IEEE Charles Prometeus Steinmetz award 2007

Vic Hayes

Thank You

- **I am very pleased with the honor of receiving the award**

- **All I did was to providing a good infrastructure so the engineers of IEEE 802.11 and the Wi-Fi Alliance could come to agreement**

- **I dedicate this award to everybody having contributed to its success**

It was a pleasure:

- **To be trusted by the group**
- **To lead the group**
- **To see the product come to maturity**
- **To see the marvelous potential the product has for mankind**

The first products

- **Telesystems   230 kbit/s**
- **Agilis   230 kbit/s**
- **O'Niell Com-munications   38 kbit/s**
- **Symbol Technologies   60 kbit/s**
- **NCR   2000 kbit/s**

1990 $ 1370,00 2 Mbit/s

2000
$ 99,99.
11 Mbit/s

First meeting

Attendance list

Mr. DAVE BAGDY	Toshiba America Information Systems Inc	714 583 3846
Mr. CHANDAN BANERJEE	NYNEX Corporation	914 287 5543
Mr. KEN BIBA	Agilis Corporation	415 962 9400
Mr. DALE BUCHHOLZ	Motorola Inc.	708 632 5146
Dr. JONATHON CHEAH	HUGHES Network Systems	619 453 7007
Mr. BUDDY COOK	II-Morrow	503 581 8101 X814
Mr. PETER K. CRIPPS	Agilis Corporation	415 962 9400
Mr. ANDREW FLATLEY	NYNEX Corporation	914 644 6137
Mr. CHRIS HALLINAN	BICC Network Solutions Inc	508 842 7300
Mr. VICTOR HAYES	NCR Systems Engineering B.V	+31 3402 76528
Mr. HAMID R. HEIDARY	C-COR ELECTRONICS INC	814 238 2133
Mr. BOB HEILE	WIN Systems	508 689 3995
Mr. VIC HSIAO	Toshiba America Information Systems Inc	714 587 6157
Mr. CHIA-CHI HUANG	IBM Research	914 945 3286
Mr. LARRY van der JAGT	Knowledge Implementations Inc	914 986 3492
Mr. DONALD C. JOHNSON	NCR Corporation WHQ 5E	513 445 1452
Mr. MICHAEL MASLEID	Inland Steel Co. MS2-465	219 399 2454
Mr. STEVE MESSENGER	Telesystems SLW inc	416 441 9966
Mr. JAMES. NEELEY	IBM	919 543 3259
Mr. PAUL ODLYZKO	Motorola Inc.	708 632 3135
Mr. ANDRZEJ PARTYKA	PA-Consulting	609 426 4046
Mr. CHANDOS RYPINSKI	LACE Inc.	707 765 9627
Mr. WALTER SCHREUER	WIN Systems	508 689 3995
Mr. NATHAN SILBERMAN	Symbol Technologies Inc	408 446 2210
Dr. RAYMOND SIMPSON	O'Neill Communications Inc	609 924 1095
Mr. KIWI SMIT	NCR Systems Engineering B.V.	+31 3402 76479
Mr. WALT SONNEVILLE	Sonneville Associates	301 869 4460
Mr. OREST L. STOROSHCHUK	General Motors of Canada	416 644 6994
Mr. BRUCE TUCH	NCR Systems Engineering B.V.	+31 3402 76527

Sept 1990, First Social

Bruce Tuch
Michael Masleid
Vic Hayes
Don Johnson
Orest Storoshchuk
Kiwi Smit
Jim Neeley
Larry van der Jagt
Jonathon Cheah

January 1991, Gaithersburg
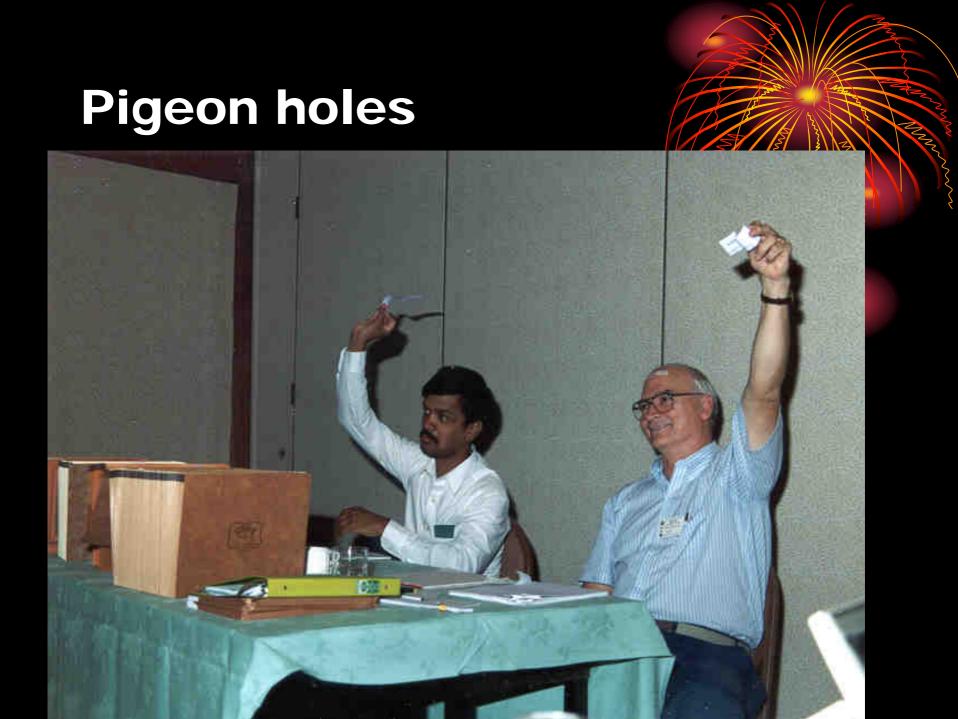
1991, computers are rare

Here is one, and Tom Phinney came with a MAC
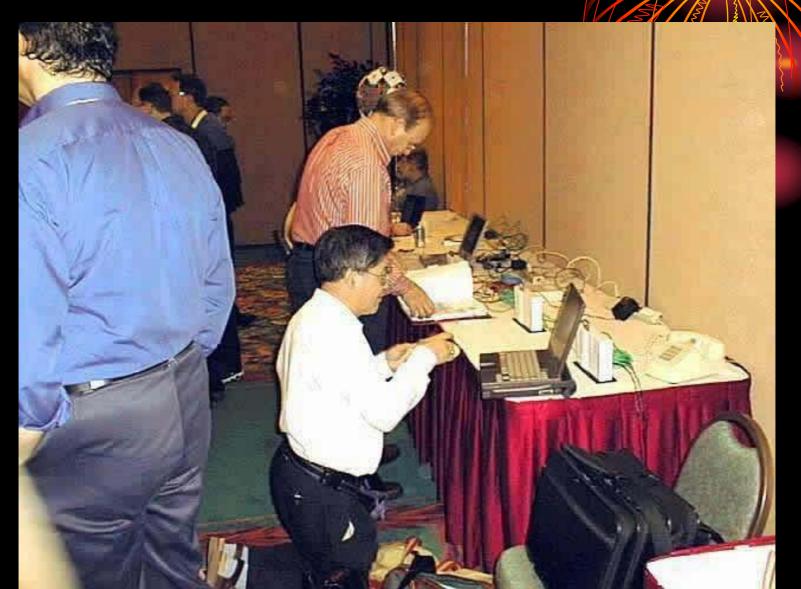
And here a heavy Dell

Pigeon holes
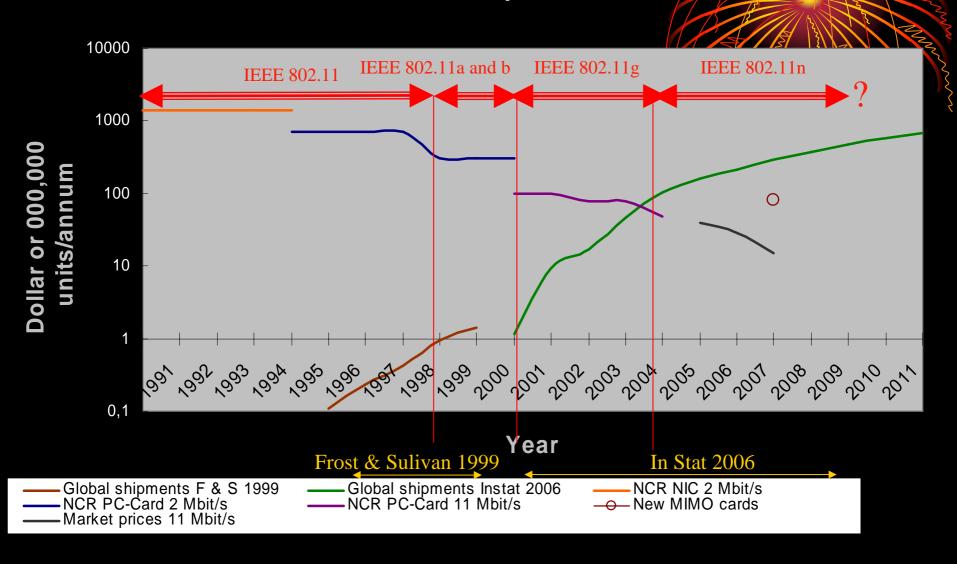
Or IEEE 802.11 network

Champagne for the coming and going men (and all attendees)

IEEE 802.11 and Wi-Fi
A global success

Price and shipments

Dollar or 000,000 units/annum vs **Year**

IEEE 802.11   IEEE 802.11a and b   IEEE 802.11g   IEEE 802.11n   ?

Frost & Sulivan 1999   In Stat 2006

Legend:
- Global shipments F & S 1999
- Global shipments Instat 2006
- NCR NIC 2 Mbit/s
- NCR PC-Card 2 Mbit/s
- NCR PC-Card 11 Mbit/s
- New MIMO cards
- Market prices 11 Mbit/s

Kofi Annan Expresses a Bold Wi-Fi Vision

- **"We need to think of ways to bring wireless-fidelity applications to the developing world so as to make use of unlicensed radio spectrum to deliver cheap and fast Internet access."**
  Kofi Annan, November 5th, 2002

Volunteers teaching how to set-up community networks

Like the one in Dharamsala, India, residence of the Tibet government in excile

THE DALAI LAMA

MESSAGE

I am very happy to offer my encouragement and support to the Air-Jaldi Wireless Summit to be convened in Dharamsala this coming October. Improved access to the Internet is very important for the Tibetan people, and for all peoples of the developing world. The Internet's contribution to the diffusion and dissemination of knowledge and information is truly remarkable. By itself the Internet cannot feed the poor, defend the oppressed or protect those subject to natural disasters, but by keeping us informed it can allow those of us who have the opportunity to give whatever help we can.

The Air-Jaldi Wireless Summit promises to be a significant event, bringing together many people from different parts of the world to focus on cutting edge modes of communication. I am impressed to know that the fine work done here on the Dharamsala mesh network will attract so many distinguished guests.

I offer my greetings to everyone attending the Air-Jaldi Wireless Summit and pray that the fruits of your good work will be far-reaching and long lasting.

May 24, 2006

I am very happy to offer my encouragement to the Air-Jaldi Summit.

Improved access to the Internet is very important for the Tibetan people, and for all peoples of the developing world.

By itself Internet's can not feed the poor, defend the oppressed or protect those subject to natural disasters, but by keeping us informed it can allow those of us who have the opportunity to give whatever help we can.
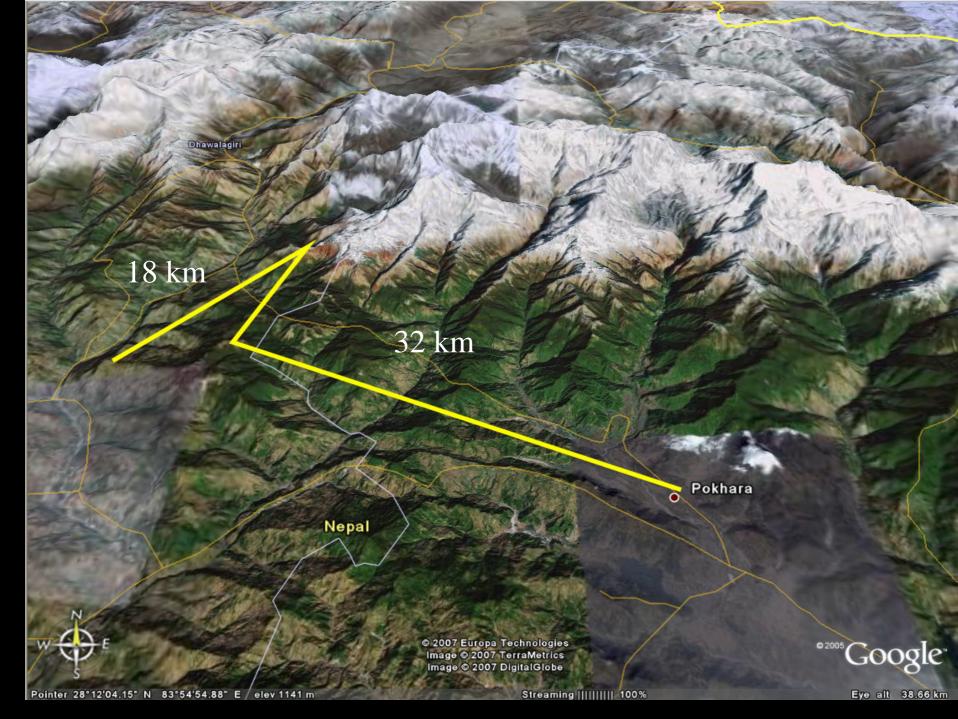
The conference group picture

Last day test of the learned lessons

Node of Air-Jaldi network at the foot of the Himalayas, Monkey-proof and solar powered

Nepal Wireless Networking Project

Run by Himanchal Higher Secondary School, Myagdi

Nepal

One of the nodes in Nepal

Uses of the Nepal Network
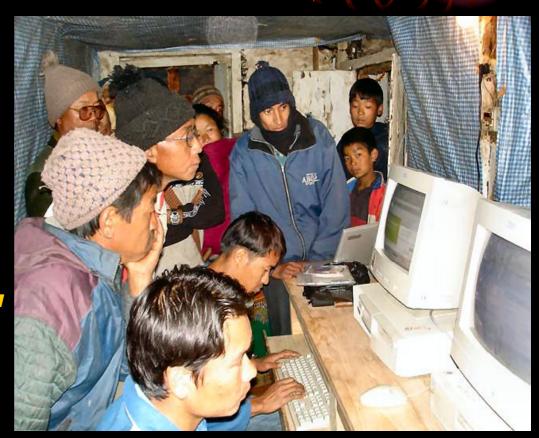
- **E-mail, Internet Browsing, Chatting**
- **Post messages, announce-ments, stories, etc in the bulletin board**

Mahabir Pun, 2006

Uses of the Nepal Network

- **Local PC-PC telephone system**
- **STD and ISTD call through Nepal Telecom Line**

Mahabir Pun, 2006

Uses of the Nepal Network

- **Reference materials for students and teachers**
- **Live tele-**
- **teaching**

Nepal Wireless Classroom 2006-04-22

Mahabir Pun, 2006

Uses of the Nepal Network

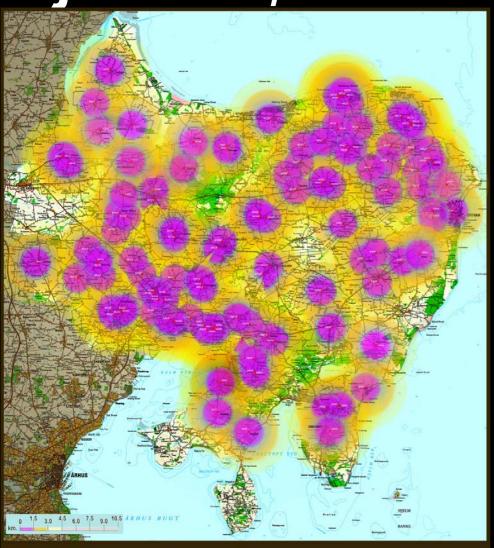- **Telemedicine with Om Hospital in Pokhara**

Mahabir Pun, 2006

Final remark Nepal Network

- **More information: http://www.nepalwireless.net/**
- **5 Full time jobs, 3 part time jobs**
- **Mahabir Pun - Team Leader**
- **Presentation to Parliament resulted in de-licensing of spectrum**
- **Won the Ramon Magsaysay award 2007 for his work in setting up and using the Nepal Wireless Network**
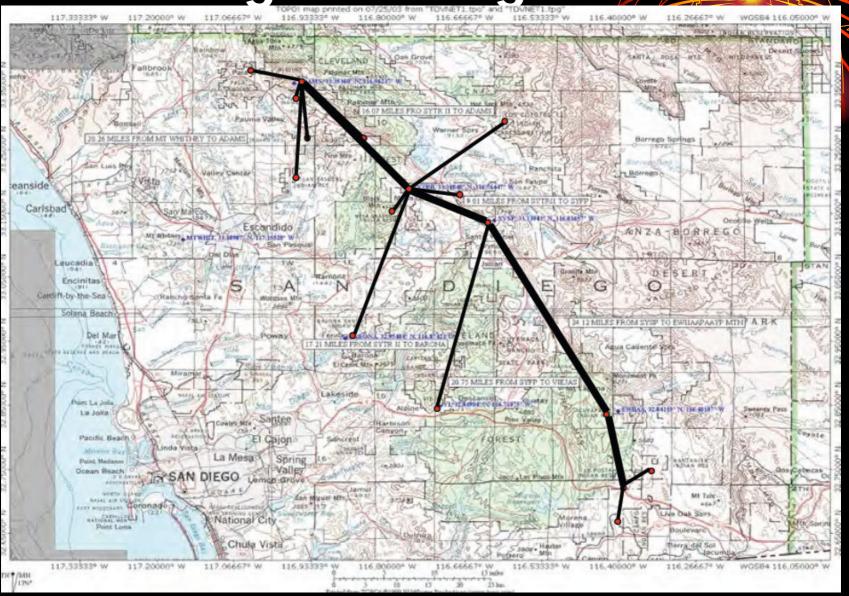
Mahabir Pun, 2006

Djursland, Denmark

Purple: within 1.5 km from antenna
Orange: within 3 km from antenna
Yellow: within 5 km from antenna

- ✓ 5000 connected households
- ✓ ISP get all business to Internet
- ✓ Without any investment in infrastructure

Nielsen, DIIRWB, 2006
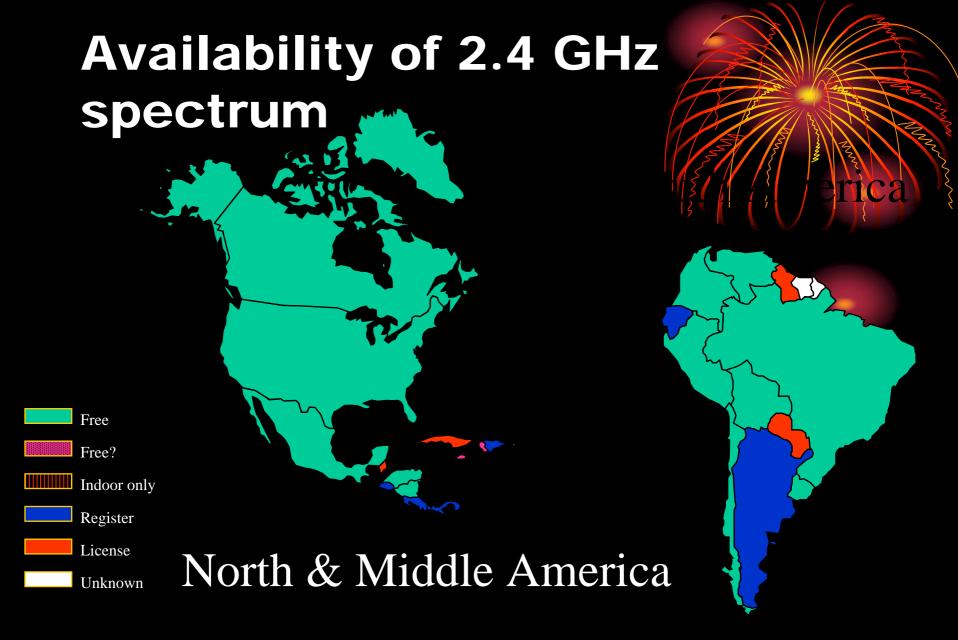
Tribal Digital Village Network

License-exempt spectrum is necessary

🟩	Free
🟪	Free?
🟧	Indoor only
🟦	Register
🟥	License
⬜	Unknown

- **Let us have a look around the world for 2.4 GHz**

Availability of 2.4 GHz spectrum

Legend:
- Free
- Free?
- Indoor only
- Register
- License
- Unknown

North & Middle America

Availability of 2.4 GHz spectrum

Middle East

Europe

Free	
Free?	
Indoor only	
Register	
License	
Unknown	

Availability of 2.4 GHz spectrum

Free

Free?

Indoor only

Register

License

Unknown

Asia

Australia

Availability of 2.4 GHz spectrum

Africa

Free	(teal)
Free?	(magenta)
Indoor only	(striped)
Register	(blue)
License	(red)
Unknown	(white)

Are we done yet?

- **Spectrum to be license-exempt around the globe**

- **Continued improvement in IEEE 802.11**

- **Open Hardware for further user-innovation and further price reductions**