

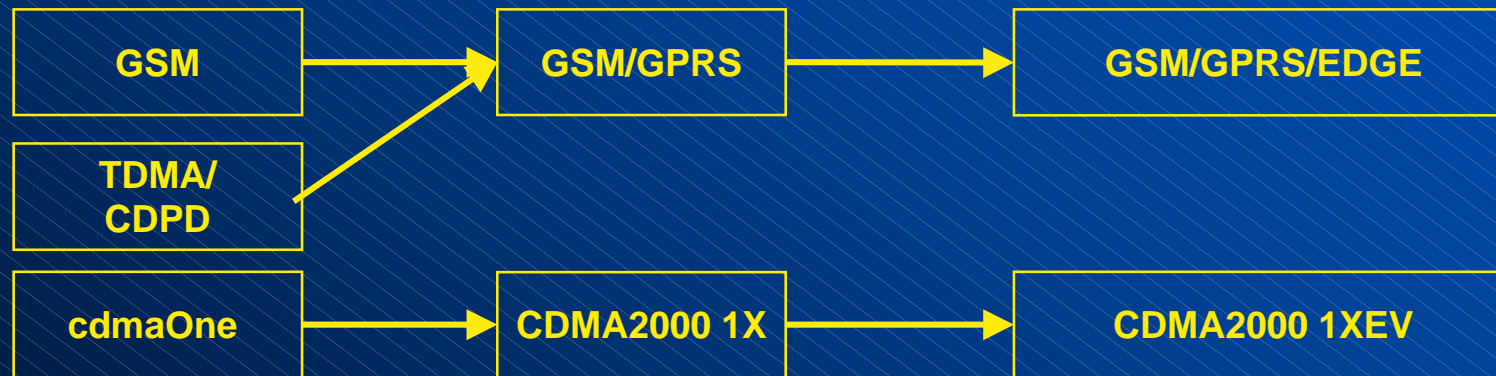
# License and Regulatory Update on UMTS

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# Main evolution into 3G networks



## Existing Spectrum

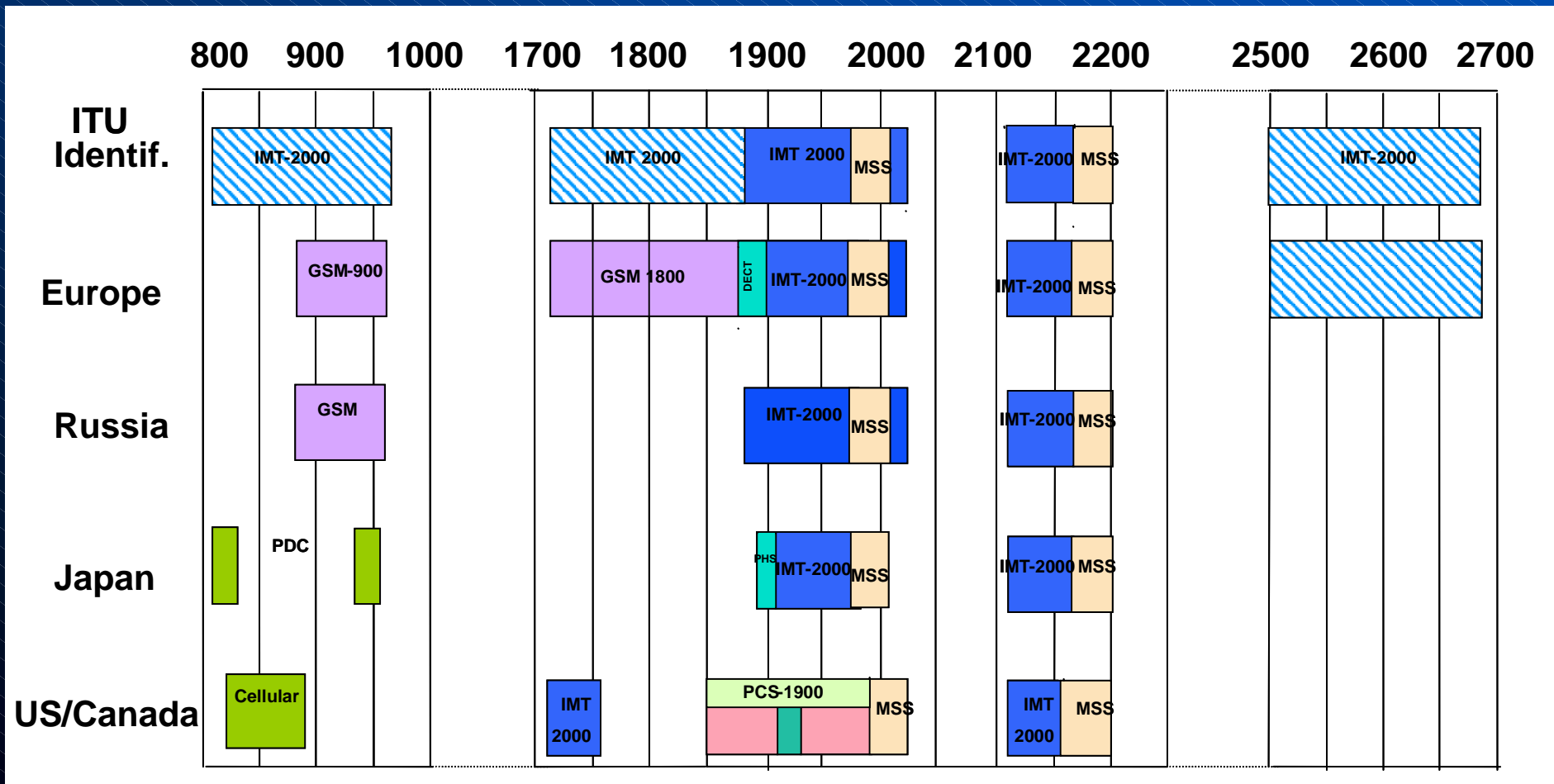


## New Spectrum



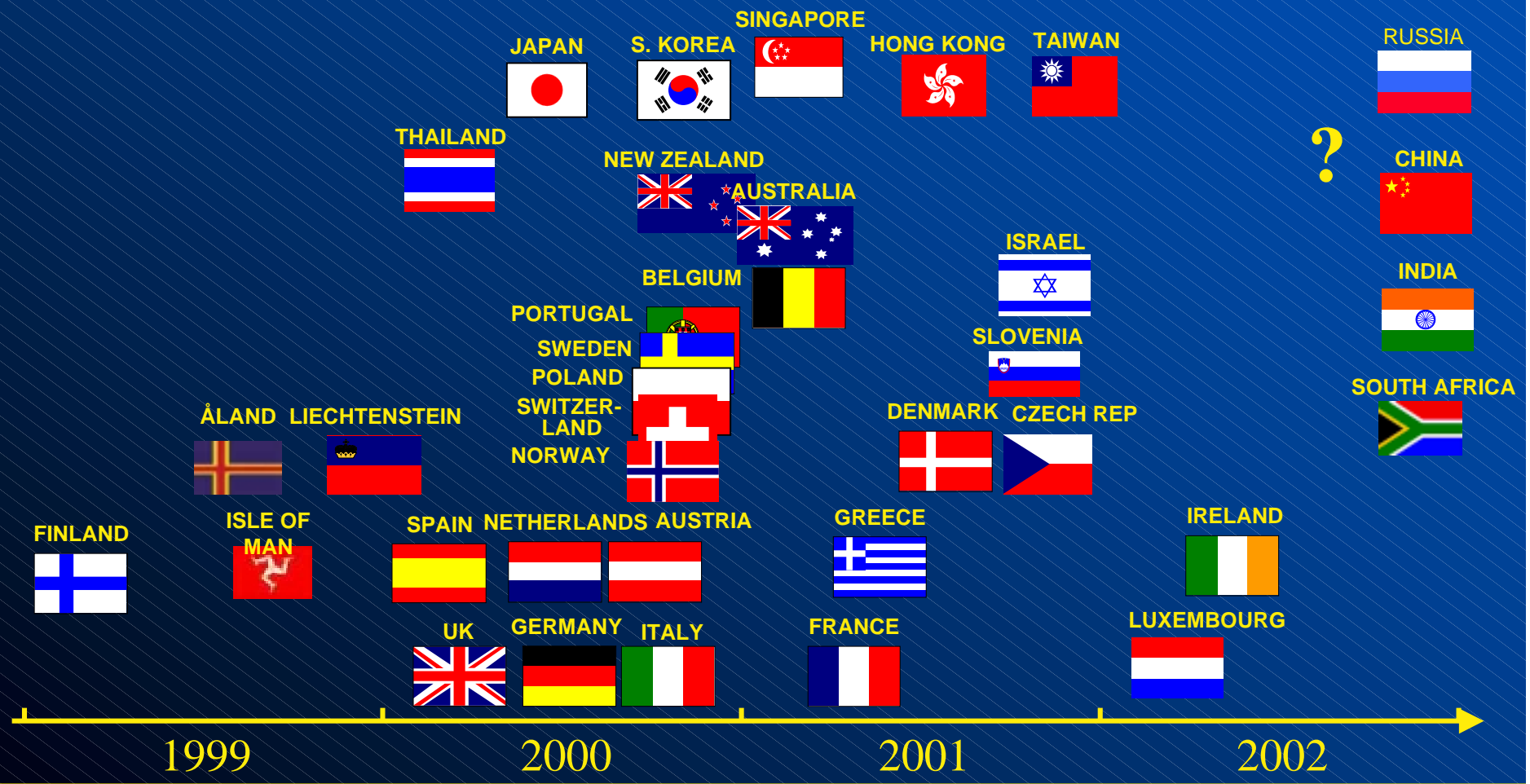
2G	First Step into 3G	3G phase 1	Evolved 3G
≤ 28.8 kb/s	64 - 144 Kb/s	384 Kb/s - 2 Mb/s	384 Kb/s - 10Mb/s+

# Spectrum planning

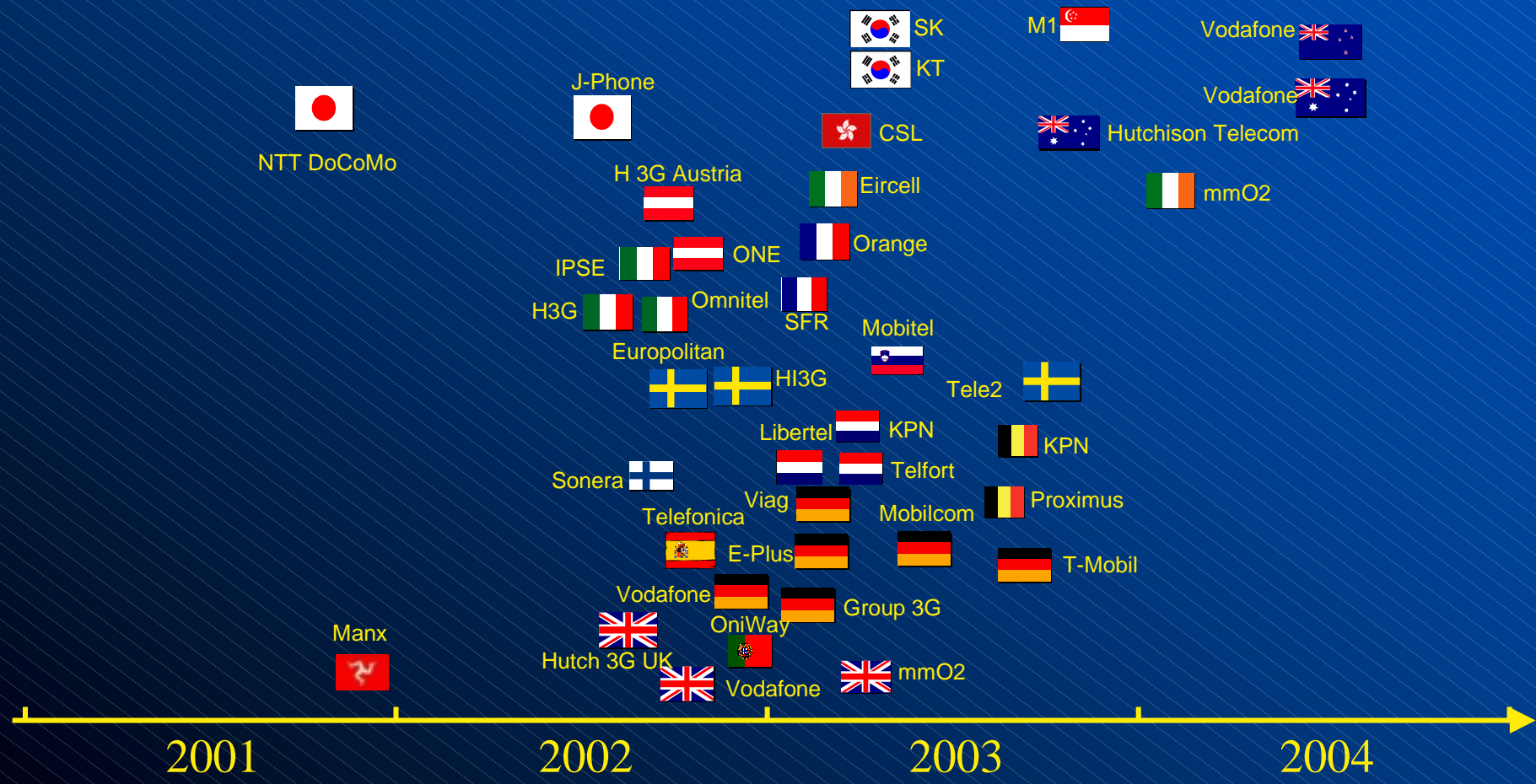


# 3G Licences: Where and when?

(3G implementation in 3G spectrum not covered)



# Announced & Expected WCDMA Launch Dates



# The basis for regulation



The UMTS Forum recommends that the general competition law framework should be used for UMTS in conjunction with the existing European and national telecommunications legislation. It is unnecessary to overlay the ordinary criteria of competition law with any additional rules when sufficient competition has been established in the telecom field.

Source: UMTS Forum Report #4

# Important licensing conditions



- Spectrum price and auctions
- Coverage and roll-out obligations
- Rules for sharing of facilities and infrastructure
- Rules for national roaming
- Global circulation of terminals

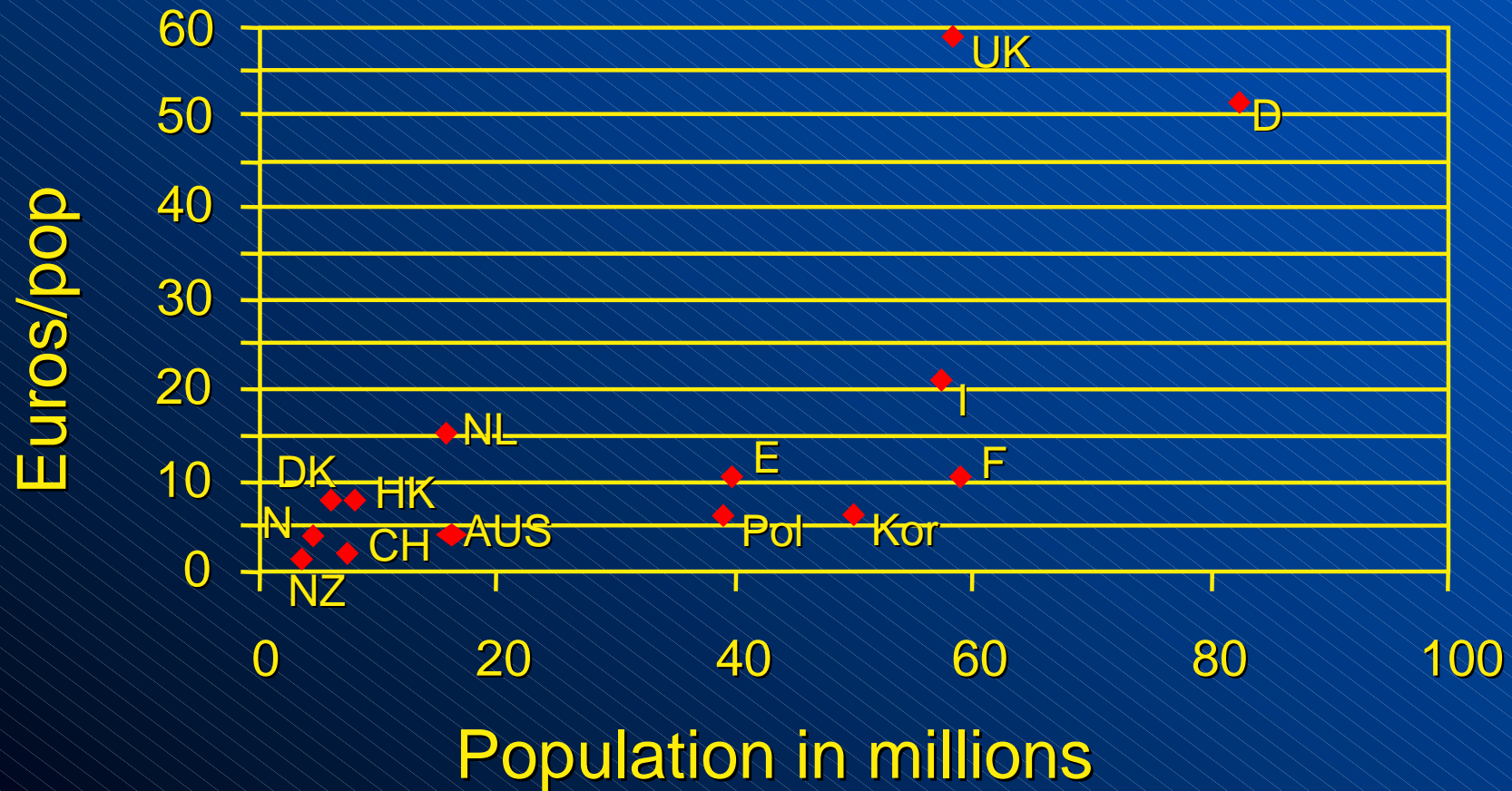
# Spectrum price

- Spectrum must be available at the right price. Large initial down-payments for spectrum will adversely affect the growth of 3 G services
- Yearly fees give better stimulus to efficient use than initial down-payments
- Intensive use of the spectrum gives better total value for society than high license fees

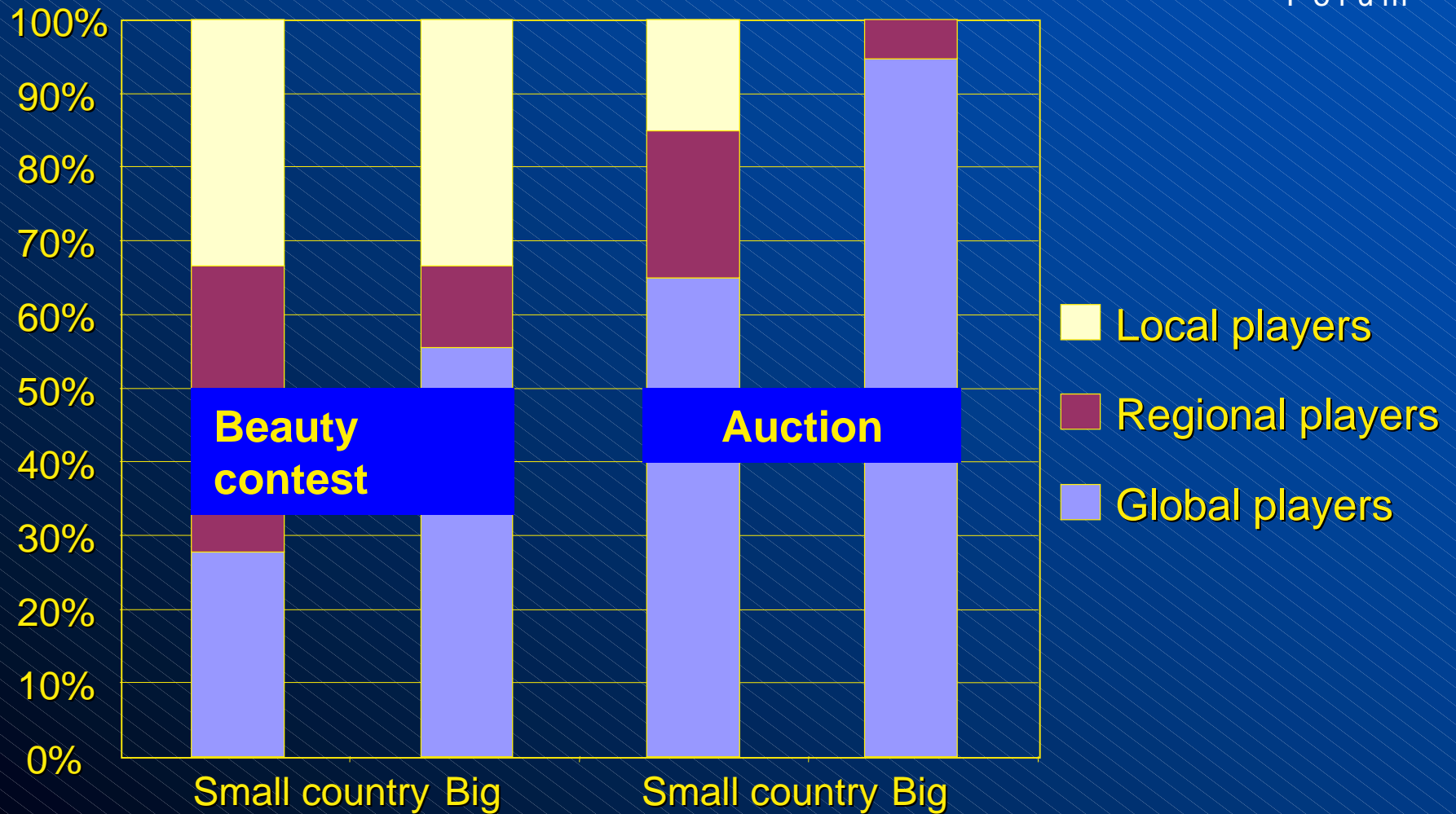
Source: UMTS Forum Report #3



# Licence prices and country size



# Categories of Licence holders



# Some economic background data

Total European spectrum licence fees	133 billion €
5 year investments in 3G infrastructure	150-200 billion €
Total yearly European purchase of telecom equipm.	70-80 billion €
Total yearly European industrial debt market	450 billion €
Total market capitalisation of big European operators end 2001	700 billion €
Total market capitalisation of big European operators end 2000	1300 billion €

# Coverage and Roll-out

- Roll out of the 3 G networks should be done according to market demand
- Coverage obligations must be linked to level of network service capability
- Ubiquitous coverage have to be achieved by satellite systems

Source: UMTS Forum Report #4

## Sharing of facilities and infrastructure

- Sharing of facilities can give a rapid deployment of networks and introduction of services
- Sharing of network infrastructure may conflict with the goal of infrastructure competition
- Sharing should be commercial; mandatory sharing is normally not acceptable

Source: UMTS Forum Report #4

# National roaming

- National roaming may be a way to achieve terrestrial coverage of unprofitable regions
- Licence conditions should allow commercially negotiated roaming agreements, if infrastructure competition is maintained
- National roaming should only as an exception be mandatory. It can during a transitionally period help new operators to establish a market

Source: UMTS Forum Report #4

## How did it turn out ?

- Most countries require the same speed for roll-out, 50% in 4 - 5 years. A few require significantly more.
- Site acquisition an increasing problem.
- Unclear how far co-operation may go, either via sharing or national roaming. Rules not easy to change in auction countries.

## Why is co-operation wanted?

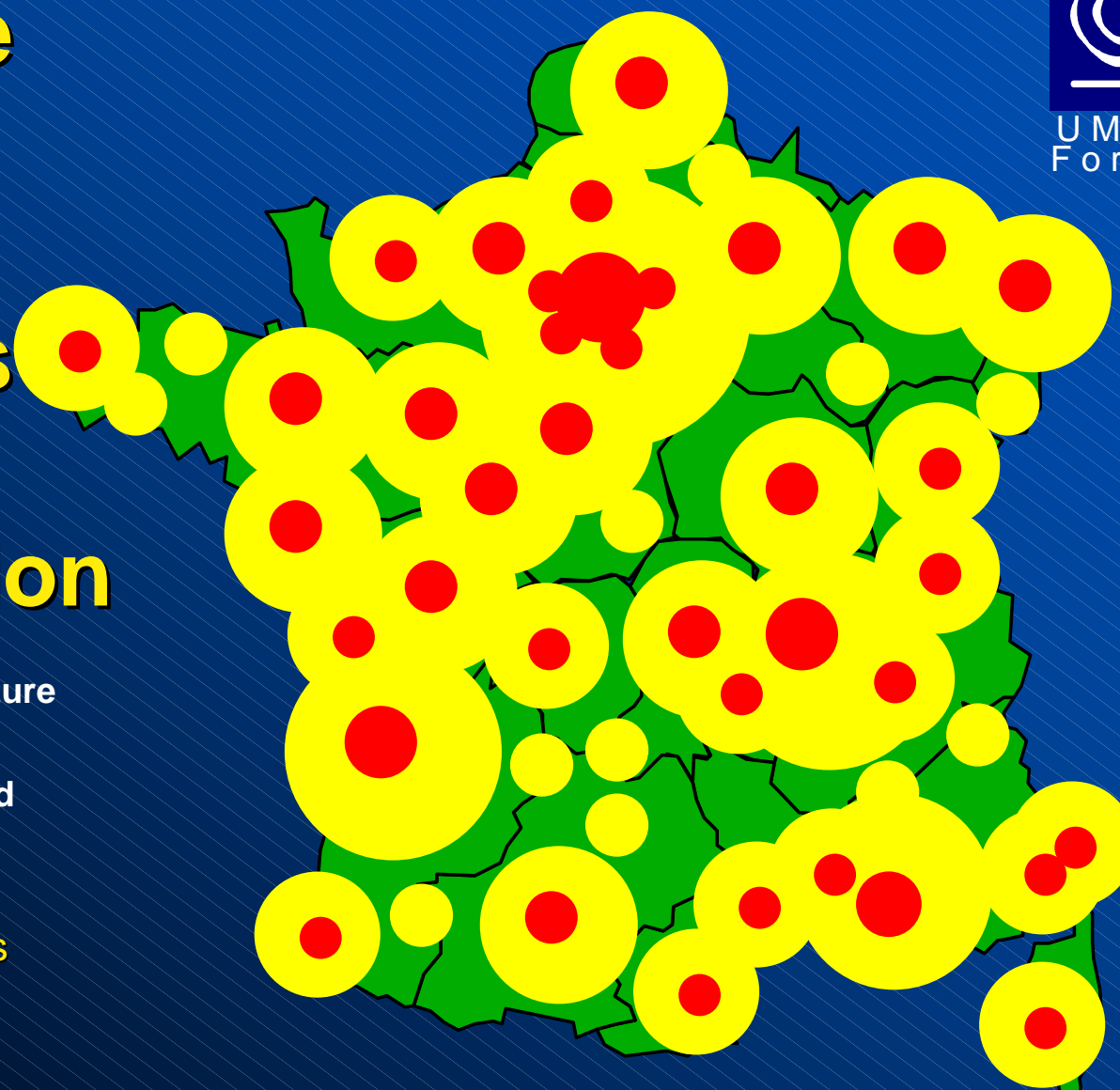
- Operators in general have a high debt burden, negative cash-flow and decreasing market capitalisation.
- Environmental concerns make site acquisition more complicated.
- Co-operation between operators may
  - facilitate deployment of network,
  - decrease investment, and
  - increase coverage and market size.



# Profitable areas for four operators with cooperation

- Separate infrastructure
- Cooperation allowed

(This is an example to show a principle and is not based on detailed calculations)



# Global circulation of terminals

- The right to carry and use personal terminals, “global circulation”, is very important for many users.
- There are very few, if any, technical problems with the circulation of GSM terminals.
- The ITU has decided on a regulatory framework for global circulation. This should be the basis for national rules.

## What can be done by governments?

- Do not use the industry as a cash cow;
- Use the spectrum bands according to IMT-2000;
- Set realistic roll-out and coverage obligations;
- Allow co-operation between operators in suburban and rural areas (network sharing, national roaming);

## What can be done by governments? (cont.)

- Simplify the process of site acquisition and agree on harmonised environmental conditions;
- Support the creation of new advanced mobile services ( e.g. e-government, e-commerce);
- Support global circulation of terminals.

Yes, the telecom business climate is depressed for the moment, but remember:

The stock market crash in the 1840s, when the railways were starting to be built, was disastrous to many companies.

But the railways were still key to the industrial revolution over the next 100 years.

**Thank you for your attention !**

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