

Comparing SMS and WAP in Europe with i-mode in Japan

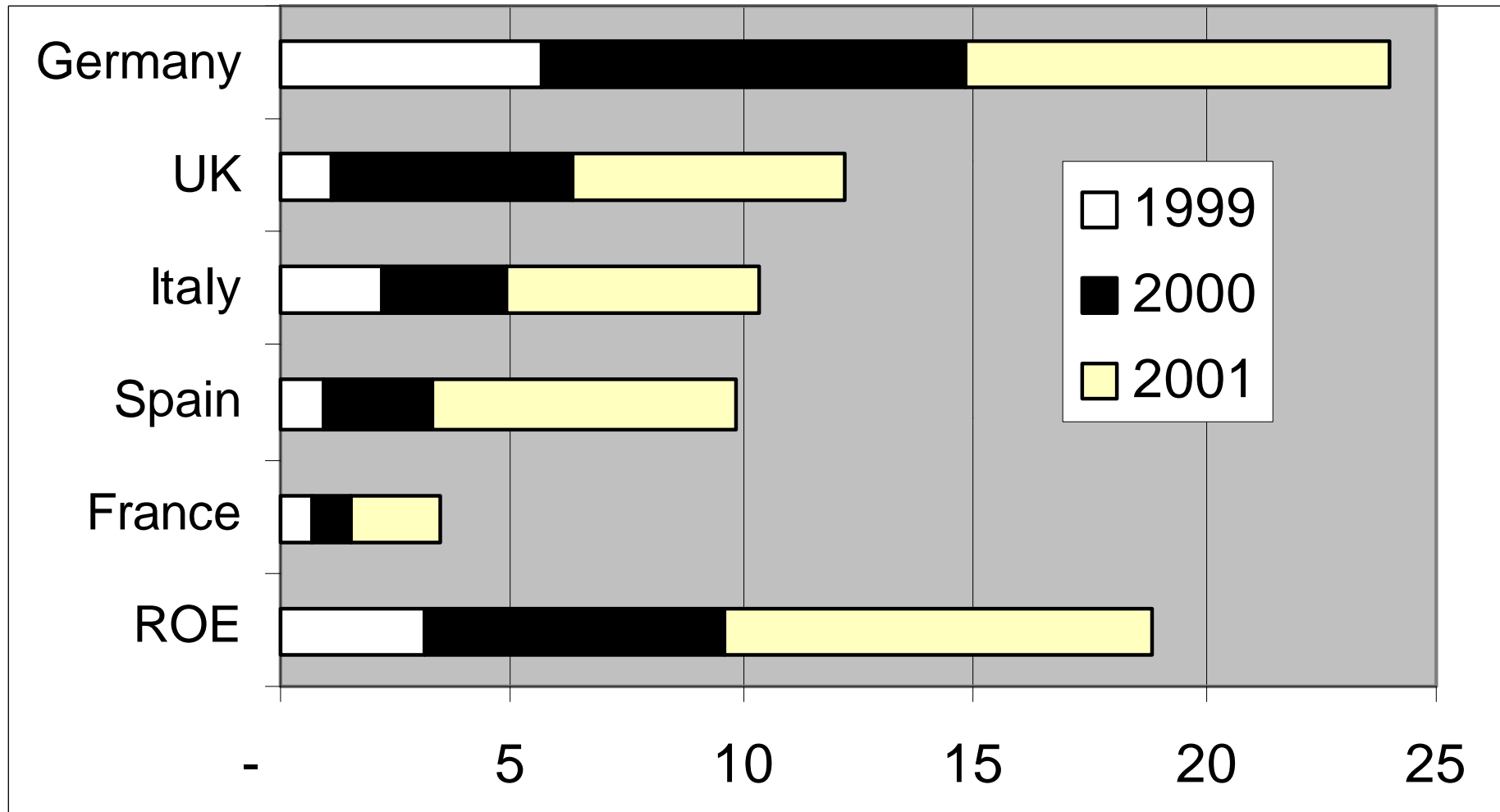
**Dr Carl Marcussen,
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at: Next Generation WAP Services & i-mode
by: IIR Telecoms & Technology, www.iir-telecoms.com
21st to 23rd January 2002
Kensington Hilton, London

Some of the slides were amended on 8th Feb. 2002, 1 on 8th June '02, 1 on 23 July '02.

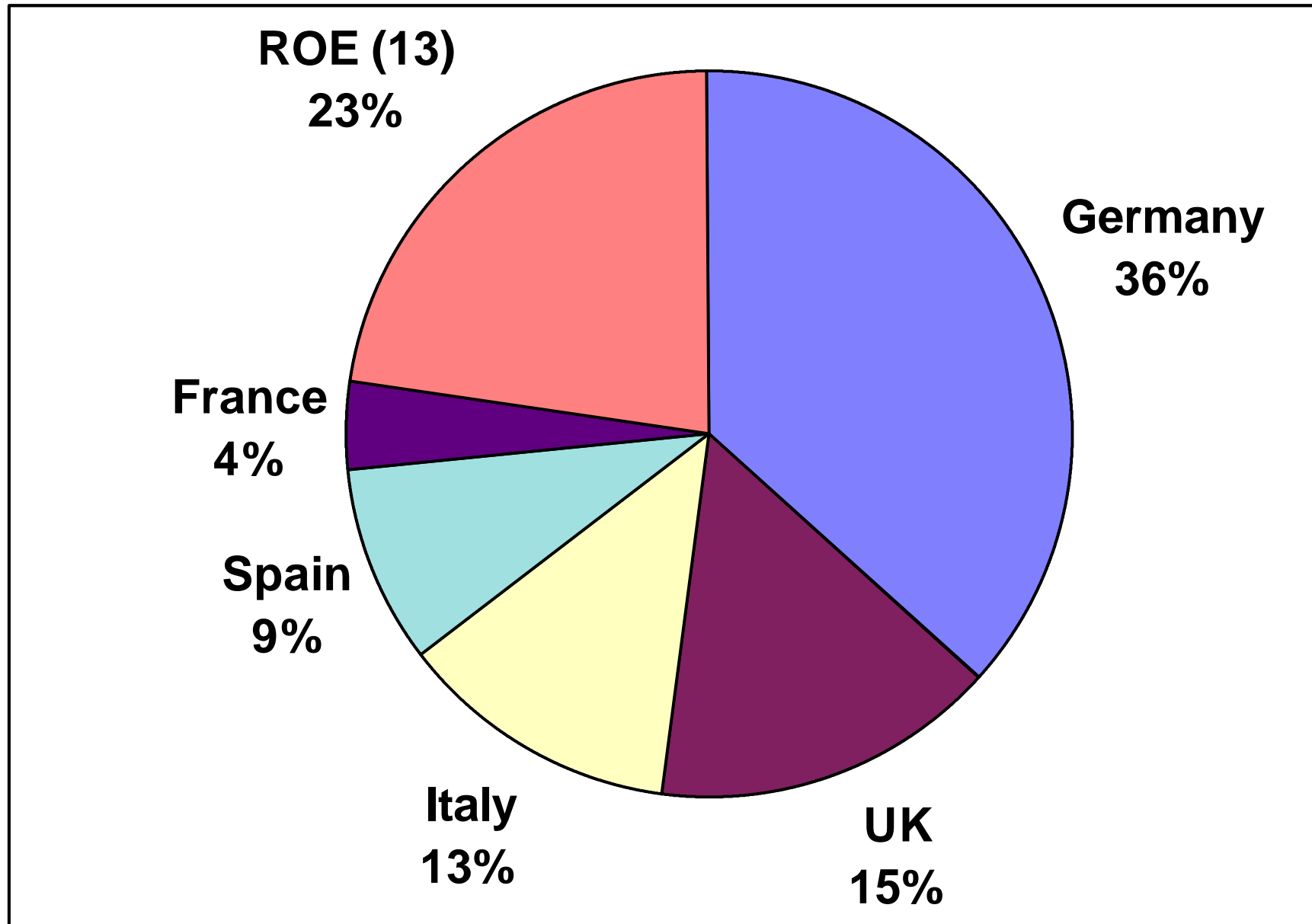
Determining usage rates
for SMS and WAP
services in Europe and
comparing to the
subscriber levels for
i-mode in Japan

Billions of SMS sent per year in W. Europe - 2001: 78.7 bn.; Up 95% from 40.4 bn. in 2000.



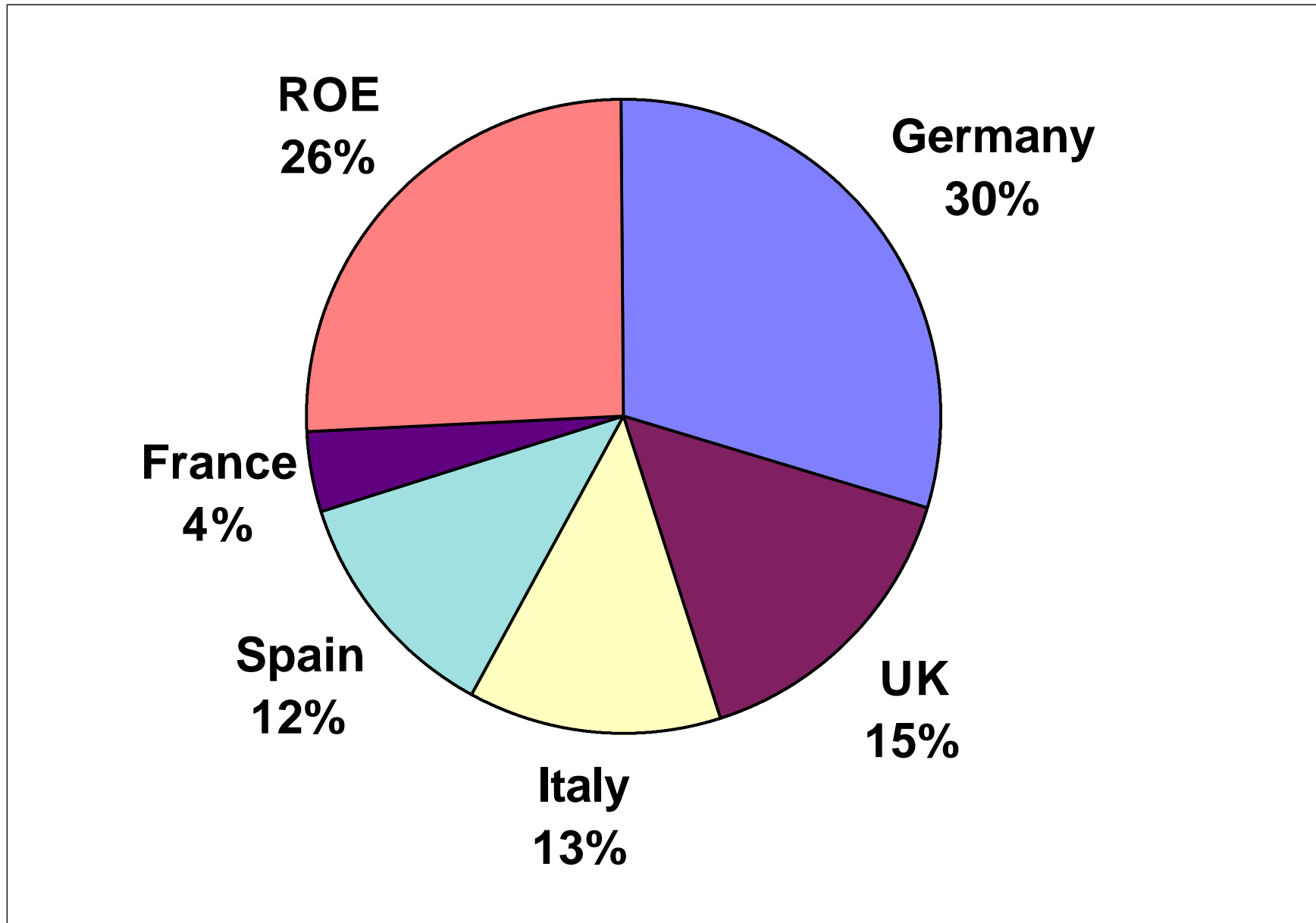
Source: Carl H. Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

SMS by country in W. Europe, year 2000: ~40 billion!



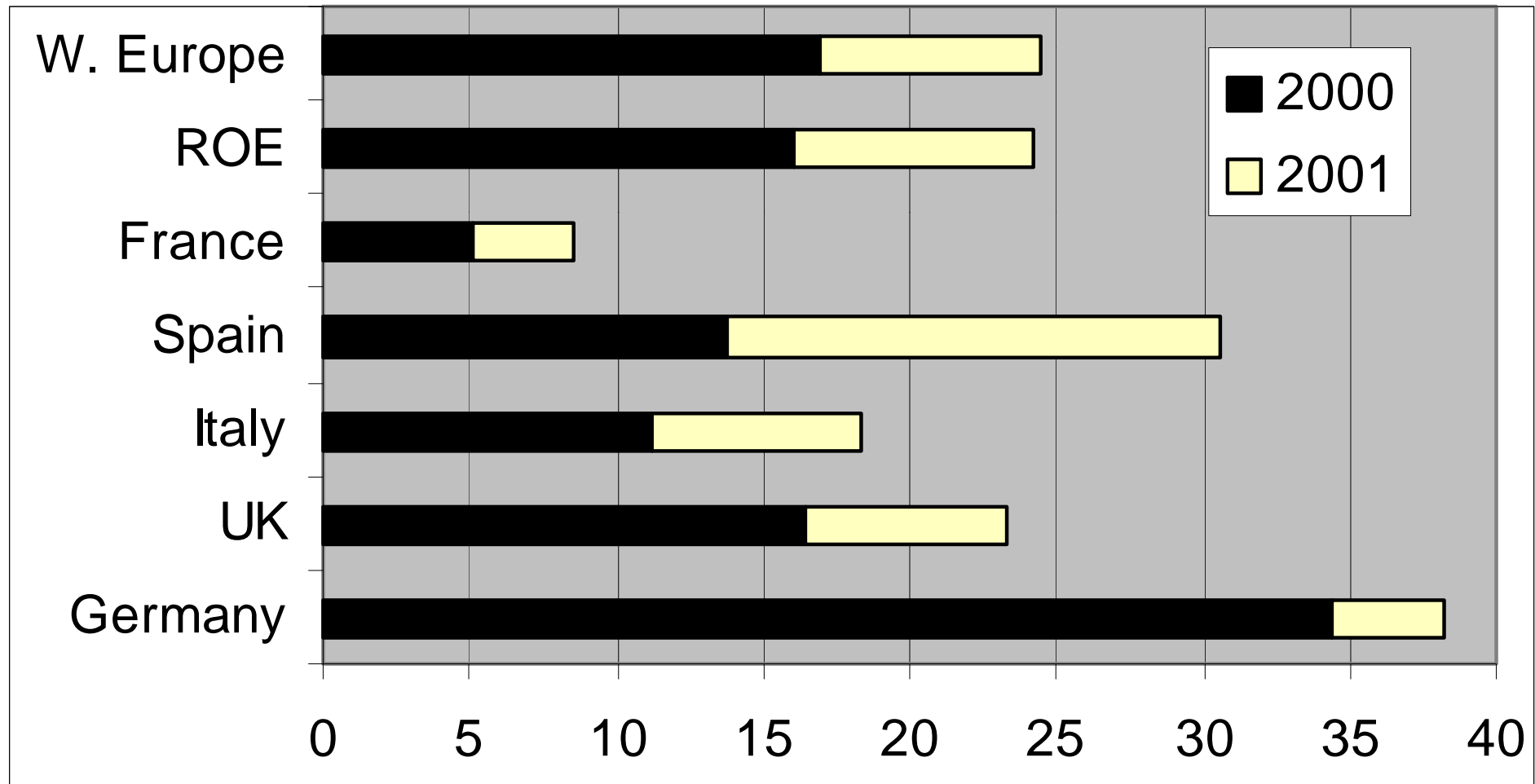
Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 21 Jan. 2002.

SMS by country in W. Europe, year 2001: ~79 billion!



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

SMS per M phone per month - W. Europe 2000 and 2001



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

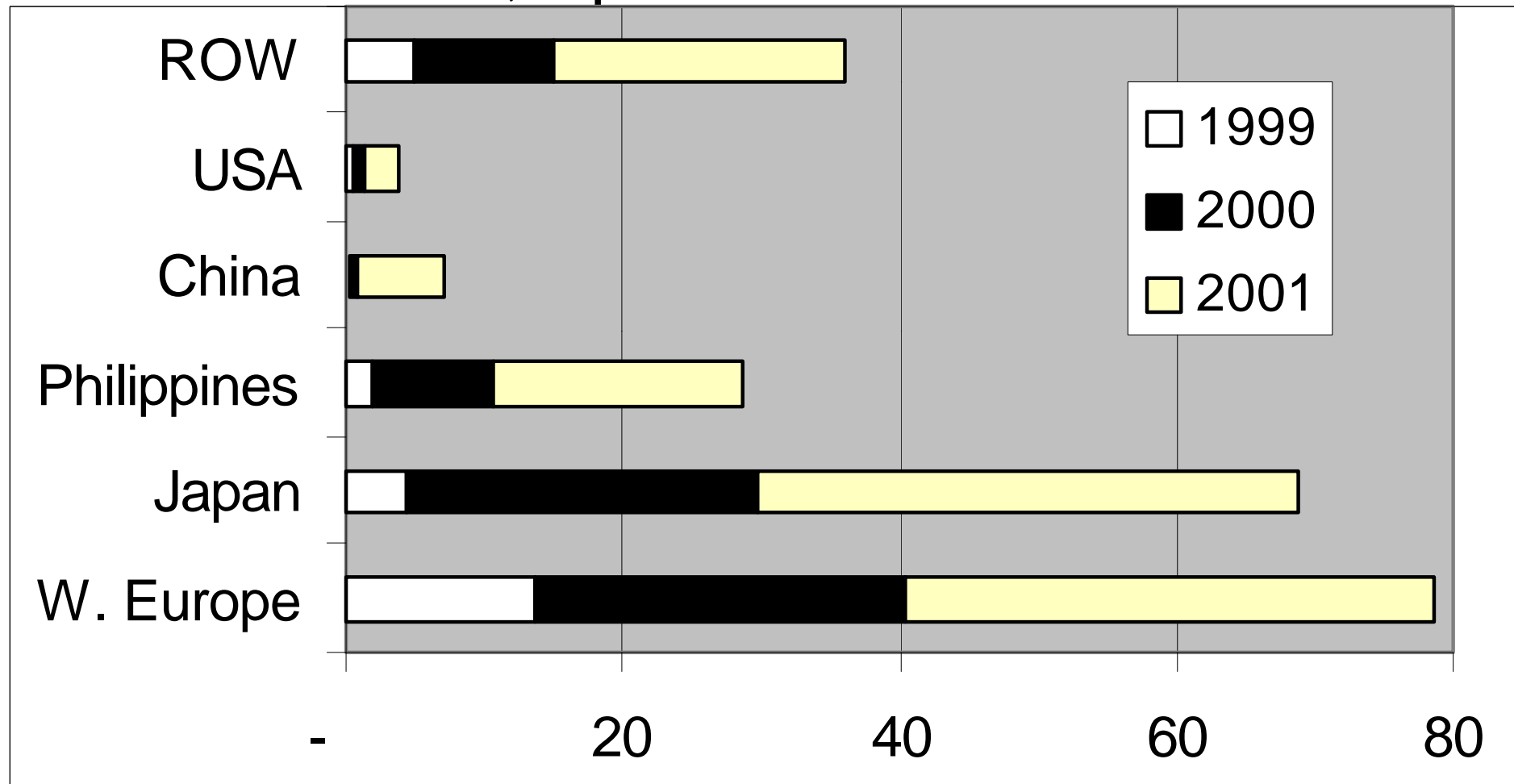
Overall ranking by number of SMS per user per month in 2001 in W. Europe:

1. Switzerland	49
2. Ireland	47½
3. Norway	47
4. Germany	38
5. Greece	37

W. Europe	24

Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 June 2002.

Billions of mobile short text messages sent p.a.,
by country/region in the world,
2001: 223 bn.; Up 127% from 98 bn. in 2000.



Source: Carl H. Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

98 billion mobile short text messages exchanged in the world, year 2000

including 1/3 in non-GSM networks, i.e. Japan and S. Korea
(probably with 30 bn. and 3.6 bn. SMS-like mostly *short* mobile text messages each).

Comparison 1 (re. SMS' year 2000):

One wellknown graph also adds up to 97 bn. for year 2000:
<http://www.gsmworld.com/technology/sms/smsggraph.shtml>
However, the GSM Association hold that 97 bn. SMS' were
sent across GSM networks alone! So, in effect, the GSM
Association have been able of locate 50% more short two-
way text messages in the year 2000, than the writer. One
explanation for the difference may be that the writer has not
carried out and documented his research carefully enough
(see earlier graphs, though).

Comparison 2 (re. SMS' year 2000): :

Quote from the *media centre* at the Vodafone.com website, in the top right corner of every press release from the year 2001 and earlier. It is a statement which has been there throughout 2001, and is still there in January 2002:

Quote: "**Fact: 200 billion text messages were sent globally in 2000**".

http://www.vodafone.com/media/press_releases/index_2001_12.htm

Fact according to this writer: **98 billion SMS-like messages in 2000**, including Japan/Korea, i.e. about 100 billion.

By this measure the writer is 100% off the right result (!) .. perhaps ..

The press department of Vodafone.com has been contacted by the writer three times: Middle of 2001, and end of 2001 and middle of January 2002. It has been clearly mentioned to them each time what he thinks is an error: The 200 bn. is some 100% higher than the true figure – which is about 100 bn. But even so, the statement remains there. So, of course Vodafone does believe that the statement holds true. – The writer does not think so, though. Having searched hard and long to locate the 100 bn., it is definitely impossible to find 100 bn. more.

PS: The statement is still on the Vodafone site by 23 July (Media Centre under Investor Relations, for any press release from Dec. 2001 back to July 1999).

About 223 billion mobile short text messages exchanged in the world, year 2001 (estimate)

including some 80 bn. non-GSM SMS-like short mobile text messages: i.e. over 70 bn. in Japan, and 9 bn. in S. Korea.

Without the non-GSM markets Japan and S. Korea, the estimate for the year 2001 would be 'just' $223-80=$ 143 bn.

Comparison re. SMS' year 2001

Thus, at this moment there is a discrepancy - of as many as 107 bn. SMS - between the number of short two-way mobile text messages exchanged in the world year 2001, according to the writer's estimate (223 bn. minus some 80 bn. non-GSM = 143 bn.), and a revised forecast of 250 bn. from the GSM Association (11 Oct. '01) , for GSM networks only.

The corresponding graph even adds up to 257 bn. SMS' for the year 2001:

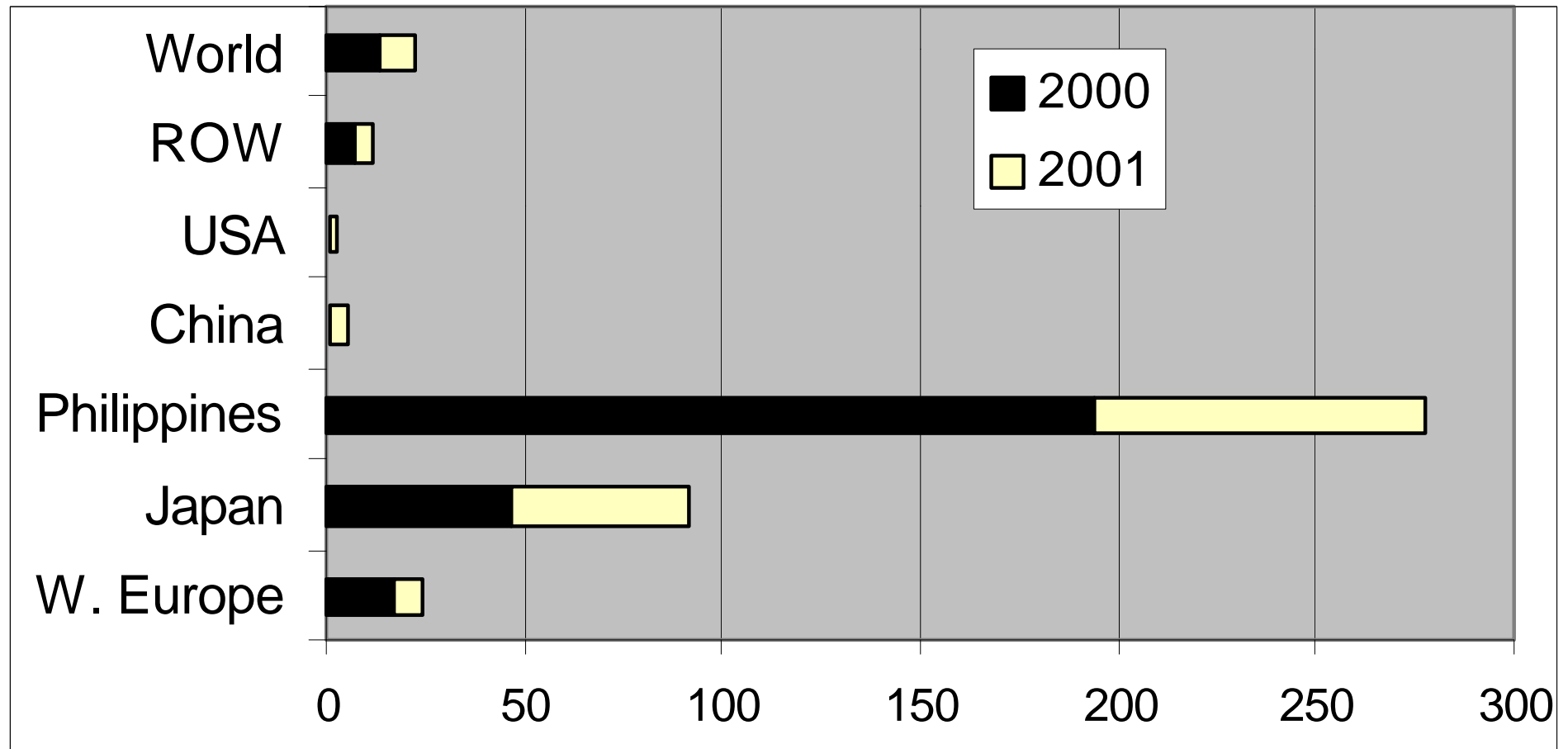
http://www.gsmworld.com/news/press_2001/press_releases_28.html

Unfortunately the mentioned source does not include any geographic break-down.

If a geographic break-down of the claimed – and possibly on the dot correct - 250 bn. (or 257 bn. which the graph indicates) were published, it would be possible to find out if the 225 bn. – including all types of mobile networks (*of which about 143 bn. in GSM networks only*) - or the 250 bn. in GSM networks only is correct. – The difference is certainly very significant indeed.

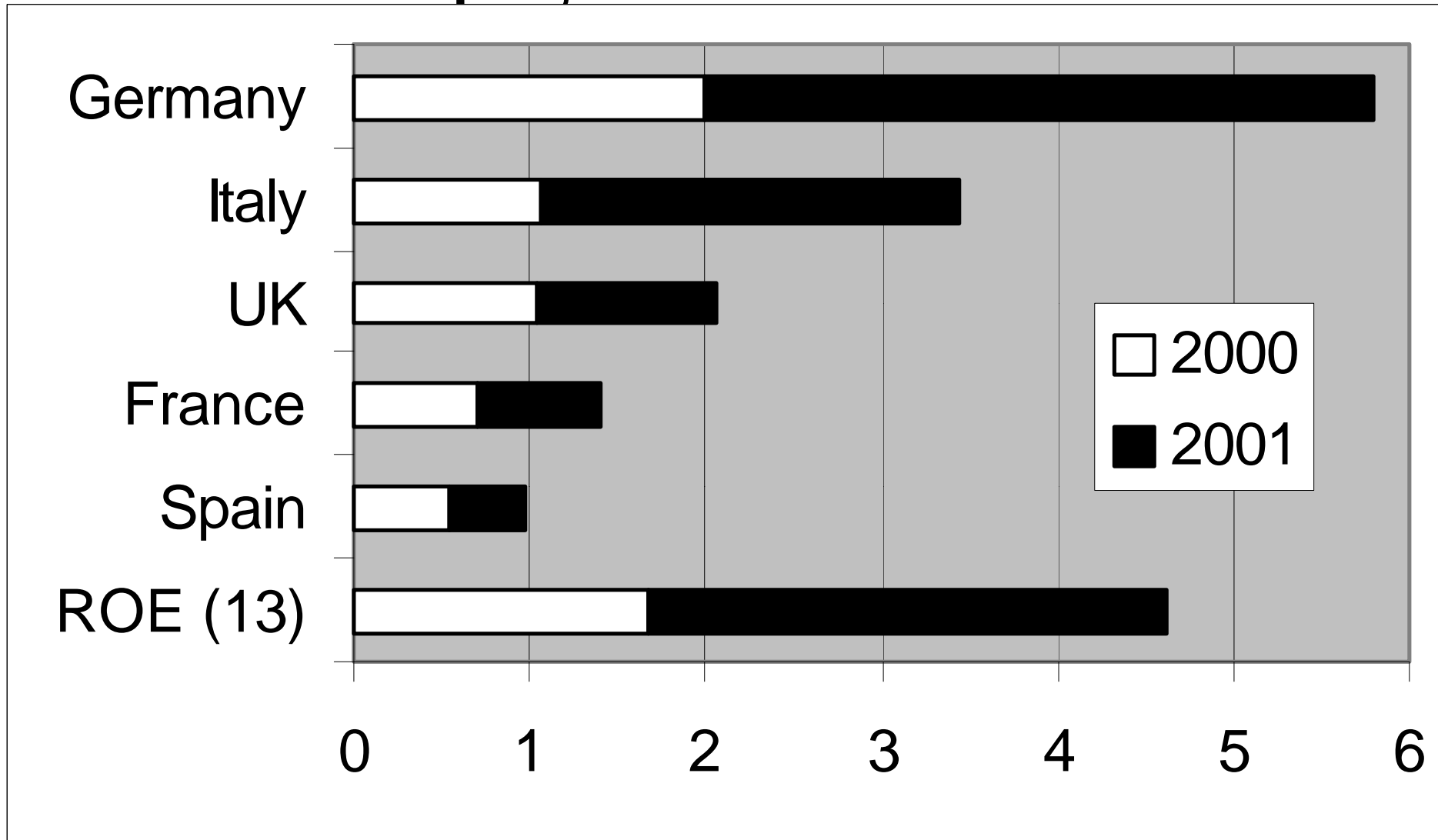
This writer's current estimate is 223 bn. for all networks in 2001.

Mobile short text messages sent per M phone per month - by country/region in the world, 2000 and 2001



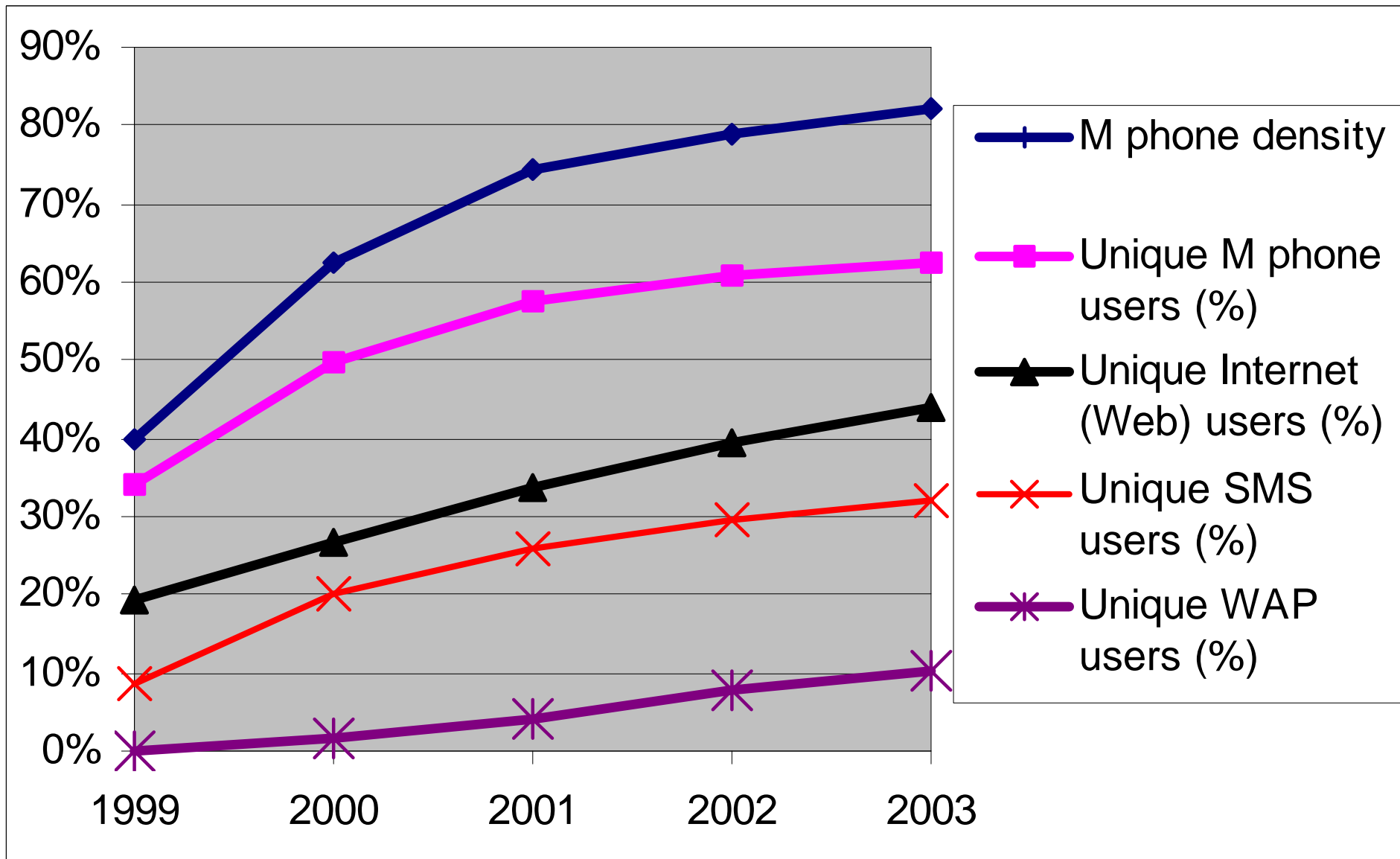
Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

WAP users by country in W. Europe, 2000 and 2001



Source: Carl H. Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 23 July 2002.

Mobile phone – SMS - WAP – Web usage rates in Western Europe, 1999-2003



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 21 Jan. 2002.

WAP users in W. Europe

2000: 7 mill. M phones used for WAP (by 6.3 million persons)

2001: 18 mill. M phones used for WAP (by 16 million persons)

2002: 34 mill. M phones used for WAP (by 30 million persons)

2003: 47 mill. M phones used for WAP (by 41 million persons)

Population: ~400 million

i-mode users in Japan

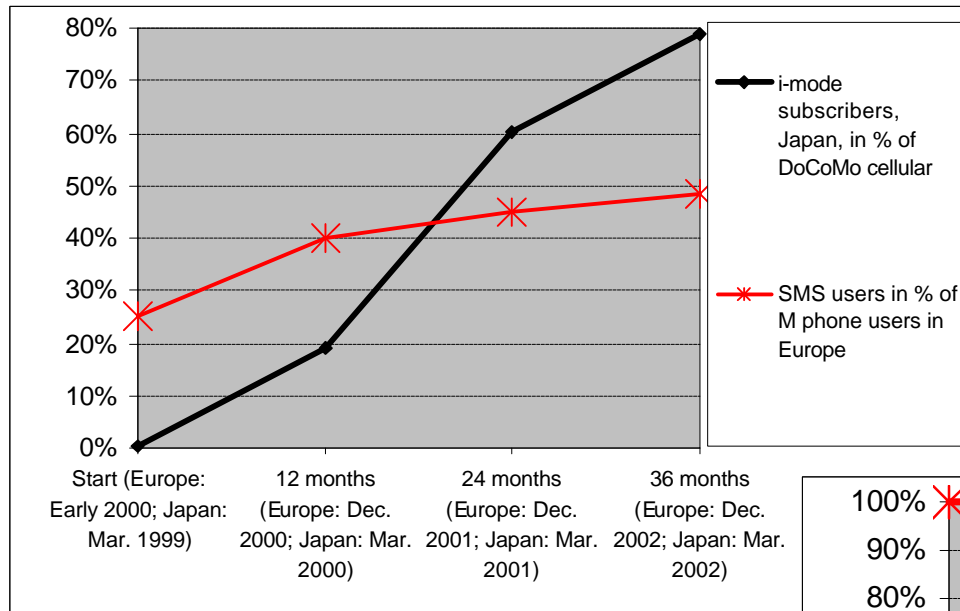
It is published on a monthly basis how many of all M phones could be used for messaging and different kinds of mobile Web usage in Japan, but we don't know how many of these actually use these functions.

Surveys are needed to indicate the actual usage!

<u>Year.month</u>	<u>i-mode sub.</u>	<u>Messaging</u>	<u>M web %</u>
2000.12	17 m (50%)	74%* of 17?	~38% of 17m?
2001.06	25 m (67%)	78%* of 25?	44%* of 25m?
2001.12	30 m (75%)	~82% of 30?	~Half of 30m?

* Mobinet #2 Jan. 2001, Mobinet #3 June 2001, by A.T.Kearney.

Comparing i-mode in Japan with SMS and WAP in Western Europe



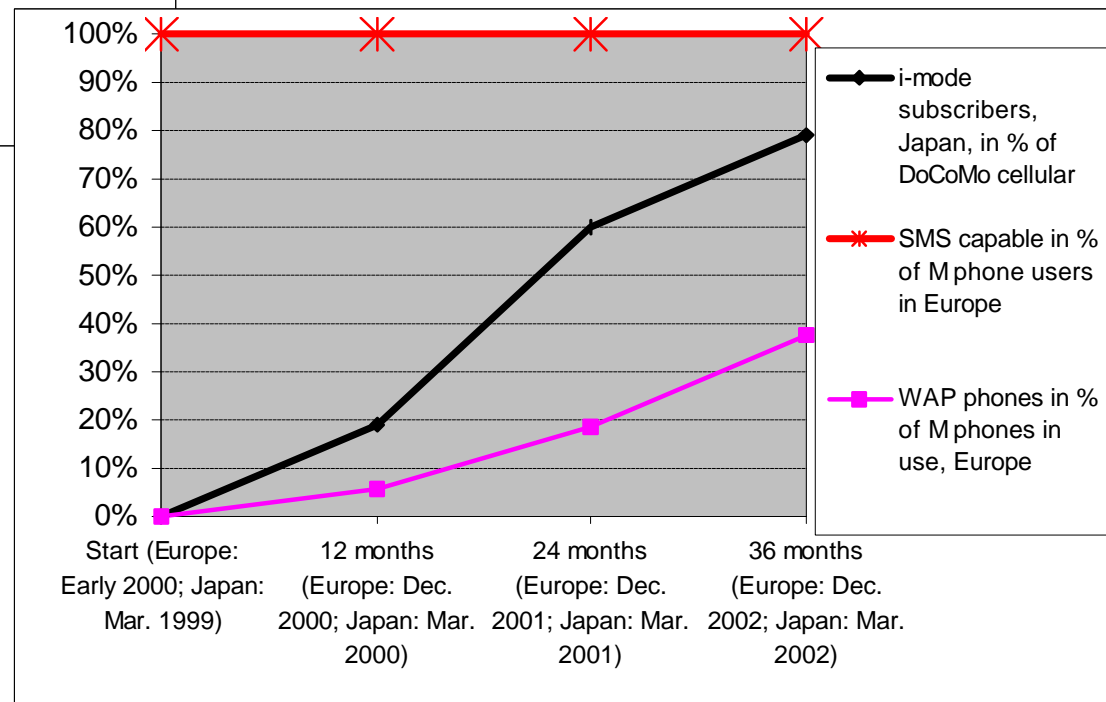
Are numbers for those

- (a) actually using i-mode being reported .. or
- (b) just those capable of using i-mode (including ~SMS)?

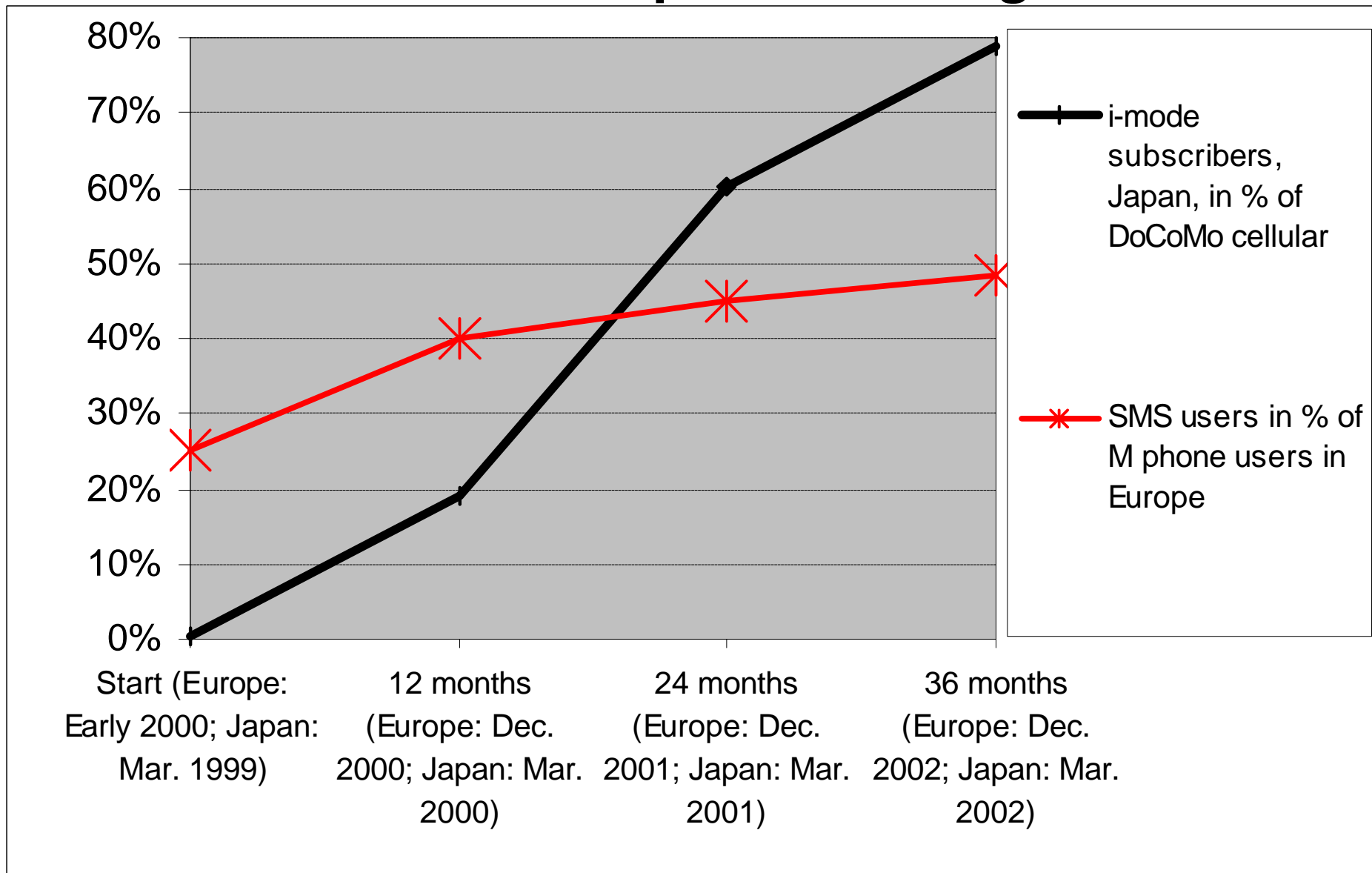
If (a) is true then the left picture is correct.
If (b) is true then the below picture is the correct one.

Comment: Is i-mode playing catch-up with SMS (in short text messaging *capability*), and is WAP in Europe in turn playing catch-up with i-mode in Japan (in partial mobile Internet access *capability*)?

Sources for i-mode: NTT DoCoMo.
For Europe: C.H.Marcussen, crt.dk

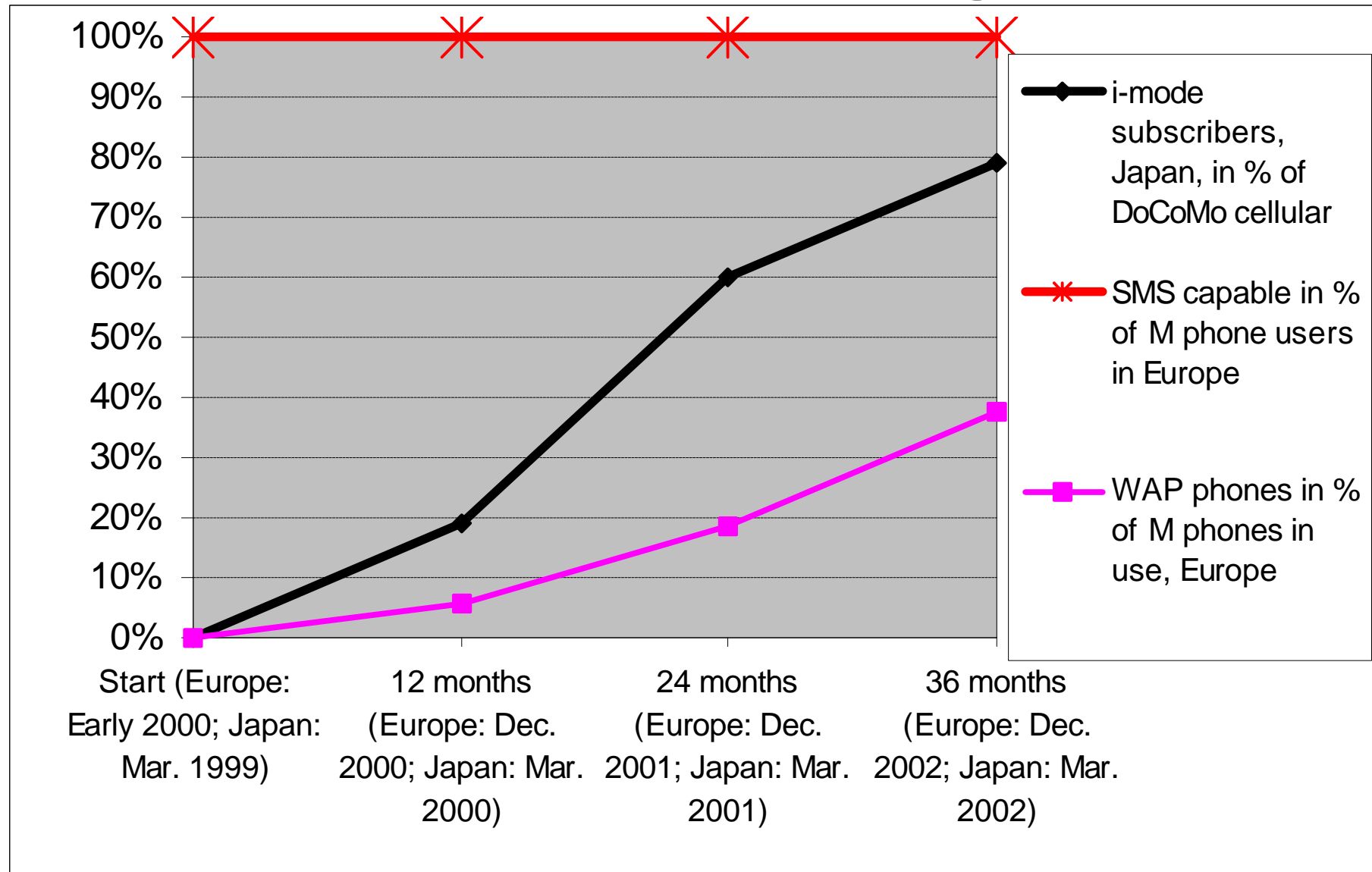


Comparing i-mode in Japan with SMS in Western Europe: The wrong version?



Sources for i-mode: Based on data from NTT DoCoMo. For Europe: C.H.Marcussen, crt.dk

Comparing i-mode in Japan with SMS and WAP in Western Europe: The right version?



Sources for i-mode: Based on data from NTT DoCoMo. For Europe: C.H.Marcussen, crt.dk

SMS, WAP, i-mode user profiles

Ranking by average age:
(eldest first)

1. WAP users in Europe
2. i-mode users in Japan
3. SMS users in Europe

Ranking by percentage of male:
(highest % first)

1. WAP users in Europe
2. i-mode users in Japan
3. SMS users in Europe

Early WAP users shared the same profile as early Internet users:
High income, high education, mainly male, etc.
SMS usage is spreading to parents and business people.

Identifying the similarities and differences in mobile data usage in Japan and Europe?

Short mobile text messaging in Japan:

NTT DoCoMo: **150m** messages per day,
not including 800m which are directed to nonexisting addresses
(InfoCom Research, 19 Nov., 2001)

This may translate to **49 bn.** messages for 2001
(~90% of 150m * 365)

Or: **111** SMS-like messages/month, 2001, NTT DoCoMo
Probably a little fewer/day for No. 2 and 3. - For all three
Japanese M network operators, approx.: **94** SMS-like
messages per reg. cellular user/month in 2001.

W. Europe, 2001: **24** SMS per reg. M user per month:
Only ¼ of the volume of NTT DoCoMo, per reg. users.

Question:

Which application has made i-mode so popular in Japan?

(the short)

Answer:

Cheap messaging!

End of story.

Price (revenue) per text message
– one significant determinant
of difference in non-voice
usage patterns:

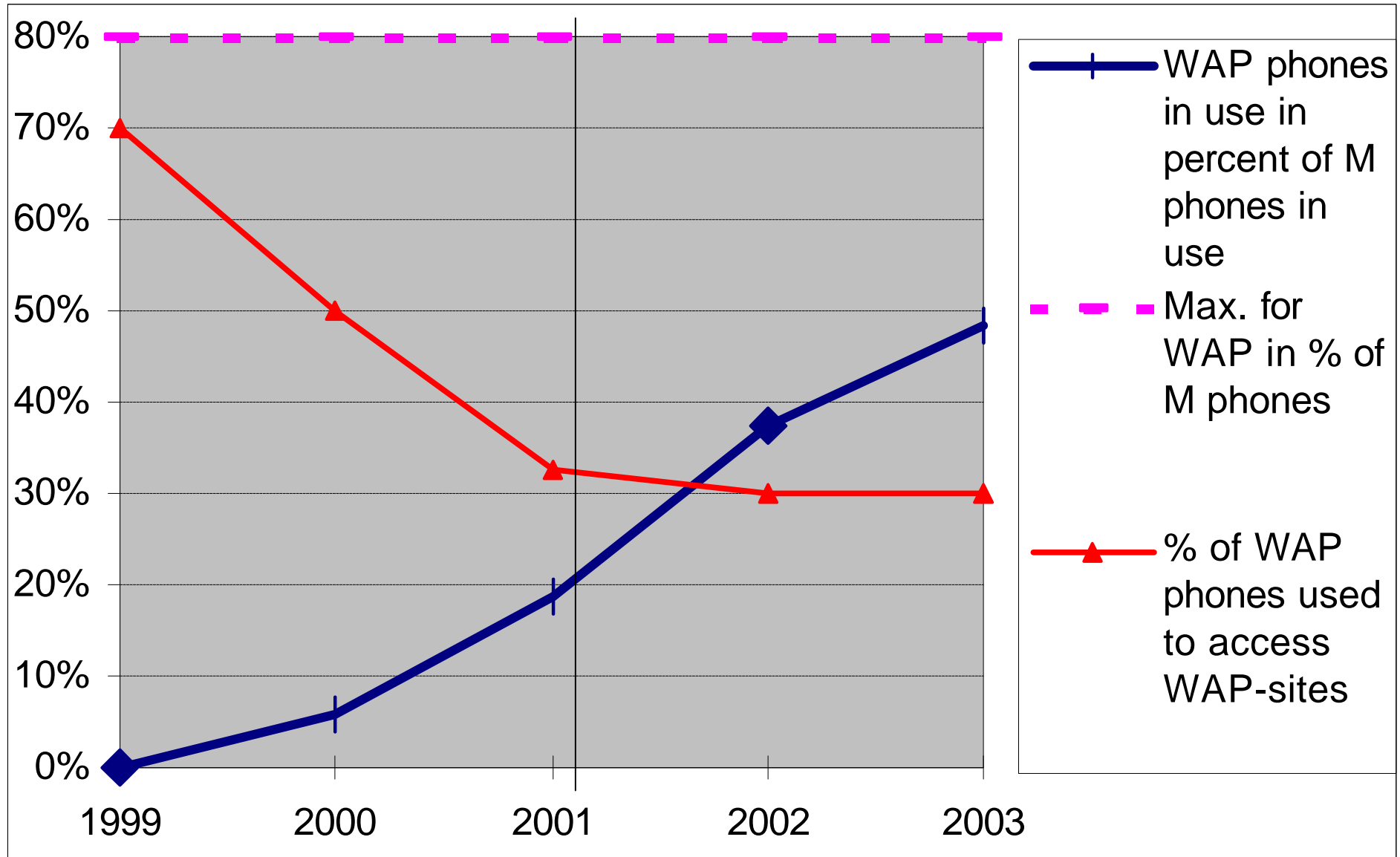
Philippines:	0.01 Euro
Japan:	0.04 Euro
W. Europe:	0.11 Euro

Note: Own year 2000 *estimates*, based on accounting data.

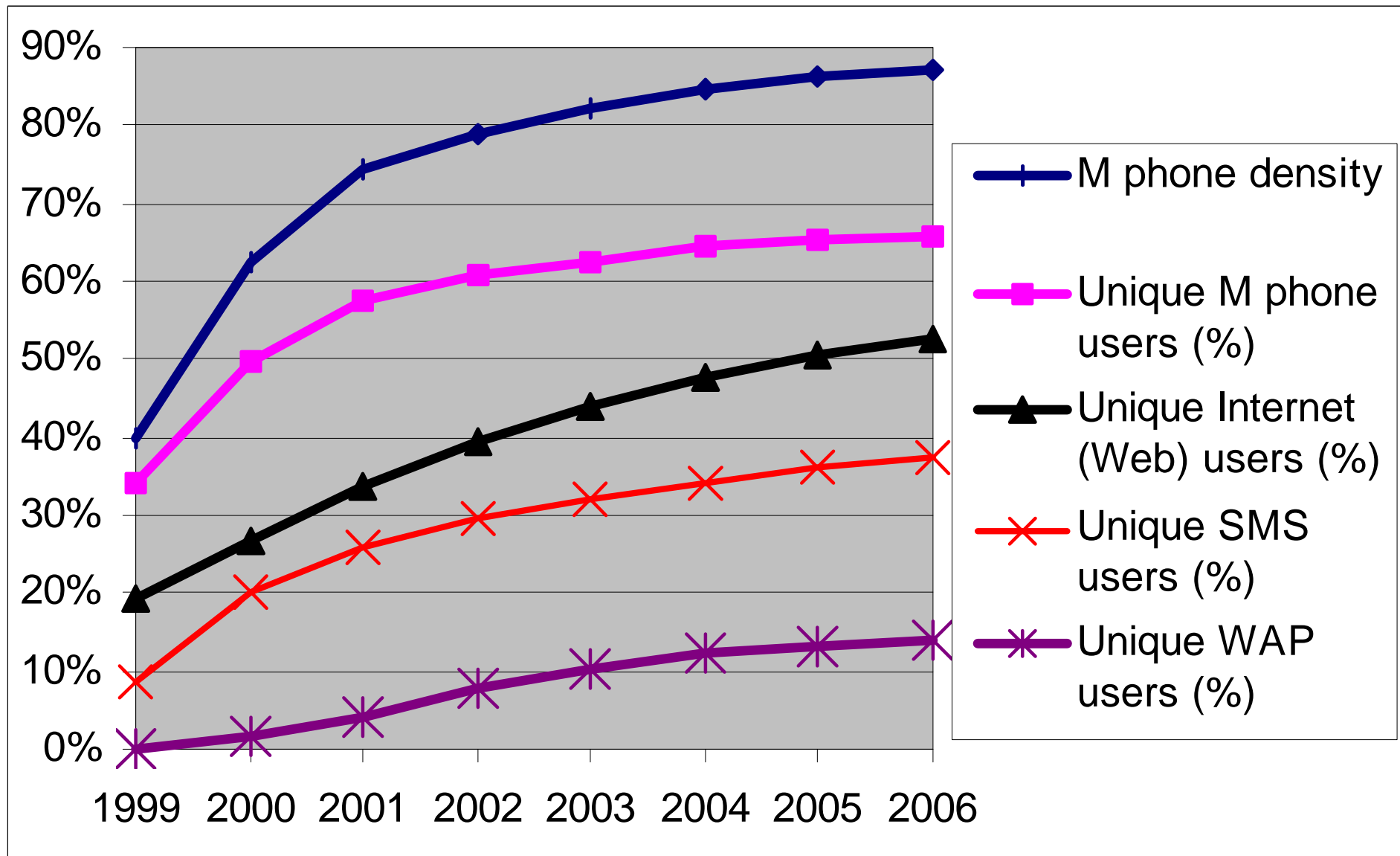
Predicting the take-up of
WAP services in Europe
[over the next 5 years]

Assumptions 2002-2003 .. etc.

The % of WAP phones used to access WAP-sites will stabilize at about 30% .. hopefully.



Mobile phone – SMS - WAP – Web usage rates in Western Europe, 1999-2006



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 21 Jan. 2002.

Conclusions:

Mobile phone – SMS - WAP – Web usage rates in Western Europe, by 2006

2 out of 3 will be mobile phone users (66%)
1 out of 2 will be Web users, min. (52%)
1 out of 3 will be SMS users, min. (37%)
1 out of 7 will be WAP users, max. (14%)
including other modes of limited Internet access

Note: The number of mobile phones per 100 inhabitants will be up to 87, but some use more than one M phone and of those who are registered as users are not active users.

Source: Carl H. Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 21 Jan. 2002.

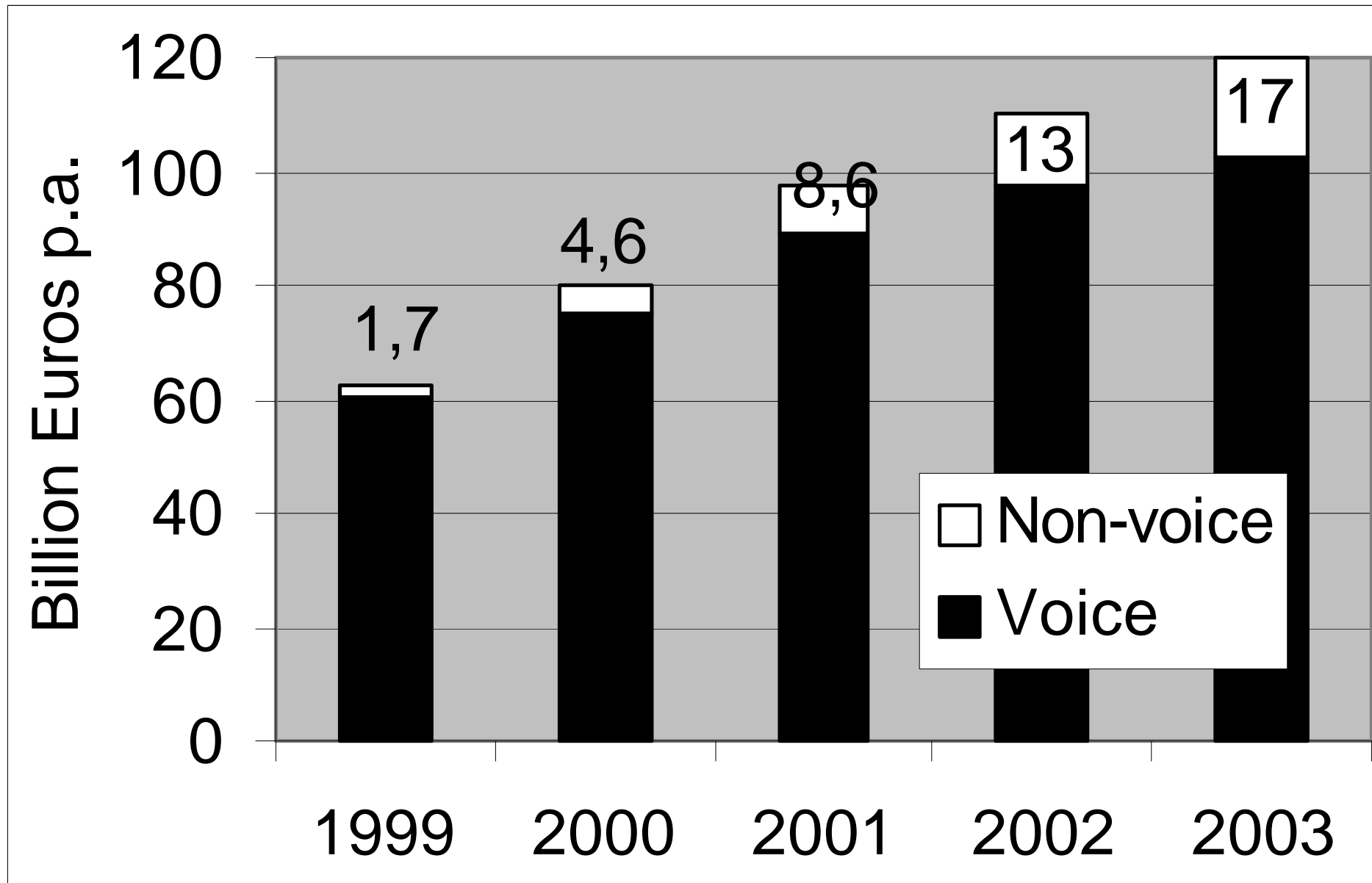
Analysing revenue streams for European and Japanese mobile network operators and determining how they differ (estimates)

<u>2000</u>	<u>Messaging</u>	<u>Mobile Web</u>	<u>Non-voice</u>
NTT DoCoMo	2.1%	6.4%	8.5%
J-Phone	3.4%	3.8%	7.2%
W. Europe	5.3%	0.1%	5.4%

<u>2001</u>	<u>Messaging</u>	<u>Mobile Web</u>	<u>Non-voice</u>
NTT DoCoMo	5.1%	11.5%	16.6%
J-Phone	5.1%	8.7%	13.8%
W. Europe	8.2%	0.6%	8.8%

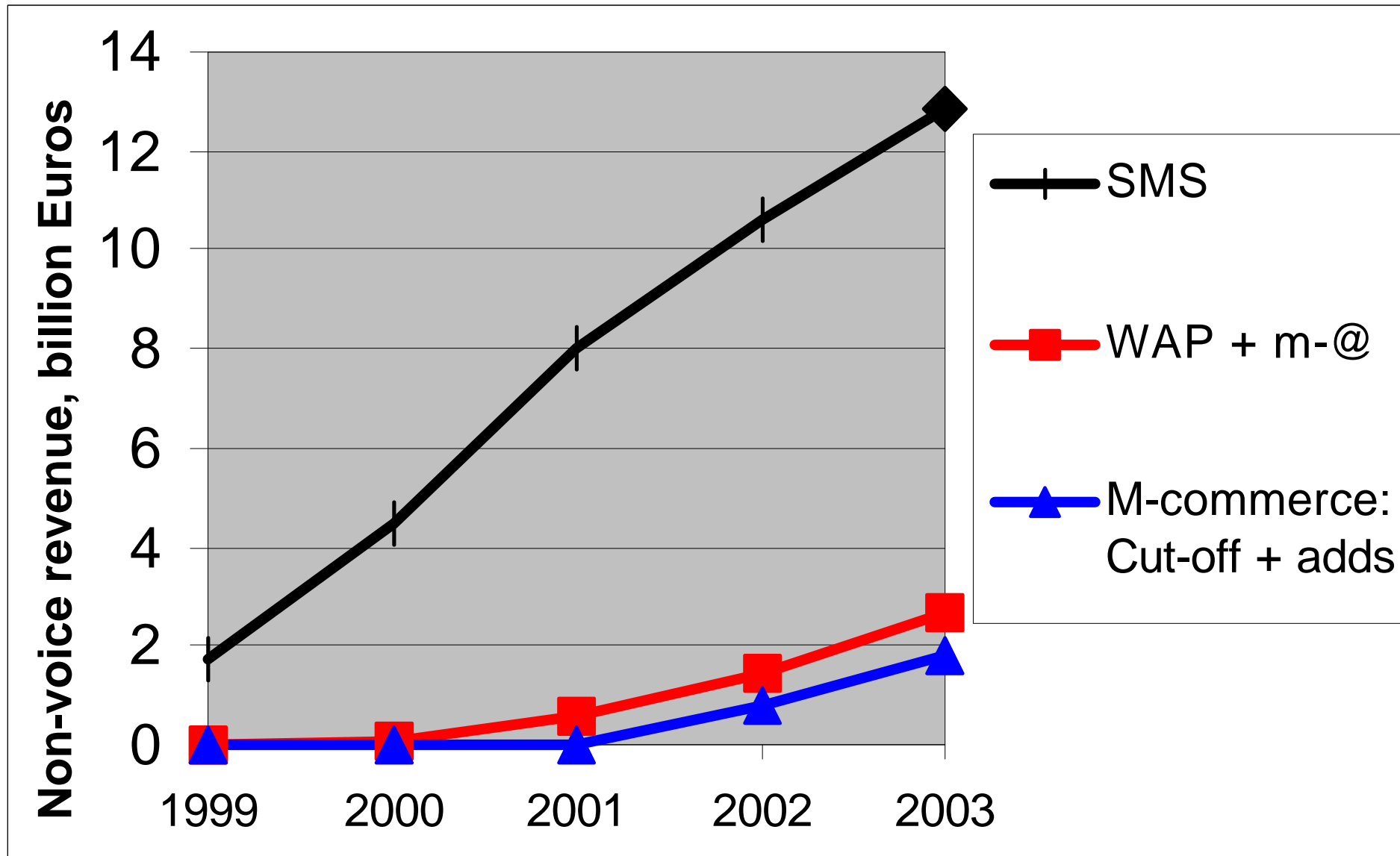
<u>2001</u>	<u>Total ARPU</u>	<u>Non-voice</u>
NTT DoCoMo / Japan	79 Euros/month	13.10
W. Europe	30 Euros/month	2.60

Voice and non-voice revenue in Europe



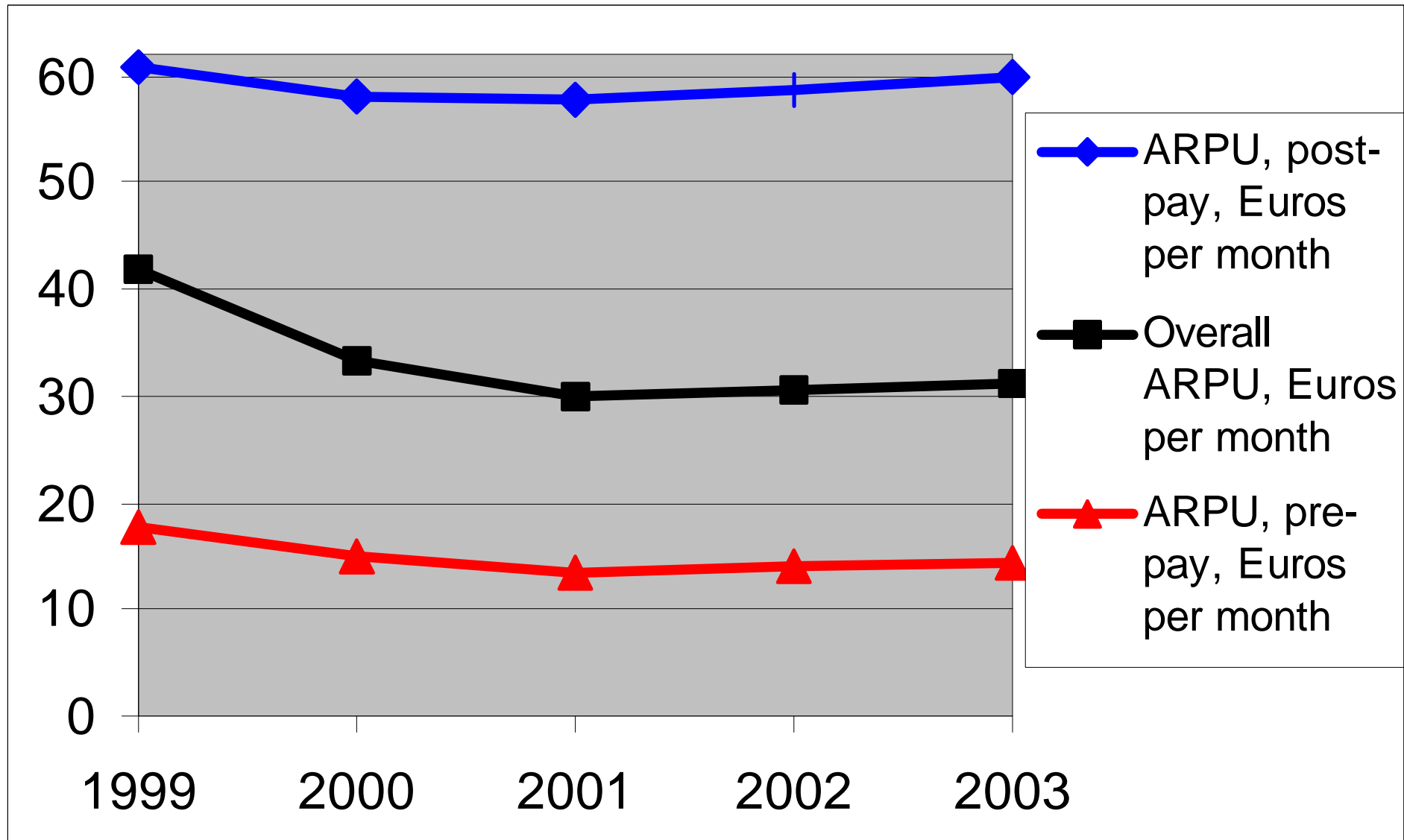
Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

Non-voice revenue in W. Europe



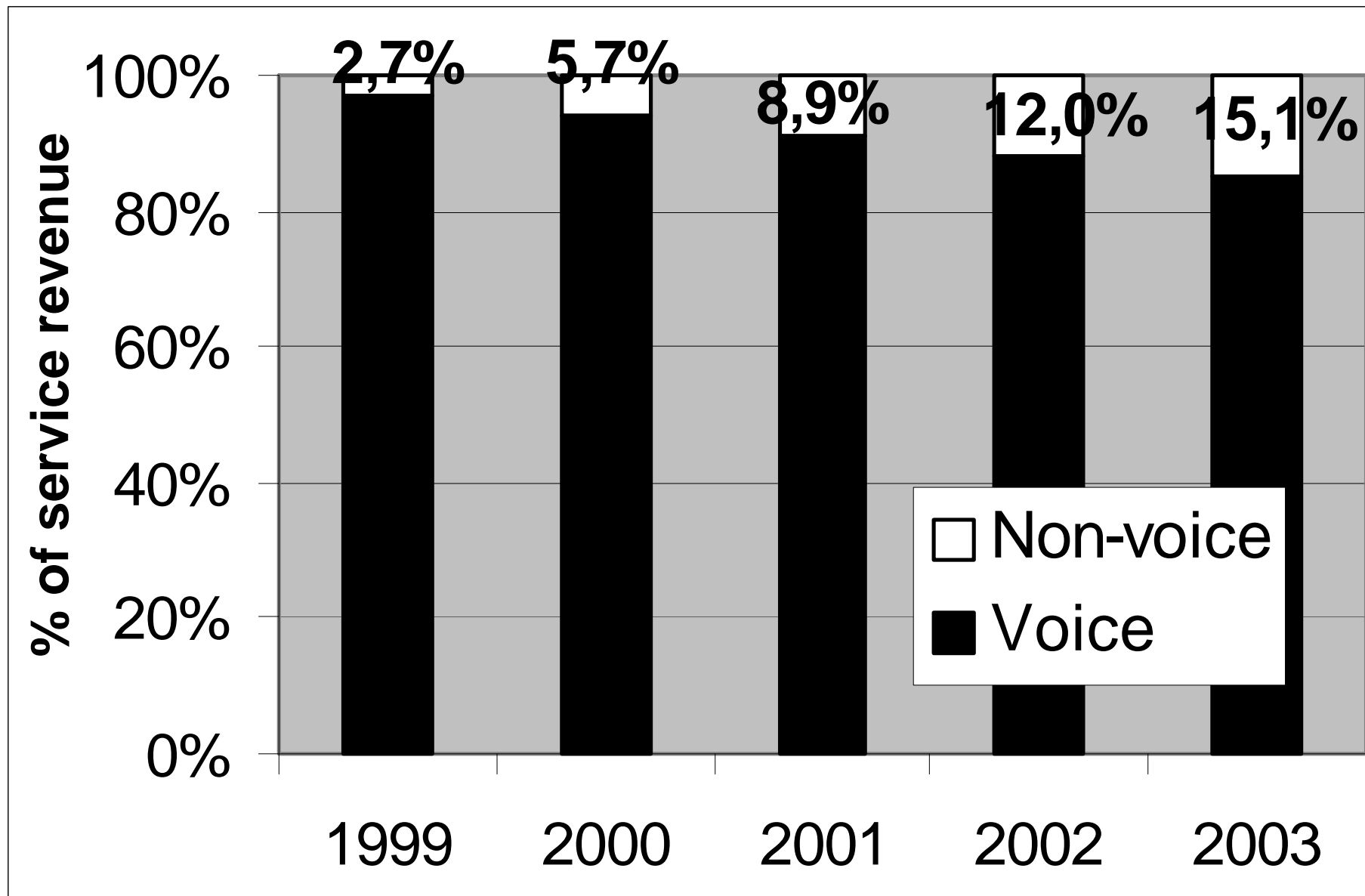
Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

ARPU developement in Europe



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

Voice and non-voice revenue in Europe (%)



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 8 Feb. 2002.

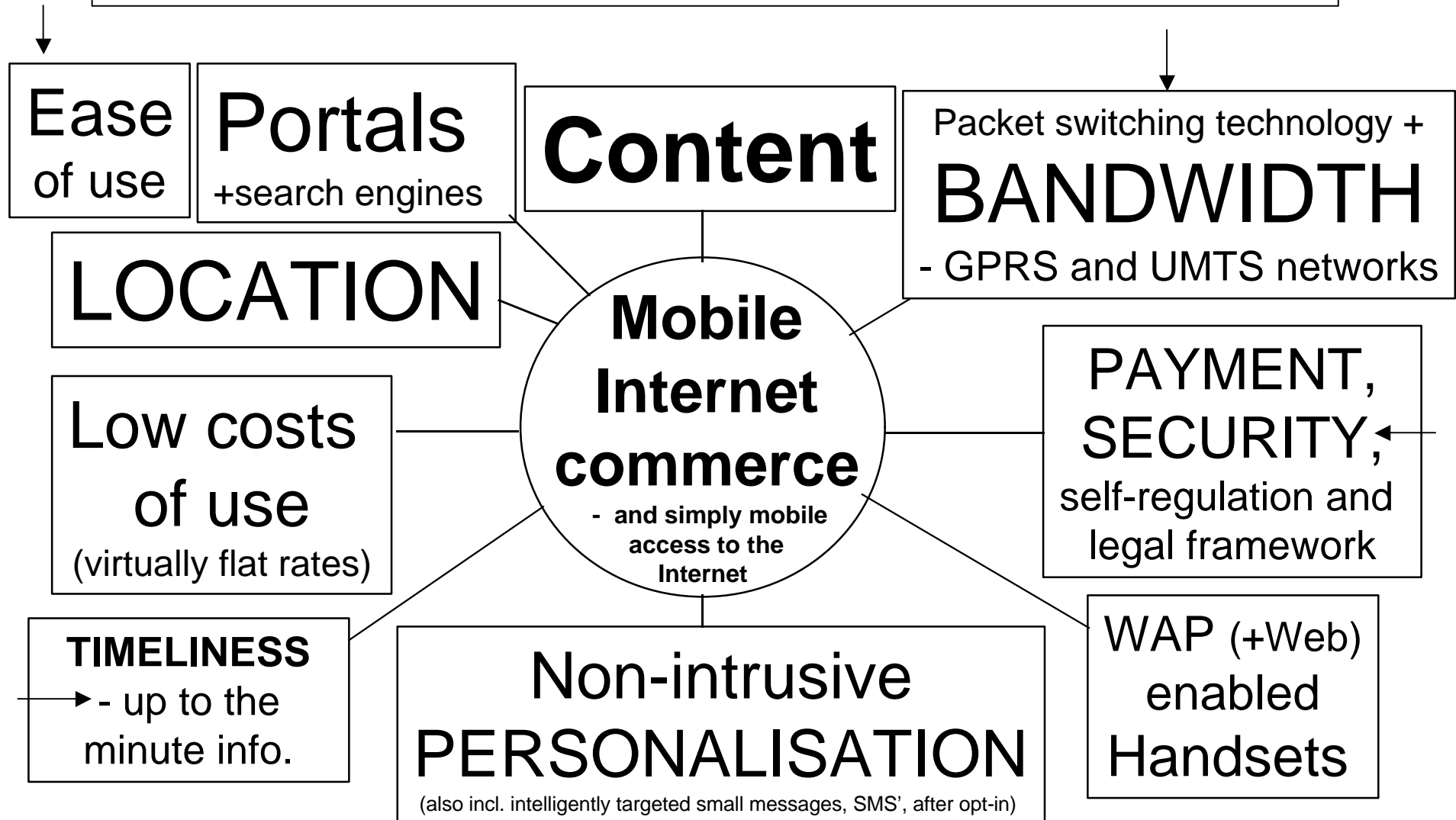
Meeting the mobile Internet needs of the consumer and business traveller in Europe

Selected survey results
(n=80)

Mostly W. Europe

Early 2001

10 key elements of mobile Internet commerce



Source: Carl H.Marcussen, Centre for Regional and Tourism Research, www.crt.dk, 21 Jan. 2002.

The five most important basic conditions of m-commerce are:

1. Data protection. 9.1
2. That information is up-to-the-minute. 8.9
3. Connection can be established swiftly. 8.9
4. That WAP-sites can be loaded quickly. 8.8
5. That WAP-sites are easy to navigate. 8.8

Note: Importance on scale from 0-10 (n=80)

Performance 'now' – year 2001

On a scale from 0 to 10 the overall average performance score for the 14 different attributes is 3.9, i.e. 39% of maximum.

The most positive thing there was to say about the 'performance' of WAP sites in 2001 was that content providers *abstained from* pushing information on to peoples mobile phones, without prior permission (score of 6.5 in 2000).

Will be the worst scoring attribute in 2 or 3 years.

Performance 'in future' – year 2003 or 2004

Six of 14 attributes score 8.0 or more (i.e. at least 80% of max.) in projected performance by 2003 (or 2004). These are, with the best performing attribute mentioned first:

- | | |
|---------------------------------|-----|
| 1. Up-to-the-minute information | 8.6 |
| 2. Fast connection time | 8.3 |
| 3. Fast loading time | 8.3 |
| 4. Low handset price | 8.3 |
| 5. Many WAP-sites | 8.2 |
| 6. Personalisation | 8.1 |

Most significant improvement

After weighting the performance in the year 2001 and the year 2003/4, respectively, with the importance of the different attributes, the most significant improvement (in absolute terms) is in the following six fields:

Primarily:

- Fast connection time.
- Fast loading time.
- Personalisation.

Secondarily:

- html-browser (in addition to wml-browser)
- Ease of navigation.
- Currency of information (up-to-the-minute info.)

**‘Already done on WAP’:
Currently most used WAP-
services – by business travellers**

(of max. 63%)

- | | |
|-------------------------------------|------------|
| 1. Get news headlines | 55% |
| 2. e-mail correspondence | 48% |
| 3. check ordinary e-mail box | 44% |
| 4. check share prices | 34% |
| 5. hotel phone nos. | 31% |

Reasons why i-mode could make it in Europe ..

- i-mode made it in Japan
- the poor image of WAP on 2G may be hard to eliminate for next generation WAP on 2.5G: This could open a window of opportunity of i-mode in Europe
- i-mode is a strong brand
- partners can learn from the marketing, portal and business model experience of i-mode in Japan (but so can others)
- because of other good reasons ...

Reasons why i-mode will hardly make it in Europe:

- Killer-app No. 1 (short text messaging) is gone: In Europe it's SMS.
- Mobile gaming will hardly become as popular here as in Japan.
- Average income lower in Europe than in Japan: Less money to spend on mobile entertainment etc.
- handset brand for i-mode not well-known in Europe.
- i-mode partners have only limited share of European M-phone users.
- The W. European market is fragmented: ~60 operators vs. just 3 in Japan.
- .. and each of the 3 largest operators in Europe are only about half the size of DoCoMo.
- The installed base of WAP-enabled phones is gaining momentum .. after two years ..
- GPRS will also benefit WAP, not only i-mode.
- Many new functions of next generation WAP.
- Rather high wired-line Internet penetration in Europe.
- Content for i-mode in Europe may be less rich than for i-mode in Japan.
- Elements of the i-mode business model can be replicated by 'anybody'.

Comparing SMS and WAP in Europe with i-mode in terms of usage and user segments

- Determining usage rates for SMS and WAP services in Europe and comparing them to the subscriber levels for i-mode in Japan
- Identifying the similarities and differences in mobile data usage in Japan and Europe
- Which application has made i-mode so popular in Japan?
- Predicting the take-up of WAP services in Europe
- Analysing revenue streams for European and Japanese mobile network operators and determining how they differ
- Meeting the mobile Internet needs of the consumer and business traveller in Europe

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Online reference: <http://www.crt.dk/UK/Staff/chm/wap.htm>