Trevor Kaufman

The Softening of the CE Interface

01.04.2005

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Background

- Ten years of interface development for software applications and Web sites
- Internal and external applications for major media, healthcare, legal, political, financial services, and consumer electronics companies
- Currently CEO of Schematic, a 100-person firm with offices in New York, Atlanta, and Los Angeles

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Hard and Soft Interfaces, Defined

A hard interface is one where every function corresponds to a distinct and dedicated interface element. No interface components perform double-duty.

A soft interface is one where interface elements can have different functions depending on their context.

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Hard and Soft Interfaces

Before the advent of screens and inexpensive graphics chips, hard interfaces were all we had.

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Hard and Soft Interfaces

Soft interfaces, of course, are totally abstract in and of themselves: they need some sort of graphical user interface (GUI) or other device to give them meaning.

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The Trend from Hard to Soft

Of course, we can all intuitively sense the move from hard interfaces to soft ones…

…but why is this taking place?

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With hard interfaces, more features means more complexity.

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Soft interfaces break the link between features (i.e. power) and complexity.

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And…

Of course, other factors are in play:

- Widespread consumer familiarity with computers
- Declining costs of screens
- Increasing clarity & definition of screens
- Increasing user sensitivity to interfaces
- The networked home
- The videogame phenomenon
- Development of ther “soft” venues, including self-service in retail environments (RFID), telematics, environmental computer systems in public locations, etc.

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But as inventors, we're most excited about the fact that we can have a system with unlimited power that's still simple to use.

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Schematic Client List

- A&E
- ABCNews.com
- Apple
- Cablevision
- Comcast
  - Comcast Broadband Group
  - Comcast Cable
- E! Networks
- Discovery Networks
- TLC
- Disney
  - ABC Cable Networks
  - ABC News
  - Disney Channel
  - ESPN
  - Touchstone Pictures
- FOX
  - Fox Cable Networks
  - Fox Television
  - FX
- Edmunds.com
- Frederick's of Hollywood
- Gibson, Dunn & Crutcher
- Gold's Gym
- Hitachi
- Hallmark Channel
- Houghton Mifflin
- Liberate
- Microsoft
  - Microsoft Game Studios
  - eHome
  - Xbox Live
  - Nielsen
- Panasonic
- Paul Mitchell
- Pfizer
- Philips
- Rainbow Media
- AMC
- Sony
  - Game Show Network
  - Sony Pictures Digital Entertainment
  - Sony Electronics
  - Sony Research and Development
  - So-Net (Japan)
- Time Warner
  - AOL
  - CNN.com
  - HBO
  - New Line Cinema
  - Warner Bros.
  - Turner Broadcasting
- Streamcast
- TNN
- Vulcan
- The Weather Channel

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ABC News: Online news, breaking news, feature stories and more - Microsoft Internet Explorer

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Address http://abcnews.go.com/ Go Links

abc NEWS January 4, 2005 | Get Your Local News and Weather

Search ABC News and the Web go

Search ABC News Search the Web

GOOD MORNING AMERICA | WORLD NEWS TONIGHT | 20/20 | PRIMETIME LIVE | NIGHTLINE | WORLD NEWS NOW | THIS WEEK

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SPECIAL SECTIONS

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ABC NEWS SERVICES

- Search Toolbar
- Wireless

U.S. Helicopters Rescue Tsunami Survivors

U.S. helicopters rescued dozens of desperate and weak tsunami survivors, including a young girl clutching a stuffed Snoopy dog, as the American military relief operation reached out to remote areas...

INTERNATIONAL

How the Tsunami Could Change History

If past events are any guide, the latest natural disaster could have profound effects on the politics and economies of the Indian Ocean.

Related: Tsunami Extended Coverage

Video: Aid for Survivors

Related: How to Help Tsunami Victims

ORIGINAL REPORT

SUVs May Not Be Safest Choice for Teen Drivers

Parents may believe an SUV, with its large size, to be the best car for young drivers. But studies suggest there are many other reasons why it's not.

TECHNOLOGY

- 'EICU' Lets Doctors Monitor Many Patients
- TiVo Unveils Portable Transfer Service
- Airport Uses Web-Based Flight Info System

ENTERTAINMENT

- Rocker Lets F-Word Slip on 'Tonight Show'
- Joel Siegel's Top 10 Movies
- Wolf Files: The Year of the Boob

MORE NEWS

- Bush, Clinton to Lead Tsunami Fund Raising
- Insurgent Attacks in Iraq Kill at Least 16
- House GOP Giving Ground on Ethics Rules
- Storm Shuts Down Major Calif. Highway
- U.S. Airlines Have 34 Deaths in 3 Years
- Frey's Book Focuses on Peterson Affair

VIDEO

Mission of Mercy
The world's effort to help in Southeast Asia begins to make a difference.

ABC NEWS NOW

- View Schedule Subscribe Now

VIDEO ON DEMAND

Internet

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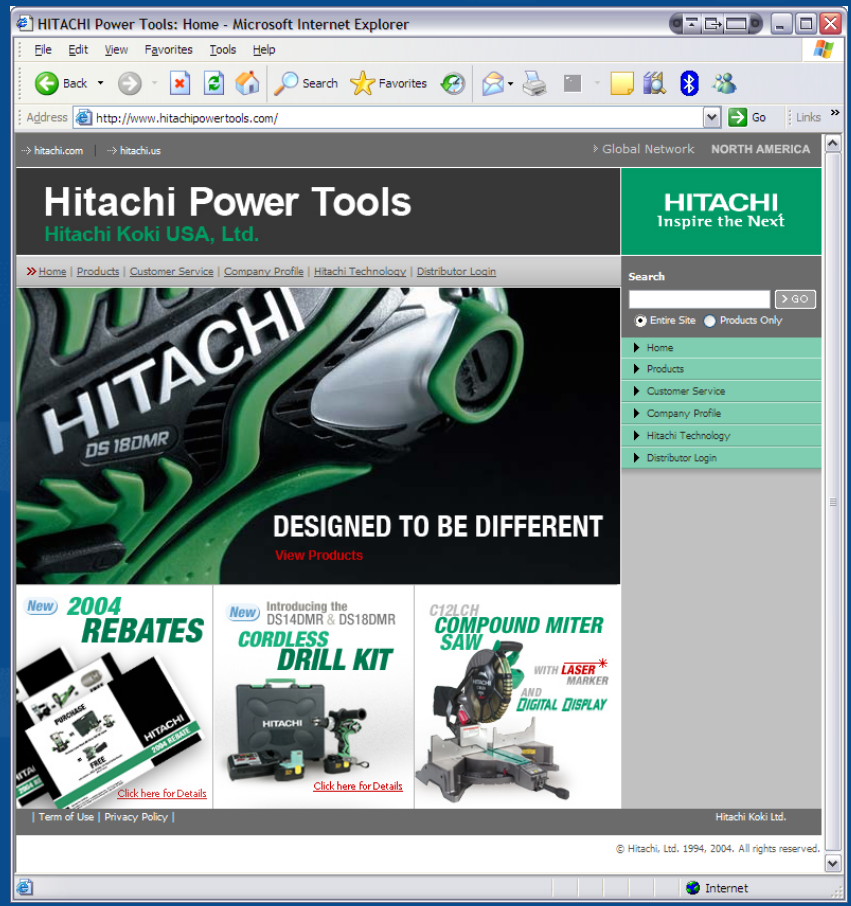
Gold's Gym - Microsoft Internet Explorer
http://www.goldsgym.com/
Sign up for Gold's Gym Updates | Contact Gold's Gym Corporate | Franchisee Login
GYM LOCATOR GOLD'S GEAR FRANCHISING ABOUT GOLD'S HEALTH & FITNESS
THE AUTHORITY SINCE 1965
WELCOME TO GOLD'S GYM
IT ALL STARTS HERE
FIND A GYM NEAR YOU NOW
550+ GYMS • 25 COUNTRIES 2.5 MILLION MEMBERS
THE NEW GOLD'S GYM POWERFLEX
BRING HOME THE GOLD!
TRAINING, NUTRITION, & HEALTH TIPS
FREE VIP PASS
DR. PHIL'S ULTIMATE WEIGHT LOSS CHALLENGE
For nearly 40 years Gold's Gym has been a leader in fitness around the world.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Hitachi Koki USA, Ltd.
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PAUL MITCHELL
WHAT'S NEW
PRODUCTS
ABOUT US
SALONS
CAREER PATH
SEARCH
COLOR CARE SHAMPOO
COLOR CARE CONDITION
COLOR CARE CONDITION
lab
elastic shaping paste
COLOR PROTECT
For Longer-Lasting, Vibrant Color

GEORGE CLOONEY | BRAD PITT | MATT DAMON | CATHERINE ZETA-JONES | ANDY GARCIA | DON CHEADLE | BERNIE MAC | AND JULIA ROBERTS

INTRO | DOWNLOADS | PHOTOS | CAST | VIDEO | THE MOVIE

ENTER THE MASTERMIND CHALLENGE

OCEAN'S TWELVE | NOW PLAYING

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- 2005 Golf Schedule & Avails
- 1st Quarter Highlights
- February Highlights - LAS
- 2004-2005 NBA Schedule
- 2005 January/February Affiliate Ad Sales Kit

Turner VALUE

No more stacks of post-promotion affidavits to submit! It's easy, just fill out the reports online at

Happy New Year from all of us at turnerresources.com!

US Decoder Replacement Program

Time to Install your new S-A D9850

Shipping of the new Scientific-Atlanta PowerVu D9850 Receivers for Turner Classic Movies, Cartoon West Coast, Boomerang, CNN en Espanol and CNN International has begun and will continue throughout December and January. Click

Internet

CUSTOMIZE DASHBOARD

STANDARD REPORTS

- All Films Nationwide
- New Films Nationwide
- All Regions Nationwide
- All Branches Nationwide
- All DMAs Nationwide
- All Circuits Nationwide
- Top 50 Theaters
- Top 200 Theaters
- New Theaters
- Old Theaters

MY FAVORITES

- All Theaters in California
- I Love Lucy
- My Top DMAs
- Some other Stuff
- Whatever I want to Call it
- What else might go here?
- Let's Mix it up
- THIS ONE IS ALL CAPS
- this will be very random
- Another Favorite Report

SPECIAL REPORTS

- Special Report 1
- Special Report 2
- Special Report 3
- Special Report 4
- Special Report 5
- Special Report 6
- Special Report 7
- Special Report 8
- Special Report 9
- Special Report 10

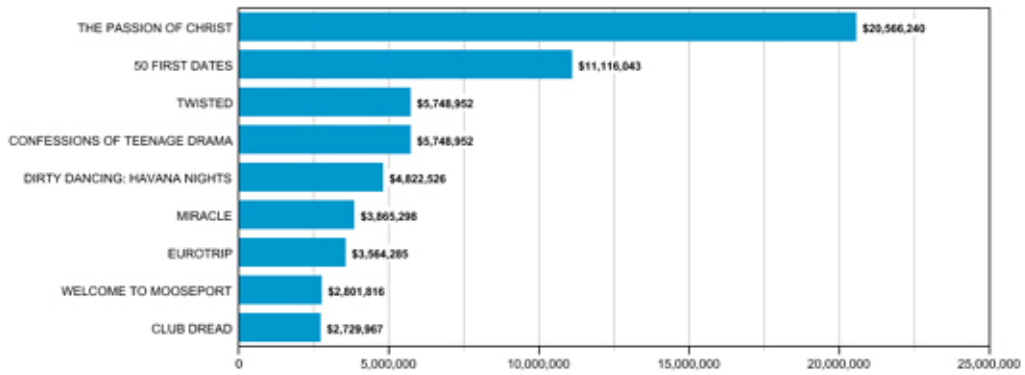
HOURLY GROSSES | UPCOMING RELEASES | MATINEE CLASSIC | CHANGE LOG | NRG TRACKING

Friday, January 10 (data as of 12:00pm Pacific) REFRESH DATA + EXPAND

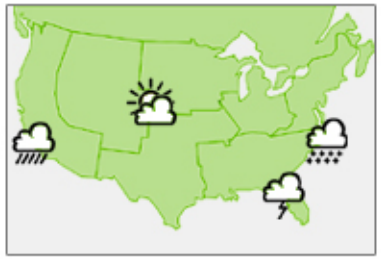
Rnk.	Film Title	Last Hour	Running Total
1	50 FIRST DATES	$45,245	$123,345,245
2	MIRACLE	$36,205	$542,536,205
3	BARBERSHOP 2	$20,046	$38,620,046
4	YOU GOT SERVED	$15,923	$98,815,923
5	THE BUTTERFLY EFFECT	$10,892	$4,910,892
6	CATCH THAT KID	$8,883	2,$28,883
7	LOST IN TRANSLATION	$4,025	$34,025
8	LORD OF THE RINGS	$998	$6,998
9	FREAKY FRIDAY	$445	$4,445
10	ANOTHER TITLE	$300	$550

DISTRIBUTOR BOX OFFICE

+ EXPAND



REGIONAL WEATHER



Poor Weather Watch (# of DMAs)

Northeast (3) | Canada N. Cnt. (13)
Southeast (2) | Pacific (9)
Midwest (15) | Rocky Mnts. (3)
South Central (0)

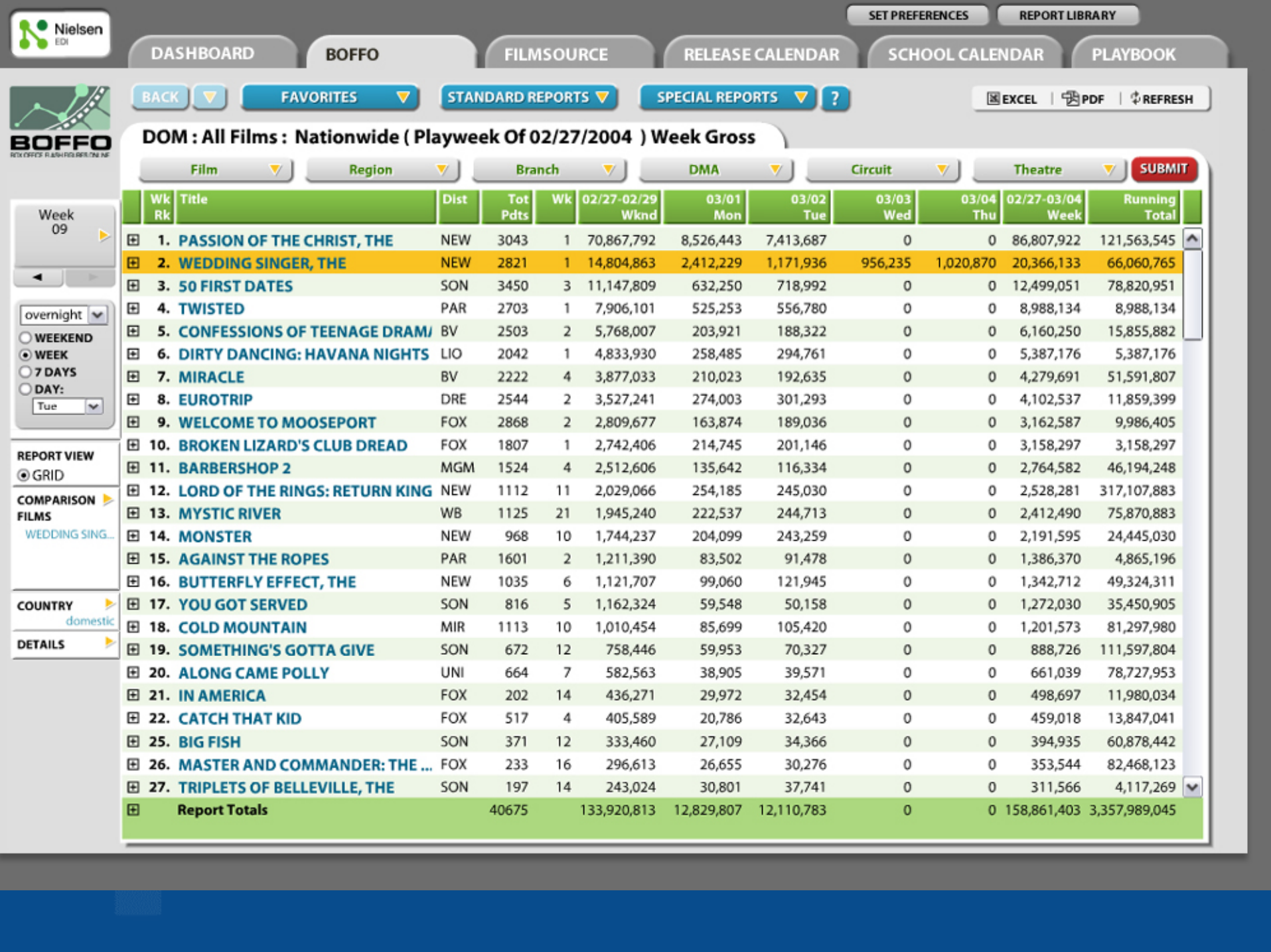
Provided by AccuWeather (TM)

INDUSTRY NEWS

Five more state pension funds to withhold votes for Eisner.
[03/03/2004]

Adding more fuel to the drieve to oust Michael Eisner as chairman of the board of the Walt Disne Co., the pension plans of New York, New Jersey, Conneticut, Massachusets and Virginia announced thursday that they plan to withhold their votes for Eisner at Disney's share-holders meeting.

Clear Channel to Congress: Sorry About That.
[03/03/2004]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EXCEL
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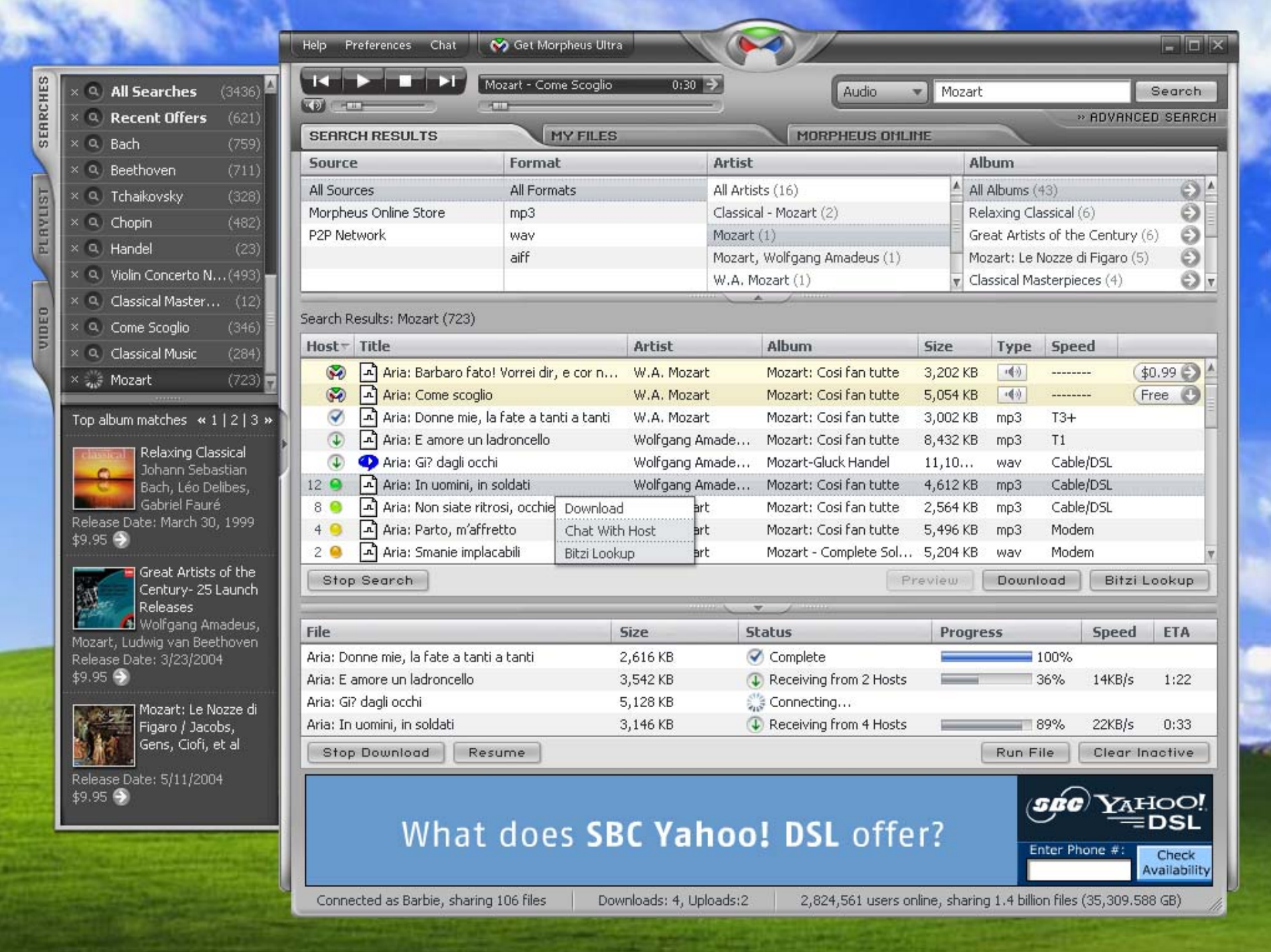
DOM : All Films : Nationwide (Playweek Of 02/27/2004) Week Gross
Film
Region
Branch
DMA
Circuit
Theatre
SUBMIT
Week 09
overnight
WEEKEND
WEEK
7 DAYS
DAY:
Tue
REPORT VIEW
GRID
COMPARISON FILMS
WEDDING SING...
COUNTRY
domestic
DETAILS
Wk Rk | Title | Dist | Tot Pdts | Wk | 02/27-02/29 Wknd | 03/01 Mon | 03/02 Tue | 03/03 Wed | 03/04 Thu | 02/27-03/04 Week | Running Total
1. PASSION OF THE CHRIST, THE | NEW | 3043 | 1 | 70,867,792 | 8,526,443 | 7,413,687 | 0 | 0 | 86,807,922 | 121,563,545
2. WEDDING SINGER, THE | NEW | 2821 | 1 | 14,804,863 | 2,412,229 | 1,171,936 | 956,235 | 1,020,870 | 20,366,133 | 66,060,765
3. 50 FIRST DATES | SON | 3450 | 3 | 11,147,809 | 632,250 | 718,992 | 0 | 0 | 12,499,051 | 78,820,951
4. TWISTED | PAR | 2703 | 1 | 7,906,101 | 525,253 | 556,780 | 0 | 0 | 8,988,134 | 8,988,134
5. CONFESSIONS OF TEENAGE DRAM/ | BV | 2503 | 2 | 5,768,007 | 203,921 | 188,322 | 0 | 0 | 6,160,250 | 15,855,882
6. DIRTY DANCING: HAVANA NIGHTS | LIO | 2042 | 1 | 4,833,930 | 258,485 | 294,761 | 0 | 0 | 5,387,176 | 5,387,176
7. MIRACLE | BV | 2222 | 4 | 3,877,033 | 210,023 | 192,635 | 0 | 0 | 4,279,691 | 51,591,807
8. EUROTRIP | DRE | 2544 | 2 | 3,527,241 | 274,003 | 301,293 | 0 | 0 | 4,102,537 | 11,859,399
9. WELCOME TO MOOSEPORT | FOX | 2868 | 2 | 2,809,677 | 163,874 | 189,036 | 0 | 0 | 3,162,587 | 9,986,405
10. BROKEN LIZARD'S CLUB DREAD | FOX | 1807 | 1 | 2,742,406 | 214,745 | 201,146 | 0 | 0 | 3,158,297 | 3,158,297
11. BARBERSHOP 2 | MGM | 1524 | 4 | 2,512,606 | 135,642 | 116,334 | 0 | 0 | 2,764,582 | 46,194,248
12. LORD OF THE RINGS: RETURN KING | NEW | 1112 | 11 | 2,029,066 | 254,185 | 245,030 | 0 | 0 | 2,528,281 | 317,107,883
13. MYSTIC RIVER | WB | 1125 | 21 | 1,945,240 | 222,537 | 244,713 | 0 | 0 | 2,412,490 | 75,870,883
14. MONSTER | NEW | 968 | 10 | 1,744,237 | 204,099 | 243,259 | 0 | 0 | 2,191,595 | 24,445,030
15. AGAINST THE ROPES | PAR | 1601 | 2 | 1,211,390 | 83,502 | 91,478 | 0 | 0 | 1,386,370 | 4,865,196
16. BUTTERFLY EFFECT, THE | NEW | 1035 | 6 | 1,121,707 | 99,060 | 121,945 | 0 | 0 | 1,342,712 | 49,324,311
17. YOU GOT SERVED | SON | 816 | 5 | 1,162,324 | 59,548 | 50,158 | 0 | 0 | 1,272,030 | 35,450,905
18. COLD MOUNTAIN | MIR | 1113 | 10 | 1,010,454 | 85,699 | 105,420 | 0 | 0 | 1,201,573 | 81,297,980
19. SOMETHING'S GOTTA GIVE | SON | 672 | 12 | 758,446 | 59,953 | 70,327 | 0 | 0 | 888,726 | 111,597,804
20. ALONG CAME POLLY | UNI | 664 | 7 | 582,563 | 38,905 | 39,571 | 0 | 0 | 661,039 | 78,727,953
21. IN AMERICA | FOX | 202 | 14 | 436,271 | 29,972 | 32,454 | 0 | 0 | 498,697 | 11,980,034
22. CATCH THAT KID | FOX | 517 | 4 | 405,589 | 20,786 | 32,643 | 0 | 0 | 459,018 | 13,847,041
25. BIG FISH | SON | 371 | 12 | 333,460 | 27,109 | 34,366 | 0 | 0 | 394,935 | 60,878,442
26. MASTER AND COMMANDER: THE ... | FOX | 233 | 16 | 296,613 | 26,655 | 30,276 | 0 | 0 | 353,544 | 82,468,123
27. TRIPLETS OF BELLEVILLE, THE | SON | 197 | 14 | 243,024 | 30,801 | 37,741 | 0 | 0 | 311,566 | 4,117,269
Report Totals | 40675 | 133,920,813 | 12,829,807 | 12,110,783 | 0 | 0 | 158,861,403 | 3,357,989,045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Mozart - Come Scoglio 0:30
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Mozart
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SEARCH RESULTS
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Tchaikovsky (328)
Chopin (482)
Handel (23)
Violin Concerto N... (493)
Classical Master... (12)
Come Scoglio (346)
Classical Music (284)
Mozart (723)
Source
Format
Artist
Album
All Sources
All Formats
All Artists (16)
All Albums (43)
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Mozart (1)
Great Artists of the Century (6)
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Mozart, Wolfgang Amadeus (1)
Mozart: Le Nozze di Figaro (5)
W.A. Mozart (1)
Classical Masterpieces (4)
Search Results: Mozart (723)
Host
Title
Artist
Album
Size
Type
Speed
Aria: Barbaro fato! Vorrei dir, e cor n...
W.A. Mozart
Mozart: Cosi fan tutte
3,202 KB
$0.99
Aria: Come scoglio
5,054 KB
Free
Aria: Donne mie, la fate a tanti a tanti
3,002 KB
mp3
T3+
Aria: E amore un ladroncello
8,432 KB
T1
Aria: Gi? dagli occhi
Mozart-Gluck Handel
11,10...
wav
Cable/DSL
12
Aria: In uomini, in soldati
4,612 KB
8
Aria: Non siate ritrosi, occhie
2,564 KB
4
Aria: Parto, m'affretto
5,496 KB
Modem
2
Aria: Smanie implacabili
Mozart - Complete Sol...
5,204 KB
Download
Chat With Host
Bitzi Lookup
Stop Search
Preview
Download
Bitzi Lookup
Top album matches « 1 | 2 | 3 »
Relaxing Classical
Johann Sebastian Bach, Léo Delibes, Gabriel Fauré
Release Date: March 30, 1999
$9.95
Great Artists of the Century- 25 Launch Releases
Wolfgang Amadeus, Mozart, Ludwig van Beethoven
Release Date: 3/23/2004
$9.95
Mozart: Le Nozze di Figaro / Jacobs, Gens, Ciofi, et al
Release Date: 5/11/2004
$9.95
File
Size
Status
Progress
Speed
ETA
Aria: Donne mie, la fate a tanti a tanti
2,616 KB
Complete
100%
Aria: E amore un ladroncello
3,542 KB
Receiving from 2 Hosts
36%
14KB/s
1:22
Aria: Gi? dagli occhi
5,128 KB
Connecting...
Aria: In uomini, in soldati
3,146 KB
Receiving from 4 Hosts
89%
22KB/s
0:33
Stop Download
Resume
Run File
Clear Inactive
What does SBC Yahoo! DSL offer?
SBC YAHOO! DSL
Enter Phone #:
Check Availability
Connected as Barbie, sharing 106 files
Downloads: 4, Uploads:2
2,824,561 users online, sharing 1.4 billion files (35,309.588 GB)

WORLD NEWS MAP

(12) ALERTS HELP CNN.NET MINI

10:48 AM NOVEMBER 5, 2004

VIEW ALL STORIES

TOP STORIES

2:30 pm - U.S., Iraqi Troops Raid Mosque

3:30 pm - Martha Stewart ready to do time

4:10 pm - Attacks on Iraqi police, 21 killed

NEWS SUMMARY

Updated: 10:30 am

LIVE CNN.Net News Stream

CC Closed Captioning off 2:30

LIVE STREAMS | PLAYLIST | RELATED STORIES

CNN.Net News Stream

Mount St. Helens erupts second line of title

Its every feature was created to cater to your every feature.
ES | 2005 LEXUS

PRODUCER BUZZ

10:31 am - New daylight pictures from Gulf Shores, Alabama, where Ivan made landfall five hours ago, look at this..

10:23 am - Do you or somebody you know need storm help? Links to relief organizations...

10:16 am - Take a tour of the Clinton library. Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

10:02 am - Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

9:56 am - Ipsum dolor sit sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantiumtotam rem aperiam, eaque ipsa

9:50 am - Ipsum dolor sit sed ut perspiciatis unde omnis iste doloremque laudantiumtotam

POLLS

COMING UP NEXT

schematic

Menu
Exit
Options
Alerts
12/07 Episode
12/14 Episode
My Marks
Exit
Options
Alerts
TONIGHT 10pm
Back
Options
Alerts
1. Preview
2. Remind
3. Record
Back
Close
Alerts
1. Preview
2. Remind
3. Record
Back
Close
Record
Queer Eye will be recorded tonight at 10pm
Back
Close
Preview
David Goldman
Back
Close
Alerts
12/07 Current Epi...
12/14 Next Epi...
My Marks
Exit
Options

Italy's Advantages

The Renaissance

- Renaissance – an explosion of creativity in art, writing, and thought
- Started in northern Italy
- Lasted from 1300–1600

City-States

- Crusades spur trade
- Growth of city-states in northern Italy
- In 1300s bubonic plague killed 60% of population, disrupts economy

The Madonna of Chancellor Rolin (1501–1504), Michelangelo.
Third line of text here

Audio File

PRESS LIVE TV

Discovery CHANNEL

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8:00PM
309 MTV
Contextual system voice here.
CHANNEL GUIDE
ON DEMAND
ACTIVE RENTALS
GAMES
ENHANCED TV
iO SHOWCASE
iO WEATHER
TODAY 32 24 FOG
Mon 30 22 HOT
Tue 32 16
Wed 28 12 DRIZZLE

schematic

Screen-based experience design has specific challenges

As in all design, the design team must be backed up by enthusiastic, expert technologists who make their work possible

User experience development is, inherently, software development

Behaviors of different platforms must be consistent, yet technical limitations of platforms vary widely

The discipline is so new that, while standards are emerging, a common language has not yet developed

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Lessons from the soft side

- Process
- Guidelines
- Direction

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Process

Requirements Definition

- Business Requirements\ Success Criteria
- Audience Identification
- Technical Audit/Specification
- Creative/Brand Brief

Scoping

- User Goals Analysis
- Feature Development
- Data Gathering Strategy
- Feature/Value Matrix

Design & Prototyping

- Application Model
- Wireframing
- Design
- Prototyping
- User Testing

Development

- Coding
- Populating
- Functional Unit Testing

Deployment

- Installation/Distribution
- Quality Assurance
- Performance/Compatibility Testing

Observation

- Behavioral Data Collection
- Demographic Data Collection
- Attitudinal Data Collection
- Analysis of Business Success Criteria

Revision

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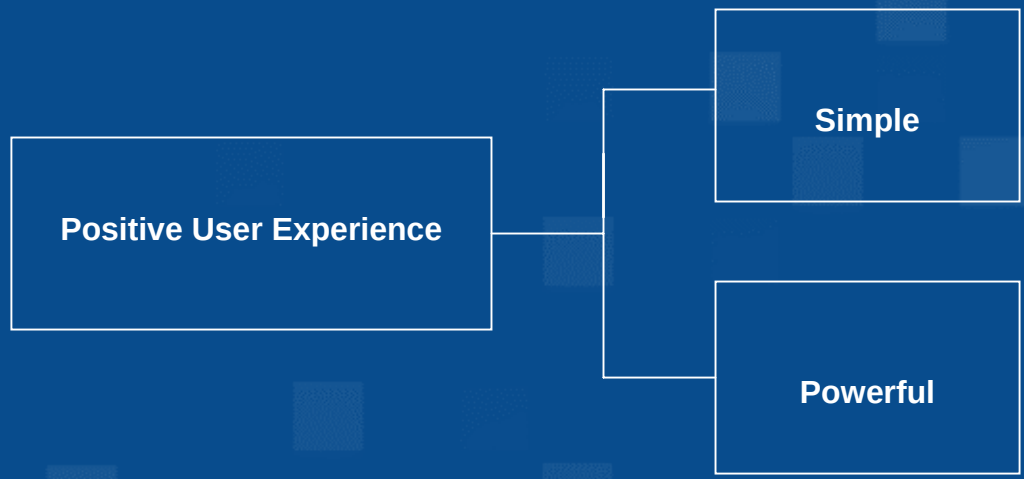
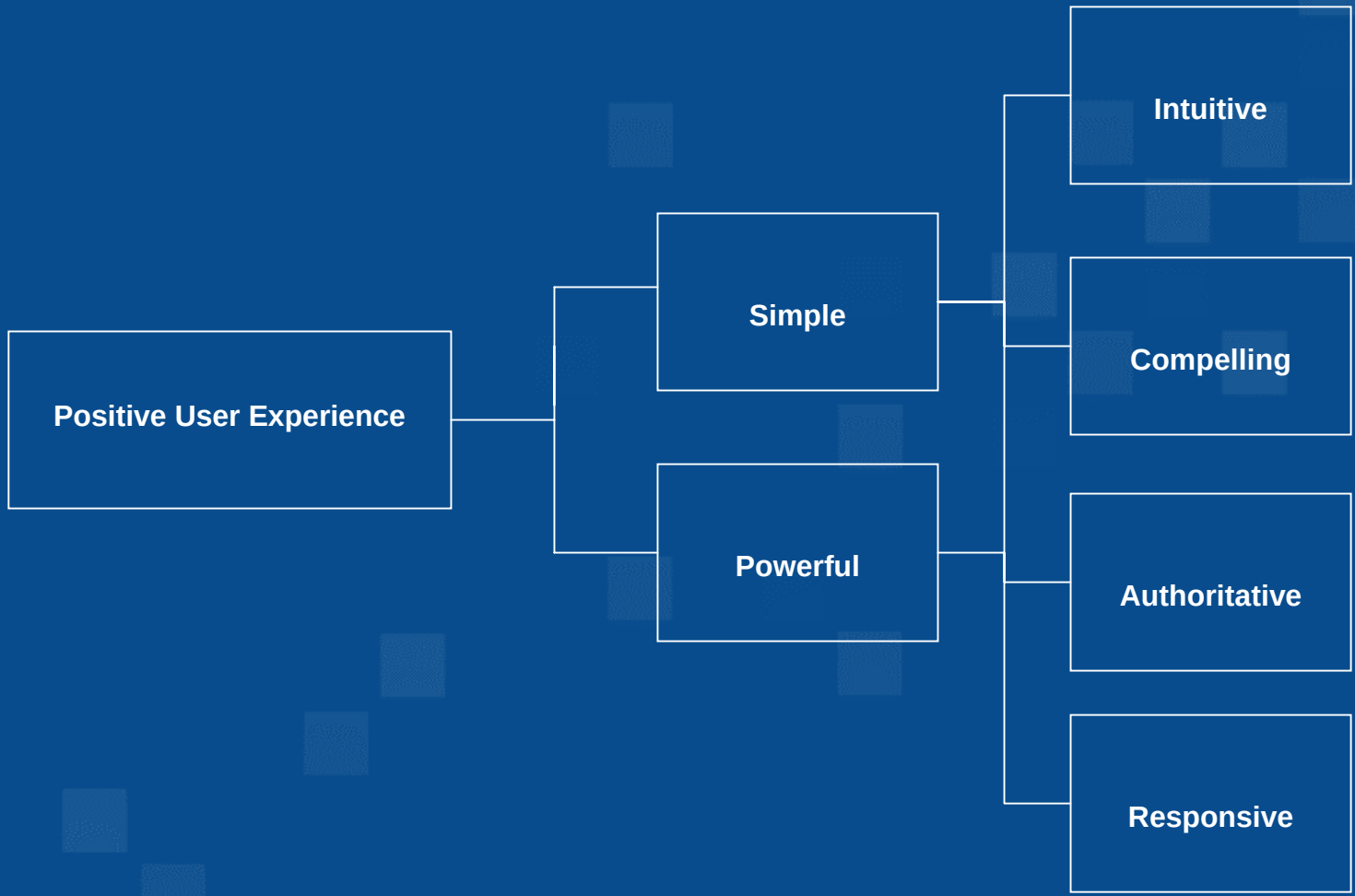
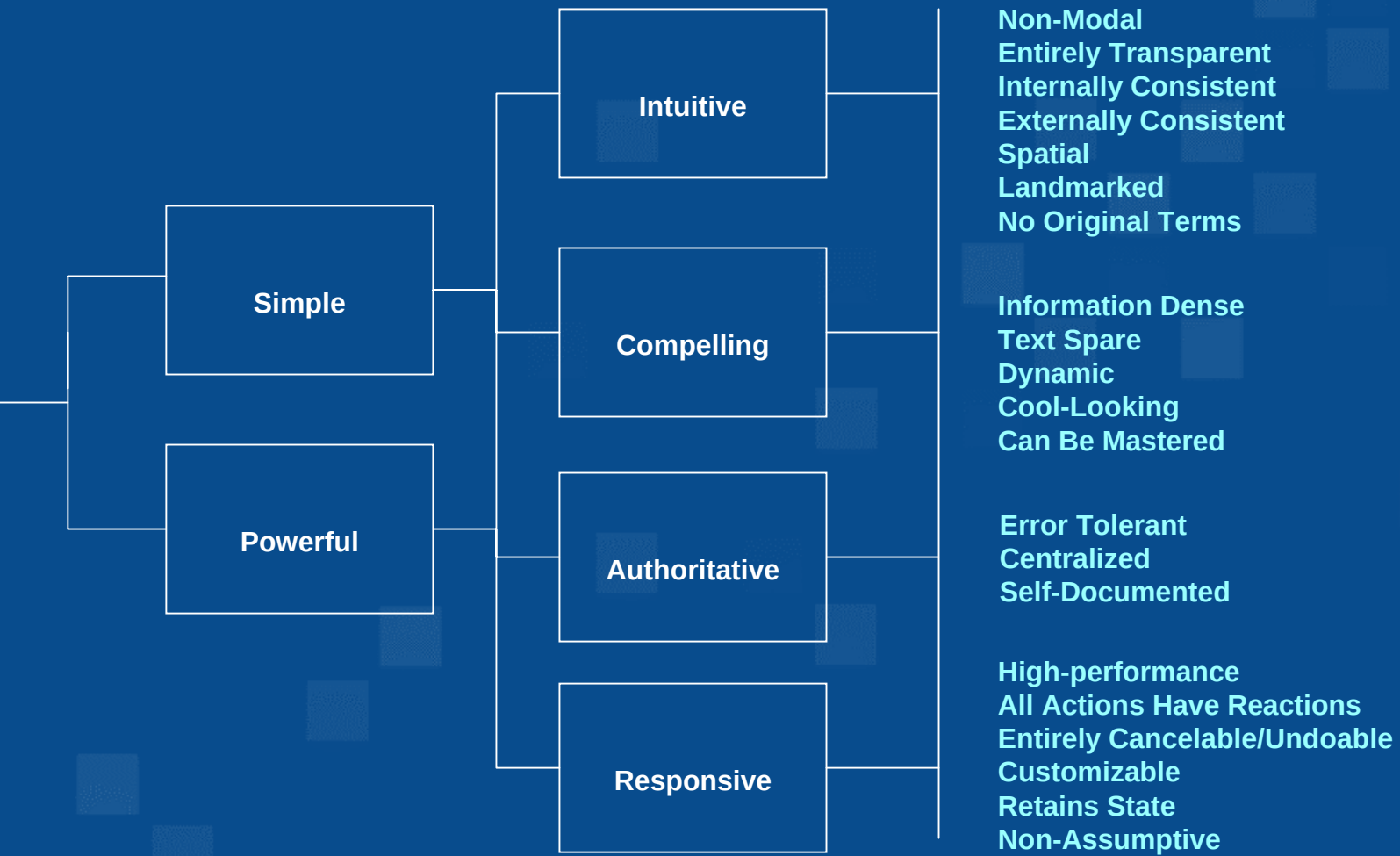
Guidelines



schematic


Positive User Experience
Simple
Powerful
Intuitive
Compelling
Authoritative
Responsive

schematic


Simple
Powerful
Intuitive
Compelling
Authoritative
Responsive
Non-Modal
Entirely Transparent
Internally Consistent
Externally Consistent
Spatial
Landmarked
No Original Terms
Information Dense
Text Spare
Dynamic
Cool-Looking
Can Be Mastered
Error Tolerant
Centralized
Self-Documented
High-performance
All Actions Have Reactions
Entirely Cancelable/Undoable
Customizable
Retains State
Non-Assumptive

schematic

Direction

Software interfaces are becoming increasingly abstract, and therefore, more like interfaces in our fantasies, e.g. *Minority Report, Disclosure,* etc.

Screens will become ubiquitous, and quickly be seen as a detriment to our quality of life

Non-screen-based soft interfaces will be required and gain quick acceptance, including speech synthesis and recognition (e.g. Amtrak IVR), haptic interfaces (e.g. iDrive), and non-screen-based visual feedback mechanisms (e.g. Ambient Orb).

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Thank you.

Schematic

3457 S. La Cienega Blvd.
Los Angeles, Ca 90016

Tel: 1.310.202.2900
Fax: 1.310.202.2910

Web site:
www.schematic.com