

3.4

AMPS

TACS

GSM

DAMPS

CDMA



VODAFONE •

Martin Wiles
Senior Project Manager Asia-Pacific

Vodafone Group International Ltd

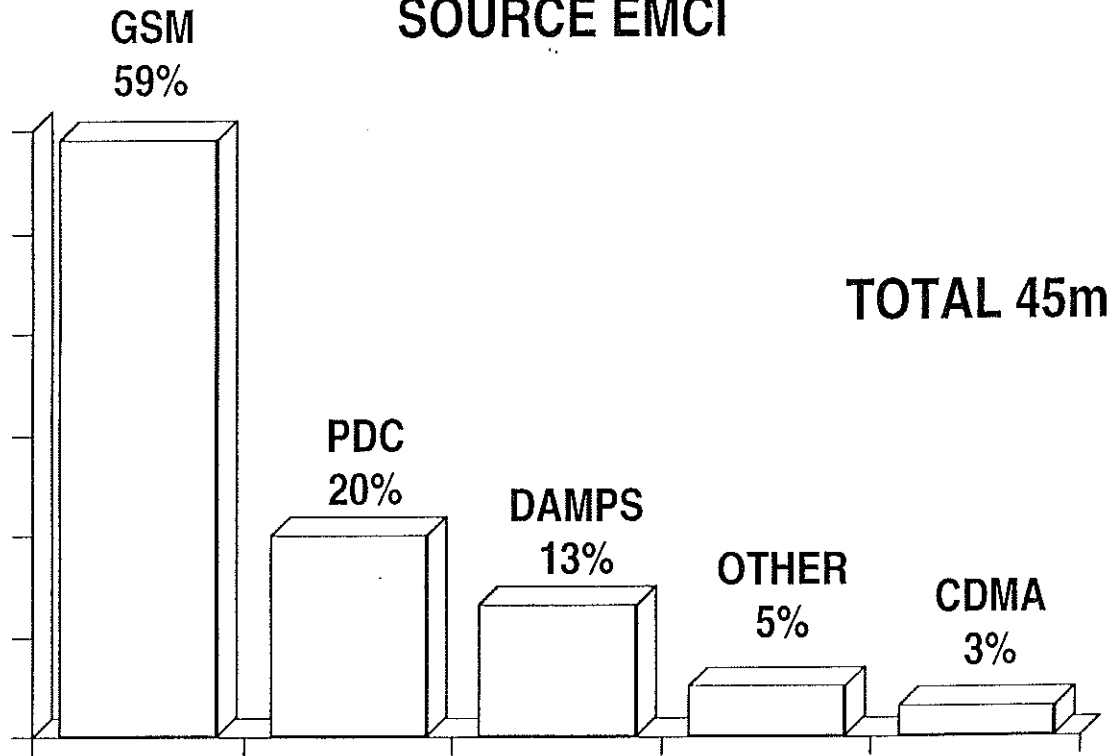
(incorporated with limited liability in England)

3103 Citibank Tower, 3 Garden Road

Central, Hong Kong

Tel: (852) 523 8287 Fax: (852) 523 9620

1999 WORLD DIGITAL CELLULAR SUBSCRIBERS SOURCE EMCI



VODAFONE

Why GSM was developed

- AMPS / TACS / NMT etc.
- Quadripartite All Europe
- No roaming
- Fraud
- Capacity
- Fully imported

GSM

- Full roaming
- Fraud protected
- Capacity improved
- Local manufacture

VODAFONE

INVESTMENT PER SUB

AMPS = \$825

GSM = \$675

1/2 rate = \$390

CDMA = \$600?

Net effect: Dramatic capex reduction for GSM

VODAFONE

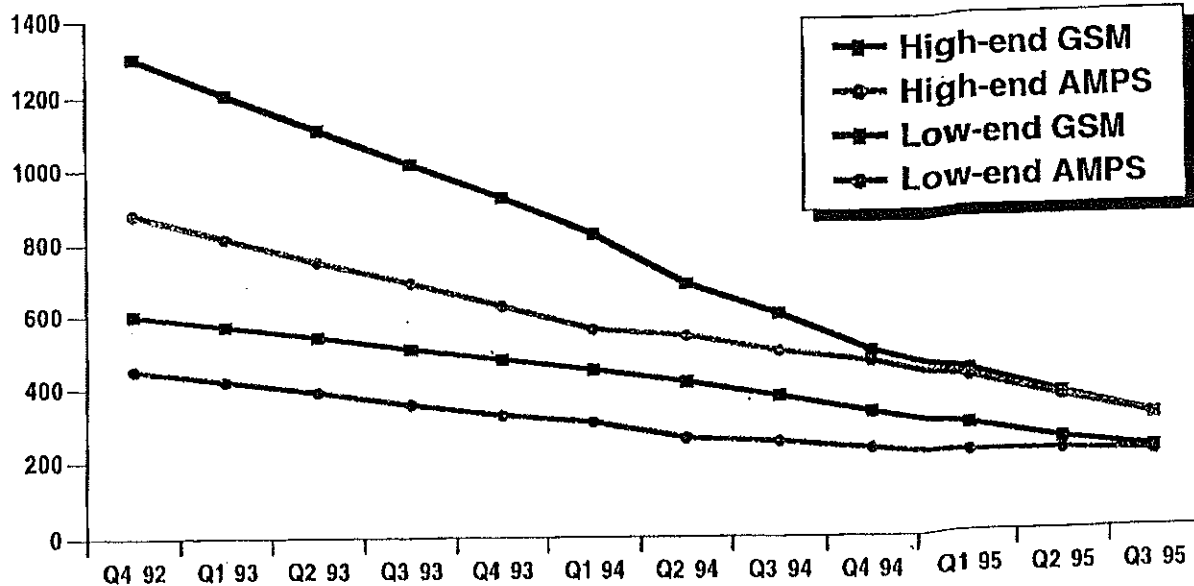
DEALER SALE

	Analogue	Digital
Coverage	✓	✓
Handset Price / Size	✓	✓
Battery Life	✓	✓ ✓
Roaming	x	✓ ✓
SMS	x	✓ ✓
Future	x	✓ ✓
Data / Fax	x	✓ ✓
Fraud Protected	x	✓ ✓
Encryption	x	✓ ✓
Commitment of 3 Networks	x	✓ ✓
Swap Service	x	✓

VODAFONE

HANDSET PRICE CONVERGENCE

US Dollars



VODAFONE

MARKET SHARE

	GSM	ANALOGUE
Finland	55	45
Switzerland	55	45
Sweden	63%	37%
Hong Kong	90%	10%
Denmark	94%	6%
France	100%	Negative
Germany	100%	Negative
Luxembourg	100%	Negative
Norway	33	66
UK	17	83
Australia	15	85

VODAFONE

WHY NOT CDMA



VODAFONE

WHY NOT CDMA?

Because it doesn't exist

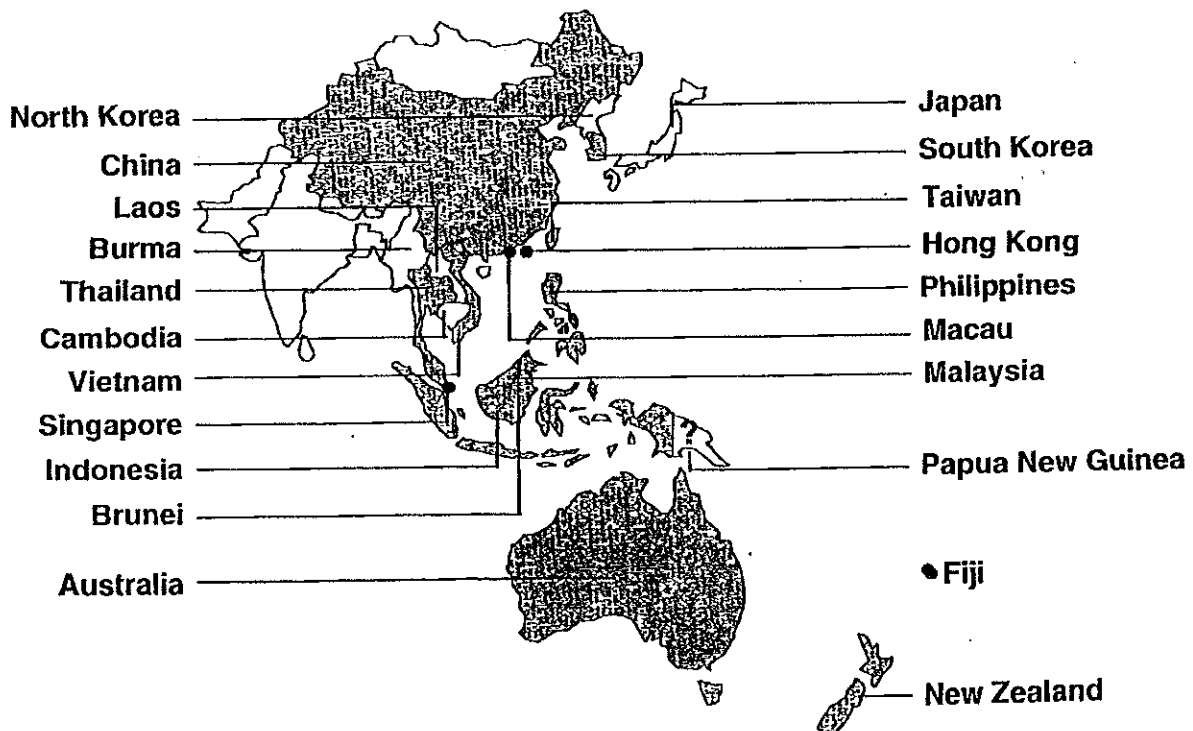
VODAFONE

MISCONCEPTIONS

- Analogue networks are cheaper - Wrong
- Analogue now, digital later - Wrong
- Analogue will evolve - Wrong
- Digital is too complex - Wrong
- Digital 1M vs analogue 26M, analogue wins - Wrong
- Enhancements = instability - Wrong
- Enhancements not back compatible - Wrong

VODAFONE

GSM NETWORKS



VODAFONE