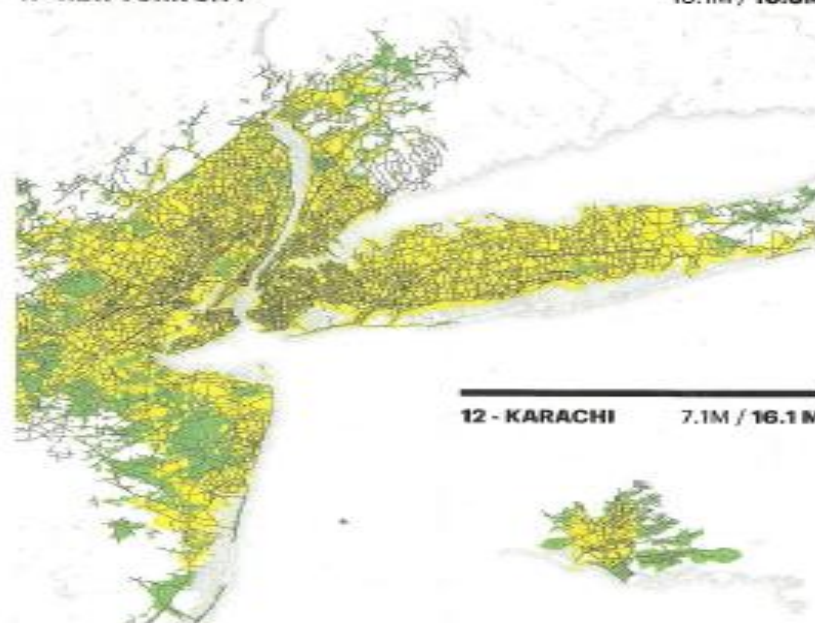


8 - BEIJING

6.8M / 20.5M

**11 - NEW YORK CITY**

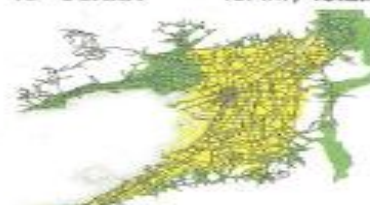
16.1M / 18.8M

**9 - MUMBAI**

12.4M / 20.4M

**10 - OSAKA**

18.4M / 19.2M

**12 - KARACHI**

7.1M / 16.1M

**13 - CHONGQING**

4.0M / 15.9M

**14 - ISTANBUL**

6.6M / 15.2M

**15 - BUENOS AIRES**

11.1M / 15.2M

**16 - KOLKATA**

11.0M / 14.9M

**17 - LAGOS**

4.8M / 14.4M

**18 - KINSHASA**

3.7M / 14.3M

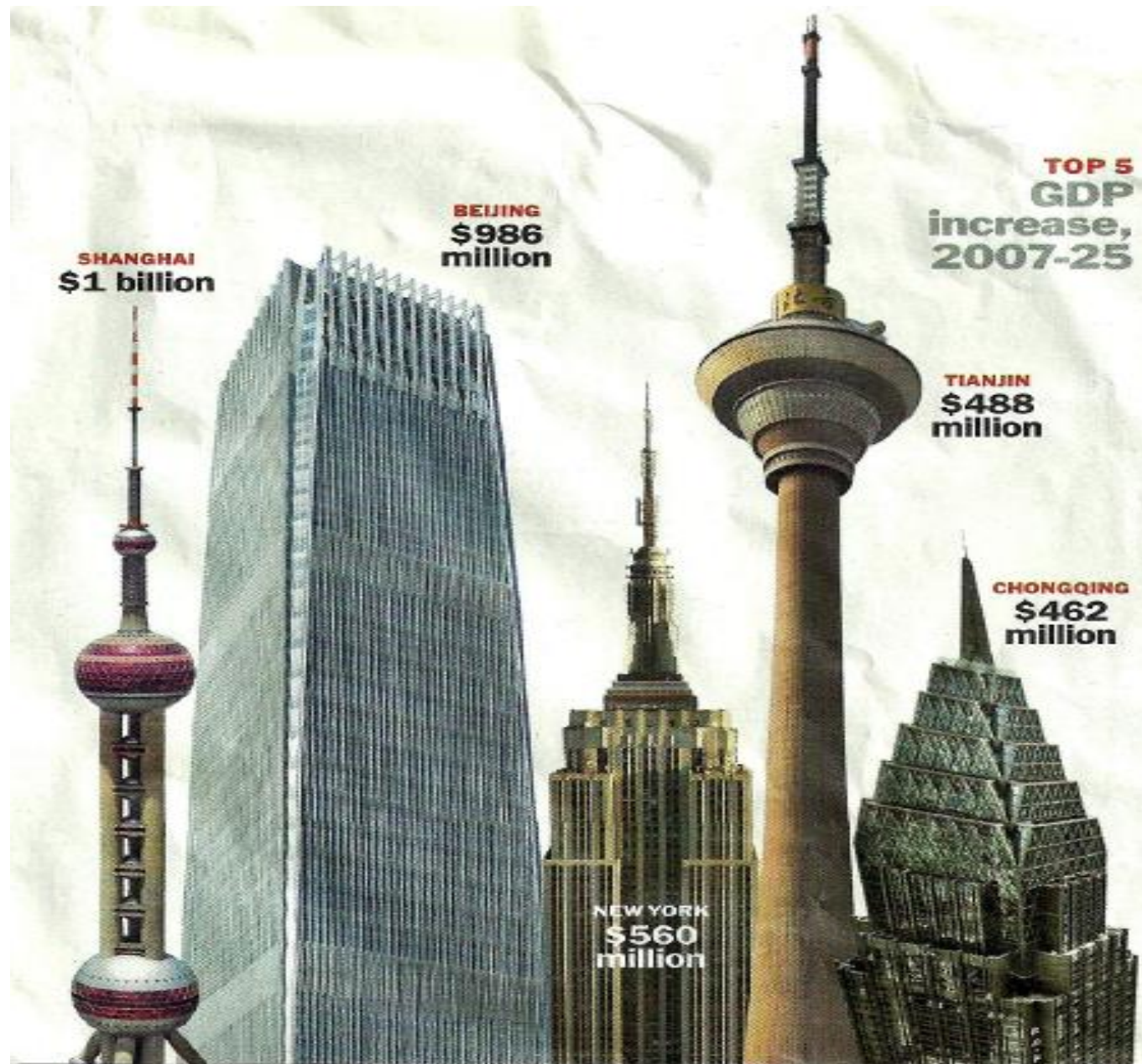
**19 - MANILA**

8.0M / 13.9M

**20 - TIANJIN**

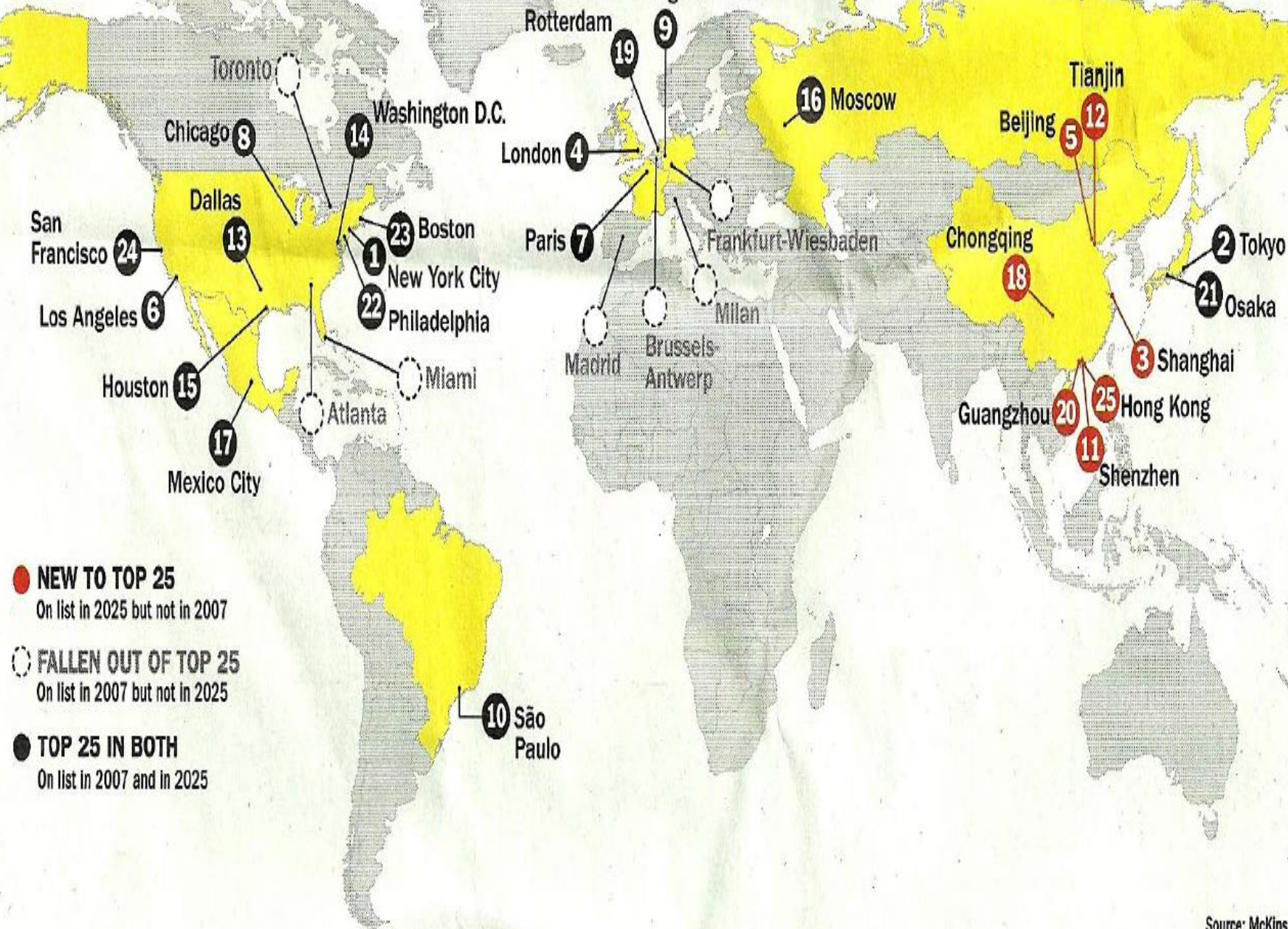
4.6M / 13.6M





Top 25 Urban Areas In 2025

By GDP



Global Companies

- What are the largest companies (revenue) in the world ?



Wait....



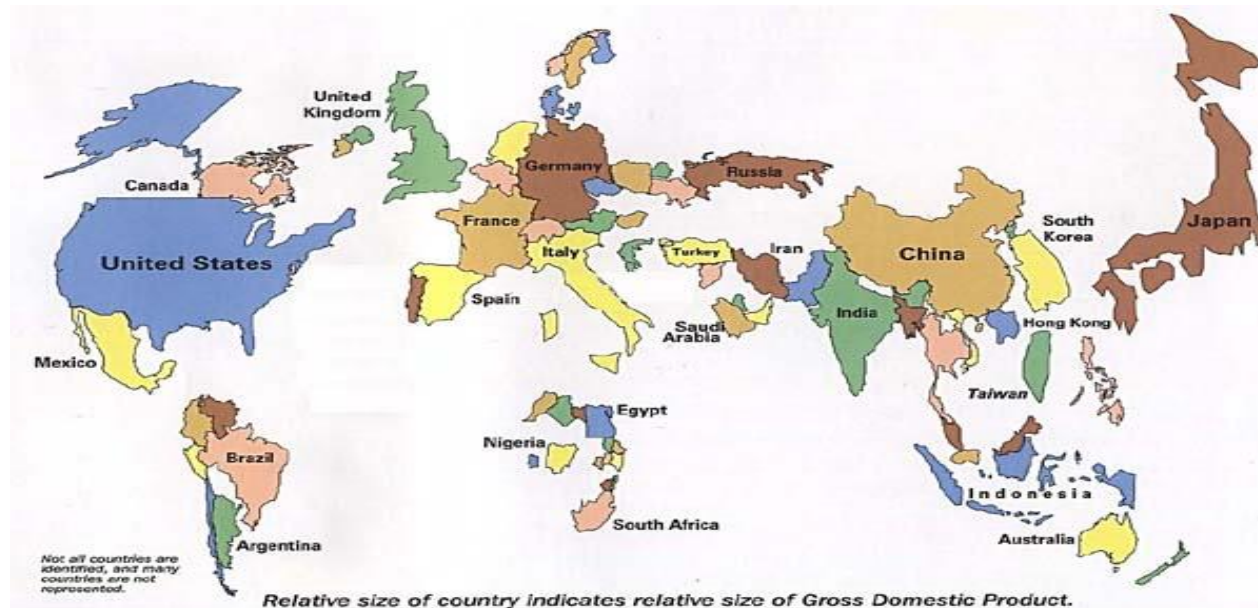
Don't look ahead, until
you have your answer !

World's Largest Companies

RANK 2019 2018		Country/Territory	\$ millions
1	1	WALMART ¹	U.S. 523,964.0
2	2	SINOPEC GROUP ^G	CHINA 407,008.8 ^E
3	5	STATE GRID ^G	CHINA 383,906.0
4	4	CHINA NATIONAL PETROLEUM ^G	CHINA 379,130.2 ^{SE}
5	3	ROYAL DUTCH SHELL ^{1,2}	NETHERLANDS 352,106.0 ^E
6	6	SAUDI ARAMCO ^{1,G}	SAUDI ARABIA 329,784.4
7	9	VOLKSWAGEN ¹	GERMANY 282,760.2
8	7	BP ¹	BRITAIN 282,616.0 ^E
9	13	AMAZON.COM	U.S. 280,522.0
10	10	TOYOTA MOTOR ^{5,3}	JAPAN 275,288.3
11	8	EXXON MOBIL	U.S. 264,938.0 ^E
12	11	APPLE ⁴	U.S. 260,174.0
13	19	CVS HEALTH	U.S. 256,776.0
14	12	BERKSHIRE HATHAWAY	U.S. 254,616.0
15	14	UNITED HEALTH GROUP	U.S. 242,155.0
16	17	MCKESSON ³	U.S. 231,051.0
17	16	GLENCORE ^{1,5}	SWITZERLAND 215,111.0
18	21	CHINA STATE CONSTRUCTION ENGINEERING ^G	CHINA 205,839.4
19	15	SAMSUNG ELECTRONICS ¹	SOUTH KOREA 197,704.6
20	18	DAIMLER ¹	GERMANY 193,346.1

Income

- Which country has the highest average household income ?
- Which country has the highest per capita GNP?



Wait....

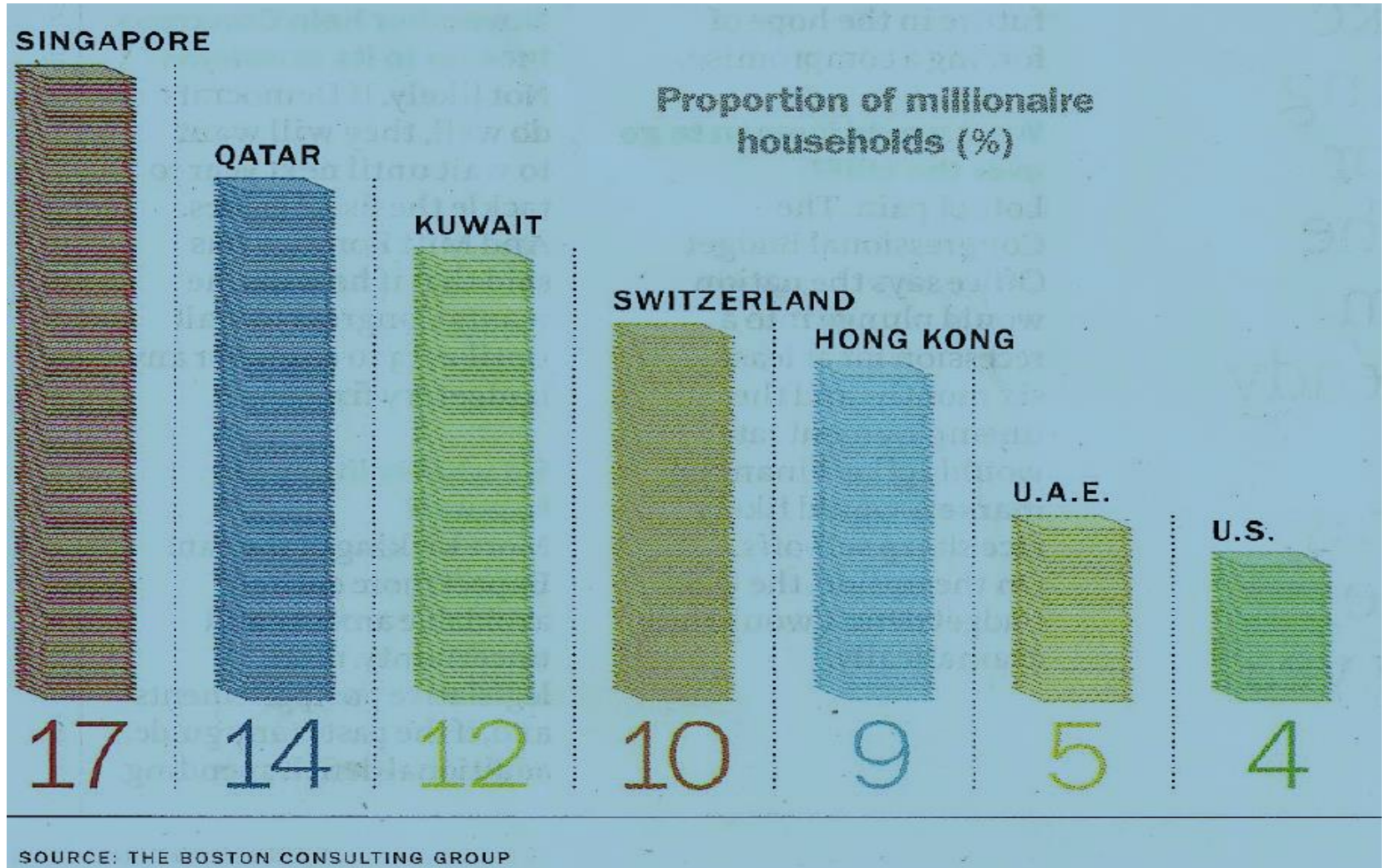


Don't look ahead, until
you have your answer !

Income (con't)

- Switzerland has the highest household income at \$62,000 (US is at \$48,000)
- Luxemburg has the highest per capita GNP at \$78,000; Norway is second at \$52,000 (US is at \$44,000)
- The number of millionaires is growing faster in China, Russia, and India than the US
- Fifteen years ago, the U.S. was 70 % of the global market cap, today it's 28 % and falling; blossoming markets are India, China, Latin/South America, and the Middle East

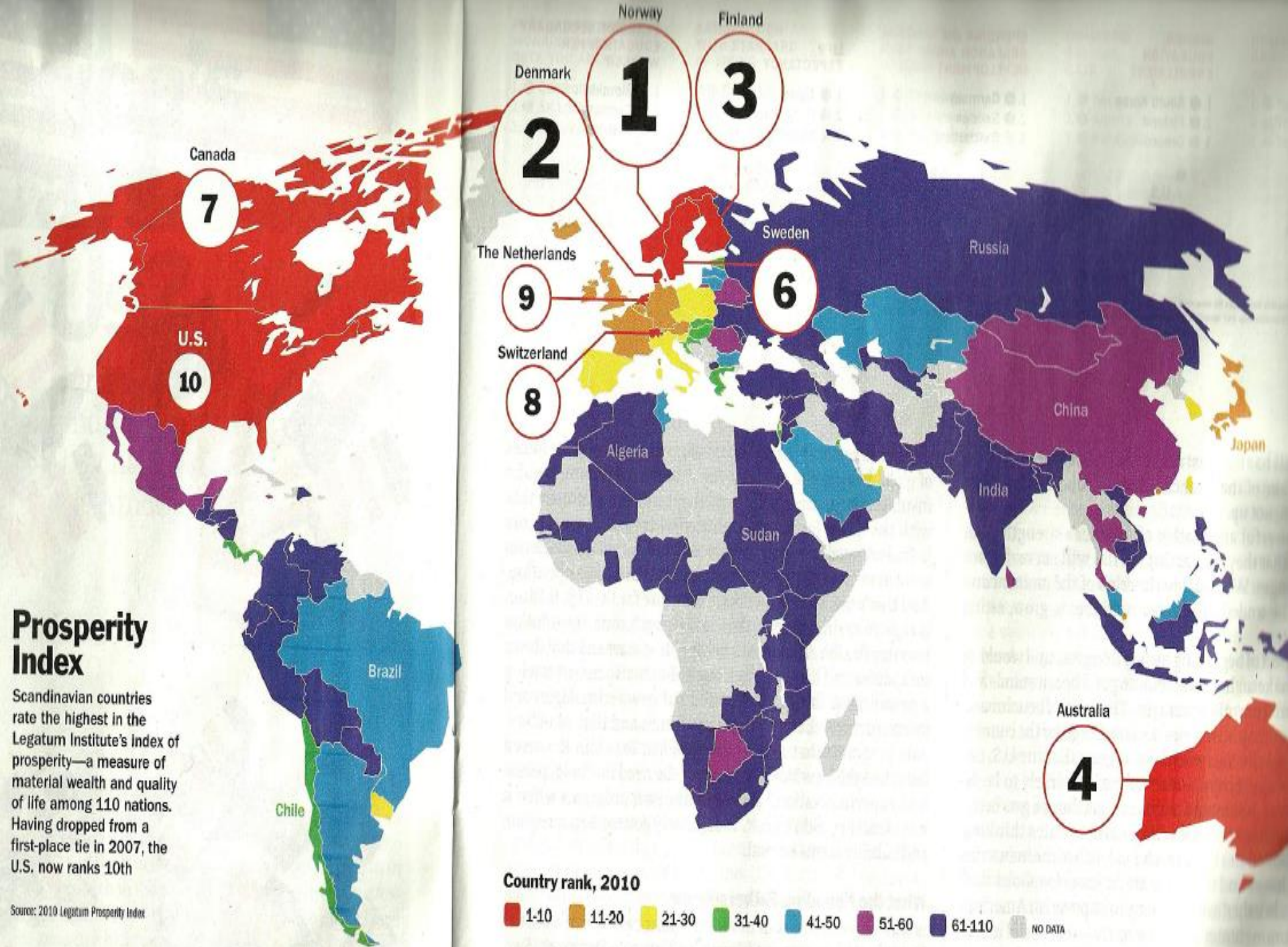
Proportion of Millionaires



Prosperity Index

Scandinavian countries rate the highest in the Legatum Institute's Index of prosperity—a measure of material wealth and quality of life among 110 nations. Having dropped from a first-place tie in 2007, the U.S. now ranks 10th

Sources: 2010 Legatum Prosperity Index



US Standard of Living

- US living standards are gradually deteriorating
- Early baby boomers--those now aged between 58 and 67--were the last generation to enjoy higher living standards than the generation that came before
- For those younger than 58, upward mobility has slowed dramatically
- Currently the odds of an ambitious young bootstrapper rising from humble origins are better in many other countries than they are in the United States
- The United States only ranks 13th out of 17 developed nations by one measure of economic mobility
- Young Americans enjoy better economic mobility than their counterparts in Slovenia, Chile, Italy and the U.K., but young workers have a better chance of moving up in 12 other countries, including Sweden, Denmark, France, Spain, Germany, Australia and Canada

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2006 Est.)	Population % of World	Internet Usage, Latest Data	% Population (Penetration)	Usage % of World	Usage Growth 2000-2005
Africa	915,210,928	14.1 %	23,649,000	2.6 %	2.3 %	423.9 %
Asia	3,667,774,066	56.4 %	380,400,713	10.4 %	36.5 %	232.8 %
Europe	807,289,020	12.4 %	294,101,844	36.4 %	28.2 %	179.8 %
Middle East	190,084,161	2.9 %	18,203,500	9.6 %	1.7 %	454.2 %
North America	331,473,276	5.1 %	227,470,713	68.6 %	21.8 %	110.4 %
Latin America/Caribbean	553,908,632	8.5 %	79,962,809	14.7 %	7.8 %	350.5 %
Oceania / Australia	33,956,977	0.5 %	17,872,707	52.6 %	1.7 %	134.6 %
WORLD TOTAL	6,499,697,060	100.0 %	1,043,104,886	16.0 %	100.0 %	189.0 %
NOTES: (1) Internet Usage and World Population Statistics were updated for June 30, 2006. (2) CLICK on each world region for detailed regional information. (3) Demographic (Population) numbers are based on data contained in the world-gazetteer website. (4) Internet usage information comes from data published by Nielsen//NetRatings , by the International Telecommunications Union , by local NICs, and other other reliable sources. (5) For definitions, disclaimer, and navigation help, see the Site Surfing Guide . (6) Information from this site may be cited, giving due credit and establishing an active link back to www.internetworldstats.com . ©Copyright 2006, Miniwatts Marketing Group. All rights reserved.						

■ As a country, where does the US rank in the world in terms of internet penetration ?

Wait....



Don't look ahead, until
you have your answer !

- The U.S. is 20th in the world in Internet penetration (Luxembourg has passed us)



Internet Usage

- China about 750 million users
- USA about 250 million users
- China 55% of population have Internet
- USA 76% of population have Internet
- China Netcom offers broadband service at \$10 a month
- **China Mobile is the world's largest telecom company and is now adding 5 million customers a month !**
- • “My friends all agree - no Internet, no life.” Chinese student (age 19)
 - Source: USA Today

Country or area	Internet users	Rank	Percentage
 China	746,662,194	1	53.20%
 India	391,292,635	2	29.55%
 United States	245,436,423	3	76.18%
 Brazil	123,927,230	4	59.68%
 Japan	117,528,631	5	92.00%
 Russia	110,003,284	6	78.41%
 Mexico	75,937,568	7	59.54%
 Germany	73,436,503	8	89.65%
 Indonesia	66,244,991	9	25.37%
 United Kingdom	62,354,410	10	94.78%
 Philippines	57,342,723	11	55.50%
 France	55,413,854	12	85.62%
 Nigeria	47,743,541	13	25.67%
 South Korea	47,094,267	14	92.72%
 Turkey	46,395,500	15	58.35%
 Vietnam	43,974,618	16	46.50%
 Iran	42,731,675	17	53.23%
 Egypt	37,519,531	18	39.21%
 Spain	37,337,607	19	80.56%
 Italy	36,442,438	20	61.32%
 Thailand	32,710,169	21	47.50%
 Canada	32,602,776	22	89.84%
 Argentina	30,758,972	23	70.15%
 South Africa	30,248,355	24	54.00%

Alibaba

- China's Alibaba possibly has more e-commerce transaction volume (in currency) than Amazon and eBay combined:
 - About \$1 trillion
 - Alibaba is partially owned by Yahoo and Japan's Softbank



Globalization Challenge

- “Web site globalization is a big challenge and requires constant vigilance to avoid cultural gaffes”.
- Today 50 out Fortune’s 100’s Web sites are available only in English.
- In our rush to get on the WWW, we sometimes forget that WW is for “World Wide”
- Wal-Mart has a global work force of over 1 million and runs more than 1000 of its 3500 retail outlets in foreign countries; yet its web site (Wal-mart.com) is only for Americans.

Global Dimensions

- 'Localization' (L12N) considers five global dimensions:
 - cultural (language, customs, demographics, etc.)
 - geographic (country/region, date/time, etc.)
 - functional (logistics, manufacturing, sales, etc.)
 - regulatory (laws, tax, confidentiality, etc.)
 - economic (currency, measures, tariffs, etc.).
 -



Language

- Since 2002 a majority of Internet users speak primarily languages other than English
- Currently the breakdown is roughly
 - 50% English
 - 9% Japanese
 - 6% German
 - 6% Spanish
 - 5% Chinese
 - 4% French
 - 15% other
- That means if you do not localize your web site soon, you will be ignoring **half of the world**

- For what % of the world population is English the native language ?

**MOTHER
LANGUAGE**

Wait....



Don't look ahead, until
you have your answer !

- What country has the most people who speak English ?



Wait....



Don't look ahead, until
you have your answer !

But, everyone knows English...

- Now its true that for a number of years most of the Internet community can still understand English, but overall English is the native language to only 8% of the world
- **China has the most English speaking people**
- Most users in foreign countries prefer content in their own language; for example, 75% of users in China and Korea have such a preference
- **It was found that visitors spend twice as long, and are three times more likely to buy from a site in their native language**

Language Multiplicity & Dialects

- In some countries/regions multiple languages are used:
 - Belgium has both French and Dutch
 - Canada both English and French
 - In Switzerland, German, French, and Italian are used
- Language dialects prevail: As George Bernard Shaw once said, “England and America are two countries divided by a common language”
 - For example, collective nouns which refer to a group of people or things are singular in the US but plural in England
 - So in the US, we say “Google **is** a company”
 - In England they say “Google **are** a company”

Multiplicity & Dialects (con't)

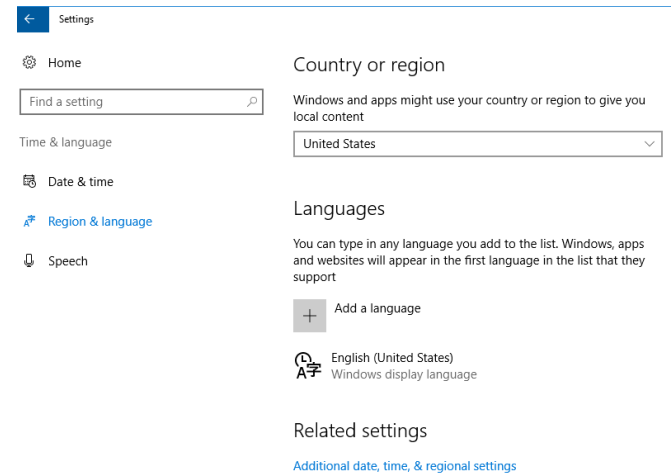
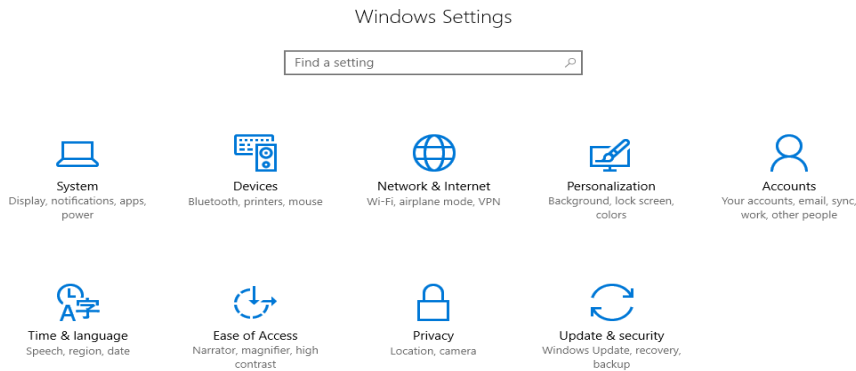
- One cannot use “Classic German” in Germany, Austria, or Belgium; since they all speak a different German
- Canadian French is different from French in Paris, just as Spanish in Mexico City is different from Spanish in Barcelona
- In some regions there may be one spoken language, but several writing systems for it such as Japan

“Locale”



- The combination of language and dialect is called a “locale” (at least, from an IT perspective)
- When you install an operating system on your computer, you typically specify a locale
- Then to view content that has been localized for a non-English audience, you have to have your computer properly equipped with the correct scripts (characters and glyphs/symbols).
- The most popular scripts are: Roman (English and romance languages), Kanji (China, Japan, and other Asian countries), Cyrillic (Russia and Eastern Europe), Arabic (Middle East), Kana (Japan), Devanagari (India), Korean, Thai, Telugu (India), Hebrew, Burmese, and Greek.

“Locale” Settings



Language Translation

- Of course the first task in localizing your web pages is to translate them into the target language/dialect.
- You can do this by
 - Hiring a translator
 - Using a company providing translation services
 - Using a computer based translation product or service



Translators



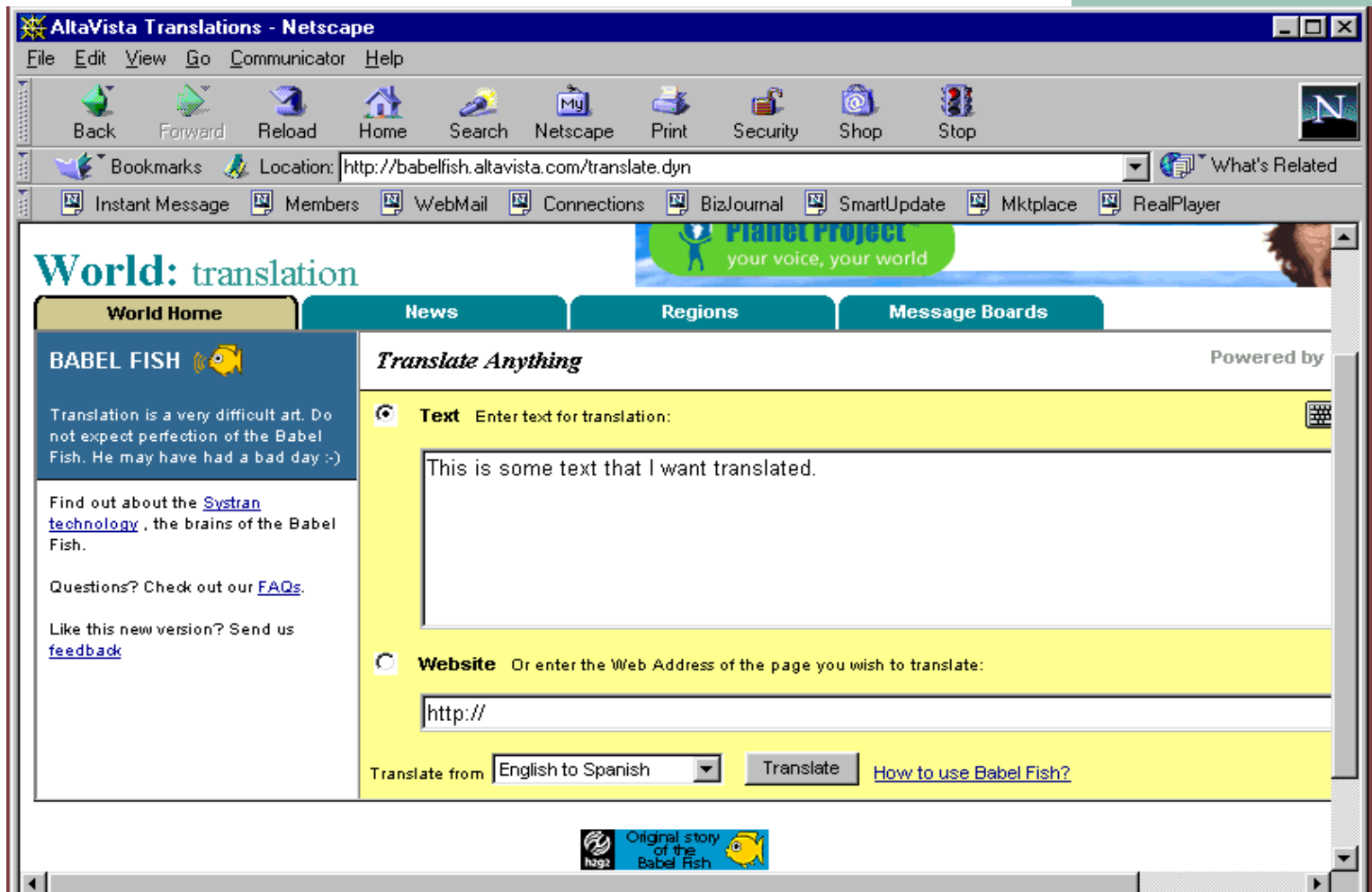
- Hiring a translator will provide the best localization, but is far more costly than the automatic methods
- Translators can easily be found in the Aquarius directory (<http://aquarius.net>), Glen's Guide (www.gleensguide.com), or Expert Central (www.ExpertCentral.com), or even Yellow Pages
- It is best to use a translator that “lives” in the local region; if a translator has not lived in a region for a decade, he has missed 10 years of the local culture
- Also after your web content is translated, it is advisable to have it reviewed by a local “focus group” (where demographics can be considered also)

Software and Services

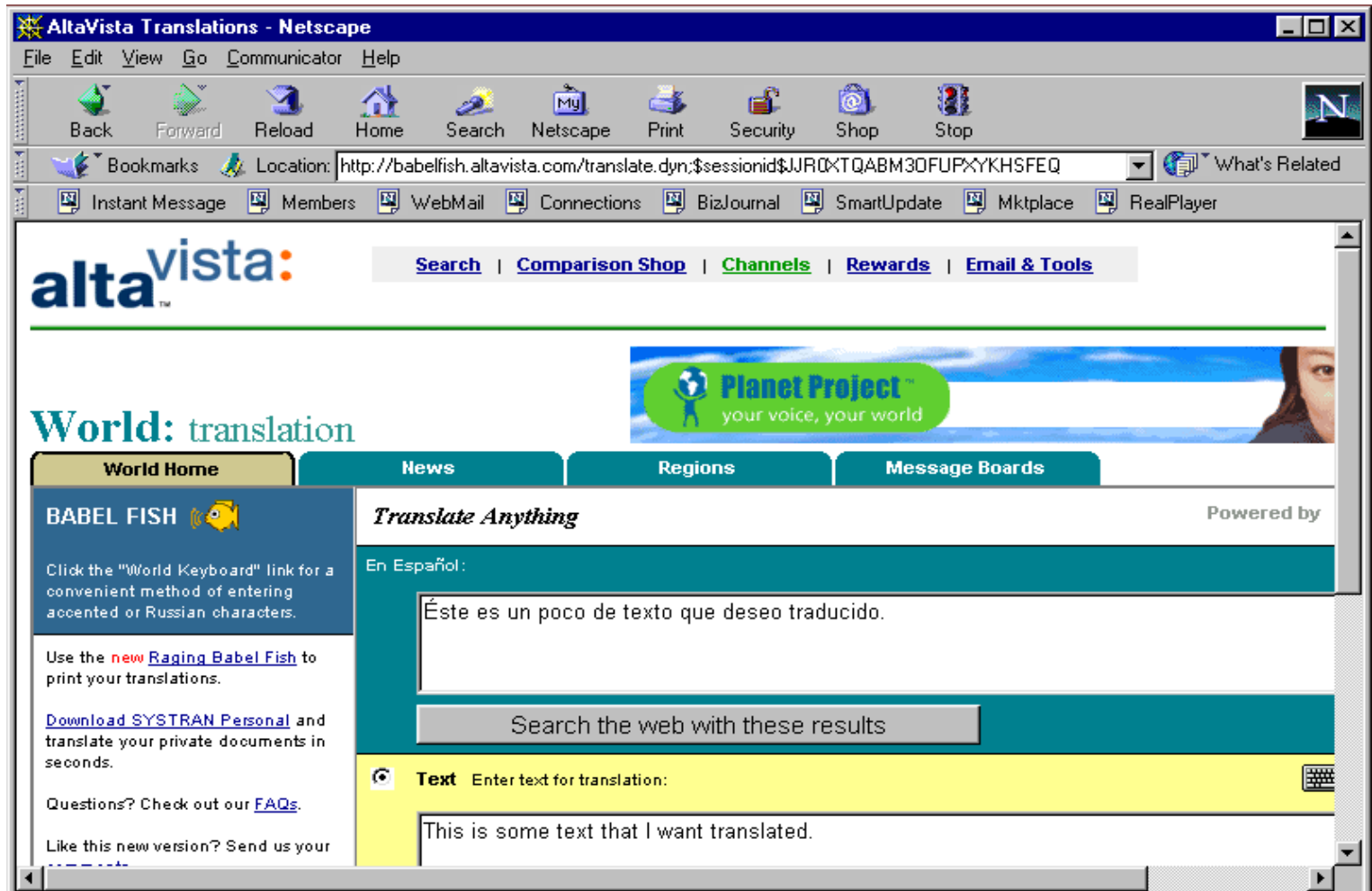


- There are also many companies that provide translation services such as: Aradco, VSI, eTranslate, Idiom, iLanguage, WorldPoint, and others. The cost of these services is about 25 cents per word per language.
- Automatic translation software is still in its infancy. Some popular software products for translation are: www.e-ling.com, www.lhsl.com, and www.systransoft.com.
- In addition there are several web sites which provide **free** translation services such as: <http://babelfish.altavista.com> and www.freetranslation.com.

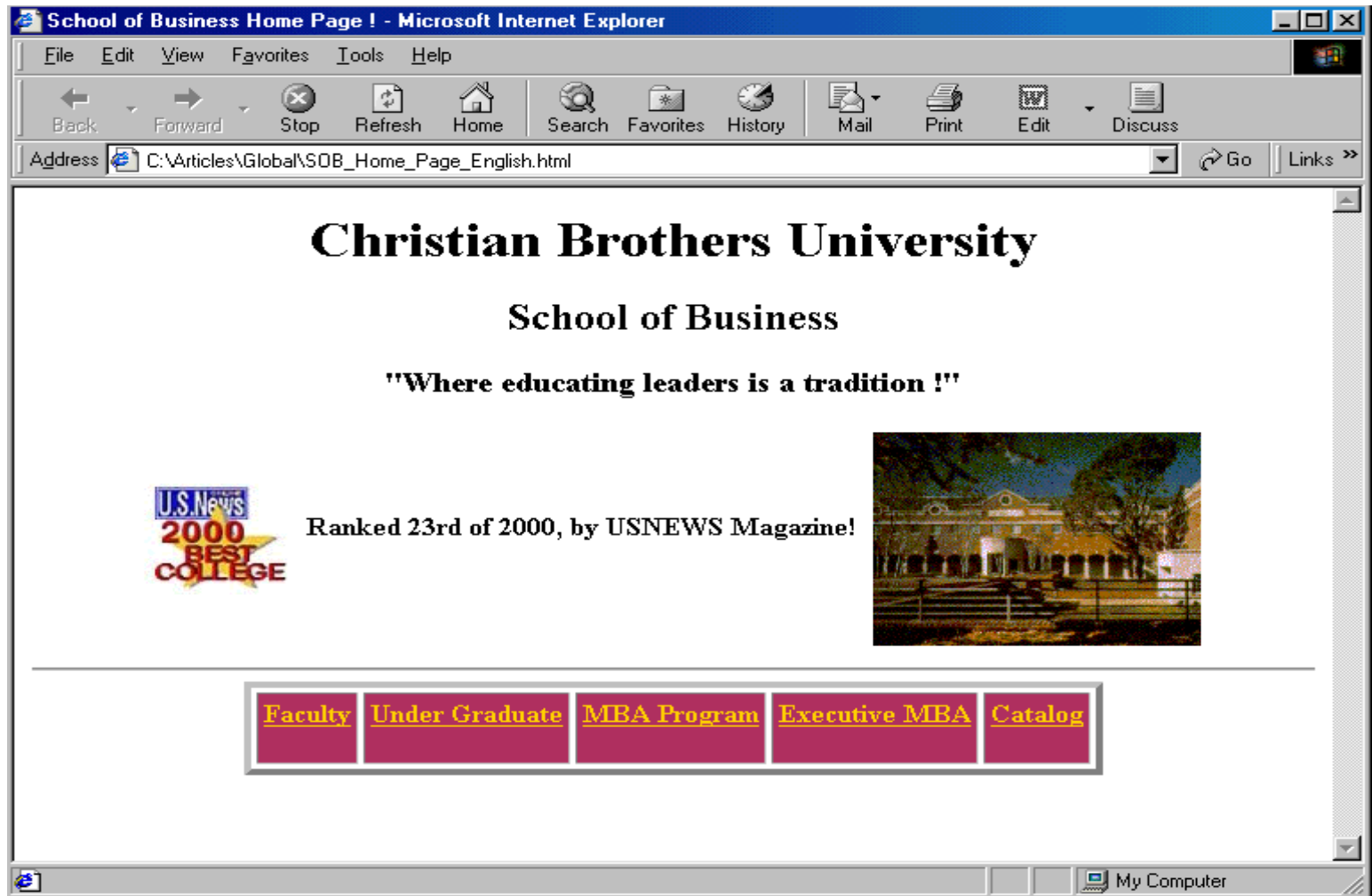
Using BabelFish



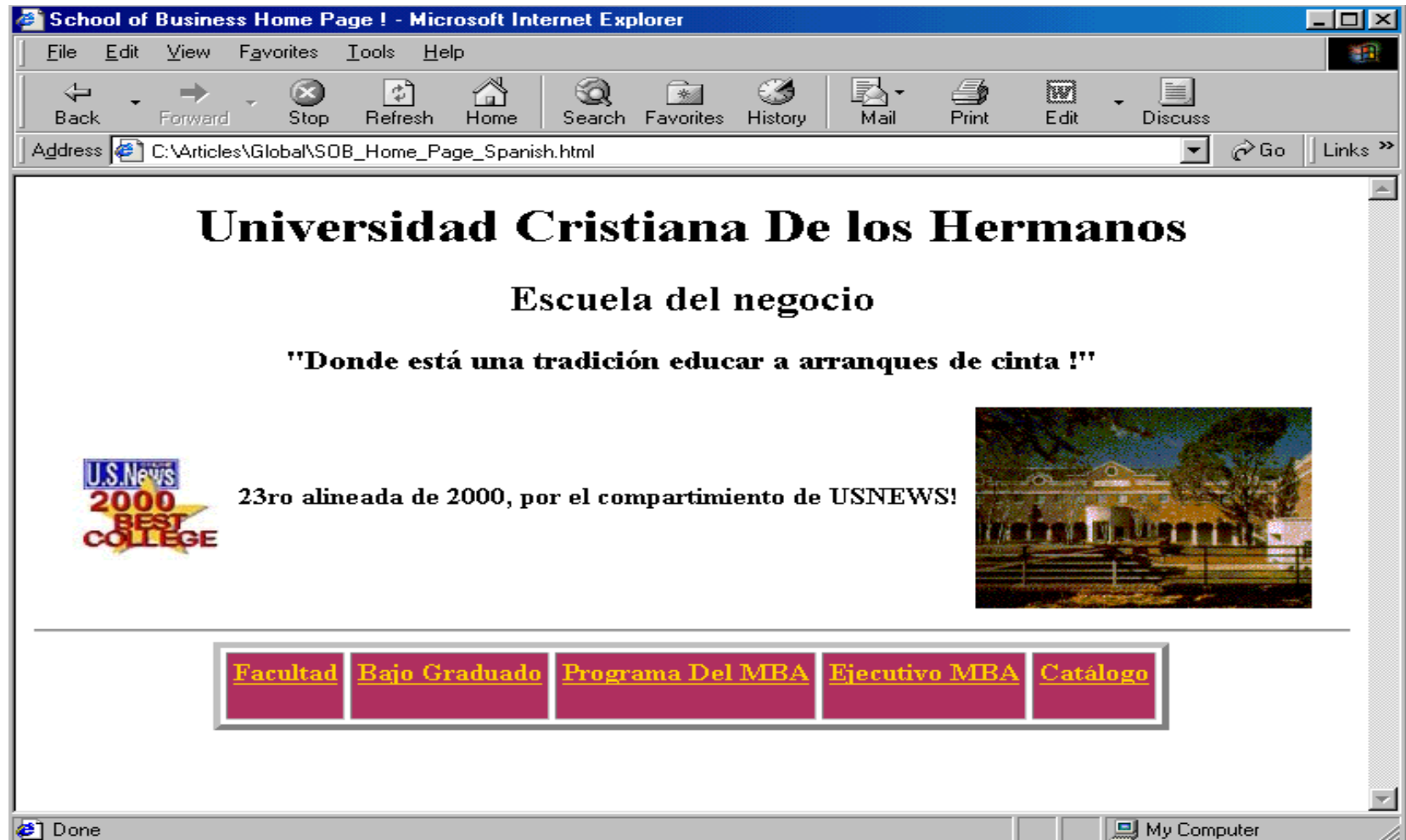
Using BabelFish (con't)



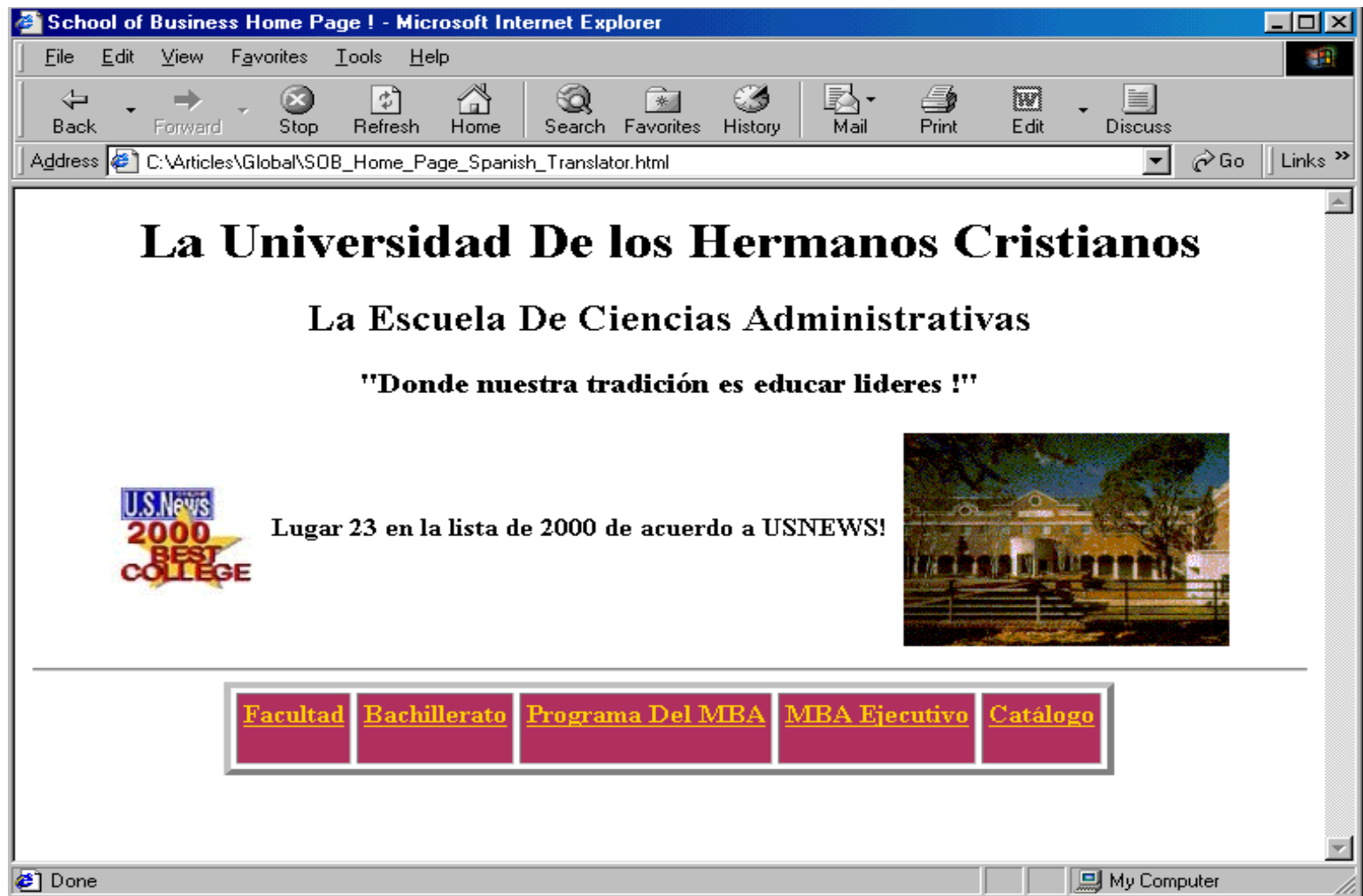
Sample Page to be Translated



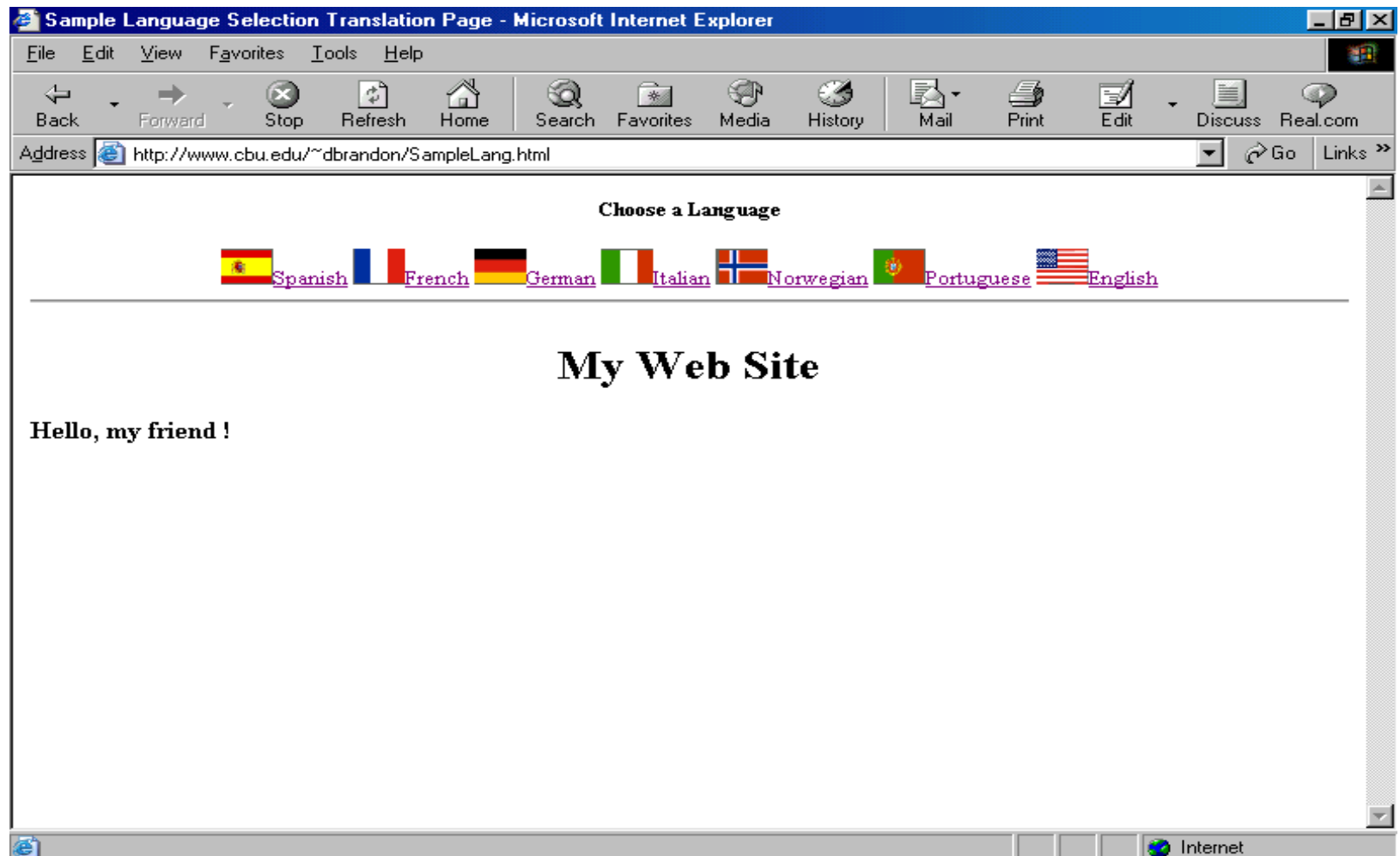
After Automatic Conversion



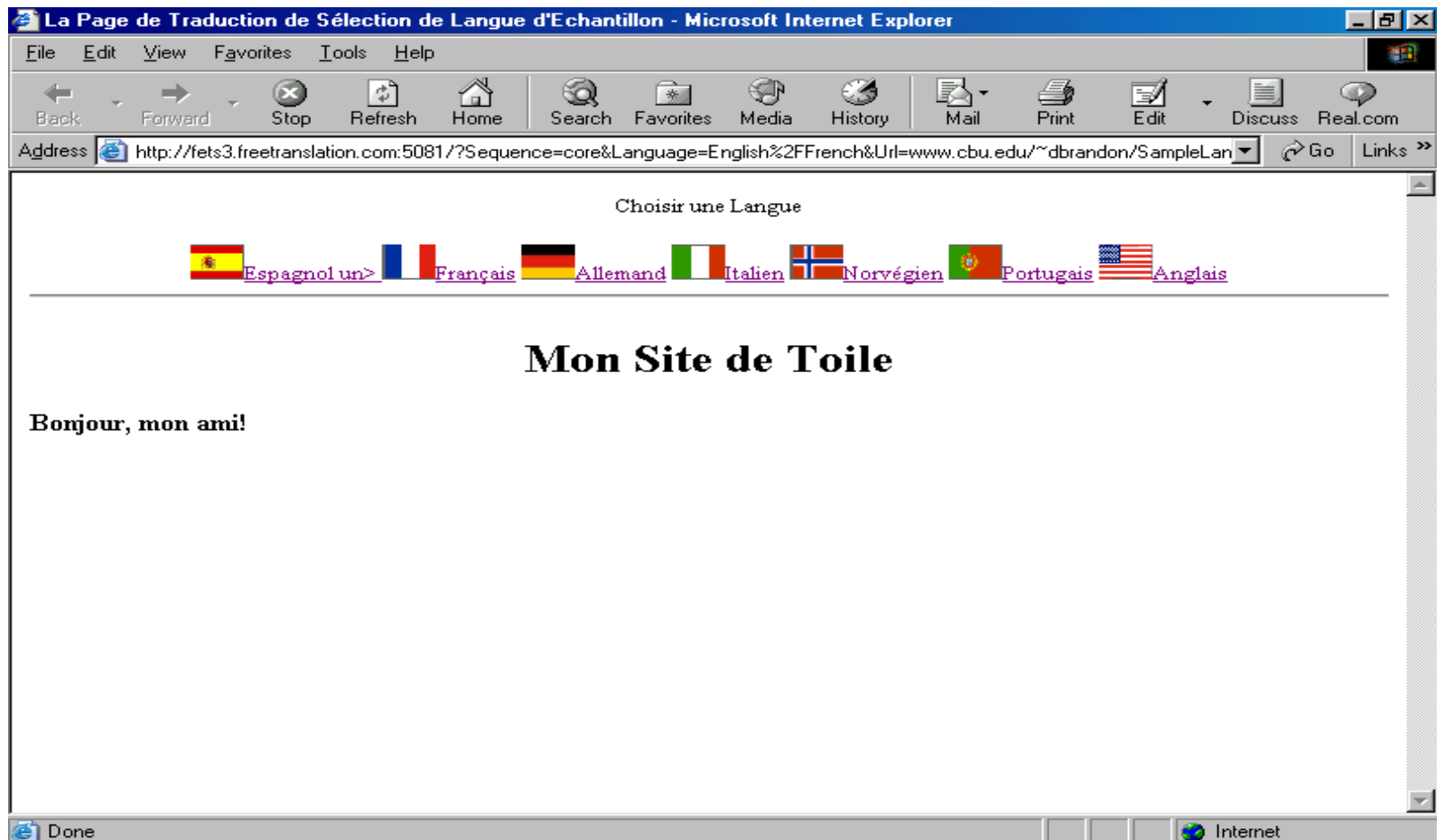
After Modification by a “Native”



Direct Linking to Online Translators



Translated Page



Comprehensive Web Translation Services

[<http://w4.systranlinks.com/>]

The screenshot shows the SYSTRAN eServices website as it appeared in the early 2000s, viewed through Microsoft Internet Explorer. The browser's address bar shows the URL <http://w4.systranlinks.com/>. The website features a blue header with the SYSTRAN logo and navigation links: About SYSTRAN, Technology, eServices, Corporate Solutions, Retail Products, and Support. A sidebar on the left contains a menu for eServices (Overview, SYSTRANLinks, SYSTRANet, SYSTRANBox, Affiliate Program) and Related Links (Available Languages). The main content area is titled 'SYSTRANLinks' with the tagline 'Drive traffic to your website! Make it multilingual!'. It describes the service as a turnkey website translation solution that transforms standard websites into interactive multilingual hubs. A list of bullet points highlights the service's features: it offers all major European, Asian, and Russian languages; localization is no longer optional; it helps build a brand in a new marketplace; and it is an ASP solution outsourced to SYSTRAN servers. On the right side, there is a registration section titled 'New to SYSTRAN eServices?' with a 'Sign up now and get a Free Trial!' button, and a 'Registered users' section with email and password input fields and a 'Password lookup' link. The browser's status bar at the bottom shows 'Done' and 'Internet'.

SYSTRAN
Information and translation technologies

Translation powered by SYSTRANLinks - Disclaimer

About SYSTRAN Technology **eServices** Corporate Solutions Retail Products Support

eServices
Overview
SYSTRANLinks
Bronze
Silver
Gold
Corporate
SYSTRANet
SYSTRANBox
Affiliate Program

Related Links
Available Languages

SYSTRANLinks
Drive traffic to your website! Make it multilingual!

SYSTRANLinks is a turnkey **website translation solution**. SYSTRANLinks transforms standard websites and content applications into interactive multilingual hubs, all within seconds.

Depending on your web localization goals, SYSTRANLinks is available in **3 different levels**: [SYSTRANLinks Bronze](#), [SYSTRANLinks Silver](#) and [SYSTRANLinks Gold](#). Also available: [SYSTRANLinks Corporate](#) for large corporations.

- SYSTRANLinks offers **all major European, Asian and Russian languages**.
- With SYSTRANLinks **localization is no longer optional**. Human translation is neither cost-effective nor capable of managing dynamic multilingual translations.
- SYSTRANLinks helps you build your brand in a **new marketplace**.
- SYSTRANLinks is an **ASP solution**, outsourced to SYSTRAN servers.

New to SYSTRAN eServices?
[Sign up now and get a Free Trial!](#)

Registered users
Email
Password [OK](#)
[Password lookup](#)

Google Translate

Get to Google faster. Update your default search engine.

Sure

No thanks



Translate

English Spanish French English - detected ▼



English Spanish Arabic ▼

Translate

Where is the bathroom ?



Dónde está el baño?



See also

Where is the bathroom?, where is the bathroom, the, bathroom, is, Where

Google Translate (con't)



Select Language ▼
Powered by Google Translate

[Home](#)

[About](#)

[Products](#)

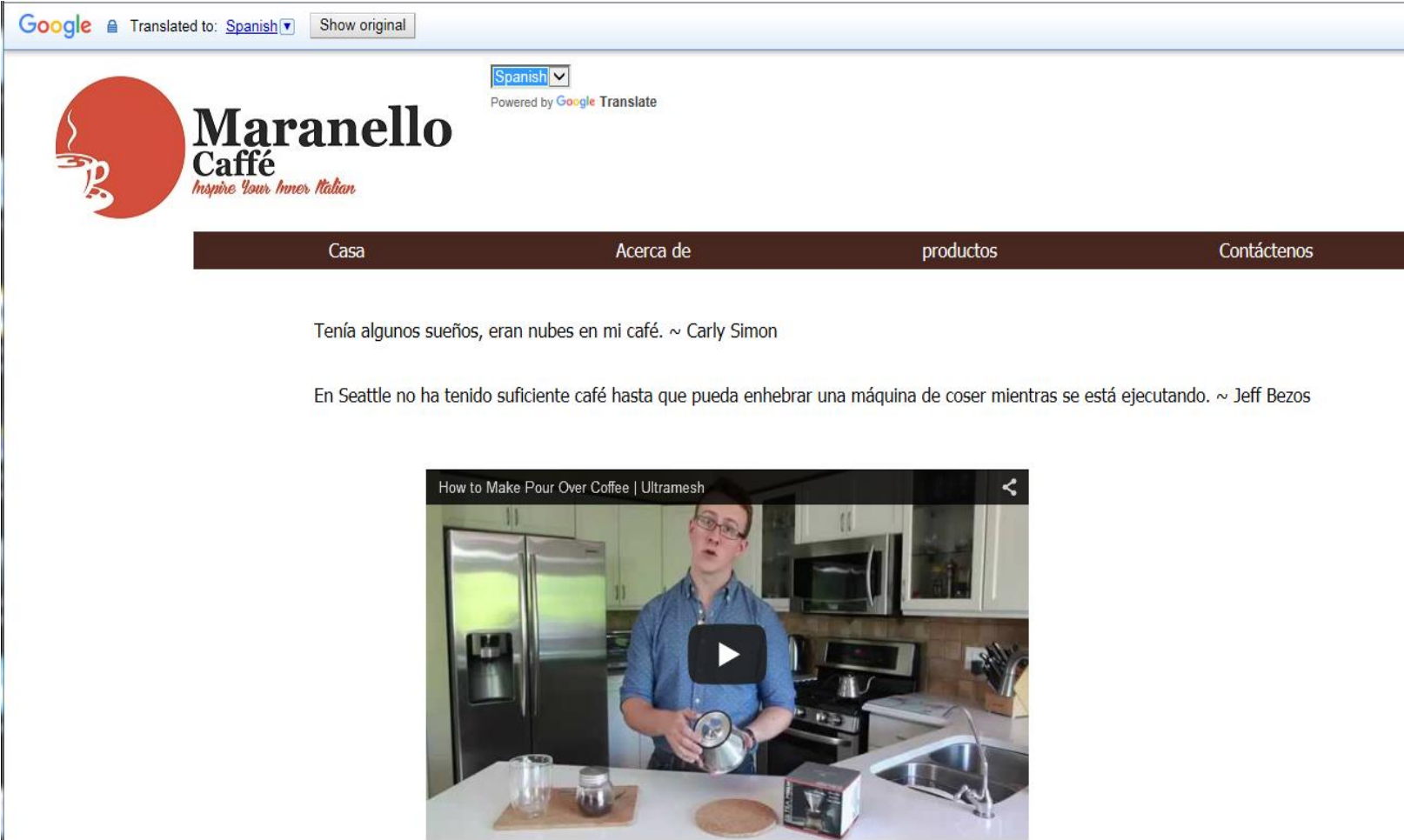
[Contact Us](#)

I had some dreams, they were clouds in my coffee. ~Carly Simon

In Seattle you haven't had enough coffee until you can thread a sewing machine while it's running. ~Jeff Bezos



Google Translate (con't)

Google  Translated to: Spanish Show original

Spanish  Powered by Google Translate

 **Maranello Caffé**
Inspire Your Inner Italian

Casa Acerca de productos Contáctenos

Tenía algunos sueños, eran nubes en mi café. ~ Carly Simon

En Seattle no ha tenido suficiente café hasta que pueda enhebrar una máquina de coser mientras se está ejecutando. ~ Jeff Bezos

How to Make Pour Over Coffee | Ultramesh 

Google Translate (con't)

```
■ <header>
■     
■
■     <div id="google_translate_element"></div>
■     <script type="text/javascript">
■         function googleTranslateElementInit() {
■             new google.translate.TranslateElement({pageLanguage:
'en', includedLanguages: 'es,ga,it'}, 'google_translate_element');
■         }
■     </script>
■     <script type="text/javascript"
src="//translate.google.com/translate_a/element.js?cb=googleTranslateEle
mentInit"></script>
■ </header>
```

Other Language Related Issues

- **Field size** may become a problem; for example, German words are longer than other languages.
- Some scripts have **different navigation** from our (Roman) left to right then top to bottom; Arabic & Hebrew are (usually) right to left, and Kana is vertical
- **Style differences**: hyphenation, stressing (underline, italics, bold in Roman, but different in other languages), bullet items, fonts, symbols above and below others, text justification
- Text **sort orders** – “sort” function after translation
- Use the LANG attribute within the META tag to specify the language of the “keywords”

User Interface Issues



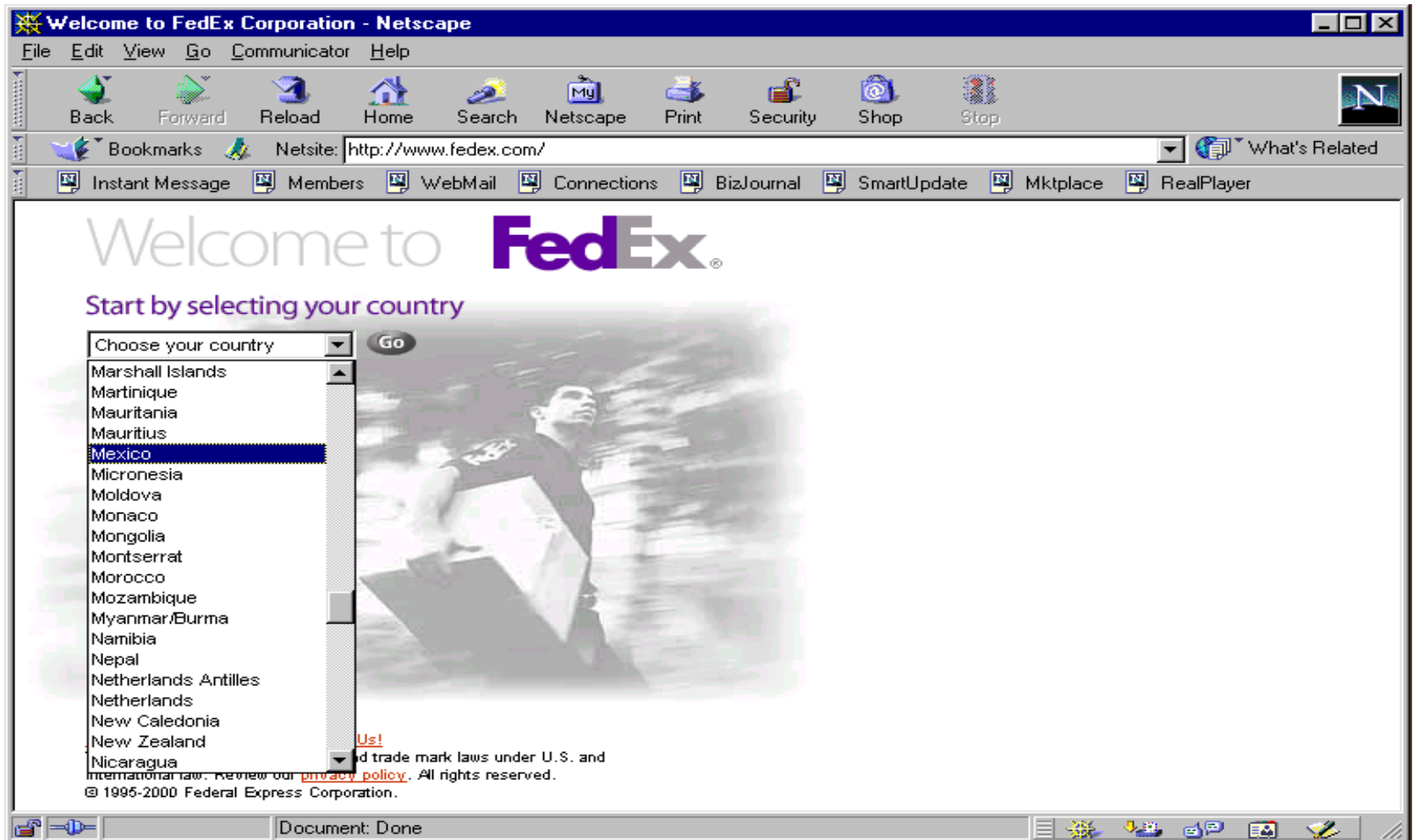
- Layout of graphical user interface (GUI) controls (text boxes and their labels, check boxes, radio buttons, drop downs, etc.)
- **Need to separate images form text**
- If all pages are not translated, it is advisable to warn uses ahead of time
- Locale specific page loading methods

Locale Page Loading

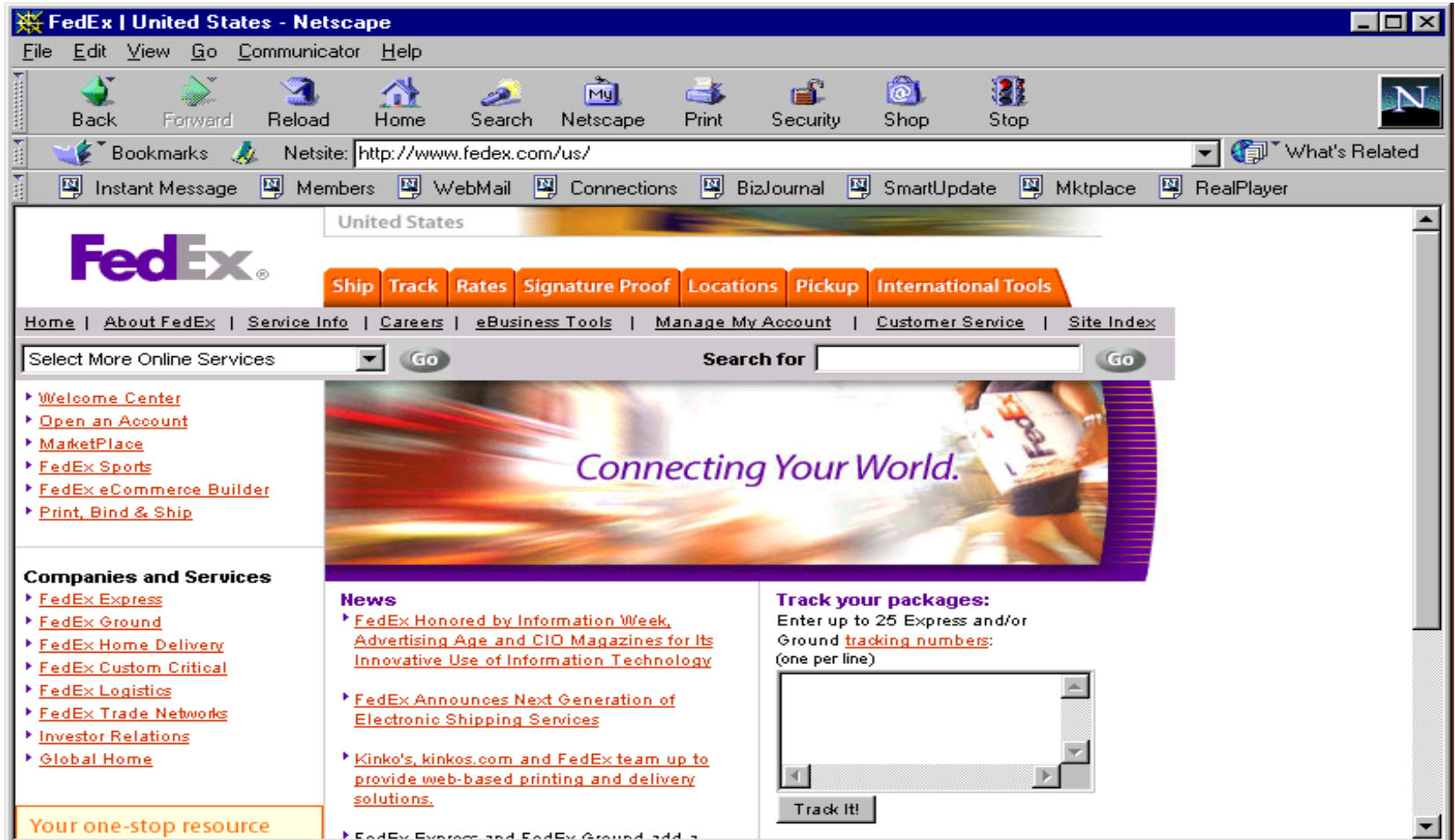
- There are also several different ways to provide the customer with the proper page for his locale
 - Provide a choice (menu) on your home page
 - Provide a choice on a locale selection page that opens before your home page
 - Use “cookies” or other session management technique to remember the locale preference for a user/computer
 - Automatically read locale configuration from operating system (requires Java)
- Menus of language selection should show the language choices in the specific language !

Language Selection Page

[cookies used thereafter]

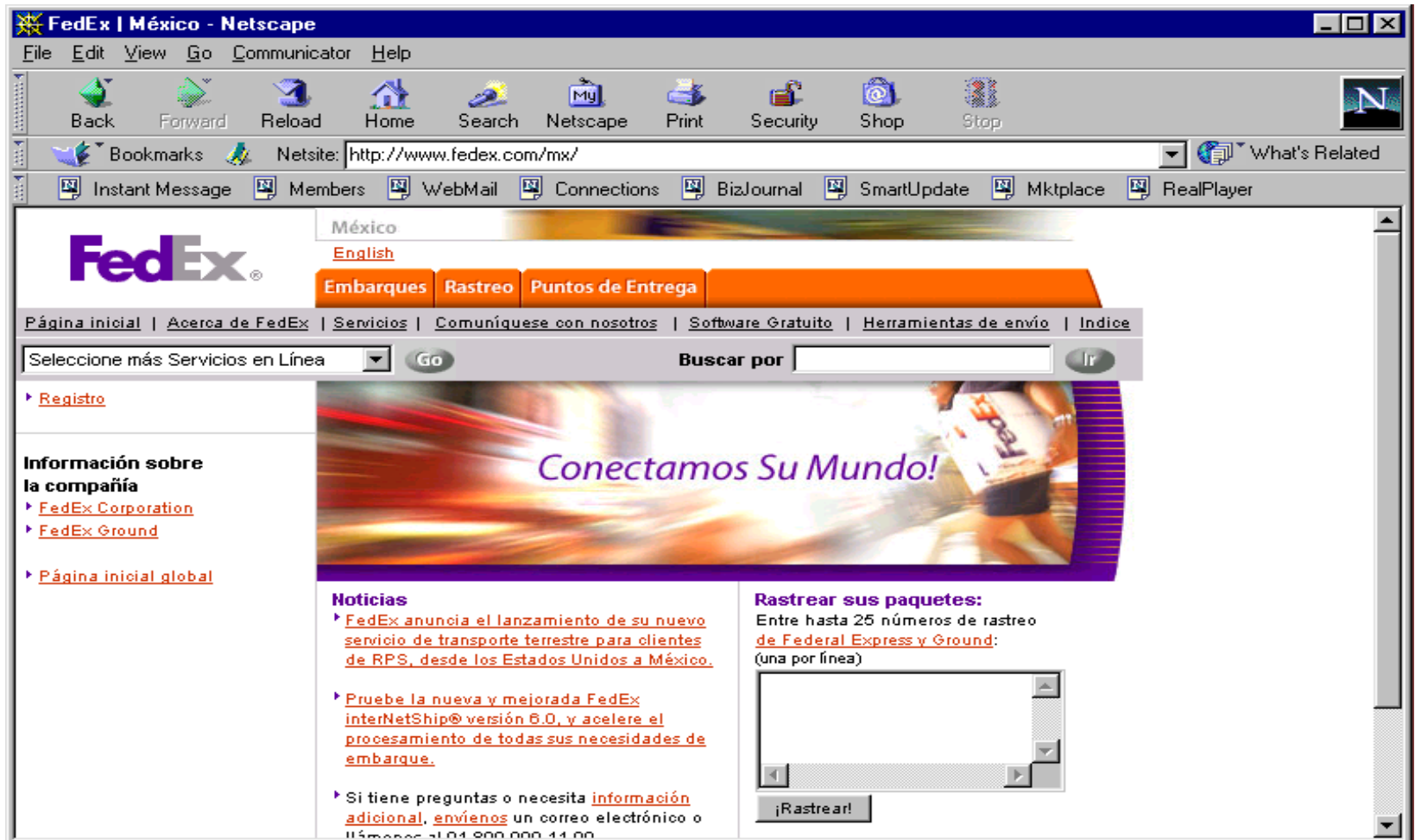


USA Loaded

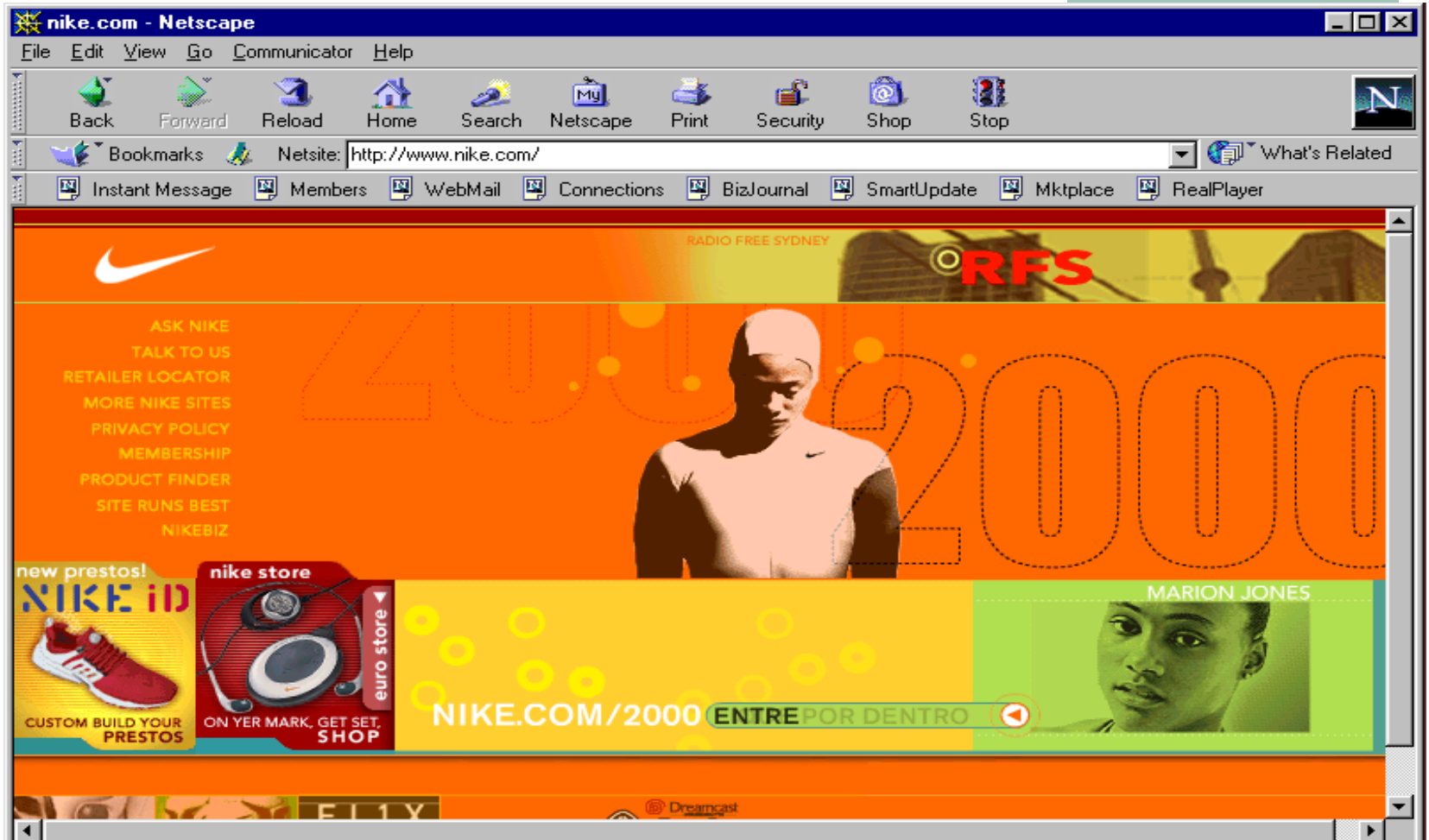


Mexico Loaded

[not all listed countries have native language pages]



Home Page with “Locator” Option



Japanese Location

(What's wrong with this page ?)

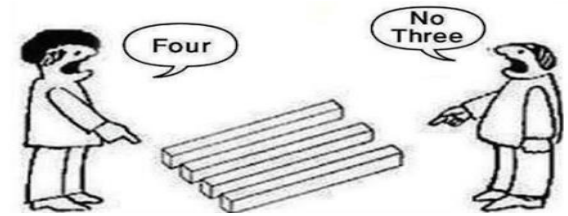


Cultural Issues



- Creating an effective foreign web site involves much more than just a good language translation
- Not only do languages differ in other countries but semantics (the meaning of words and phrases) and cultural persuasions in a number of key areas are different
- To North Americans “football” is the NFL or *Tennessee vs Florida State*, but to the rest of the world it means soccer

Misunderstandings



- Cultural misunderstandings can be very serious
- A young Japanese man was shot and killed in Louisiana on a Halloween night because the homeowner of the door he was knocking on yelled “freeze”; he only understood the word to mean “very cold”
- A man in Los Angeles was killed because his shoe was pointing at a singer, and that was considered very insulting

Inoffensive



1. not causing anger or annoyance
2. giving no offense
3. substituting a mild term for a harsher or distasteful one (adj)

1. अहानिकर
2. सहृदय
3. हानि न पहुँचाने वाला

- “Sensitivity to culture and national distinction will separate success from failure”
- To be effective a web site has to not only be understandable and efficient, but has to be **culturally pleasing and inoffensive**
- To accomplish that, it may be necessary that not only is language localized, but that content, layout, navigation, color, graphics, text/symbol size, and style may be different

Cultural Blunders

- Many companies have put forth global web sites simply by translation the English into the targeted language, but then had to pull back and re-plan and redesign the localized site due to cultural offenses
- Some first try international web sites manage to generate multiple cultural offensives on their first try; one company had an offensive gender role, an offensive color, and an American “look” to the actors (even though they were of the correct ethnicity)
 - General Motors tried to market the Chevy Nova in Mexico (in Spanish “No Va” means “doesn’t go”) !
 - A pharm company wanted to market a weight loss pill in Europe called “Tegro”, in France that means “you are fat”
 - Another pharmaceutical company marketed an HIV medication which meant “foolish love” in German

Humor & Idioms



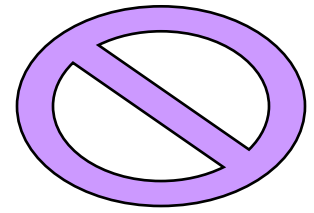
- Our humor, symbols, idioms, and marketing concepts do not send the same messages to other parts of the world as they do to us
- For example, the hand symbol in Brazil is vulgar.
- It is best to avoid all body part symbols except perhaps a smile
- Oriental “manners” can be even stranger; for example, avoid groups of four on Japanese sites
- Some areas of **global disagreement** to avoid are:
equality of differing demographic groups, sexuality, abortion, child labor and majority age, animal rights, nudity, guns, work hours and ethic, capital punishment, scientific theories, and religious particulars

Colors



- Colors have symbolic and special meaning in most locales
- In the U.S. :
 - Red/white/blue signify patriotism
 - Red and green signify Christmas
 - Orange and black are associated with Halloween
 - Purple, green, and gold are associated with Mardi Gras here and many other parts of the world

Colors - Problems



- In India, pink is considered too feminine
- Purple is a problem in many places, it symbolizes death in catholic Europe and prostitution in the Middle East
 - Euro Disney had to rework its European sites after the first version used too much purple
- In China, the color white (in the foreground) is for mourning, and black backgrounds signal misfortune - don't use green hats (John Deere clothes), means infidelity - Best Chinese colors: red and gold
- Overall blue is the most culturally accepted color



Symbols & Manners

- It is also very important to respect other cultures “symbols” (heroes, icons, etc.) both positive and negative (swastika)
- One guide site is Merriam Webster’s Guide to International business (www.bspage.com/address.html)
- The classic books on these cultural subjects are excellent guides for web pages also: “Kiss, Bow, or Shake Hands: How to do Business in 60 Countries, Do’s and Taboos Around the World, and Dun & Bradstreet’s Guide to Doing Business Around the World

Technical Issues



- **“Language is often the least challenging aspect of customizing, or localizing, a web site for a foreign audience**
- **The hard part is all the technical challenges”:**
 - **including date/currency formats, bandwidth capabilities, tagging HTML properly, correct character sets to use, managing multilingual pages on the server, directing users to the language specific content, configuration control, etc.**

Some Standards Involved

- **Common ISO 639 - Language Codes**
- **Common ISO 3166 - Country Codes**
- **Common ISO 4217 - Currency Codes**
- **ISO 8601 - Date Format**
- **NAICS - North American Industry Classification System**
- **EAN – European Article Numbering**
- **UPC – Universal Product Code**
- **UPU – Universal Address Formats**
- **Greenwich 2000 – Time Standard**
- **ISO 10646, Unicode (16 bit character/symbol standard)**
- **World Wide Web Consortium (W3C) HTML 4.01 Specification**

US Sizes Displayed [Laura.html]

Laura's Combat Outfits - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit Discuss Real.com

Address  C:\MyData\470\Globalization\laura.html  Go  Links >>

Laura's Combat Outfits for Women

(U.S./Canada Sizes)

Sizes in Inches, \$75 U.S. Dollars

Sizes	Small	Medium	Large
Chest	34 - 35	36 - 37	38 - 40
Waist	22 - 23	24 - 25	26 - 28

A woman in a dark, form-fitting combat outfit is shown against a dark background with a large, glowing circular emblem behind her. To the left of the woman is a small, glowing, flame-like object.

[Metric Measurements](#) [Place Order](#) [Exit](#)

Done  My Computer

Metric Sizes Displayed [Javascript conversion]

Laura's Combat Outfits - Microsoft Internet Explorer

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Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit Discuss Real.com

Address <C:\MyData\470\Globalization\laura.html> Go Links »

Laura's Combat Outfits for Women

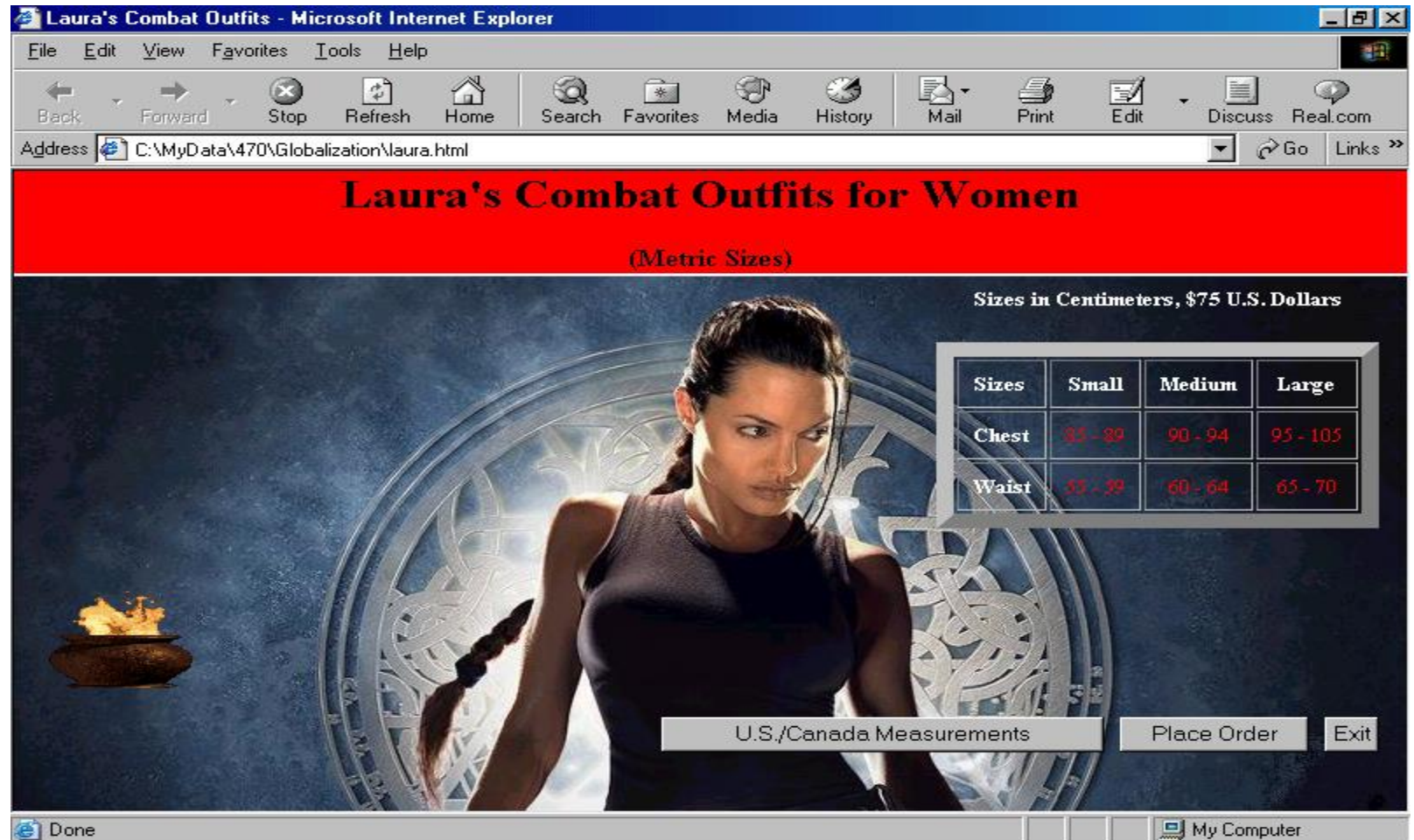
(Metric Sizes)

Sizes in Centimeters, \$75 U.S. Dollars

Sizes	Small	Medium	Large
Chest	85 - 89	90 - 94	95 - 105
Waist	55 - 59	60 - 64	65 - 70

U.S./Canada Measurements Place Order Exit

Done My Computer



International Delivery

Laura's Order Form - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit Discuss Real.com

Address  C:\MyData\470\Globalization\orderForm.html Go Links >>

Laura ships around the world via FedEx; your order cost is \$75.00 (U.S. Dollars) including delivery.

First Name: Last Name:

Top (Chest) Size: Small ☒ Medium ☐ Large ☐ Bottom (Waist) Size: Small ☒ Medium ☐ Large ☐

Credit Card Number:

Expiration Month (2 digits): Expiration Year (2 digits):

Country:

Address 1:

Address 2:

Address 3:

City:

State/Province/Region:

Zip/Postal Code:

Telephone Number:

Done My Computer

Technical Issues – Language/Cultural Aspects Only

- Multilingual Pages/Phrases (Items in general)
- Character sets
- Dynamic HTML
- Configuration Control



Configuration Control

- Similar to the problem of developing and maintaining a software product
 - There are actually a number of versions of the software product, generally in two (or more dimensions):
 - Versions in time, each with its own features, usage, documentation, known problems list, etc.
 - Versions for different users: customizations, different platforms (operating system, language, communications protocol, etc.), etc.



- For web sites, companies strive to be platform independent (HTML, CSS, JavaScript) and time independent
- That is we only support one version of the web site at a time
 - Life's certainties: "Death, taxes, and **web page updates**"
- However for localization, companies now need to support any number of versions !!!!

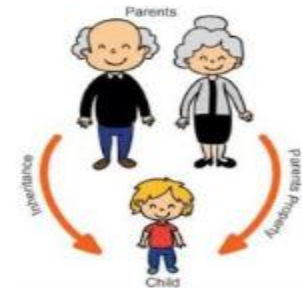
Localization Level

- **Page Level** – Separate HTML/CSS for each locale
- **Item Level** – Locale specific items
 - Phrases
 - Images, sound tracks, videos, ...
 - Products
 - Numbers



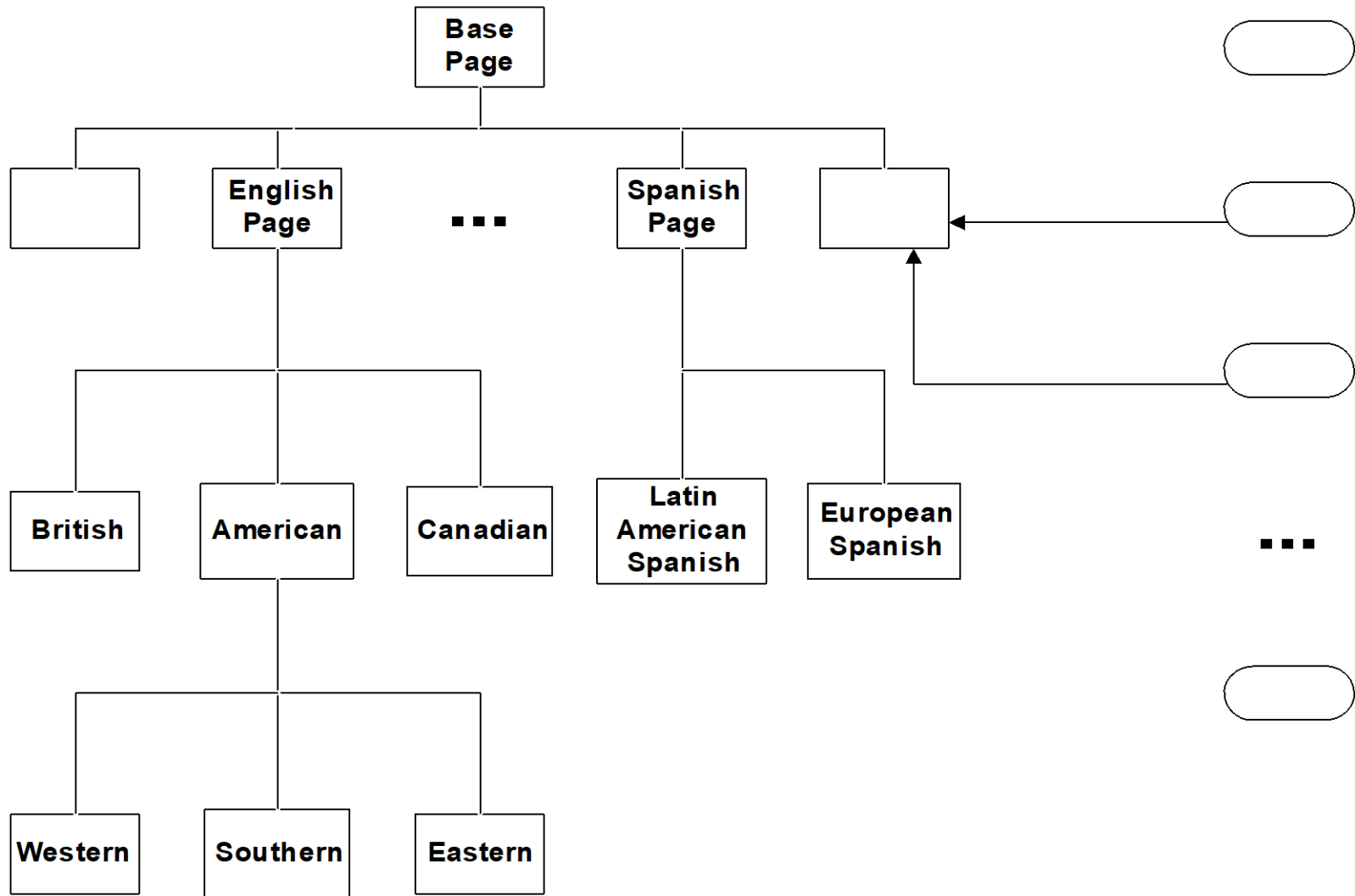
“Object Oriented Approach”

- Principle of ‘Inheritance’
 - Form and Function is inherited from base page definition
 - For new page, only need to specify base page and different or additional form and function
 - When a base is changed, all pages derived from base are thus modified also
- OO capabilities built into Java Resource Bundles



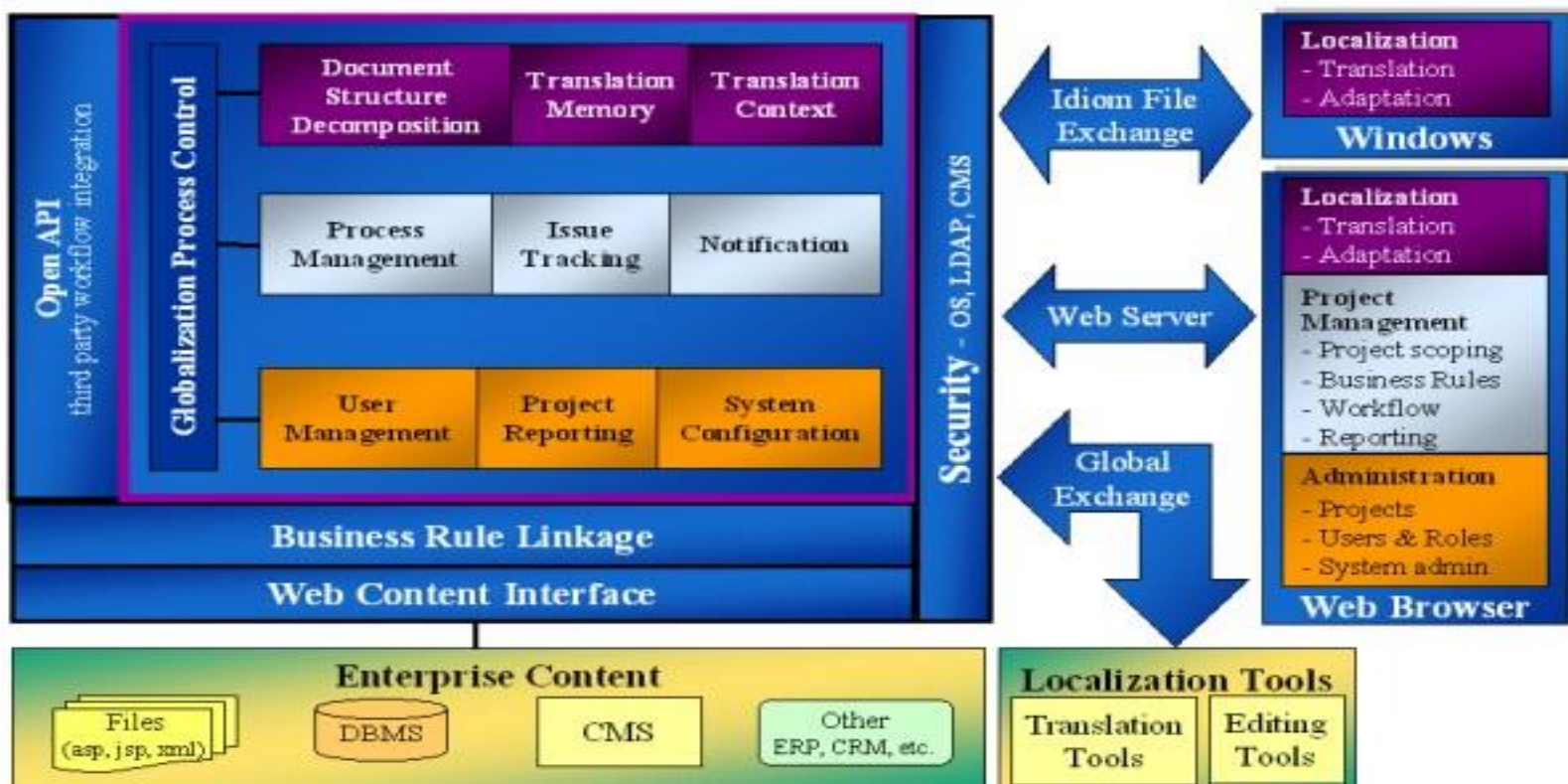
Page Definitions

Elements



Global Content Management Software

WorldServer™ Architecture



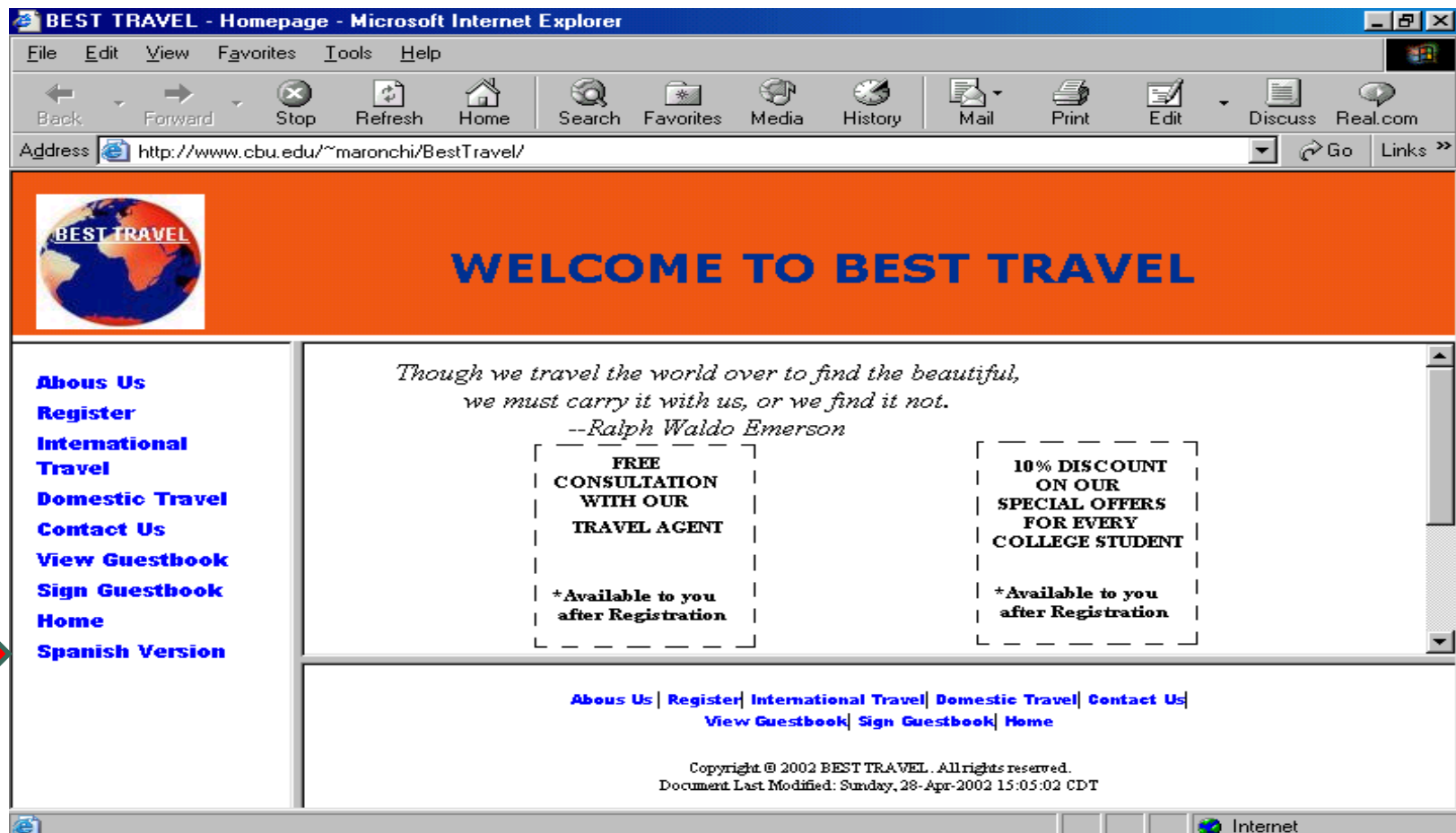
Internet Everywhere

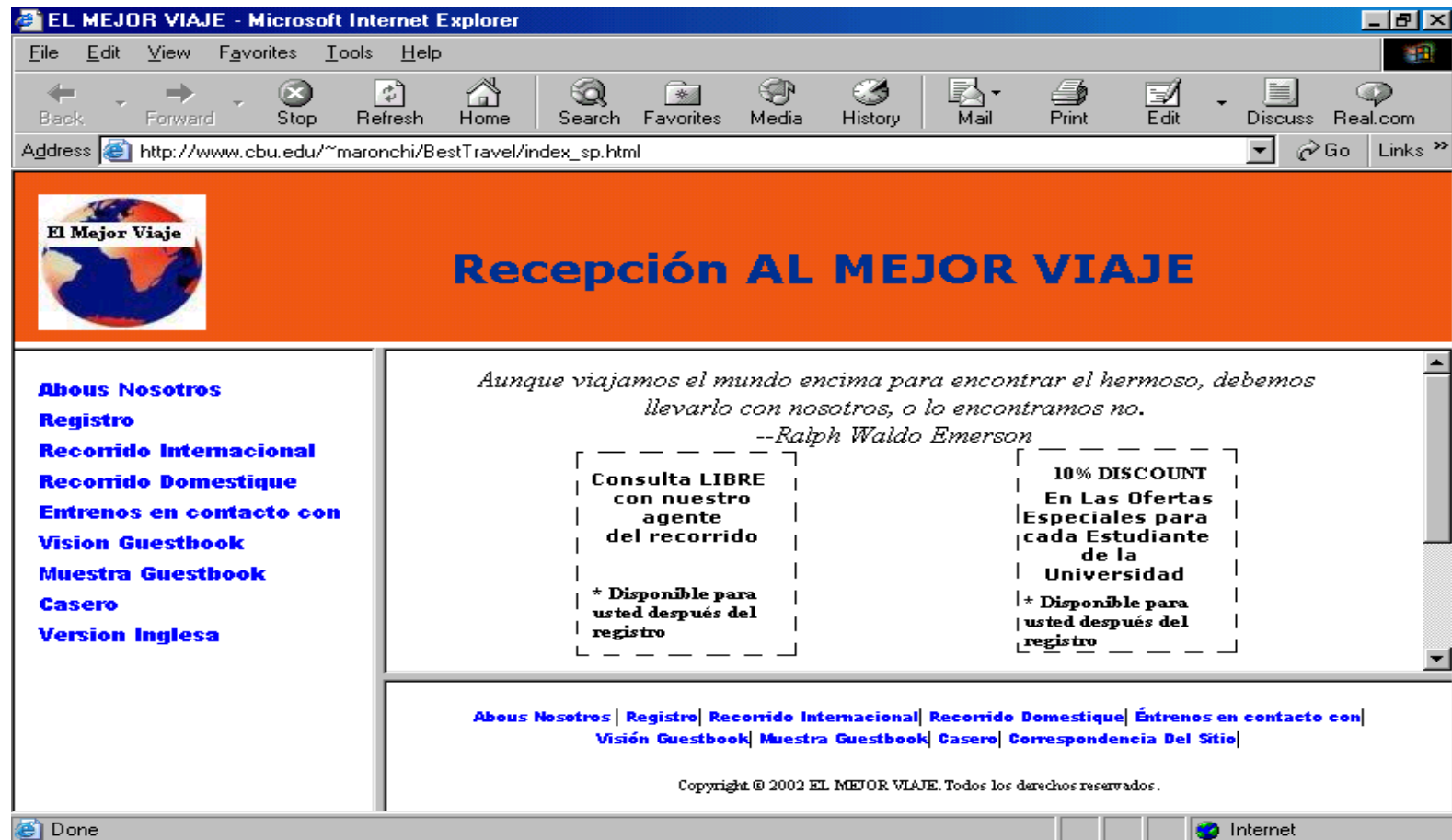


- The Internet is becoming pervasive and become an integral part of our everyday lives via WebTV, Net “Appliances”, Wireless devices, smartphones, connected devices, smart cards, etc.
- In essence, the web will be **everywhere**; by “everywhere” we mean not only in all our electronic devices, but everywhere in the world
- It has been said that the “Net brutally punishes latecomers”, so it is essential for business to start planning the globalization and localization of E-Commerce now
- **Also remember the web is a two way street; foreign corporations are coming after your customers too !**

Project Example

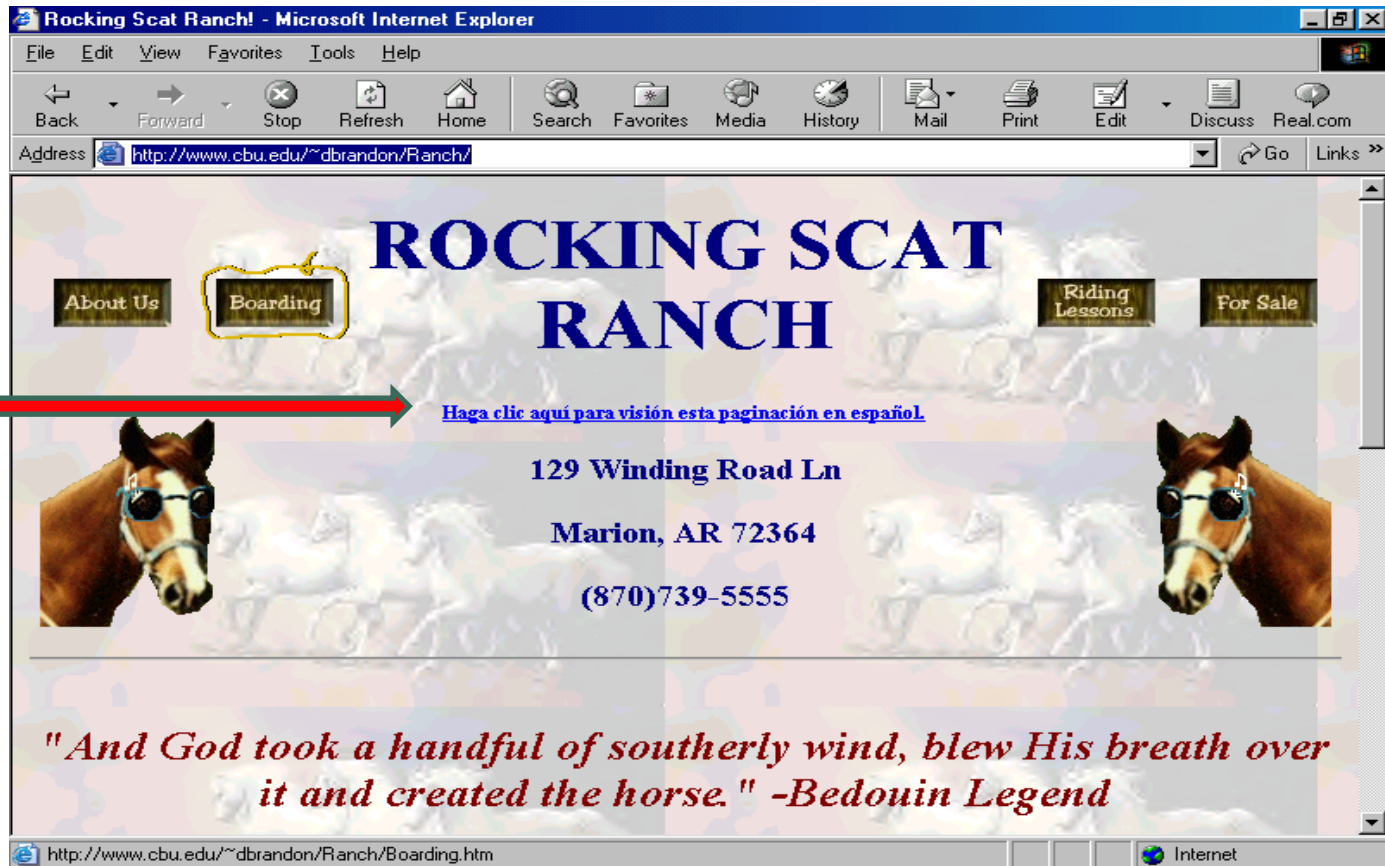
[<http://facstaff.cbu.edu/dbrandon/travel>]

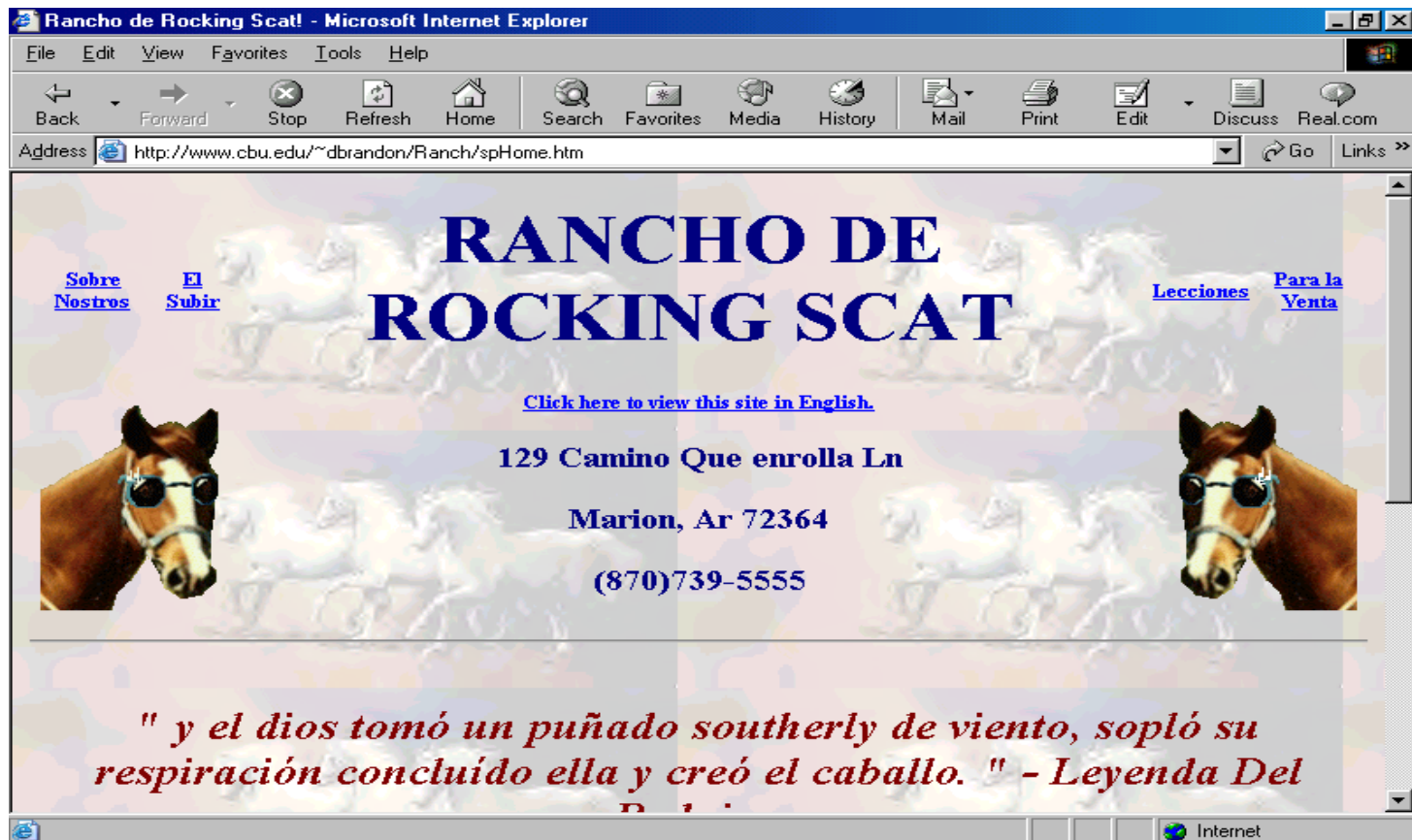




Project Example

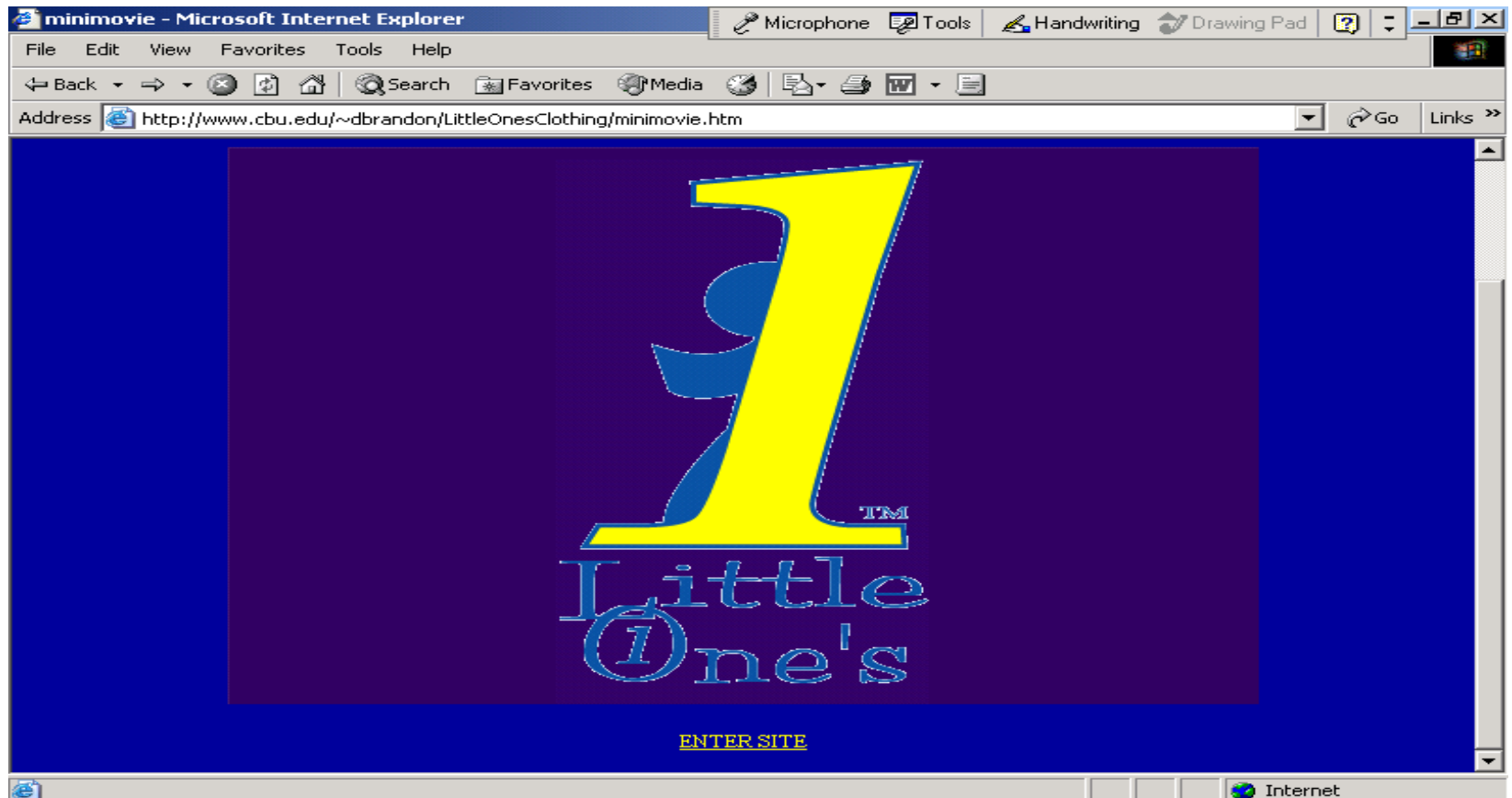
[<http://facstaff.cbu.edu/~dbrandon/Ranch/>]





Project Example

[<http://facstaff.cbu.edu/~dbrandon/LittleOnesClothing/minimovie.htm>]



Tequillia's Project 3 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print W

Address <http://www.cbu.edu/~dbrandon/LittleOnesClothing/frameset.htm> Go Links



Little Ones

Today's Date is: Friday, 13-Jun-2003 11:36:59 CDT

- [Welcome](#)
- [About Us](#)
- [Shop](#)
- [Size Chart](#)
- [Toys & Gifts](#)
- [Order Form](#)
- [Join Our Team](#)
- [Request Catalogue](#)
- [ESPAÑOLA view](#)

Welcome to Little Ones Clothing Store!



Thank You in advance for selecting Little Ones to provide you with the highest quality fashion at the most affordable prices in the industry. Please browse through our wide selection of clothing for both boys and girls in various categories including casual, swimwear, and specialty.

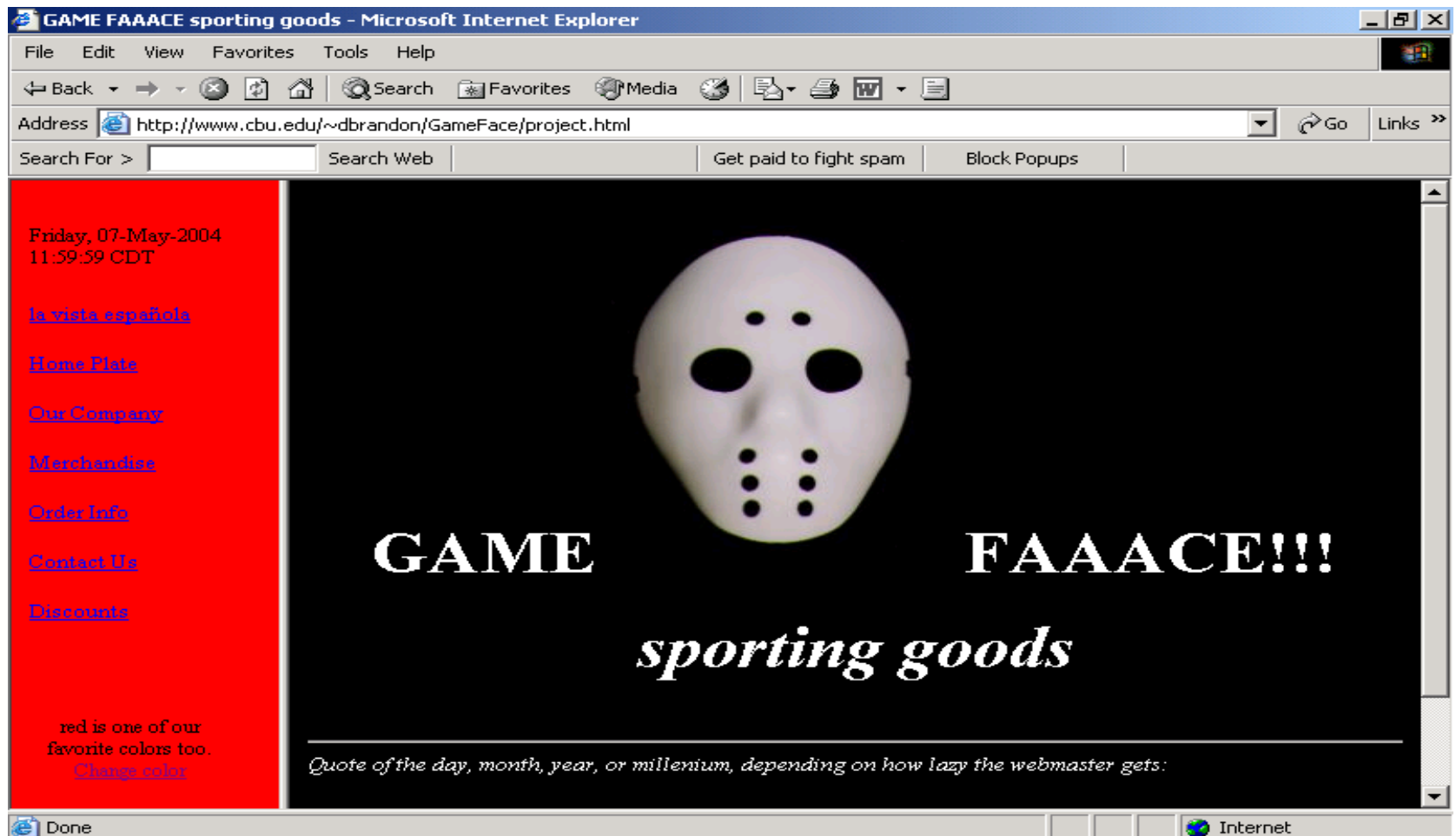
Our unique children clothing collection for both boys and girls includes boys shirts, girls dresses, boys jeans, girls leggings, baby rompers, baby booties, childrens aprons and kids hats.

[Welcome](#) | [About Us](#) | [Shop](#) | [Size Chart](#) | [Toys & Gifts](#)
[Order Form](#) | [Join Our Team](#) | [Contact Us](#) | [SPANISH view](#)

Copyright © 2003 Little Ones All Rights Reserved.

Done Internet

<http://facstaff.cbu.edu/~dbrandon/GameFace/project.html>



References

- **The Culturally Customized Web Site: Customizing Web Sites for the Global Marketplace by Nitish Singh and Arun Pereira**
- **Joomla! Start to Finish: How to Plan, Execute, and Maintain Your Web Site (Wrox Programmer to Programmer)**
- **Going Global with Drupa: Creating Sustainable, Multilingual Web Sites by Todd Kelsey**
- **HTML5 for Masterminds: How to take advantage of HTML5 to create amazing websites and revolutionary applications by J.D. Gauchat**



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Homework

- Complete on Project 3 !
- Extra Points on Project 2/3 for multiple language version !

