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# Beyond the Dot Con Era: Towards the Right Framework for Non-Material Capitalism

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# Society in Transition

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The Past: The era of **Material Capitalism**

The Present: Challenge to existing institutions and models; uncertainty and confusion

The Future: The era of **Non-Material Capitalism**

**Are we equipped for this future?**

# The Past: Material Capitalism

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- . **Dominant focus of value:** Material property
- . **Legal underpinnings:** Asset protection via patents, copyright, trademarks, & confidentiality
- . **Prevailing economic theory:** Laissez-faire, free-market competition
- . **Dominant business models:** Market advantage via closed systems, ownership & exclusivity
- . **Business financing models:** A closed process, subject to authority/control by a third-party agent -- a VC for private financing; an Underwriter for public financing
- . **Societal conventions:** Pervasive reliance on agents and intermediaries for transaction completion

# Forces for Change

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- . **Major shift of value focus.** Away from material items; towards non-material items.
- . **The Internet -- Communications.** Internet end-to-end model allows near-instant communication among groups and individuals. *Threatens all institutions based on friction and latency of communication.*
- . **The Internet -- Access to Information.** Immediate access to data. *Threatens all institutions based on limited information access.*
- . **The Internet -- Egalitarianism.** Unrestricted freedom of action for groups & individuals. *Threatens all institutions based on external control & authority.*
- . Emergence of the Free Software Movement -- challenging conventional notions of software ownership.
- . Major shift of responsibility towards the individual.

# The Internet End-To-End Model

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- Individuals at either end can accomplish whatever they want without participation or interference by middlemen.
- Middlemen are always bypassed.
- Gatekeepers & toll collectors will become extinct.

# Popping Rivets

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## **Breakdown of the status quo:**

- . **Ungovernability of the Internet.** Ineffectuality of laws regarding pornography, gambling, etc.
- . **The dot.com bubble.** Dysfunctionality/abuse of current financing models.  
*Frontline: Dot con.*  
<http://www.pbs.org/wgbh/pages/frontline/shows/dotcon/>
- . **Unenforceability of IPR laws.** Linux, Napster, etc.
- . **Challenges to current economic models.** Open-source software: Linux, etc. Free Software Foundation, <http://www.fsf.org/>
- . **Patent system in crisis.** <http://www.programming-freedom.org/Patents/against-software-patents.html>
- . **Repeated failure of closed & proprietary systems.** SNA, DECnet, ASP
- . **Demise of intermediaries.** Rapid elimination/irrelevance of agents & middlemen.

# New Modes of Thinking

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- . Sacred cows an endangered species
- . *Net gain*. Authors John Hagel, Arthur Armstrong. McKinsey & Co., 1997.
- . *Net worth*. Authors John Hage, Marc Singer. McKinsey & Co., 1999.
- . *Frontline: Dot con*.  
<http://www.pbs.org/wgbh/pages/frontline/shows/dotcon/>
- . New economic models: *Blowback: Costs & Consequences of American Empire*. Author Chalmers Johnson.

# Internet End-To-End Model: Lessons from History

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## **Success Stories**

1. The Internet itself
2. The World Wide Web
3. GNU/Linux
4. PGP
5. CDPD
6. Napster/Gnutella

## **Failures**

1. SNA (IBM)
2. Minitel
3. WAP
4. CDPD

# Tip of the Iceberg: Success Stories in Non-Material Capitalism

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- GNU/Linux
- Internet Protocols
- GPL
- Apache
- Napster/Gnutella

Something big disrupting existing models!

# The Future: Non-Material Capitalism

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- **Dominant focus of value:** Non-material items: information, software, music, ideas.
- **Legal underpinnings:** Non-material assets reside entirely in the public domain, *without legal protection of ownership*. No patents, no copyright. In place of ownership: attribution of authorship via copyleft and trademarks. Confidentiality frowned upon.
- **Prevailing economic theory:** Greatly expanded role of cooperation and collaboration. *Blowback: Costs & Consequences of American Empire*. Chalmers Johnson.
- **Dominant business models:** Market advantage via first mover advantage, superior delivery of service, virtual community building, increasing returns, scale, winner takes all. *Net gain*. John Hagel, Arthur Armstrong. McKinsey & Co., 1997.
- **Business financing models:** Open, egalitarian, with no middlemen. Subject to true supply and demand forces, e.g. via Internet-based Dutch Auction.
- **Societal conventions:** Major shift towards individual responsibility & self-reliance for transaction completion. Greatly diminished role of agents & intermediaries.

# Problems & Solutions

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<b>Domain</b>	<b>Status Quo</b>	<b>Problem</b>	<b>Solution</b>
Value	Material	Value shift	Non-material
Legal	IPR	Ineffective	Attribution
Economic Models	Laissez-faire	Linus, Napster	Cooperation
Business Models	Proprietary, closed	Challenge by open systems	<i>Net gain</i>
Financing	Old-boy network	<i>Dot con</i>	Dutch auction
Society	Agents & intermediaries	Rapid obsolescence	Direct participation

# Dominant Focus of Value

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The past: Material assets

The future: Non-material assets: creativity, knowledge, art, ideas, music

# Legal Underpinnings

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## **Status Quo: Intellectual property protections based on:**

- Secrecy/confidentiality
- Patents
- Copyright
- Trademarks

## **Problems:**

- Existing IPR laws based on material assets
- Patent system in crisis
- Linux, Napster

## **Solutions:**

- Attribution of authorship
- Copyleft; free software, free music
- Trademarks
- Secrecy: merely bad form

# Prevailing Economic Theory

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## **Status Quo:**

- Accepted mantra: Competition is good

## **Under New Dispensation:**

- Collaboration & cooperation

# Dominant Business Models

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## **Status Quo:**

- Ownership of assets via closed, proprietary systems
- Patents
- Secrecy

## **Under New Dispensation:**

- First-mover advantage
- Virtual community building
- Winner takes all

# Societal Expectations

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## **Status Quo:**

- . Transactions via agents and middlemen
- . Public protection based on the agent model

## **Under New Dispensation:**

- . End-to-end transactions between principals
- . Loss of conventional protections -- new forms of fraud/abuse
- . New forms of protection required
- . Caveat emptor!

# Private Financing: The VC Model

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Prevailing VC model based on:

- Expertise in assessing company viability
- Preservation of company assets via confidentiality
- Valuation based on limited, two-party negotiation
- Close oversight of investment
- Tight control of operations via Board presence
- Highly privileged financial position
- Willingness to accept risk of total loss

# Private Financing: Problems & Issues

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- Companies assessed on basis of short-term sellability and flippability rather than true long-term profitability
- Company confidentiality routinely violated. VC's refuse to sign NDA's, and Business Plans commonly leaked.
- Oversight & control oriented towards quick flip and profit-taking, rather than long-term company value

# Private Financing: The Open Model

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- Open to all legal participants
- Opportunity assessment up to the individual investor.  
Underling principle: *caveat emptor!*
- Public disclosure of company Business Plan
- Valuation based on true supply/demand interaction
- No direct oversight/control. Indirect oversight via independent third-party reporting.
- No privileged class of investor
- Willingness to accept risk of total loss

# Public Financing: Old vs. New

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## **Traditional IPO:**

- Controlled by the Underwriter
- Heavily favors a closed, two-person club: Underwriter in bed with Institutional Investor
- Result: corruption and fraud; the Internet bubble; *Dot Con*

## **.The New Model:**

- The Dutch Auction
- No middlemen
- Open and egalitarian

# Material Capitalism vs. Non-Material Capitalism

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**Domain of Things  
(The Microsoft/WAP Way)**

**Domain of Ideas / Art / Information  
(The Linux/LEAP Way)**

Ownership	Identification of origin
Competition	Cooperation
Confrontation	Collaboration
Royalties & Licenses	Sharing - Services & Support
Secrecy	Public
Specification control	Specification stability
Patents	Usage freedom
Copyright	Copyleft
Trademarks	Trademarks
Capital at work	Creativity at work

# Case Study: WAP vs LEAP

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- Not just theoretical
- An actual case study: LEAP

# WAP is Not Wireless Internet

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- WAP claims to be Internet End-to-End, but is not

From: Phil Karn <karn@qualcomm.com>  
To: public@MOHSEN.BANAN.1.BYNAME.NET  
CC: ietf@ietf.org, karn@qualcomm.com  
Subject: Re: WAP Is A Trap -- Reject WAP

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One thing missing from most block diagrams of WAP is the chute on the bottom of the carrier's WAP gateway pouring out money. It's safe to say that this chute is WAP's primary reason for existence.

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The Internet end-to-end model will once again prevail, putting the cellular service providers back into their proper place as providers of packet pipes, nothing more. And life will be good again. :-)

- Is a WAP operator an ISP / ASP?

# WAP: A Technical Failure

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1. Excessive re-invention in the name of wireless
2. User interface assumptions
3. Extreme accommodation to existing networks
4. Vulnerable Wireless Transport Layer Security (WTLS)
5. Bungled protocol number assignment

**Ask your own engineers!**

# WAP: A Basic Misconception

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1. The wrong answer initially:      Mobile Web Browsing
2. The right answer initially:      Mobile Messaging
3. Unsupported claims:
  1. Wireless Internet
  2. End-to-end
  3. Not device-dependent
4. Is it even really necessary?
  1. Limited web browsing capabilities
  2. Existing technology adequate
  3. Voice interface adequate

# LEAP: One Alternative to WAP

## The Concept

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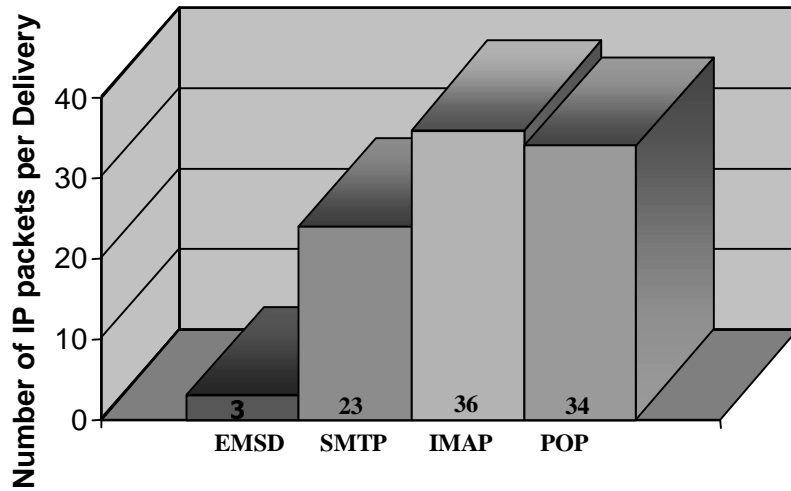
- **Opportunity**

- There is a need for a new generation of truly open efficient Internet protocols which address wirelessness, mobility, & miniaturization.
- WAP is not it. WAP is a trap.

- **Solution**

1. LEAP: Lightweight & Efficient Application Protocols
2. Internet mainstream

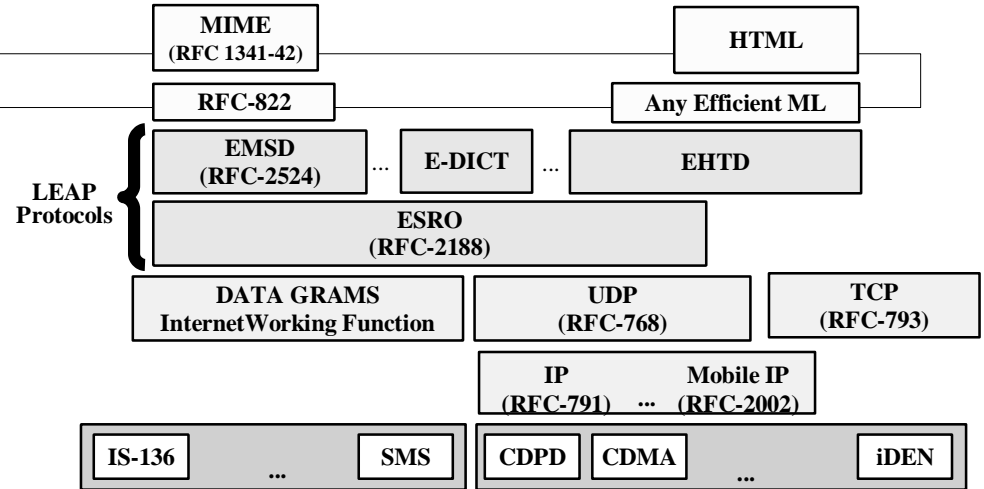
# What is LEAP?



**Bandwidth Efficiency**

**Efficiency Benefits:**

- . Efficient use of carrier network
- . Lower costs per minute of use
- . Longer battery life
- . Reduced latency for user access



**LEAP is a family of protocols:**

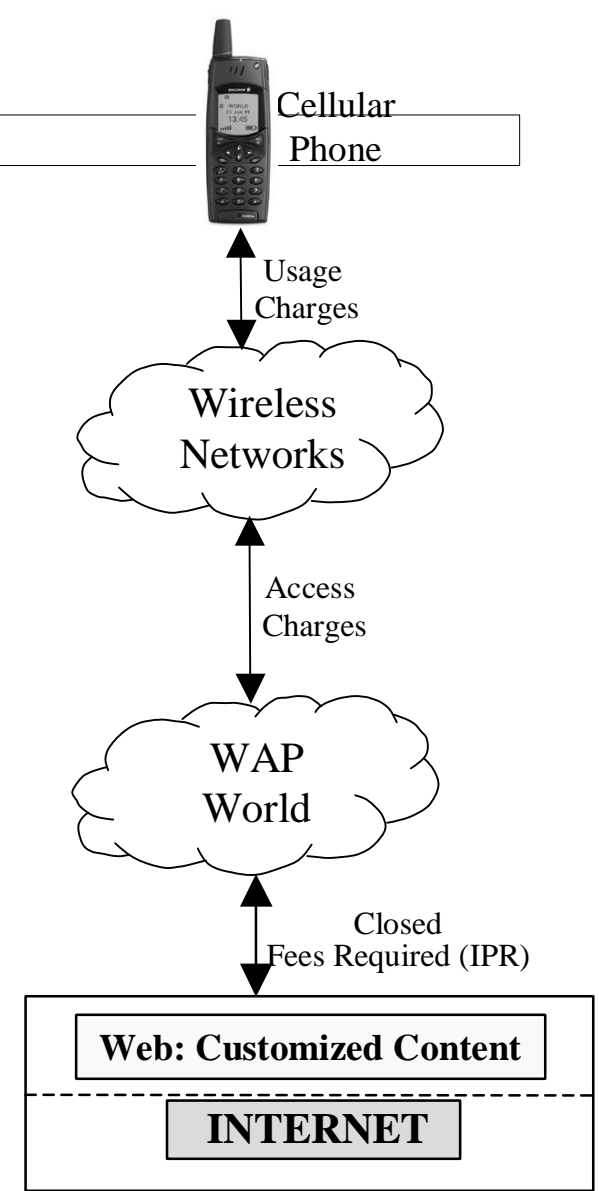
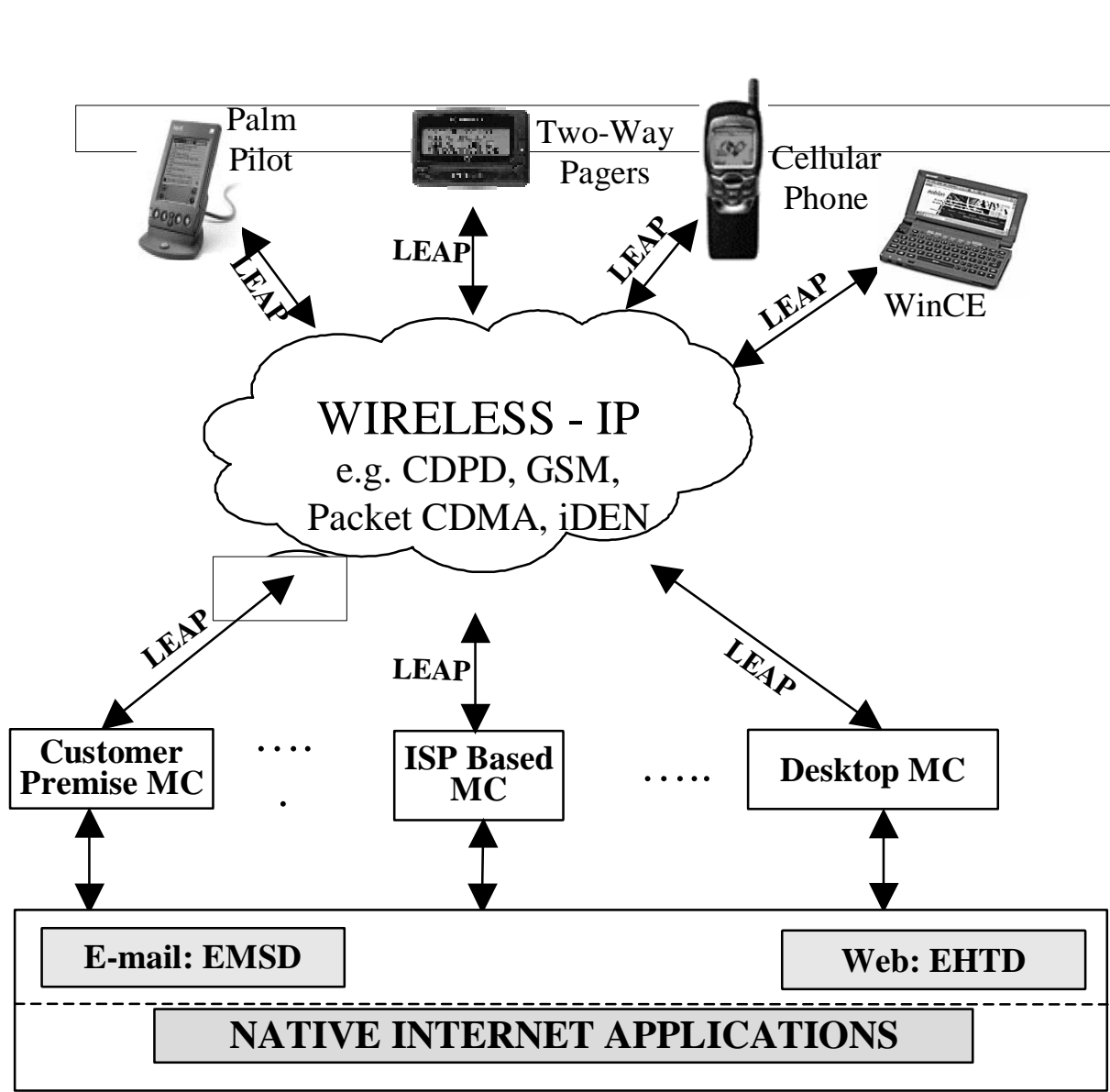
- . **ESRO: Efficient Short Remote Operations**
- . **EMSD: Efficient Mail Submission & Delivery**
- . **EHTD: Efficient Hyper Text Delivery (in progress)**
- . ...

**Technical Attributes:**

- . Technical excellence
- . Ideal for wireless & mobile applications
- . Native IP & wireless-IP
- . Truly open & patent-free
- . RFC published

# How LEAP Works

# How WAP Fails



# A Brief History of LEAP

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- **The Past**

- In 1994 McCaw Cellular began work to optimize the transmission of short text messages over wireless-IP, and to create an efficient wireless e-mail system
- This work was abandoned in 1997 when AT&T sold its paging licenses
- Recognizing a unique opportunity, Neda, the lead developer, undertook to develop the protocols independently of AT&T. The result is LEAP

- **The Present**

- LEAP protocols published as RFCs
- LEAP implementations ready as open-source software
- LEAP about to be announced

- **The Future**

- Go head-to-head with WAP & other non-end-to-end solutions
- LEAP will become the foundation of the Mobile Messaging industry

# LEAPing over WAP

<b>WAP</b>	<b>versus</b>	<b>LEAP</b>
<b>Patented</b> <b>Self-published by WAP Forum</b> <b>Subject to change without notice</b> <b>Maintained by the WAP Forum</b> <b>Re-invention of existing protocols</b> <b>Tailored to mobile phone interface</b> <b>Security vulnerability</b> <b>Inconsistent protocol number assignment</b> <b>Poor technical design</b> <b>Initial focus: web browsing</b> <b>Treats wireless as a special case</b>		<b>Patent-free</b> <b>Published as Internet RFCs</b> <b>Revisions permanently fixed</b> <b>Maintained by open working groups</b> <b>Optimizing extensions to existing protocols</b> <b>User interface independent</b> <b>No security assumptions</b> <b>Consistent protocol number assignment</b> <b>Good technical design</b> <b>Initial focus: messaging</b> <b>Treats wireless as an extension of Internet</b>
<b>Read: The WAP Trap</b>		<b>Read: LEAP: One Alternative to WAP</b>

## **. A patent fiasco:**

- . Geoworks patent assertion**
- . Phone.com patent assertion**
- . Phone.com suing Geoworks**

## **. WAP is facing intense criticism**

## **. WAP -- Where Are the Phones?**

# LEAP: The Bigger Picture

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The LEAP Manifesto -- describes our vision.

## **Standards & Technology**

- . Free Protocols Foundation -- <http://www.freeprotocols.org>
- . Lightweight & Efficient Application Protocols (LEAP) Forum -- <http://www.LEAPForum.org>
- . Efficient Mail Submission & Delivery (EMSD) -- <http://www.emsd.org> -- Home of RFC-2524
- . Efficient Short Remote Operations (ESRO) -- <http://www.esro.org> -- Home of RFC-2188

## **Open-Source Software**

- . MailMeAnywhere -- <http://www.MailMeAnywhere.org>

## **Subscriber Services**

- . ByNumber Services -- <http://www.ByNumber.net>
- . ByName Services -- <http://www.ByName.net>
- . Others to come

## **Supported & Commercial Software and Solutions**

- . Neda Communications, Inc. -- <http://www.neda.com>
- . Others to come