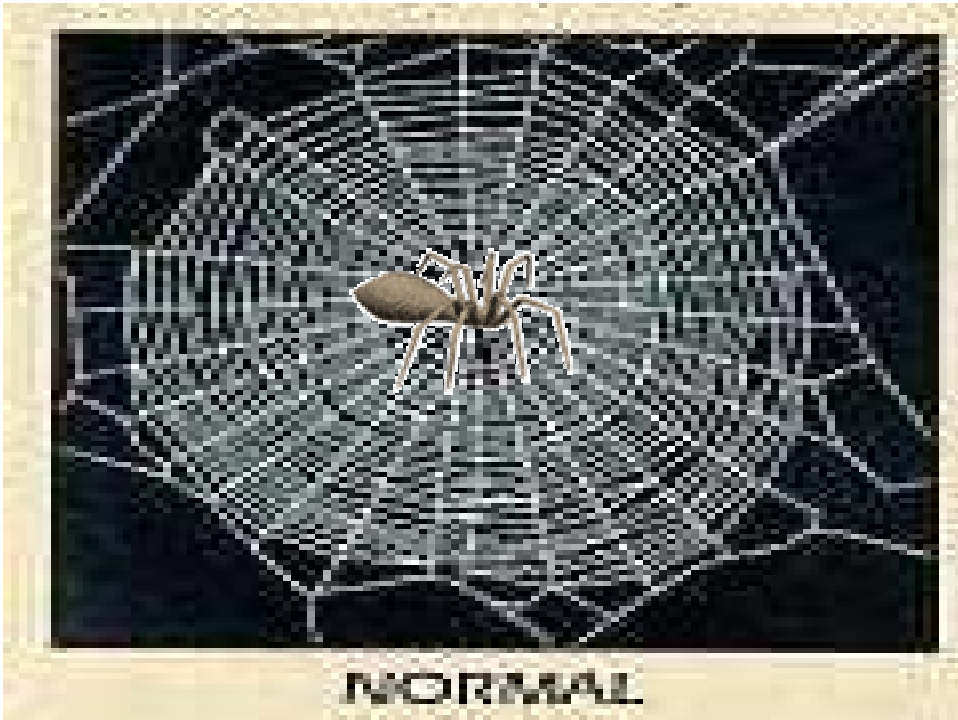




IPV6
THE NEW
INTERNET

The text is rendered in a bold, blue-outlined, 3D-style font. It is surrounded by several thick orange curved lines and small orange squares, creating a celebratory or dynamic feel. A vertical dashed cyan line runs through the center of the text.





NORMAL



CAFFEINE



NORMAL



MARIJUANA **NAT**



CAFFEINE



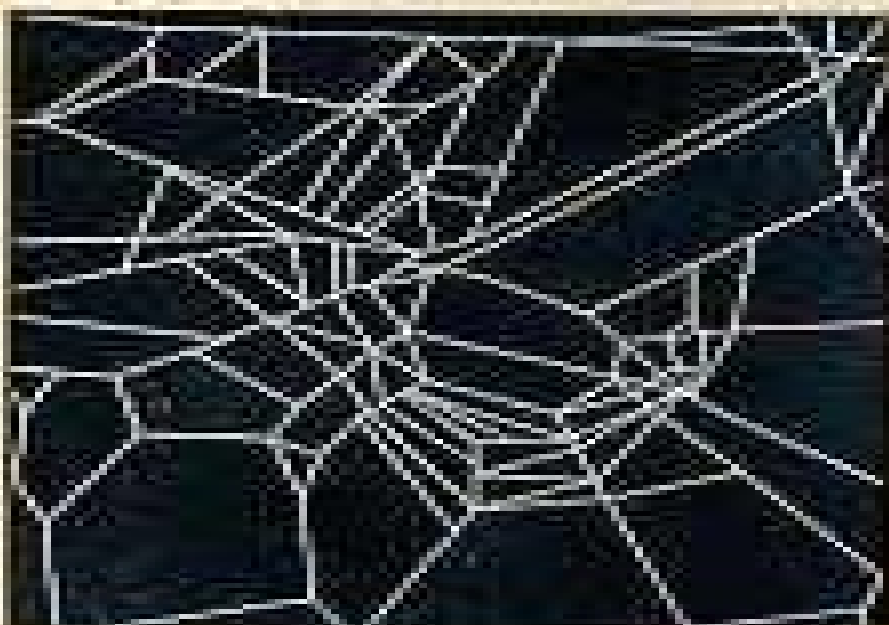
NORMAL



MARIJUANA **NAT**



CAFFEINE



BENZODIAZEPINE **STUN-ED**



Internet - Global Statistics

*“The Internet
is a Research
Experiment”*

Vint Cerf

At DOC Meeting

July 28, 04

22.5 Million Hosts
(Bellcore June
1997)

50 Million Users
(NUA Jul 1997)

250 Million Hosts
(ISC Apr 2004)

745.3 Million Users
(InternetWorldStats.com
April 2004)

(approx. 2.3 Billion Telephone Terminations, 750 Million PCs)

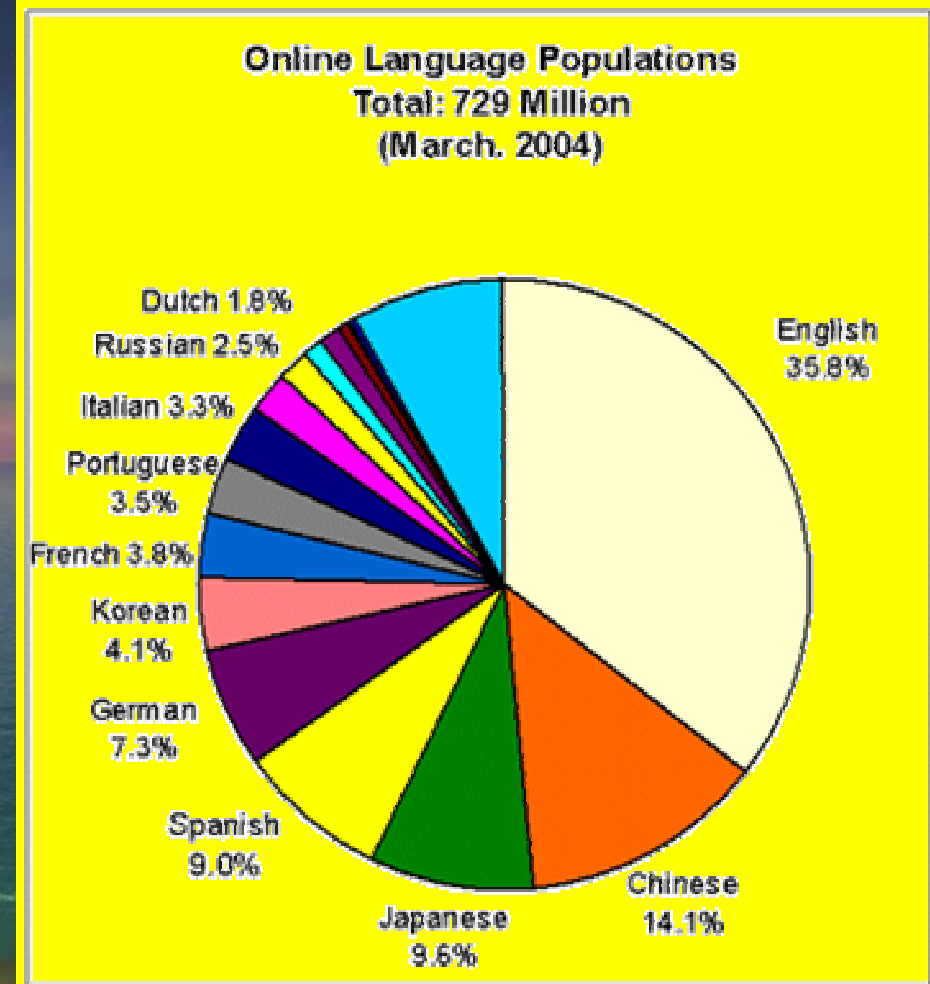
Internet Penetration Statistics

Regions	Pop(2004)	Internet Use (2000)	Internet Use (latest)	User Growth	% Penetration	% of Table
Africa	906 M	4.5 M	10.1 M	123.6 %	1.1 %	1.4 %
Asia	3,654 M	114.3 M	235.1 M	105.7 %	6.4 %	31.5 %
Europe	729 M	101.0 M	204.6 M	102.5 %	28.1 %	27.4 %
Middle East	259 M	5.3 M	14.5 M	174.5 %	5.6 %	1.9 %
North America	327 M	108.1 M	216.0 M	99.8 %	66.1 %	29.1 %
Latin Am Caribbean	546 M	18.0 M	49.5 M	174.0 %	9.1 %	6.6 %
Oceania	32 M	7.6 M	15.7 M	105.5 %	49.1 %	2.1 %
Total	6,453 M	358.8 M	745.4 M	106.3 %	11.5 %	100.0 %

Source: *InternetWorldStats.com*

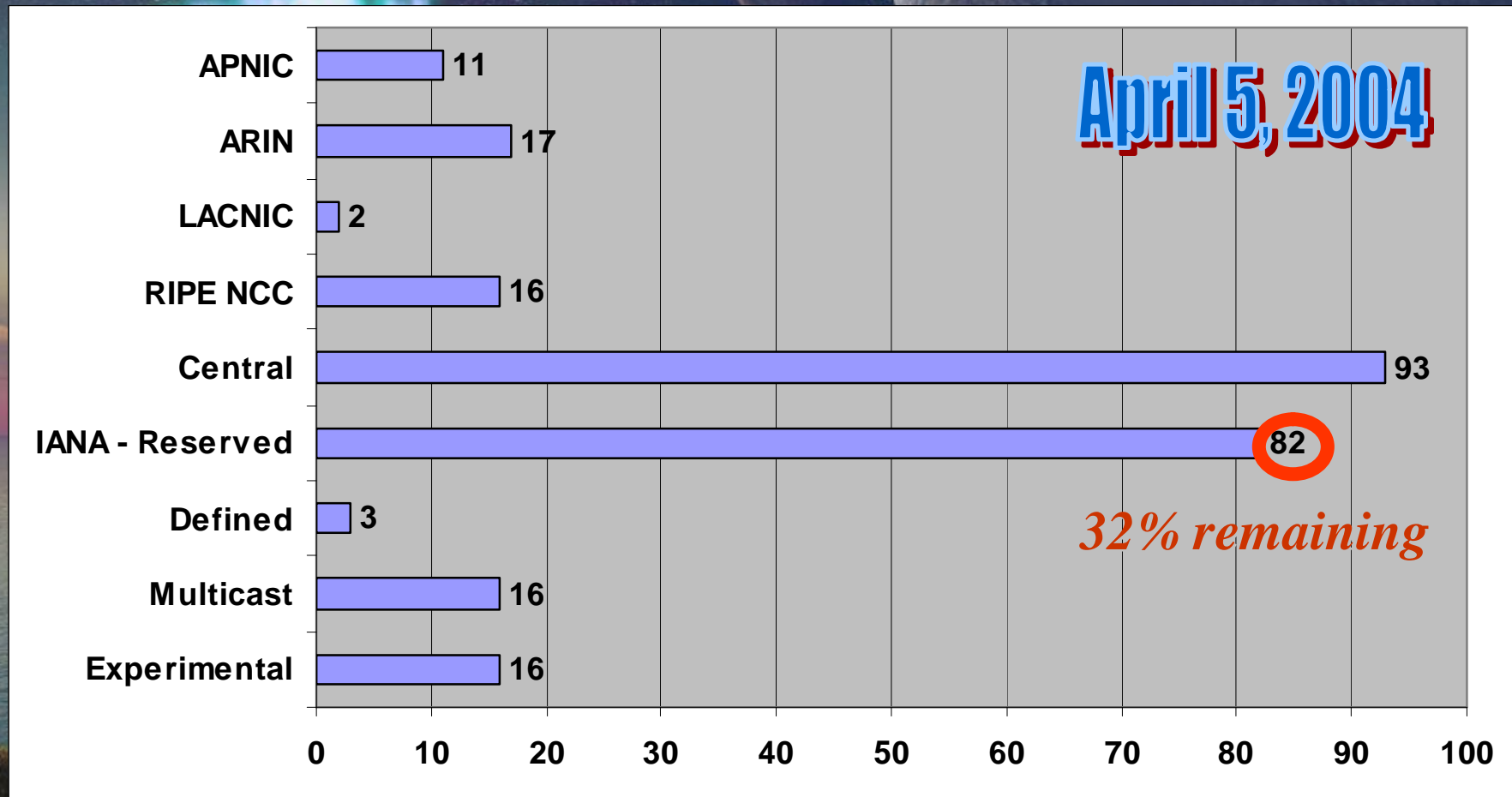
Size of Internet: Online Population

	Internet Access (Million)	% pop online
Total	729.2	
English	287.5	35.8%
Non-English	516.7	64.2%
European excl English	276.0	37.9%
Asian Languages	240.6	33.0%
Arabic:	13.5	1.7%



Source: Global Reach (<http://global-reach.biz/globstats/>)
last revised 2004 March 30

Distribution of IPv4 addresses by /8



Digital Chasm

Nation (Internet country code)	Population (2003)	Internet users (2002)	% Internet Penetration Rate	Global IPv4 address assigned per country	Current /8 equivalent
Arab Nations	298 830 000	4 360 200	1,46%	2 990 848	1
Egypt (.eg)	71 931 000	600 000	0,83%	852 224	0,060
Sudan (.sd)	33 610 000	56 000	0,17%	8 192	0,010
Algeria (.dz)	31 800 000	180 000	0,57%	69 888	0,010
Morocco (.ma)	30 566 000	400 000	1,31%	147 456	0,010
Iraq (.iq)	25 175 000	12 500	0,05%	0	0,000
Saudi Arabia (.sa)	24 217 000	570 000	2,35%	553 216	0,040
Yemen (.ye)	20 010 000	17 000	0,08%	8 192	0,010
Syria (.sy)	17 800 000	60 000	0,34%	24 576	0,010
Tunisia (.tn)	9 832 000	400 000	4,07%	40 960	0,010
Libya (.ly)	5 551 000	20 000	0,36%	16 384	0,010
Jordan (.jo)	5 473 000	212 000	3,87%	131 072	0,010
Lebanon (.lb)	3 653 000	300 000	8,21%	67 584	0,010
Palestine (.ps)	3 557 000	60 000	1,69%	53 248	0,010
Mauritania (.mr)	2 893 000	7 500	0,26%	0	0,000
Armenia (.am)	3 061 000	30 000	0,98%	36 864	0,010
Oman (.om)	2 851 000	120 000	4,21%	98 304	0,010
United Arab Emirates (.ae)	2 995 000	900 000	30,05%	411 136	0,030
Bahrain (.bh)	724 000	140 200	19,36%	20 480	0,010
Qatar (.qa)	610 000	75 000	12,30%	24 576	0,010
Kuwait (.kw)	2 521 000	200 000	7,93%	426 496	0,030

Internet around the world

Nation (Internet code)	Population (2003)	Internet users (2002)	% Internet Penetration Rate	Global IPv4 address assigned per country	Current /8 equivalent	addresses needed to reach 20% H-ratio of 85%	Number of IPv4 /8 required for 20% H-ratio of 85%
209 countries							
Worldwide	6,321,688,311	613,040,319	9.70%	2,455,834,135	147	6,229,490,197	372.3
Specified use (IANA)				605,093,888	36.070		
China (.cn)	1,304,196,000	56,600,000	4.34%	44,007,936	2.630	1,761,501,891	105.00
India (.in)	1,065,462,000	7,000,000	0.66%	2,804,480	0.170	1,699,132,089	101.28
Indonesia (.id)	219,883,000	4,400,000	2.00%	1,141,504	0.070	261,377,868	15.58
Brazil (.br)	178,470,000	13,980,000	7.83%	1,199,160	0.080	202,594,158	12.08
Pakistan (.pk)	153,578,000	1,200,000	0.78%	254,464	0.020	175,020,149	10.44
Bangladesh (.bd)	146,736,000	150,000	0.10%	128,000	0.010	166,655,664	9.94
Nigeria (.ng)	124,009,000	100,000	0.08%	114,688	0.010	136,679,929	8.15
Russia (.ru)	143,246,000	18,000,000	12.57%	7,638,944	0.460	113,059,221	6.74
Vietnam (.vn)	81,377,000	400,000	0.49%	159,232	0.010	82,758,458	4.94
Philippines (.ph)	79,999,000	4,500,000	5.63%	765,696	0.050	77,455,760	4.62
Mexico (.mx)	103,457,000	3,500,000	3.38%	6,311,936	0.380	72,369,345	4.32
Ethiopia (.et)	70,678,000	20,000	0.03%	16,384	0.010	70,830,896	4.23
Egypt (.eg)	71,931,000	600,000	0.83%	853,504	0.060	67,382,138	4.02
Iran (.ir)	68,920,000	420,000	0.61%	581,888	0.040	65,449,815	3.91
Turkey (.tr)	71,325,000	2,500,000	3.51%	2,429,696	0.150	57,553,061	3.44



**INTERNET
IS RESERVED
FOR THE ELITE
OF THE
WORLD**

Internet Penet
Address S

W
H

D
B

**INTERNET
IS INDEFINITELY
RESERVED
FOR THE ELITE
OF THE
WORLD**



ASCII Table

US ASCII = 7 Bits

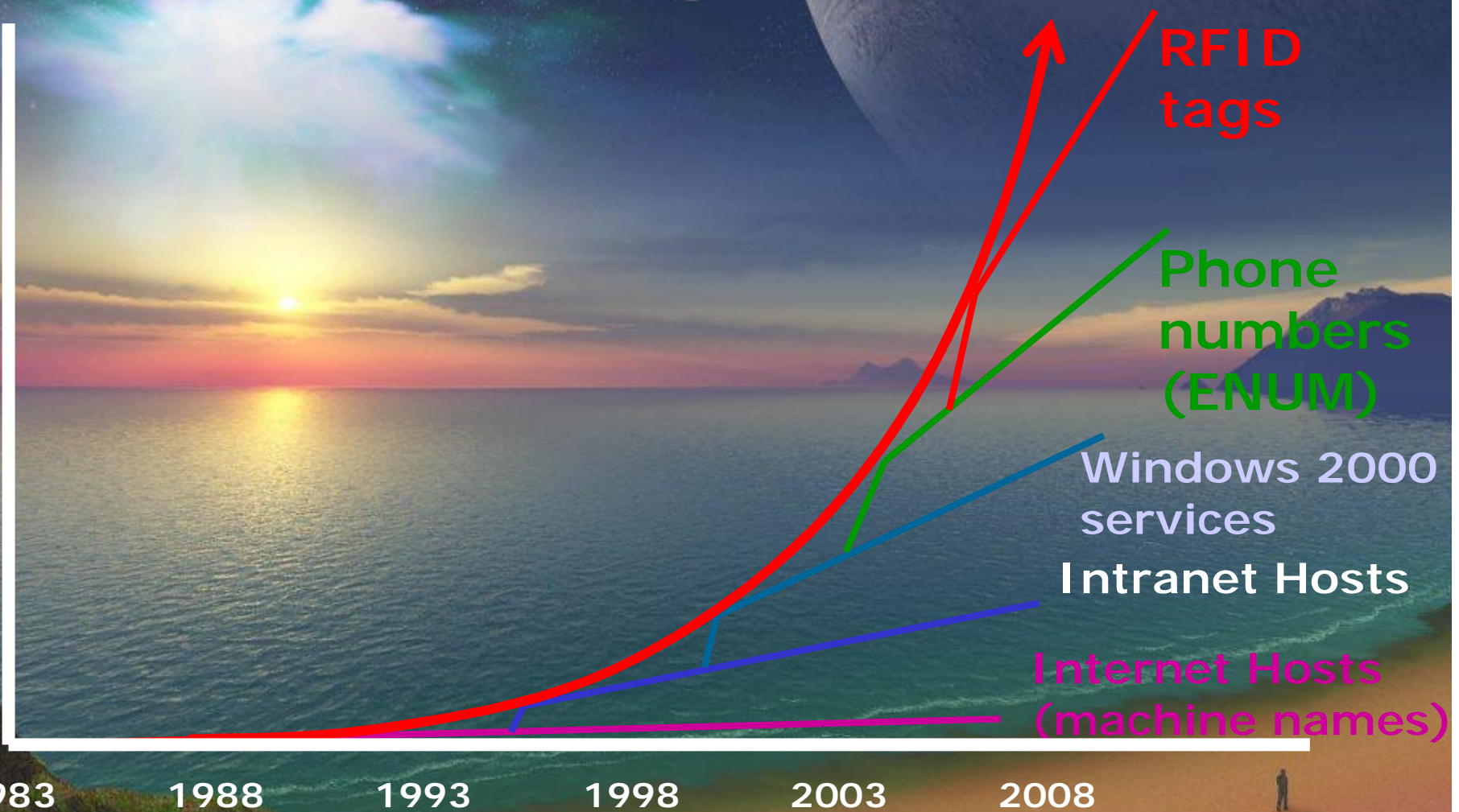
International ASCII = 8 Bits

DNS à IDN

<http://ทีเชอชนึค.พทลนึชย์.ไทย>

Courtesy of i-dns.net

DNS Use Is Growing Exponentially



Source: Nominum; Mockapetris

Is this the Fate

of the Internet

**The Internet Was
the Most Challenged
Technology!**

So, Why Bother?

E2E – The Best Kept Secret

Complexity rises as technology exceeds its design limits

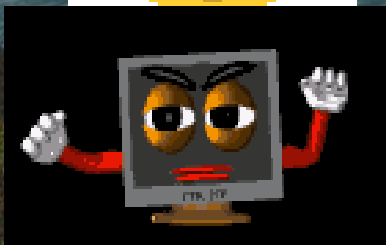
Maintenance costs become excessive

Workarounds become endemic

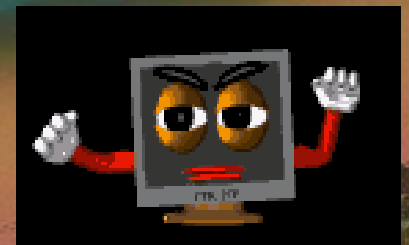
Logical End-to-End model sacrificed



Phone Call + Call back

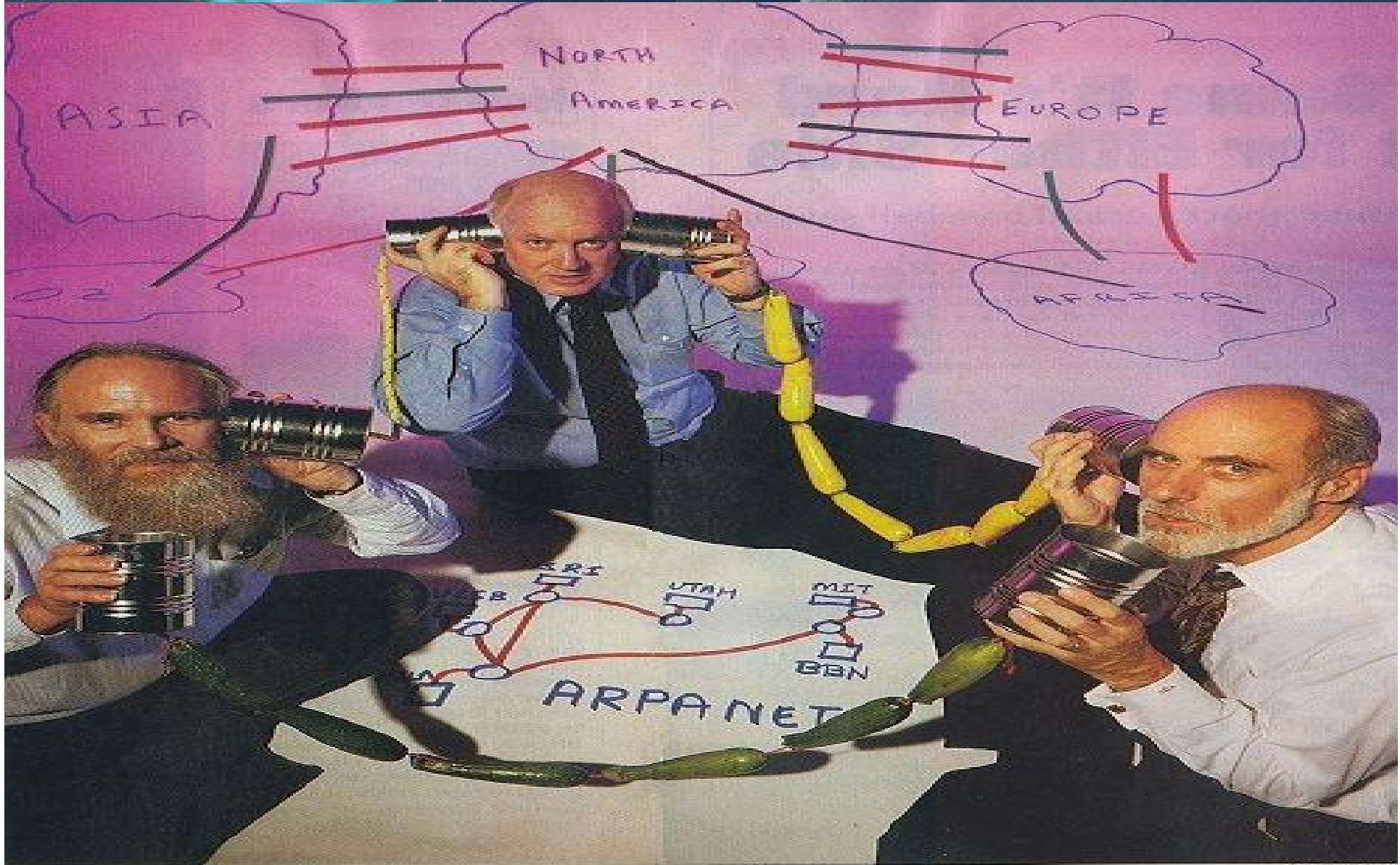


E2E IP Multimedia Connection



So, Why Bother?

E2E – The Best Kept Secret



The Consumer Vision

BROADBAND
Entertainment,
E-Business, Services

MOBILE MULTIMEDIA
Entertainment,
Personal Pictures and Video,
Services

MEDIA
Pre-Recorded Content,
Personal Media

Consumers want their
devices to work together
and share content

BROADCAST
Services,
Entertainment

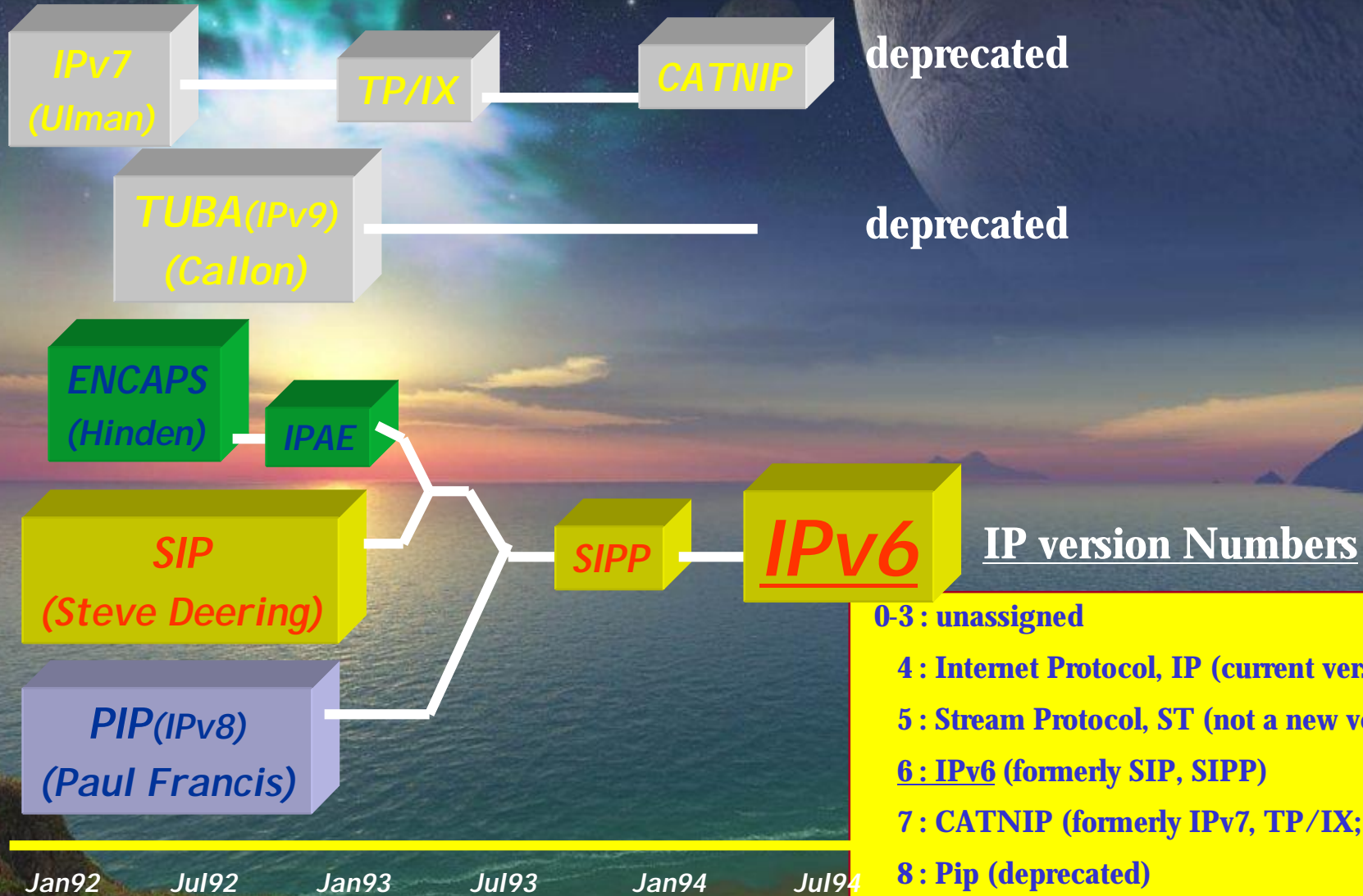
The Future of the Internet

Inter-NET or Inter-NAT

NAT is about Control

IPv6 is about
Freedom!

IPv6 Evolutionary Tree

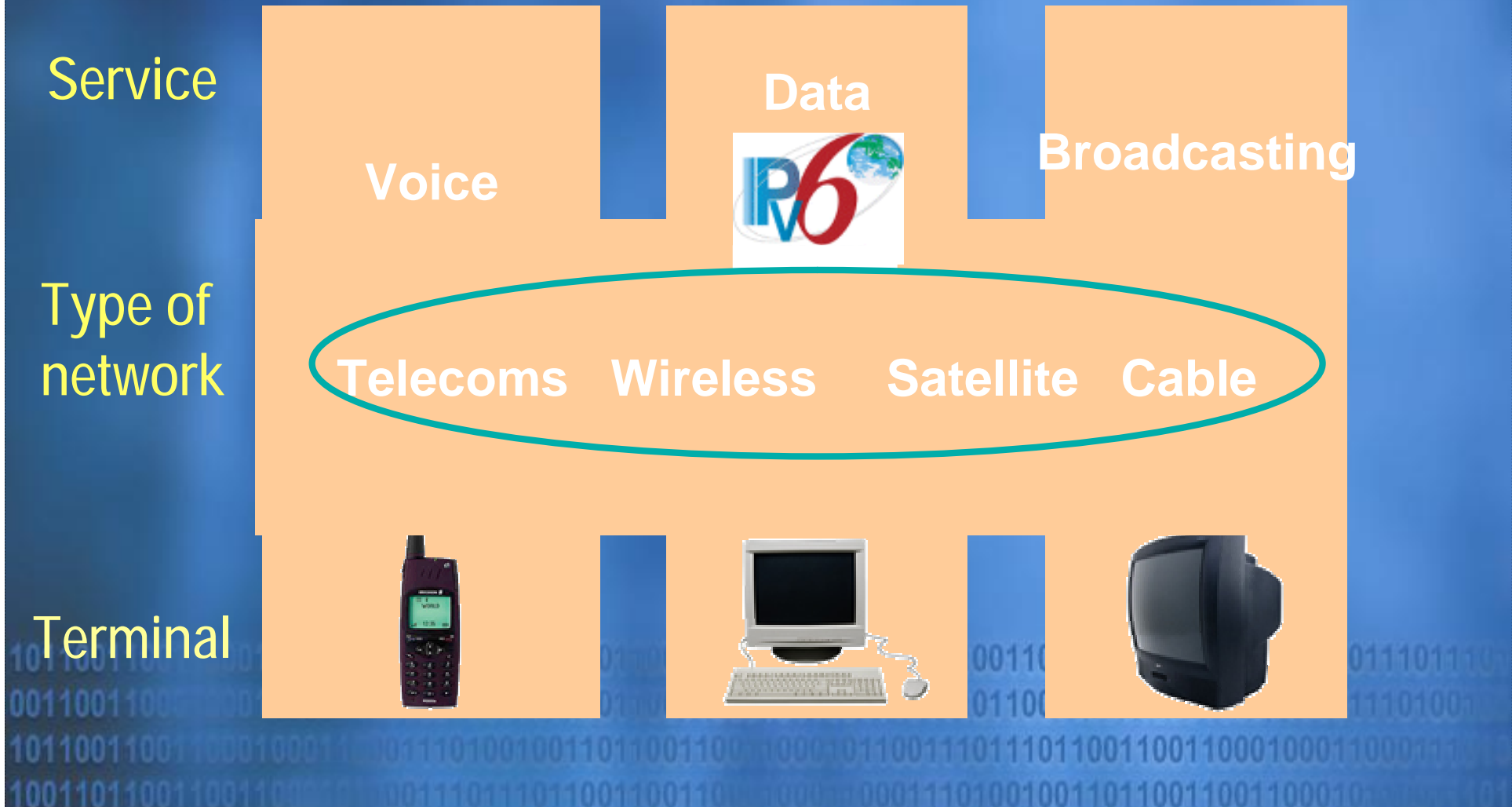


- 0-3 : unassigned
- 4 : Internet Protocol, IP (current version)
- 5 : Stream Protocol, ST (not a new version of IP)
- 6 : IPv6 (formerly SIP, SIPP)
- 7 : CATNIP (formerly IPv7, TP/IX; deprecated)
- 8 : Pip (deprecated)
- 9 : TUBA (deprecated)
- 10-15 : unassigned

The Next Big Thing

- Carly Fiorina: "Adaptive Information Technology"
- IBM: "On-Demand Computing"
- Bill Gates: "Seamless Computing"
- Other Vendors:
 - > Ubiquitous Computing
 - > Autonomous Computing
 - > Utility Computing
- Forester Research: "Organic Computing"
- Gartner: "Real-Time Computing"
- Vision Hard to Name: Unglamorous Technology:
"Futility Computing"

Roadmap to Most Advanced IT Nation!



END TO END MUSICIANS



IPv4
250 M

à

IPv6 Vision
10 Billion Nodes

**Always-on
Identity**



Autoconfig



**Always-on
Security**



**Always-on
Security
Privacy**



The New Internet Symmetric

Filesharing

&

**Resource
Sharing**



**Instant
Communication**

Interactive

**Collaborative
Computing**

Wide Open Again for INNOVATION

Killer Apps



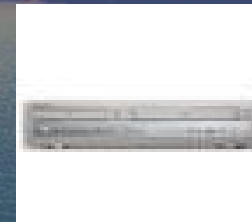
A Brand New Experience

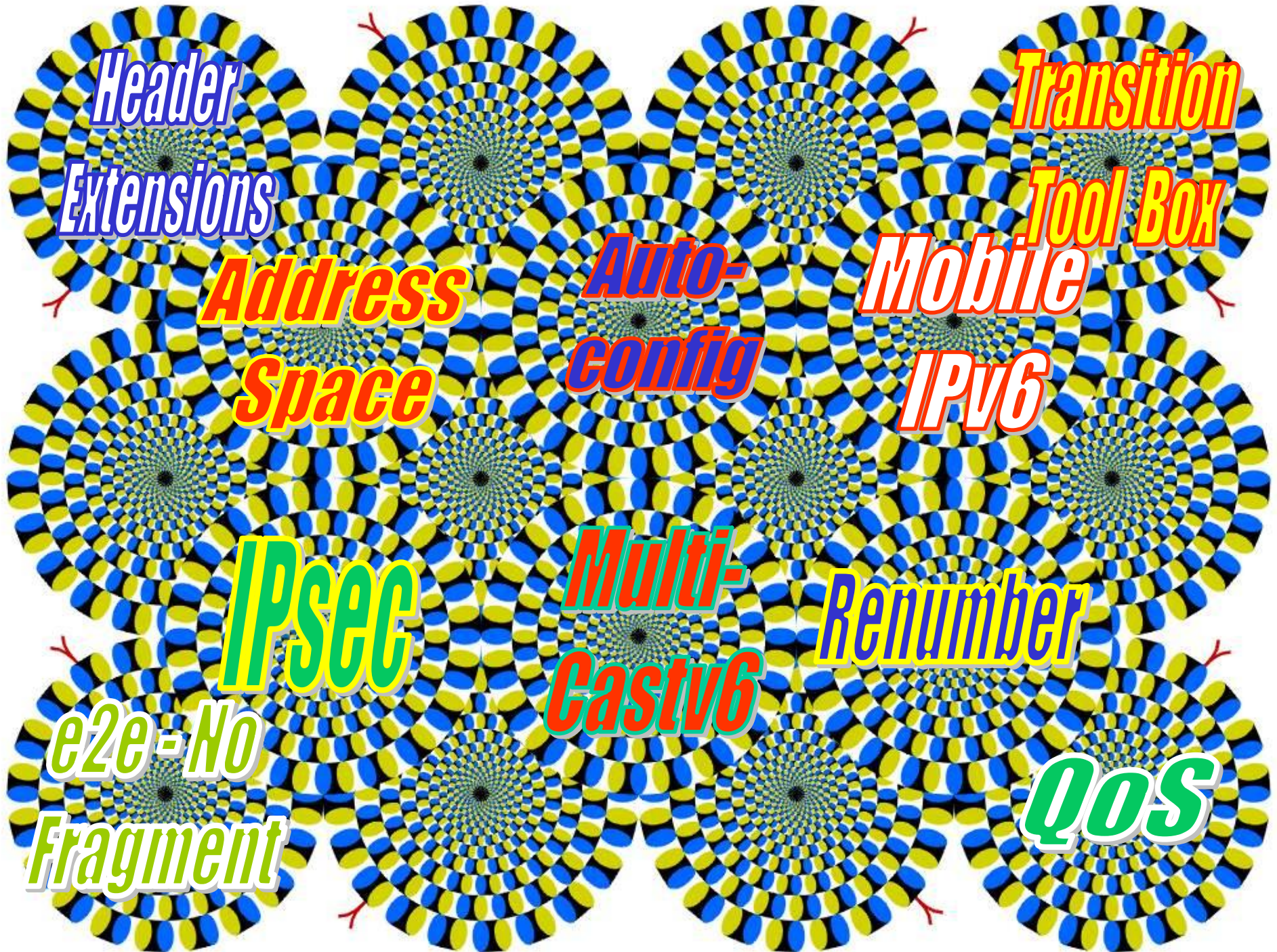






The Next Edge





**Header
Extensions**

**Transition
Tool Box**

**Address
Space**

**Auto-
config**

**Mobile
IPv6**

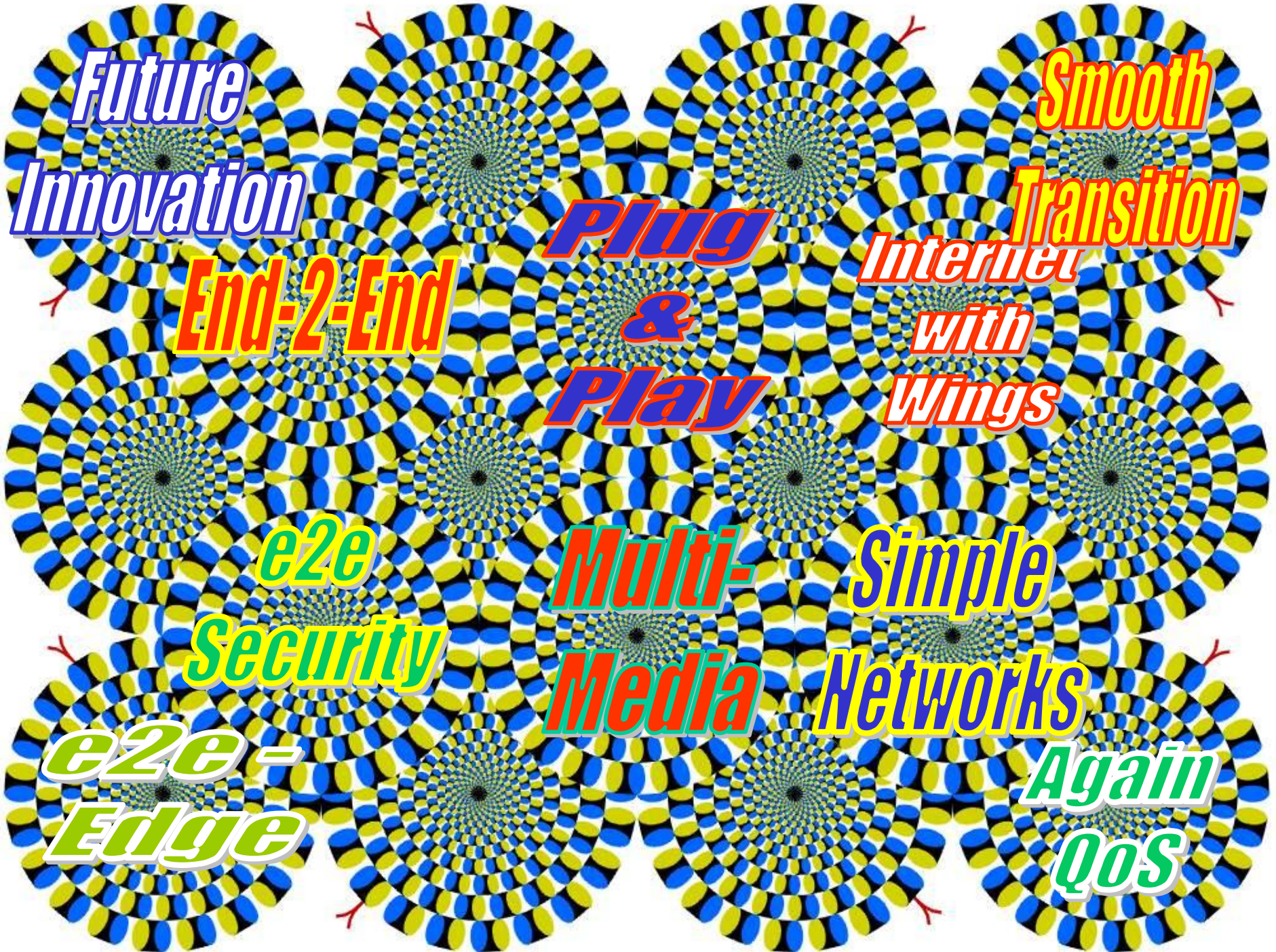
IPsec

**Multi-
Castv6**

Renumber

**e2e-No
Fragment**

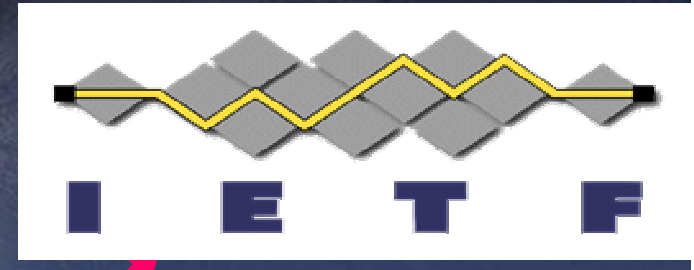
QoS



Strategic Government Support Deployment Roadmap



Strategic Standards Bodies Support

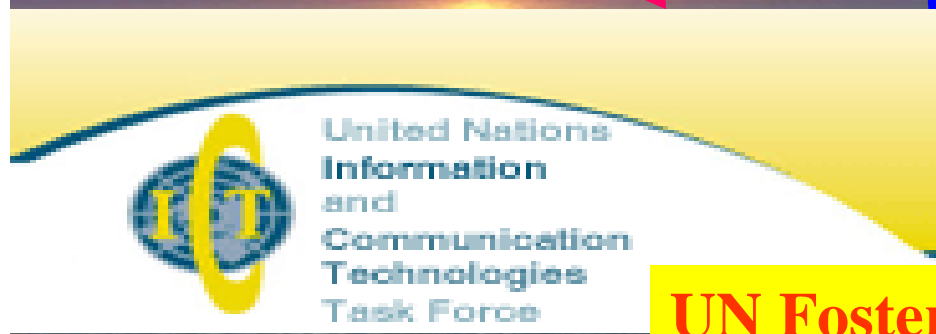


3G mandates IPv6

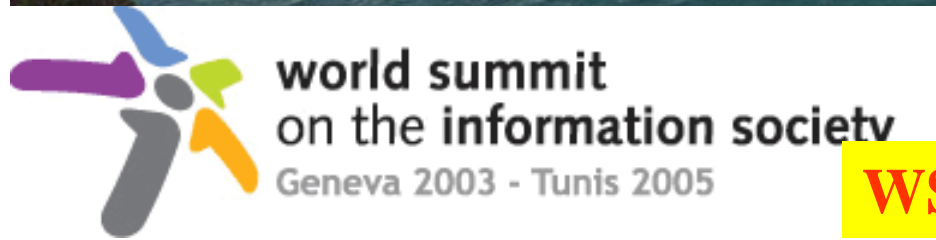
B3G mandates IPv6

ITS mandates IPv6

Strategic Advocacy Bodies Support



UN Fosters IPv6



WSIS Fosters IPv6



IPv6 TF Around The World



Leadership Worldwide

IPv6 Ready Logo Tremendous Success

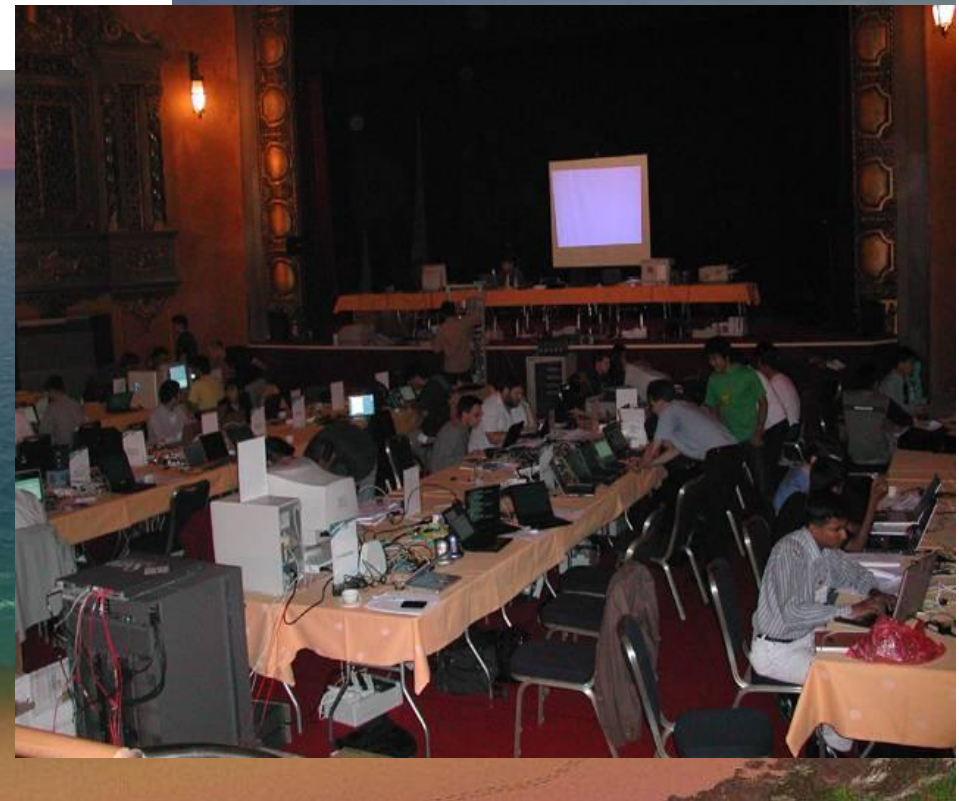
Silver Phase: I



Golden Phase: II



50 Companies passed the test!



IP = Peace Protocol

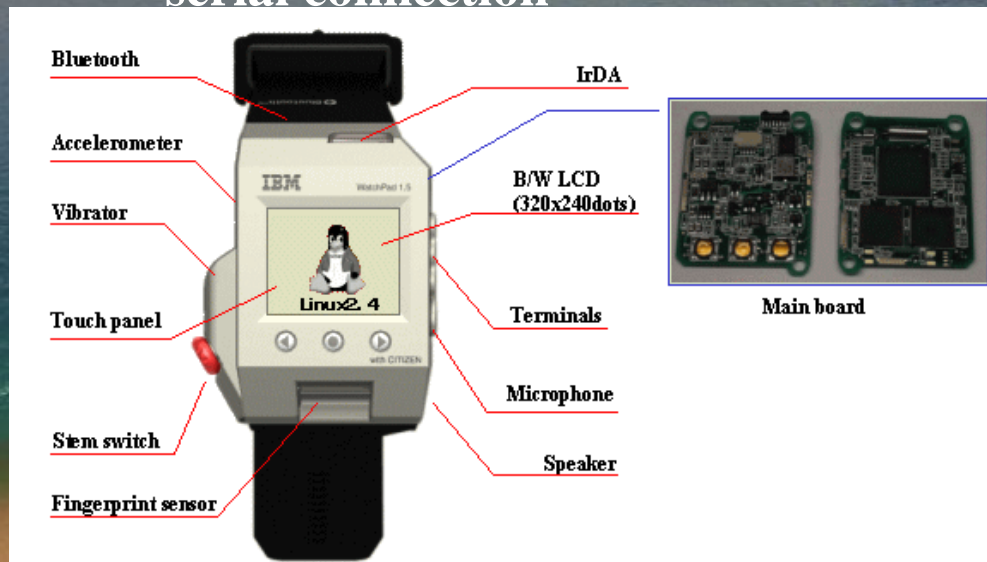
IPV6 = Green Protocol

Not The Famous IETF Toaster



But at Last a Linux WristWatch

- Research Prototype
- ARM7 Processor (18Mhz), 8MB DRAM, 16MB Flash, 320x240 Display
- Runs Linux OS
- Serial Line, Bluetooth
- Needs to be on a cradle to use serial connection



An image of an iceberg floating in the ocean. The tip of the iceberg is visible above the water surface, while the much larger, submerged part is hidden below. The text is overlaid on this image. The top text is 'IPv6 is an Iceberg' and the bottom text is 'The End-User will not see but will feel all of it !'.

IPv6 is an Iceberg

**The End-User
will not see but
will feel all of it !**