



Brad Neuberg

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Outline

- The Vision
 - Thought experiment
 - Set of designs and mockups
- The Reality
 - Simpler implementation

Goals

1. Collaboration should be unbelievably easy for normal people
2. Editing and collaboration should be first-class citizens in web browsers

Goals

1. Explore what a P2P version of the web might look like
2. Find an alternative to the DNS, ICANN, and Verisign

Methodology

- Took a different approach to satisfy these goals
- NASA's Horizon Mission Methodology
 - *“Forces paradigm shifts beyond extrapolations of existing technologies by using impossible hypothetical mission goals to solicit new solutions”*
 - Final design is usually impossible to build but provides insights that can be used

Methodology

- Created over one hundred paper and computer mockups
- Did guerilla usability testing
 - Find random people in coffee shops and put mockups in front of them
 - Cheap and easy

Design

- Create a new kind of web browser that provides transparent collaboration
 - Use P2P technologies to help achieve this transparency
- The new web browser is called Paper Airplane
- The new P2P network is called The Two Way Web

Manifesto

- Seven-point manifesto of what features this browser should have

Manifesto

- Browsers should provide full-featured editors
 - No more small text forms or basic rich text editors
 - Something more like Open Office-lite

Manifesto

1. Internet office suites should be more about collaboration with others than printing pretty documents
 - Collaboration should happen automagically
 - No setting up servers
 - No subscribing to web sites (Webex, etc.)

Manifesto

1. Internet-centric editors should have one click editing and saving
 - No more FTP
 - Saving and creating collaborative communities should feel as easy as saving to your hard-drive

Manifesto

1. Users should not have to perform web site and server administration
 - Use P2P distributed storage to create "virtual" hard-drive to store web-sites

Manifesto

1. DNS registration and administration should be transparent to site creators
 - Use P2P network to resolve domain name bindings
 - Reduce domain name scarcity - anyone can create an ending

Manifesto

1. Browsers should embed standardized collaboration and navigation features for:
 - Editing and creating pages
 - Creating web sites
 - Cookie trails
 - Signing in and out of web sites
 - Joining and unjoining web sites
 - Managing site membership
 - Searching a web site

Manifesto

1. Communities should be as open or as closed as you wish
 - Completely open and editable – WikiWiki's
 - Completely closed and private – Private work-groups

User-Interface

- Walkthrough of user-interface using mockups

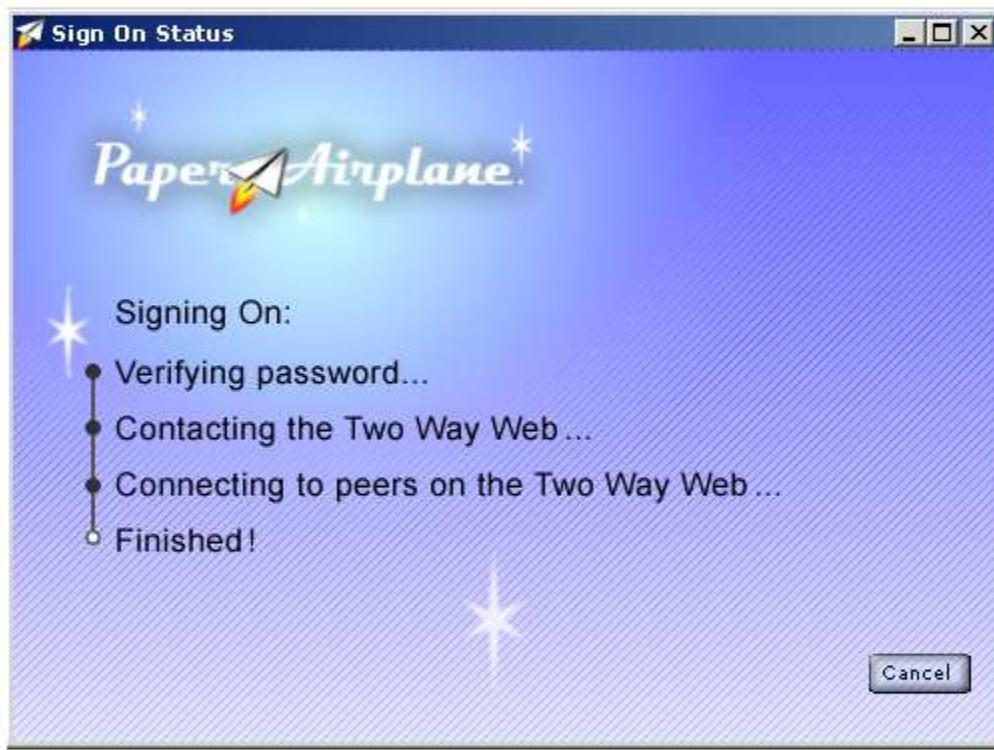


Version 1.0

Powered by Mozilla, JXTA, and Java

Brad Neuberg
Hoang Dinh, Lucas Papaya designs







Side Bar



go://www.nike.laborpolicy/Excerpts from Books About Nike's Labor



BradNeuberg

Sign Off



www.Acme.company



www.lucaspapaya.com



Loading . . .



www.nike.laborpolicy > Excerpts from Books About Nike's Labor Policies

This is an excerpt from When Corporations Rule the World by David C. Korten concerning Nike's labor policies:

"Nike, a major footwear company, refers to itself as a 'network firm.' This means that it employs 8,000 people in management, design, sales, and promotion and leaves production in the hands of some 75,000 workers hired by independent contractors. Most of the outsourced production takes place in Indonesia, where a pair of Nikes that sells in the United States or Europe for \$73 to \$135 is produced for about \$5.60 by girls and young women paid as little as fifteen cents an hour. The workers are housed in company barracks, there are no unions, overtime is often mandatory, and if there is a strike, the military may be called to break it up. The \$20 million that basketball star Michael Jordan reportedly received in 1992 for promoting Nike Shoes exceeded the entire annual payroll of the Indonesian factories that made them.

When asked about the conditions at plants where Nikes are produced, John Woodman, Nike's general manager in Indonesia, gave a classic Stratosdweller response. Although he knew that there had been labor problems in the six Indonesian factories making Nike shoes, he had no idea what they had been about. Furthermore he said, 'I don't know that I need to know. It's not within our scope to investigate.'

The Nike case is a striking example of the distortions of an economic system that shifts rewards away from those who produce real value to those whose primary function is to create marketing illusions to convince consumers to buy products they do not need at inflated prices. It is little wonder that many managers, like the Nike manager who avoided contact with Indonesian workers, prefer to avoid talking to too many people outside the elite circles."

Wizard - Creating a new Two Way Website



Creating a new Two Way Website



This Wizard provides everything you need to create your free, new [Two Way Website](#) 

[Cancel](#)

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Wizard - Creating a new Two Way Website



Naming your Two Way Website



Choose an online name and domain ending for your Two Way Website. Paper Airplane adds hundreds of free new domain endings, such as .cooperative, .religion, .fan, .love, .weblog, and many more.

Choose an online name:

Choose a domain ending: 

[Cancel](#)

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Wizard - Creating a new Two Way Website



Naming your Two Way Website



Choose an online name and domain ending for your Two Way Website. Paper Airplane adds hundreds of free new domain endings, such as .cooperative, .religion, .fan, .love, .weblog, and many more.

Choose an online name:

CodingInParadise

Choose a domain ending:

- .gay
- .global
- .globalize
- .goddess
- .government
- .hip hop
- .hobby
- .weblog
- .information
- .labor
- .lesbian

[Cancel](#)

[< Back](#)

[Next >](#)

Wizard - Creating a new Two Way Website



Your new site is www.CodinginParadise.weblog

Choosing a Description & Category



Paper Airplane includes a Two Way Web Directory for users to easily find websites of interest. Enter a description and choose up to three categories to control how your site will appear in this directory.

Enter site descriptions:

Choose a category:

<Choose Category> 

<Choose Category> 

<Choose Category> 

Choose a sub-category:

<Choose Sub-Category> 

<Choose Sub-Category> 

<Choose Sub-Category> 

Include my site in the directory

[Cancel](#)

[Back](#)

[Next >](#)

Wizard - Creating a new Two Way Website



Your new site is www.CodinginParadise.weblog



Choosing your Membership Policy



Choose how public or private you would like your site to be: [?](#)

- Super Public
- Public
- Public Restricted
- Private

[Cancel](#)

[< Back](#)

[Next >](#)

Wizard - Creating a new Two Way Website



Your new site is www.CodinginParadise.weblog

You're Ready to Go!



Give out your new Two Way Website online name to friends and family and have them start joining. Make sure they download the Paper Airplane Browser before accessing your site.

Your new site is www.CodinginParadise.weblog

[Cancel](#)

[Back](#)

[Create](#)

extranet - Paper Airplane

File Edit View Bookmarks Tools Help

New Site New Page Edit Page Members New Changes Unjoin Site Print

Side Bar Back Forward Stop Home Go BradNeuberg Sign Off

www.CodingInParadise... www.lucaspapaya.com Loading ...

www.CodingInParadise.weblog > Main Search Site

Welcome to your new Two Way Web Site!

In the toolbar above you will find everything you need to get started with your new site:

- To edit the current web page:
 Edit Page
- To create a new web page on your site:
 New Page
- To manage this site's members:
 Members
- To track new changes to your site:
 New Changes

Transferring data from www.CodingInParadise.weblog...

Start User Manual, Functional ... extranet - Writeable Web...

10:43 AM

extranet - Paper Airplane

File Edit View Bookmarks Insert Format Modify Table Tools Help

New Site New Page Save Cancel Select Text Box Image Table Link Note Draw QuickShapes Symbols Signature ABC SpellCheck Find/Replace Print

Side Bar Back Forward Home Go BradNeuberg Sign Off

Format - Fonts Format - Alignment & Shading Format - Bullets & Numbering

Style: Normal Name: Garamond Size: 14 pt Color: Pink

B I U S A¹ A₂

More Options

Format - Page Format - Selection

www.CodingInParadise... www.lucaspapaya.com Loading ...

www.CodingInParadise.weblog > Main (Editing)

Search Site

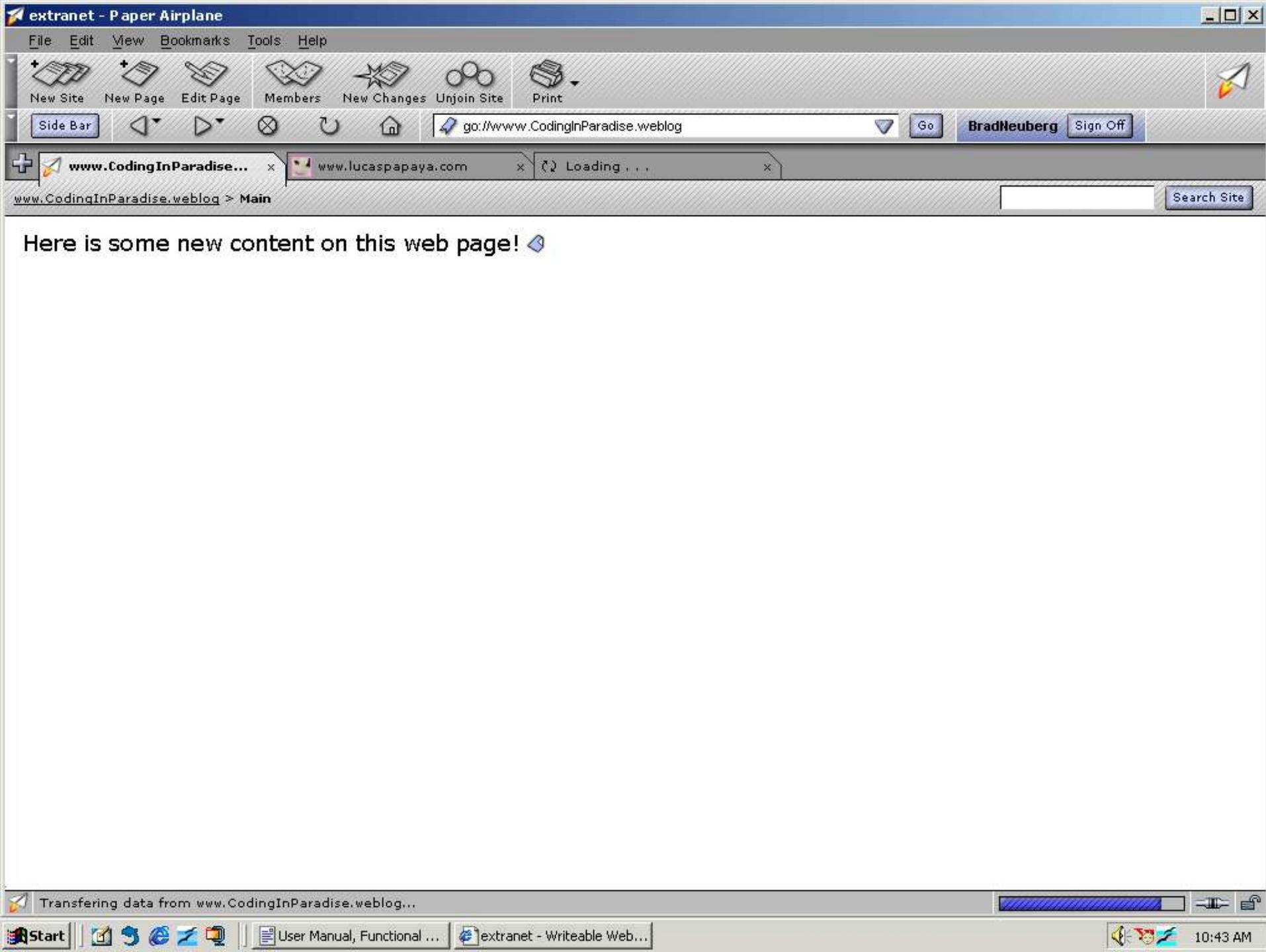
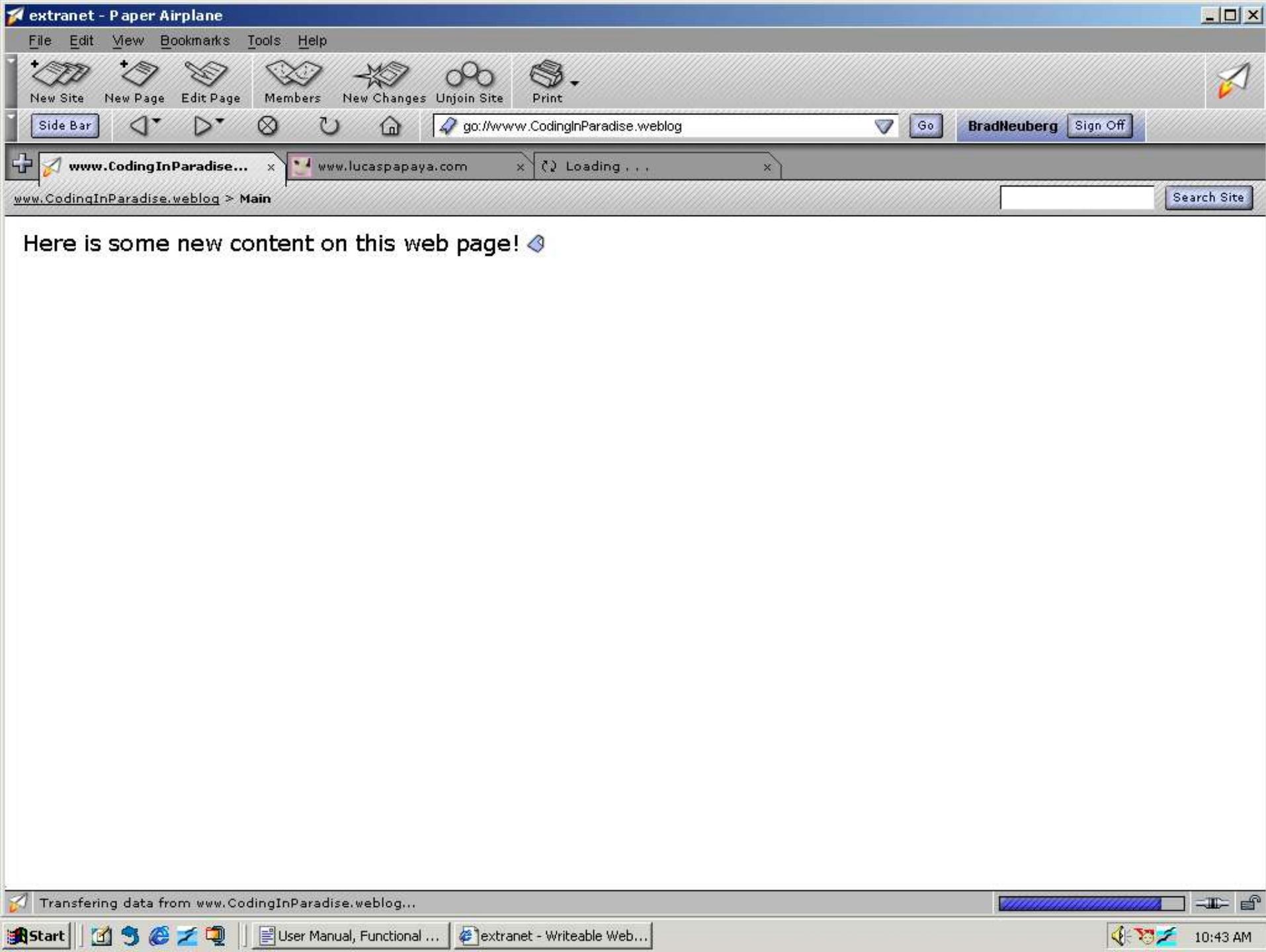
Here is some new content on this web page! 

 Reply Delete < Back Next >

From: BradGNUberg
To: JohnMiller22
Subject: Comments on your document

Hil This is a simple note commenting on your document

Start User Manual, Functional ... extranet - Writeable Web... 10:43 AM





Print

Side Bar



go://www.TwoWayWeb.directory



BradNeuberg

Sign Off



Home > The Two Way Web Directory

The Two Way Web Directory

Use this directory to find web sites that match your interests in the Two Way Web

Inside Paper Airplane

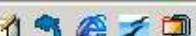
- [What is Paper Airplane and the Two Way Web?](#)

Categories

- [Arts](#)
- [Business](#)
- [Computers](#)
- [Games](#)
- [Health](#)
- [Home](#)
- [Lifestyles](#)
- [Kids and Teens](#)
- [News](#)
- [Recreation](#)
- [Reference](#)
- [Regional](#)
- [Science](#)
- [Shopping](#)
- [Society, Politics, & Government](#)
- [Spiritual and Religious Practices & Philosophy](#)
- [Sports](#)



Start



User Manual, Functional ...

extranet - Writeable Web...



10:43 AM



Print

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Sign Off

Home > The Two Way Web Directory > Society, Politics, & Government

The Two Way Web Directory - Society, Politics, & Government

Use this directory to find web sites that match your interests in the Two Way Web

Inside Paper Airplane

- [What is Paper Airplane and the Two Way Web?](#)

Sub-Categories

- [Activism](#)
- [Advice](#)
- [Alternative](#)
- [Anarchy](#)
- [Anti-Corporate Politics](#)
- [Campaign Finance Reform](#)
- [Civil Liberties](#)
- [Conspiracy](#)
- [Crime](#)
- [Culture Jamming](#)
- [Death](#)
- [Democracy](#)
- [Disabled](#)
- [Drug Legalization](#)
- [Drug Reform](#)
- [Economics](#)
- [Electronic Civil Liberties](#)
- [Environmental Activism](#)
- [Environmental Issues](#)
- [Ethnicity](#)
- [Feminism](#)
- [Folklore](#)
- [Free Tibet](#)
- [Future](#)
- [Gay, Lesbian, and Bisexual](#)
- [Genealogy](#)
- [Global Change](#)
- [Globalization](#)
- [Government](#)
- [Grassroots Politics](#)
- [History](#)
- [Holidays](#)
- [Human Rights](#)
- [Issues](#)
- [Labor](#)
- [Languages and Linguistics](#)
- [Law](#)
- [Libertarianism](#)





Side Bar



go://www.TwoWayWeb.directory/Society, Politics, & Government/Ca

Go

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Sign Off

Home > The Two Way Web Directory > Society, Politics, & Government > Campaign Finance Reform

The Two Way Web Directory - Campaign Finance Reform

Use this directory to find web sites that match your interests in the Two Way Web

Inside Paper Airplane

- [What is Paper Airplane and the Two Way Web?](#)

Site Listings

- [www.campaignfinance.information](#) - Fed up with the bailouts to special interests?
- [www.brookings.institute](#) - Information and analysis to assist citizens and policy makers about how campaign finance practices have evolved, and what efforts are underway to reform them.
- [www.electronic.policy](#) - Provides annotated links to a variety of organizations and information sources.
- [www.wisconsin.reform](#) - Provides an electronic community for overhauling Wisconsin's campaign finance system.
- [www.americas.future](#) - Coalition of citizen groups, labor organizations, think tanks, and other organizations interested in saving American democracy.
- [www.campaignfinance.institute](#) - Seeks to change the current system of campaign finance.
- [www.clean.government](#) - Seeks to stop private funding of elections.
- [www.campaignfinance.website](#) - Examines the history, current structure, court cases, reform proposals, and who's giving to whom of campaign finance.
- [www.howdarethey.politics](#) - A public campaign to rid special interest influence on elections and legislation through excessive monetary contributions.
- [www.campaignfinance.glossary](#) - Defines significant words and concepts in the areas of campaign finance reform and ethics in government.

Previous 10

Next 10



User Manual, Functional ...

extranet - Writeable Web...



10:43 AM

► Members

▼ New Changes

Title
▼ Today
Doing Business In Bangkok
To Do List for Bangkok Project
Fourth Quarter Financials
Company Baseball Game
▼ Yesterday
► 3 days ago
► 4 days ago
► 5 days ago
► 6 days ago

► Search

► Bookmarks

► History

▼ Members

[+] [-] Approve

Name
▼ Waiting to be Approved
Laurent Vasilescu
Ryan Blum
Susan Kassin
► Managers
► Members
Bryan Neuberg
Hoang Dinh
Christopher Tse
Deanna Neuberg

► New Changes

► Search

► Bookmarks

► History

► Members

► New Changes

▼ Search

Bangkok

with www.Acme.company

Search Results (1-10)

- Doing Business In Bangkok
- We Shouldn't Go Into Bangkok
- To-Do List for Bangkok
- This is The Roll-Over State
- This is The Mouse-Down State
- Selected (done clicking) State
- We Shouldn't Go Into Bangkok
- To-Do List for Bangkok
- Project Members
- Doing Business In Bangkok

Back Next

► Bookmarks

► History

Current Reality

- Many features are not realistic or possible with current state of P2P
 - Distributed storage
 - Secure, distributed, and easy naming
 - Robust ACLs
- Very difficult to get users to download a new browser

Current Reality

- Much too big a system for a few volunteer programmers to create
- Performance might suffer from integrating full-featured editor into browser

Paper Airplane-lite

- A toolbar for existing web browsers
- WikiWiki-like editing and access control
 - No advanced editor or access control
- Paper Airplane Groups instead of Two Way Web Sites

Paper Airplane-lite

- Sites are hosted on end-users machines
 - No P2P storage
 - Firewall and NAT traversal
- Easy wizards for creating groups

Paper Airplane-lite

- P2P domain name system
 - Users can reach groups by typing names into browsers, just like web sites
- Easy install and automatic P2P configuration



Sign On

New Group Find Groups

Group Members Group Chat New Changes Join Group

New Page Edit Page



Wizard - New Group Wizard



01. Begin > 02. Group Name > 03. Creating Group

Creating a New Paper Airplane Group

This Wizard provides everything you need to create your free, new Paper Airplane Group.

Paper Airplane Groups enable documents to be authored collectively using a web browser. Members can create and save web pages with one click.

These groups are free to create and maintain, and eliminate web servers and the hassle of uploading web pages by being stored on your own machine.

You can host a Paper Airplane Group even if you are behind a firewall or have an ISP that blocks web servers.

Paper Airplane is a peer-to-peer application. Every Paper Airplane plugin on the Internet works together to resolve domain names, bypassing the Domain Name System and Verisign, and helps to reach users behind firewalls.

Cancel

Back

Next

Wizard - New Group Wizard



01. Begin > **02. Group Name** > 03. Creating Group

Naming Your Paper Airplane Group

You must choose a name and domain ending for your group, just like a web site.

Enter a name for your group:

Choose a domain ending for your group:

 ▾

Cancel

Back

Next

Wizard - New Group Wizard



01. Begin > 02. Group Name > **03: Creating Group**

Creating Your Paper Airplane Group

Please hold while we create your group:

Seeing if name is taken...

Creating group...

You're ready to go!

Tell your friends and family to visit your Paper Airplane Group at
www.codinginparadise.weblog

NOTE: Be sure to tell your friends and family to download the Paper Airplane plugin at
www.paperairplane.us in order to view your new Paper Airplane Group.

Cancel

Back

Next

Wizard - Registration



[01. Intro](#) > 02. Features > 03. Username > 04. Password > 05. Activate

Introduction

Interested in expressing yourself creatively and politically on the Web, for free and easier than you can imagine?

Couldn't care less about configuring web servers, setting up domain names, or learning HTML?

Intrigued by the idea of web-sites that feel more like a community and less like a one-way television?

Welcome to Paper Airplane!

Cancel

Back

Next

Wizard - Registration



01. Intro > 02. Features > 03. Username > 04. Password > 05. Activate

What is Paper Airplane?

Paper Airplane is a browser plugin empowering ordinary users to create collaborative web sites called Paper Airplane Groups.

Paper Airplane Groups enable documents to be authored collectively using a web browser. Members can create and save web pages with one click.

These groups are free to create and maintain, and eliminate web servers and the hassle of uploading web pages by being stored on your own machine.

You can host a Paper Airplane Group even if you are behind a firewall or have an ISP that blocks web servers.

Paper Airplane is a peer-to-peer application. Every Paper Airplane plugin on the Internet works together to resolve domain names, bypassing the Domain Name System and Verisign, and helps to reach users behind firewalls.

Cancel

Back

Next

Wizard - Registration



01. Intro > 02. Features > 03. **Username** > 04. Password > 05. Activate

Create Username

Choose a username. You will use this to sign into Paper Airplane.

Cancel

Back

Next

Wizard - Registration



01. Intro > 02. Features > 03. Username > **04. Password** > 05. Activate

Choose Password

Please choose a password:

Re-enter your password:

Cancel

Back

Next

Wizard - Registration



01. Intro > 02. Features > 03. Username > 04. Password > **05. Activate**

Activating Your Account

Remember to write down your username and password, and keep them in a safe place. Since Paper Airplane is a peer-to-peer application, you will not be able to retrieve a lost username and password.

Please hold while we create your account:

Initializing Paper Airplane...

Contacting Paper Airplane Network...

Starting Peer-to-Peer Services...

Cancel

Back

Next

Implementation

- Front-end built using Flash MX 2004
- Peer-to-peer backend created with Java, JXTA, and P2P Sockets
- Toolbar wrapped with:
 - XUL for Mozilla
 - ActiveX for Internet Explorer

Implementation

- Java Runtime Environment (JRE) is started during sign-on
 - Browser starts quickly because JRE is not invoked on start-up
 - Feels like normal network overhead to end-user
- Installation using Mozilla's XPIInstall technology
 - JRE, Flash, and application transparently installed with one-click

Current Status

- Alpha-version available in a few weeks
- Open source under BSD-type license
- Initial version targeted for Mozilla-based browsers on Windows only
 - Other browsers and platforms are straightforward, but need more developers

Special Thanks

- Hoang Dinh (hoang@lucaspapaya.com)
- Ben Munat (ben@munat.com)

More Information

■ Paper Airplane

– www.paperairplane.us

■ JXTA

– www.jxta.org

■ P2P Sockets

– p2psockets.jxta.org

■ Flash

– www.macromedia.com