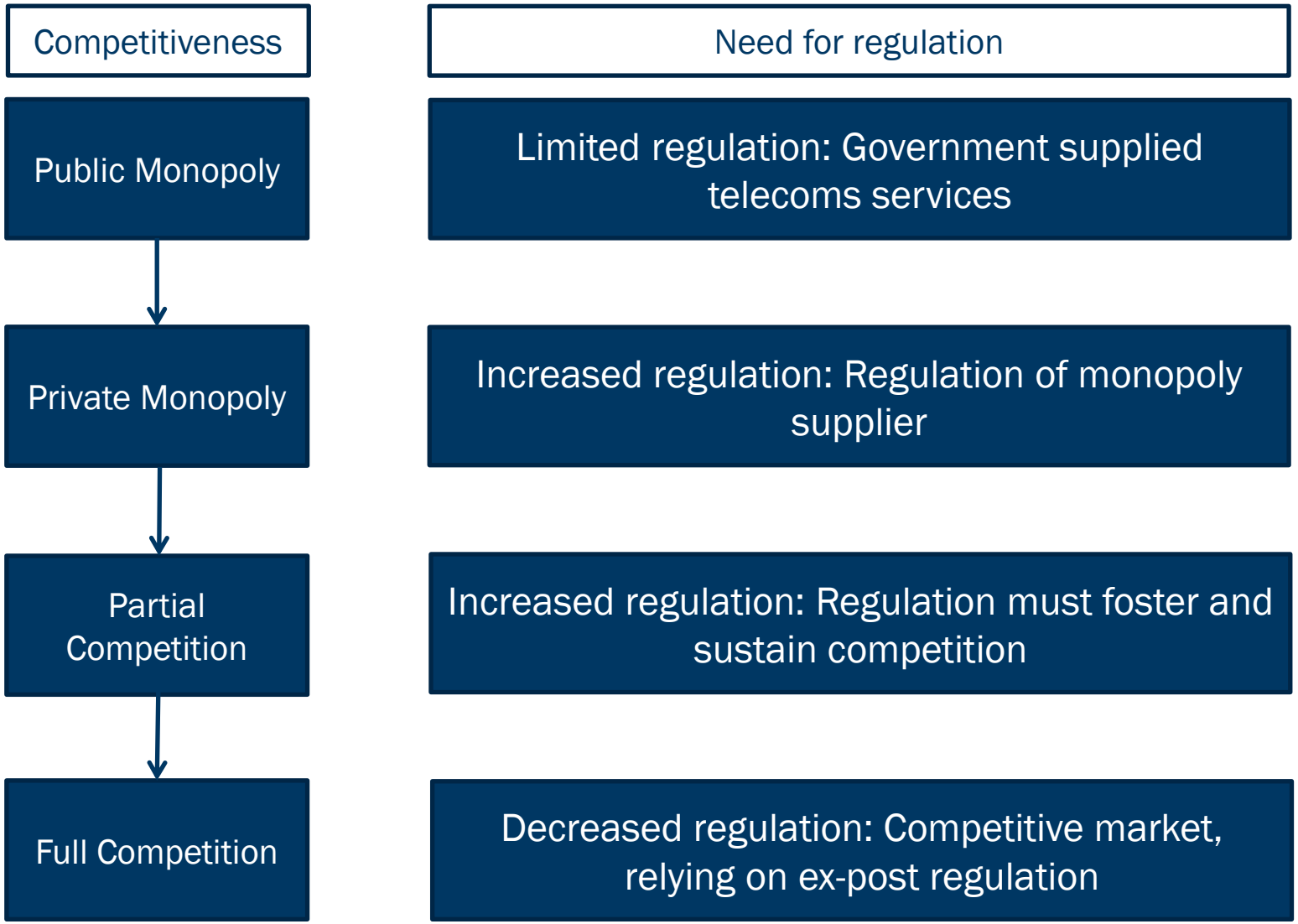
# General Regulation

# Regulation is used to foster and sustain competition




Source: ICT Regulation Toolkit

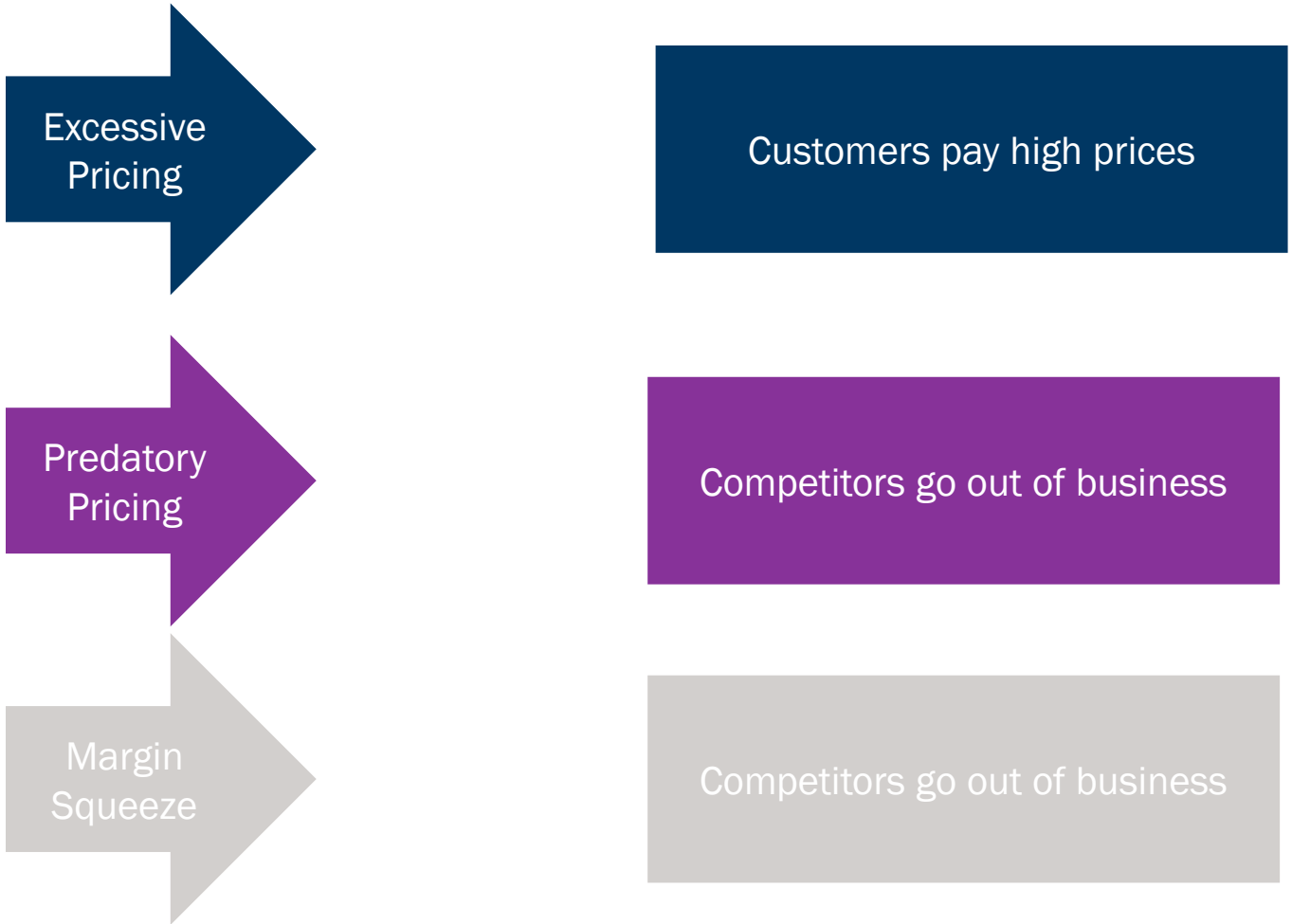
# Why Regulate?

- To avoid market failure
- To foster effective competition
- To protect consumer interest
- To increase access to services

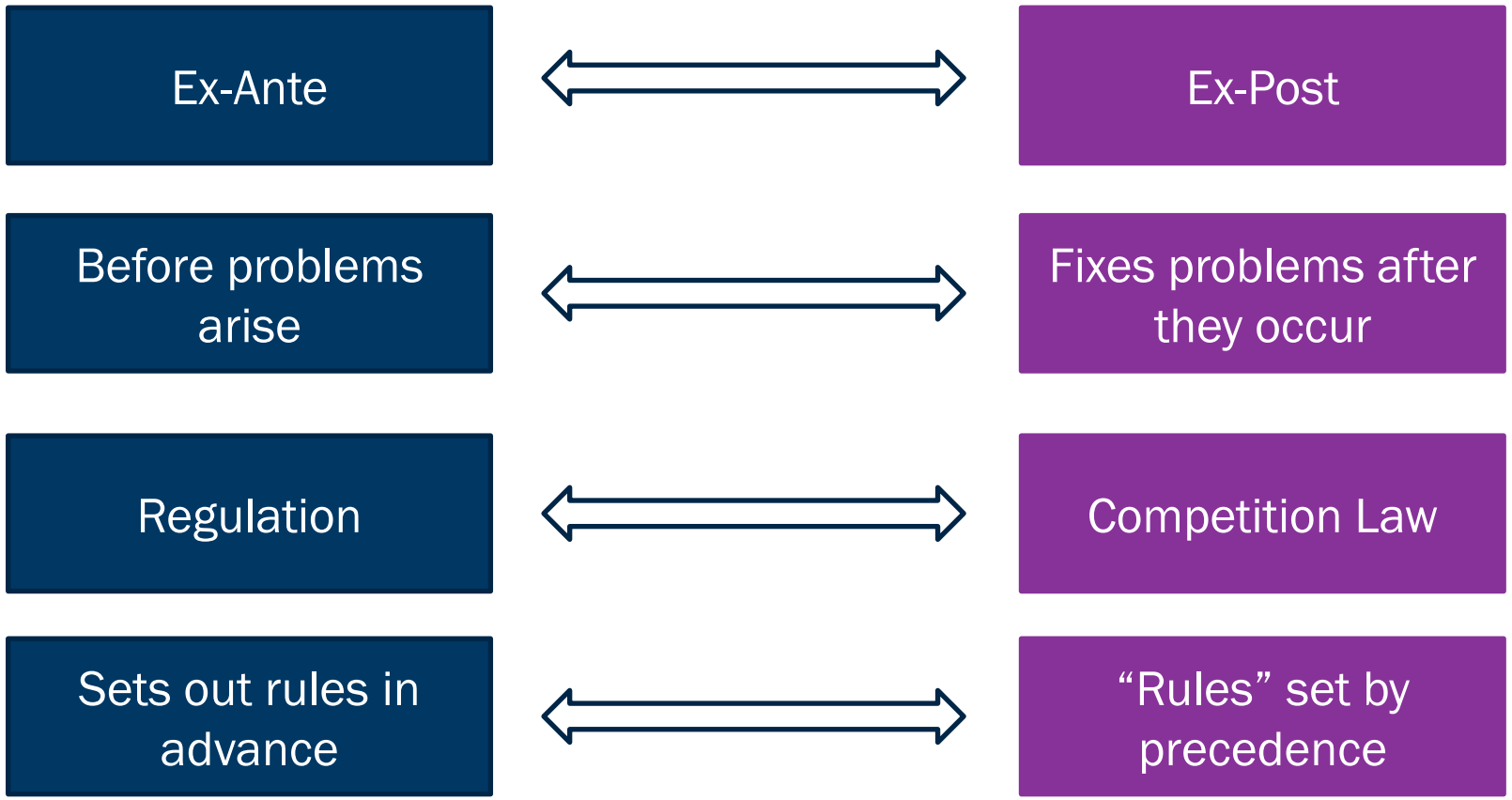
LEADING TO…

- Abuse of market power
- Under-investment
- Lack of consumer choice
- Lack of innovation
- Too high prices

# If dominant firms are unregulated they may demonstrate…



# Two approaches – Ex-Ante and Ex-Post



# EU approach to regulation: Ex-Ante and Ex-Post

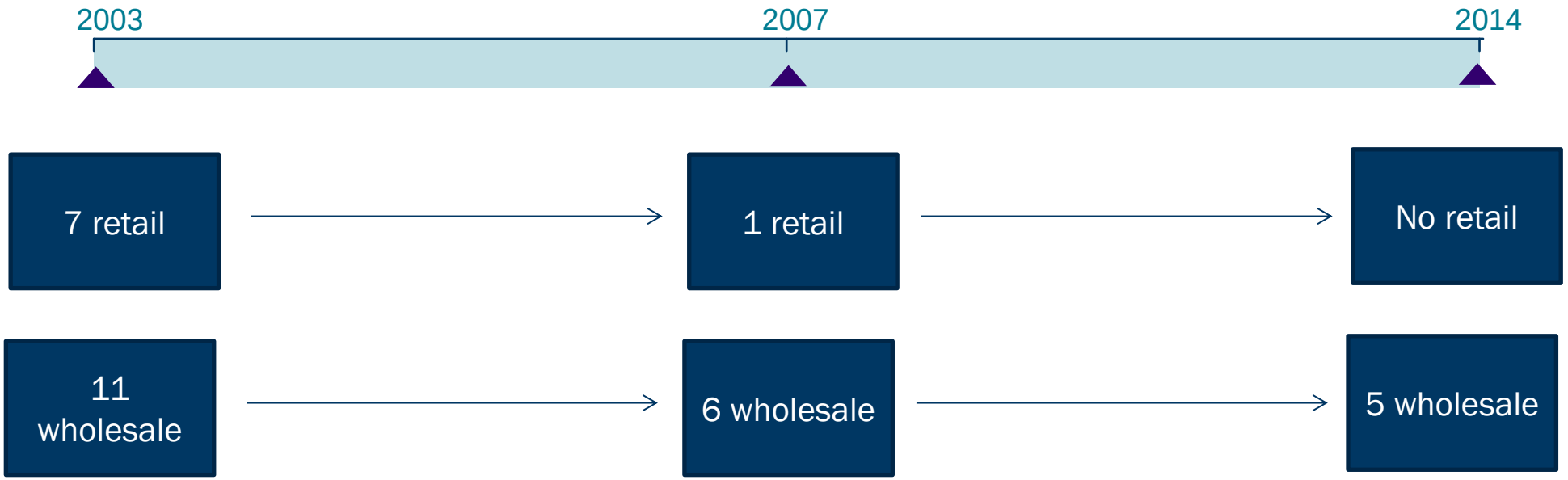

### Ex ante approach

- The regulator carries out an assessment into all relevant markets to determine whether dominance/significant market power exists
- Regulator then imposes remedies where it considers future potential for market abuse

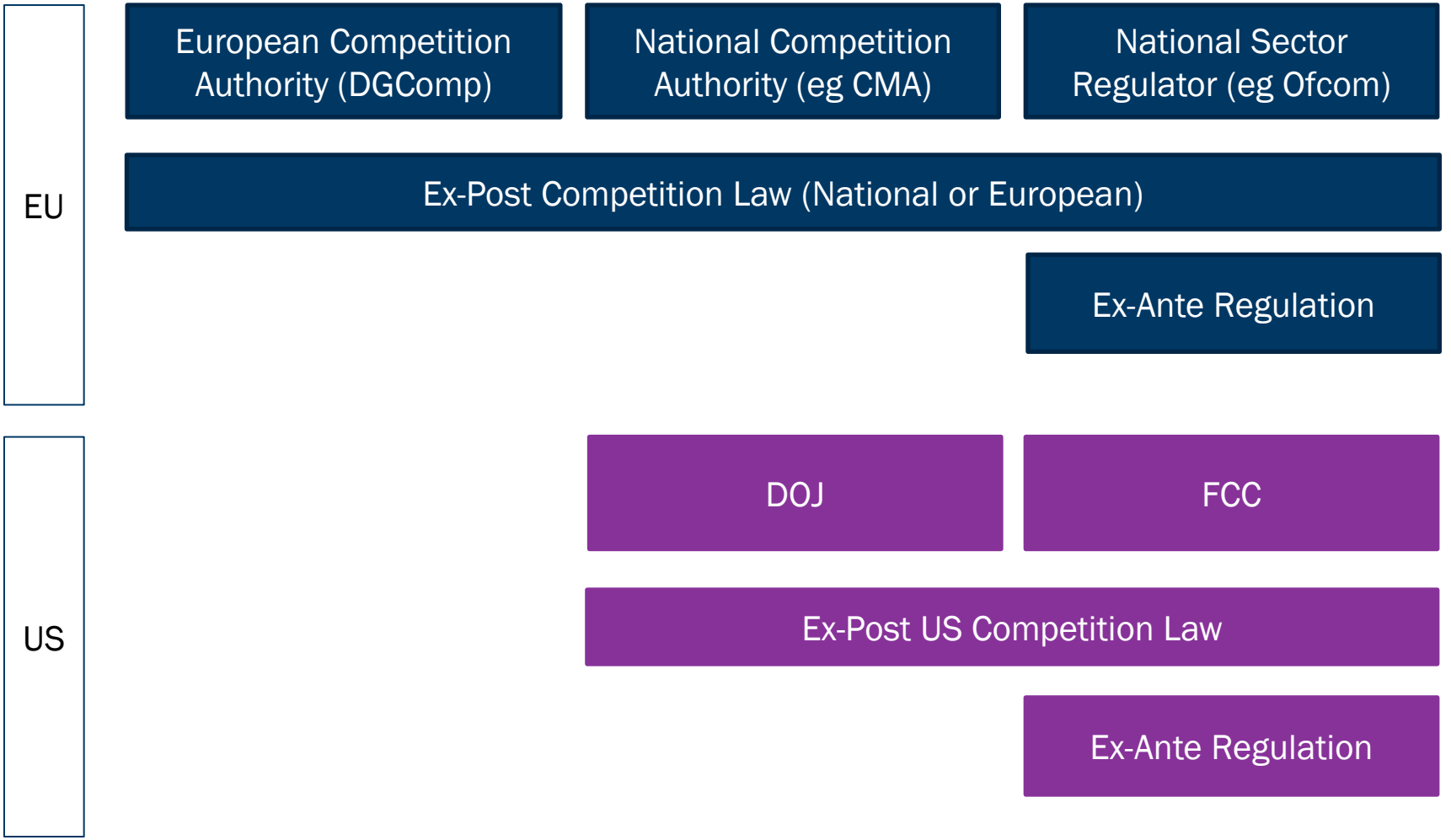
### Ex post approach

- A complaint is made under competition law and/or an investigation made by competition authorities into alleged past or current market abuses
- Market then reviewed under competition law to assess whether the defendant has market power and whether it has then abused it

# Reducing number of markets subject to ex-ante review in EU



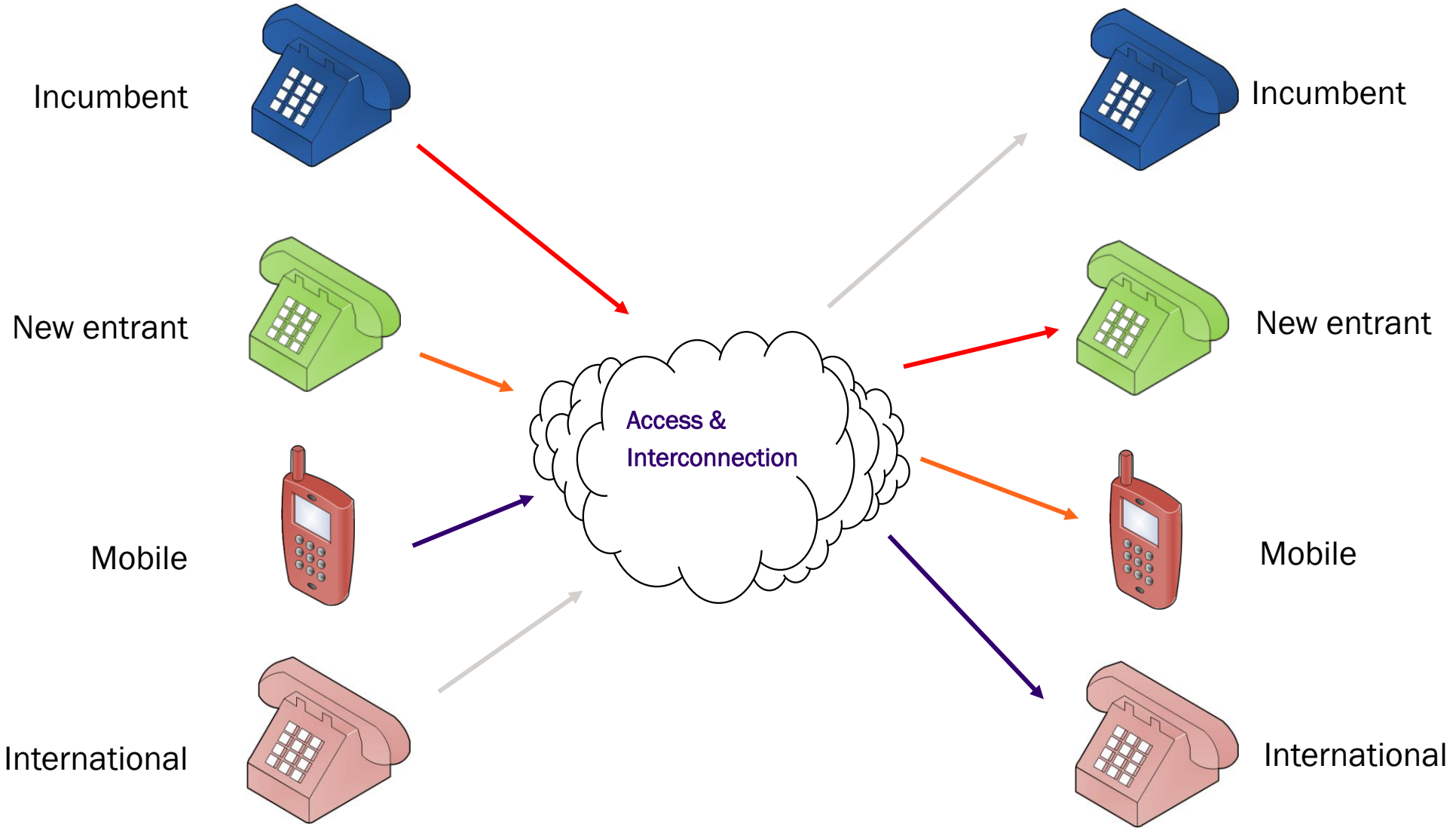
# Regulation and Competition – EU and US



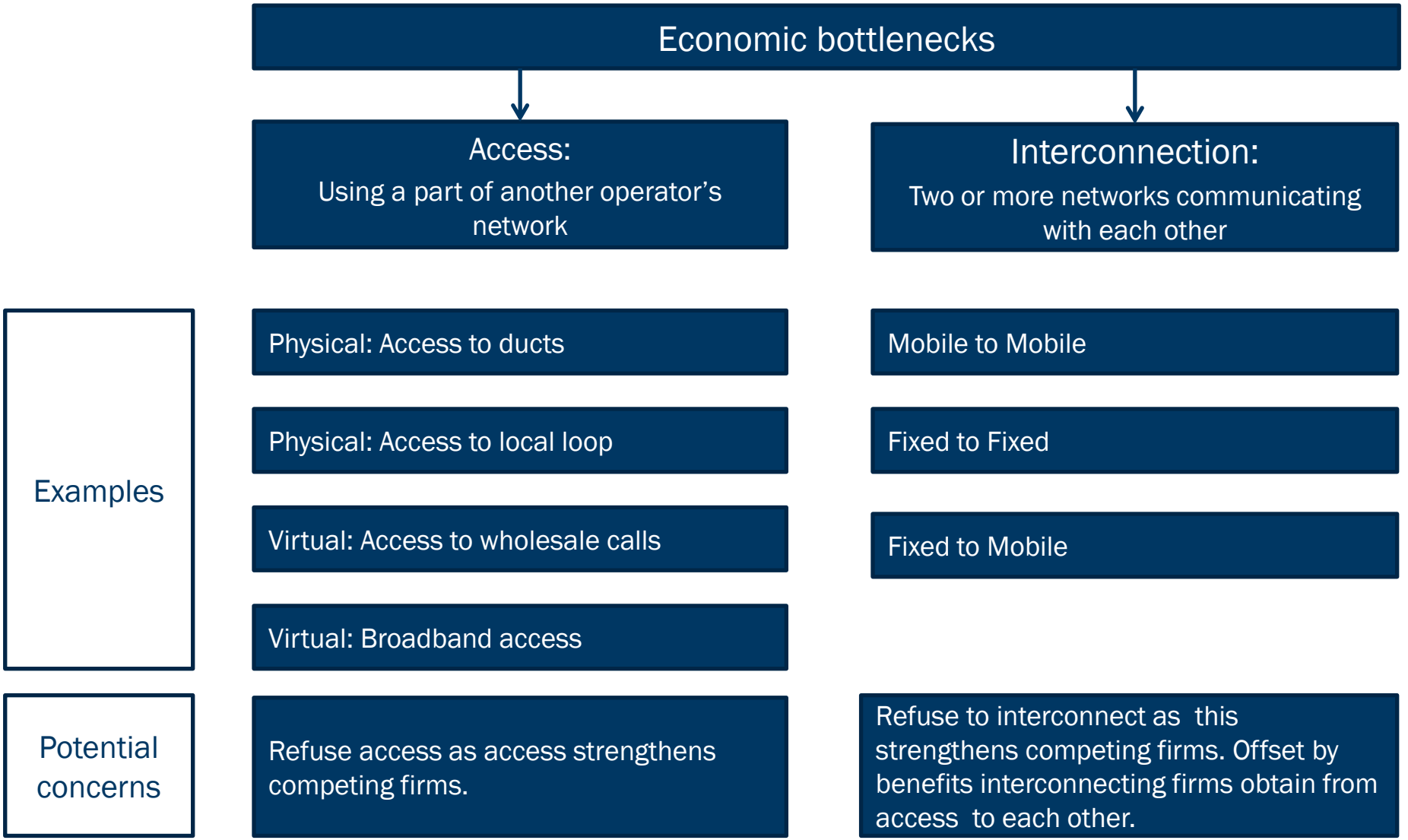

- **Competition Law:** Jointly held (most EU countries and US)
- **Ex-ante regulation:** Only by sector regulators

# Interconnection

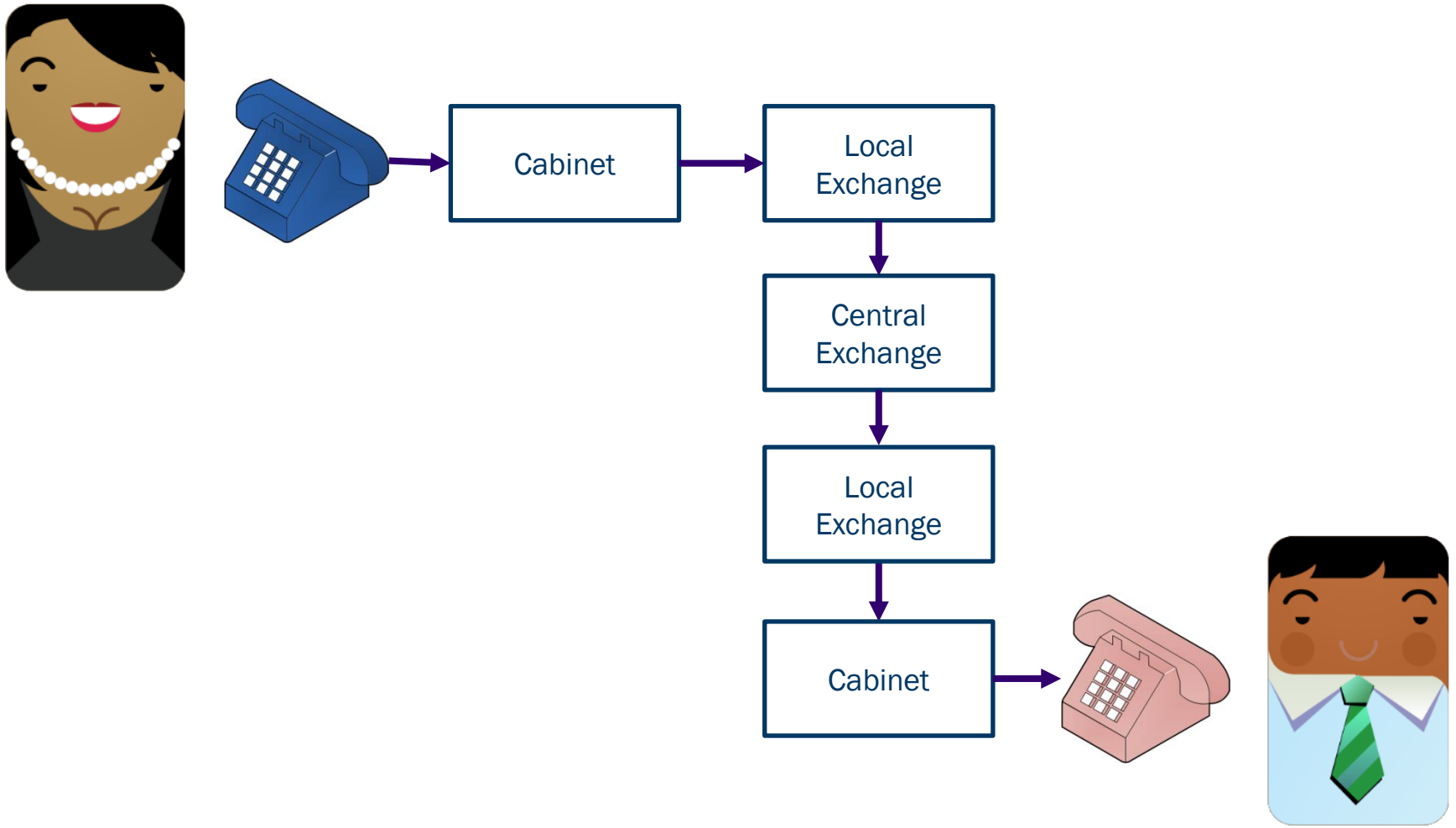
# The principle of access and interconnection: any-to-any



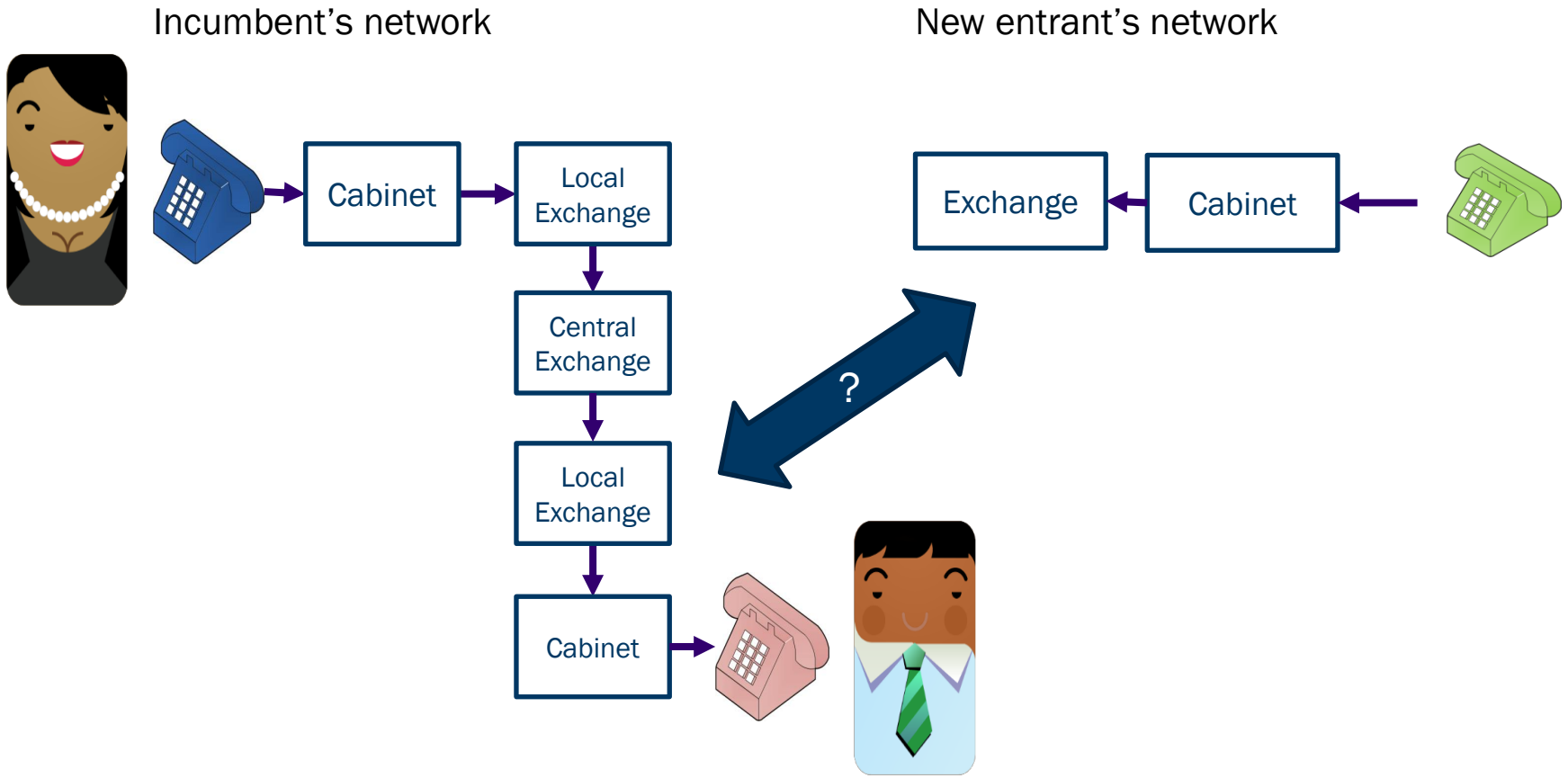
# Connecting networks: Interconnection and Access



# Interconnection in 1980s – TDM networks



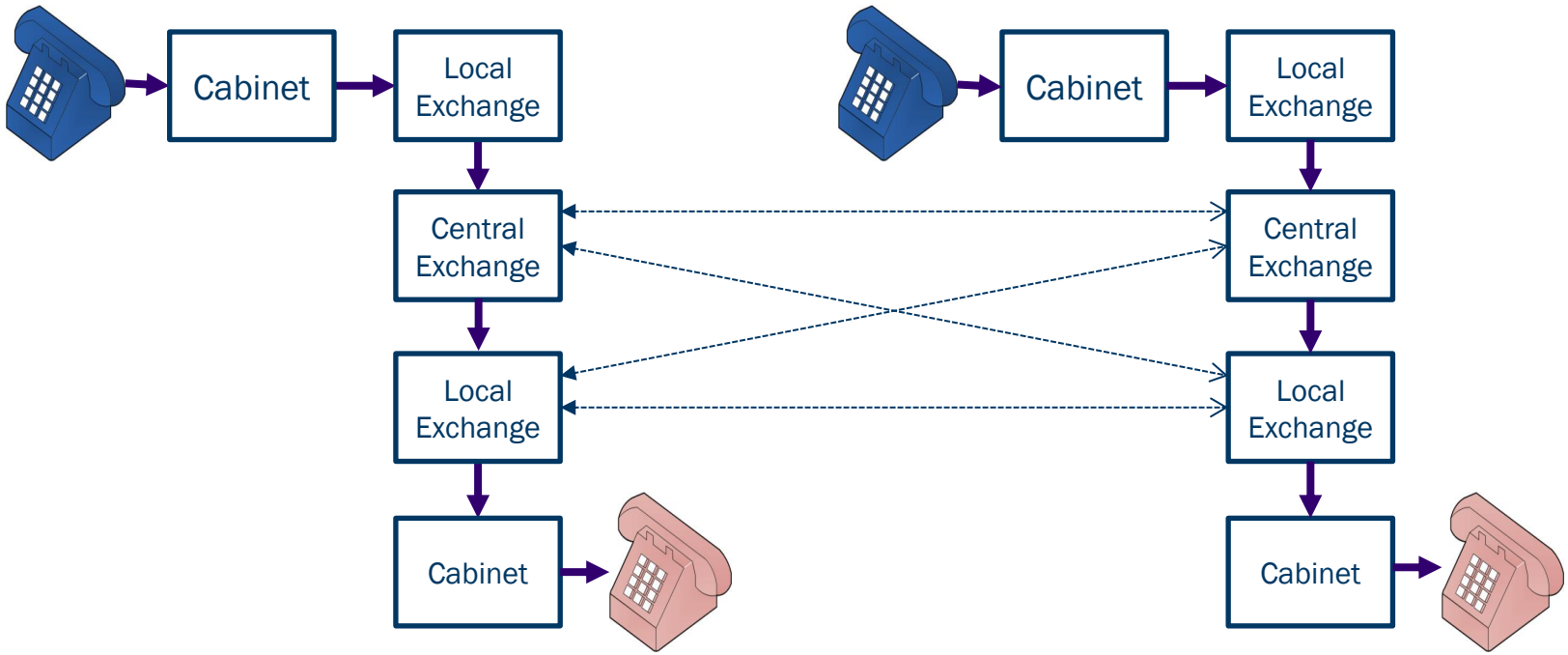
# Introduction of competition is complex – even with one technology



# Time Division Multiplexing (TDM) networks

Incumbent's non-IP (TDM) network

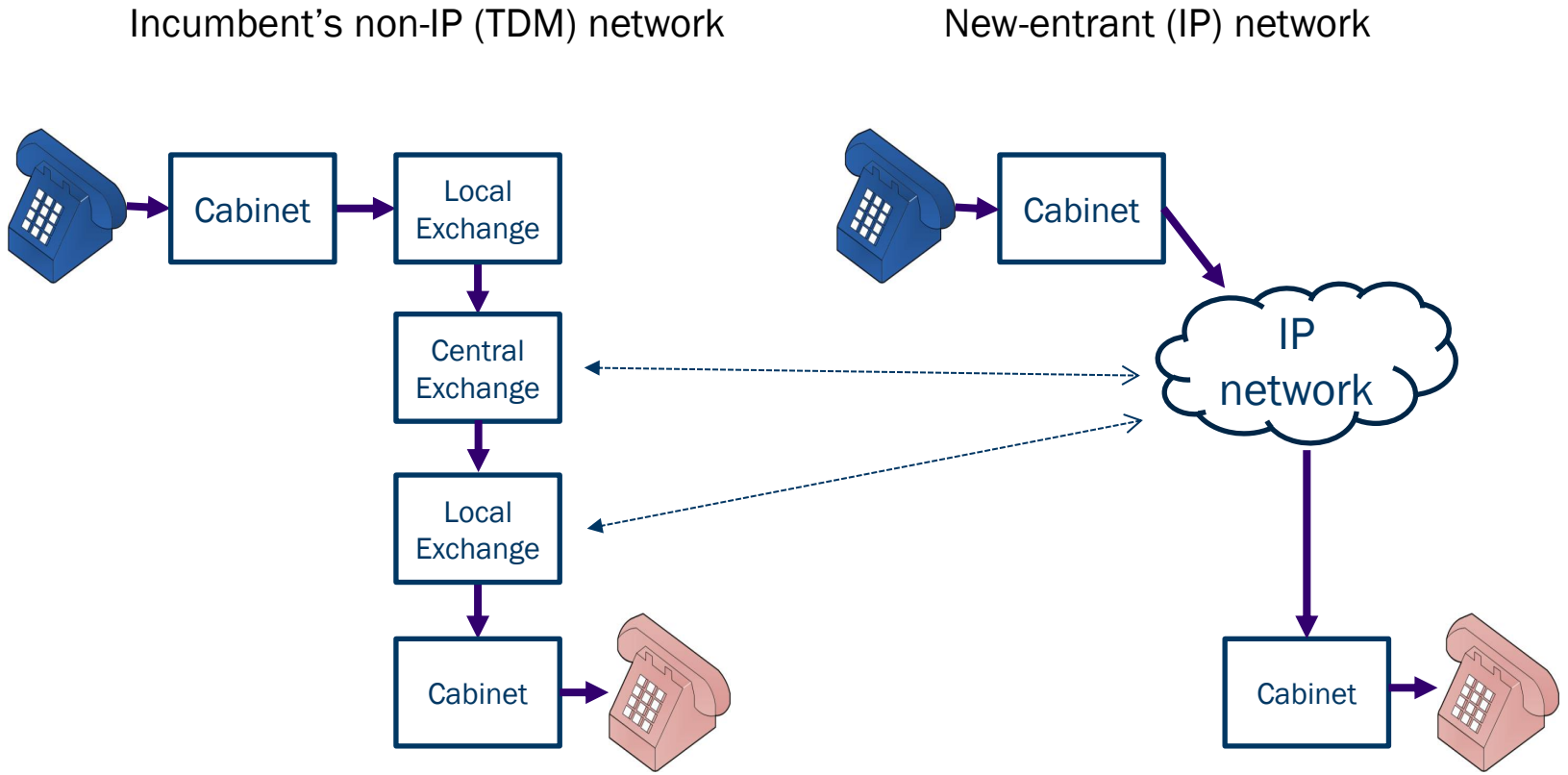
New-entrant (TDM) network




**Solutions:**

- Prices regulated
- Incumbents required to interconnect with other networks

# Interconnecting TDM and IP networks

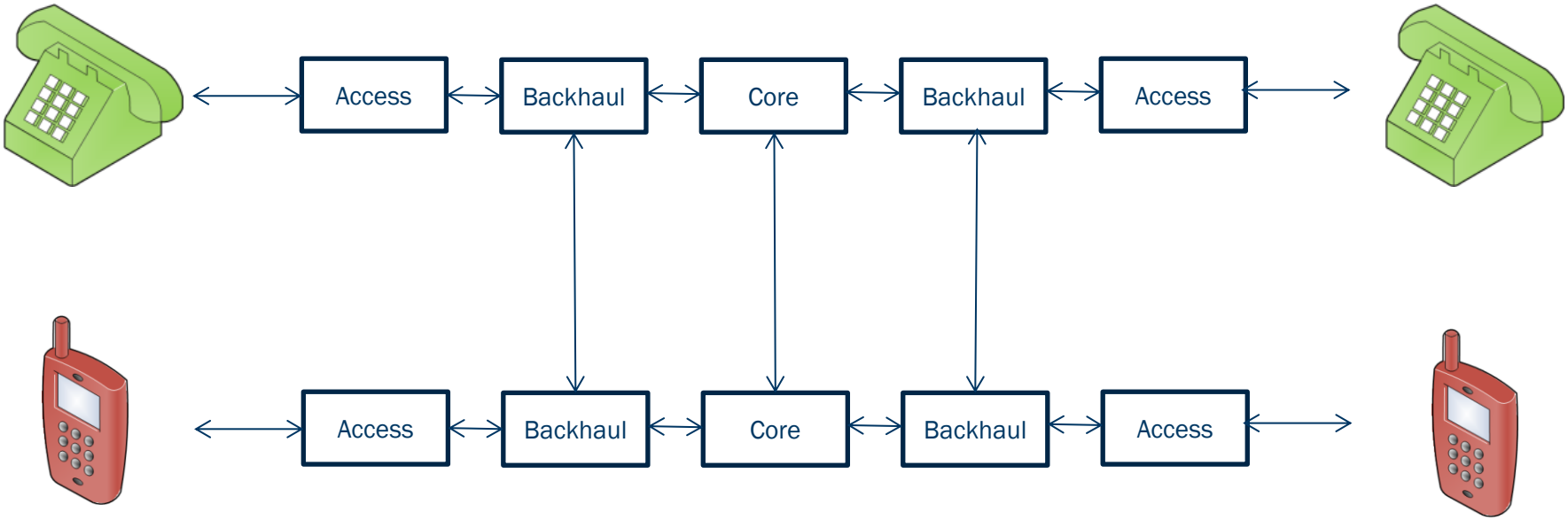



**Solutions:**

- Regulation based on "old" technology
- Incumbents still required to interconnect with IP networks

# VOIP

# Traditionally, fixed and mobile networks were distinct



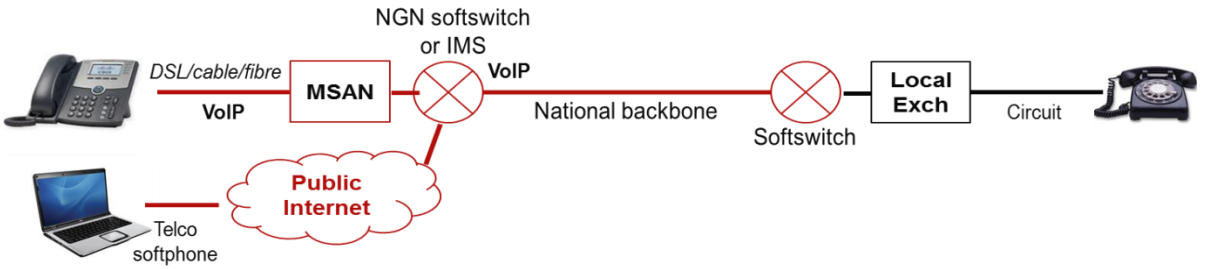

- Fixed and mobile networks were distinct, but had to interconnect to send calls from one network to another.

# VOIP – can be used in many parts of the value chain

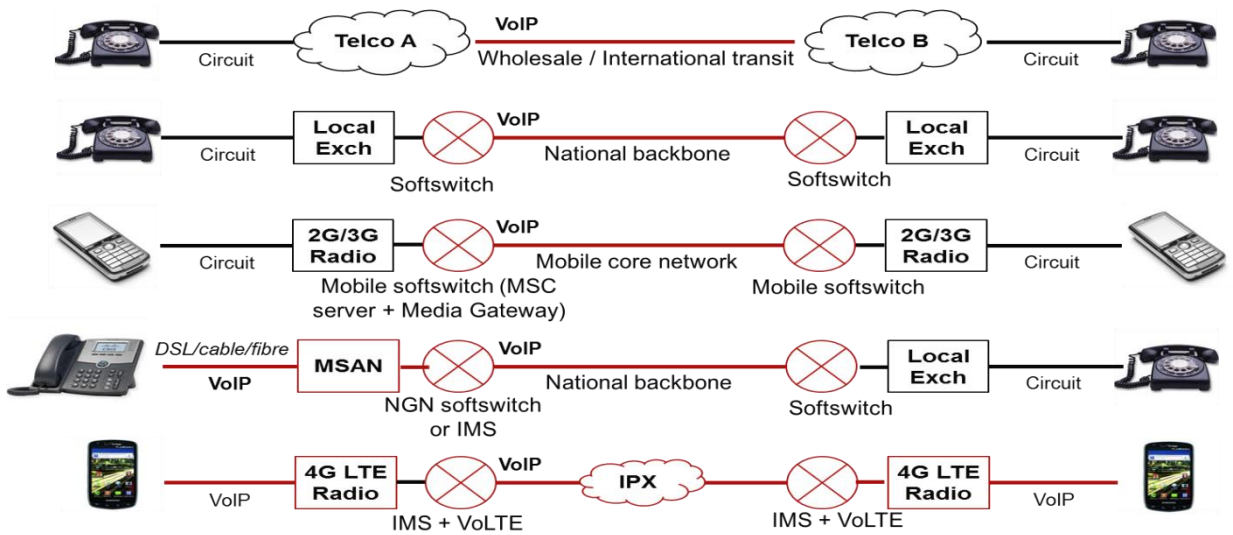
Internet calling (Skype to Skype)


Internet calling (Skype to other)


Internet VOIP




Non-Internet VOIP



# EU Regulation of VOIP - Requirements

| Area | Requirement |
|---|---|
| Security | Security and integrity of networks and services. |
| Emergency services | Access to emergency services. |
| Caller Location Information | Provide Caller Location Information (where it is 'technically feasible') |
| Access | Availability and reliability of access (although the regulations recognise that this may not apply to 'network-independent undertakings' which may not have control over the networks their service is provided over. |
| Quality of service | The revised directives set out a number of obligations for providers including the right for users to have a detailed contract |
| Privacy | providers are required to ensure privacy of data relating the services they provide. |

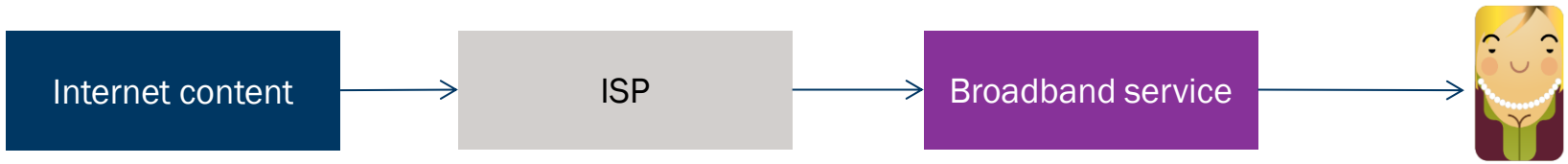
- Requirement are for the providers of Electronic Communication Services (ECS)
- ECS providers are those that operate a network of some kind
- Would apply to a VOIP operator like VONAGE
- Wouldn't apply to a VOIP operator like SKYPE

# Determining what a “telecoms” service is complex

| Example firm | Phone/Computer | Phone number | Data connectivity |
|---|---|---|---|
| Eg Viber | Smartphone | Mobile | 3G, 4G, Fixed broadband |
| Eg Skype | Smartphone/ Computer | Landline | 3G, 4G, Fixed broadband |
| Eg BT One-Phone | Smartphone/ Converged fixed/mobile phone | Mobile OR landline | Various – includes picocell technology |
| Eg VONAGE | VOIP Phone | Landline | Fixed broadband |

# Net Neutrality: What does it actually mean?

# Net Neutrality: Concept defined in 2003 in United States

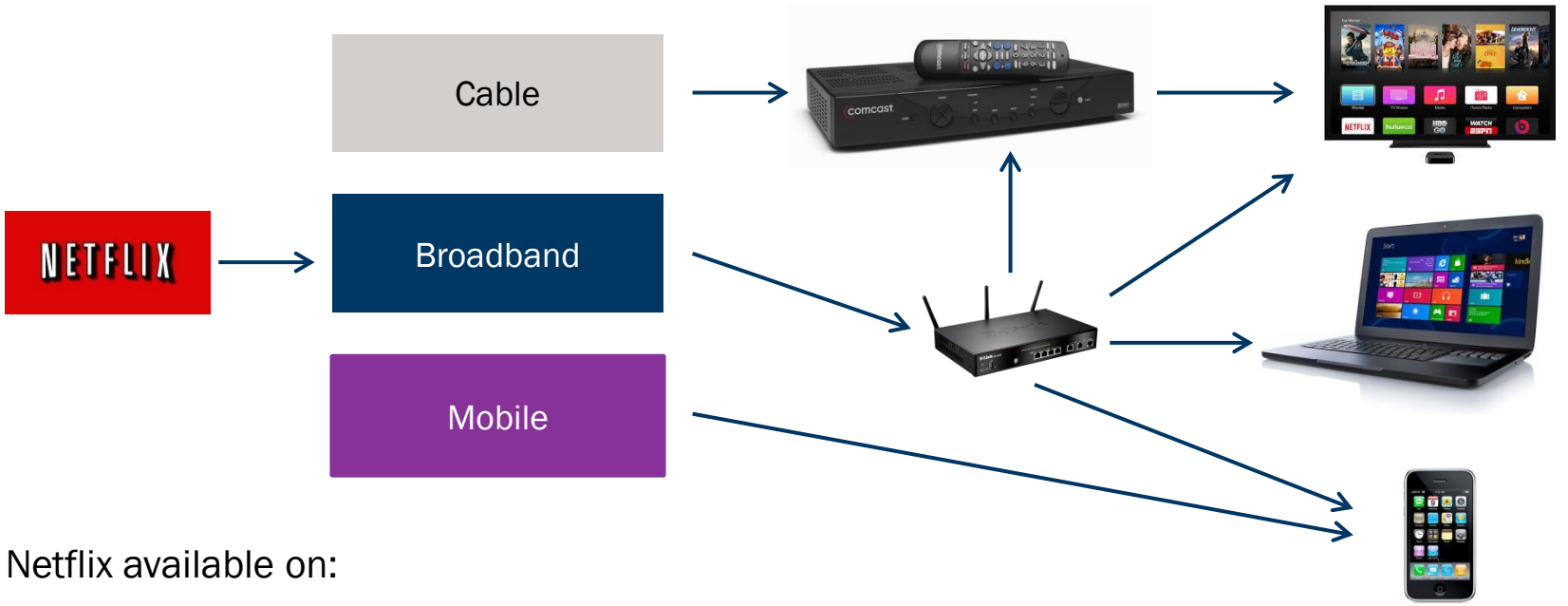



**Net Neutrality = Having a "neutral network"**

"an internet that does not favour one application (say, the world wide web) over others (say e-mail)"

Sources: Network Neutrality, Broadband Discrimination - Wu, 2003, Net Neutrality: A progress report – Kramer, Wiewiorra, Weinhardt, 2011

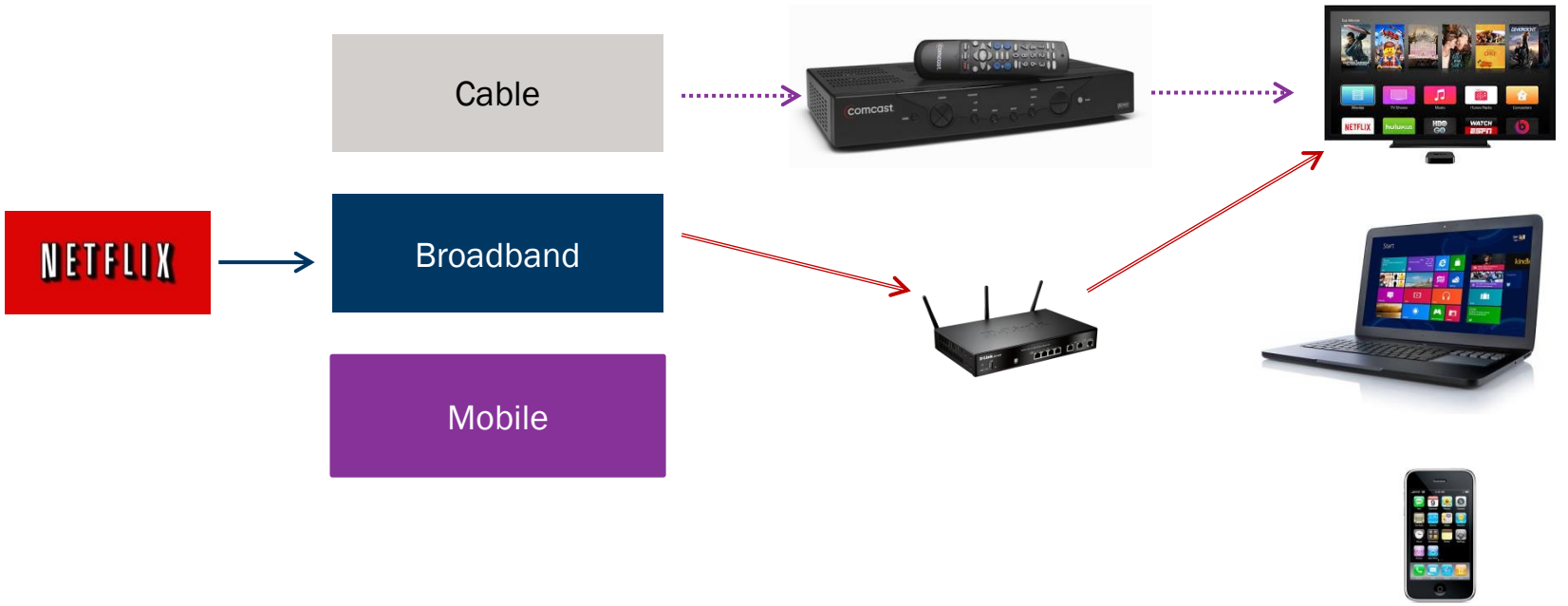
# Netflix: Same content – multiple delivery methods




Netflix available on:

- TVs
  - Cable TV (via cable)
  - Smart TVs (eg via broadband)
  - Dumb TVs (eg via Chromecast)
- Laptops (via broadband)
- Mobiles
  - Via mobile
  - Via Wifi (via broadband)

# Netflix: Same content – multiple delivery methods

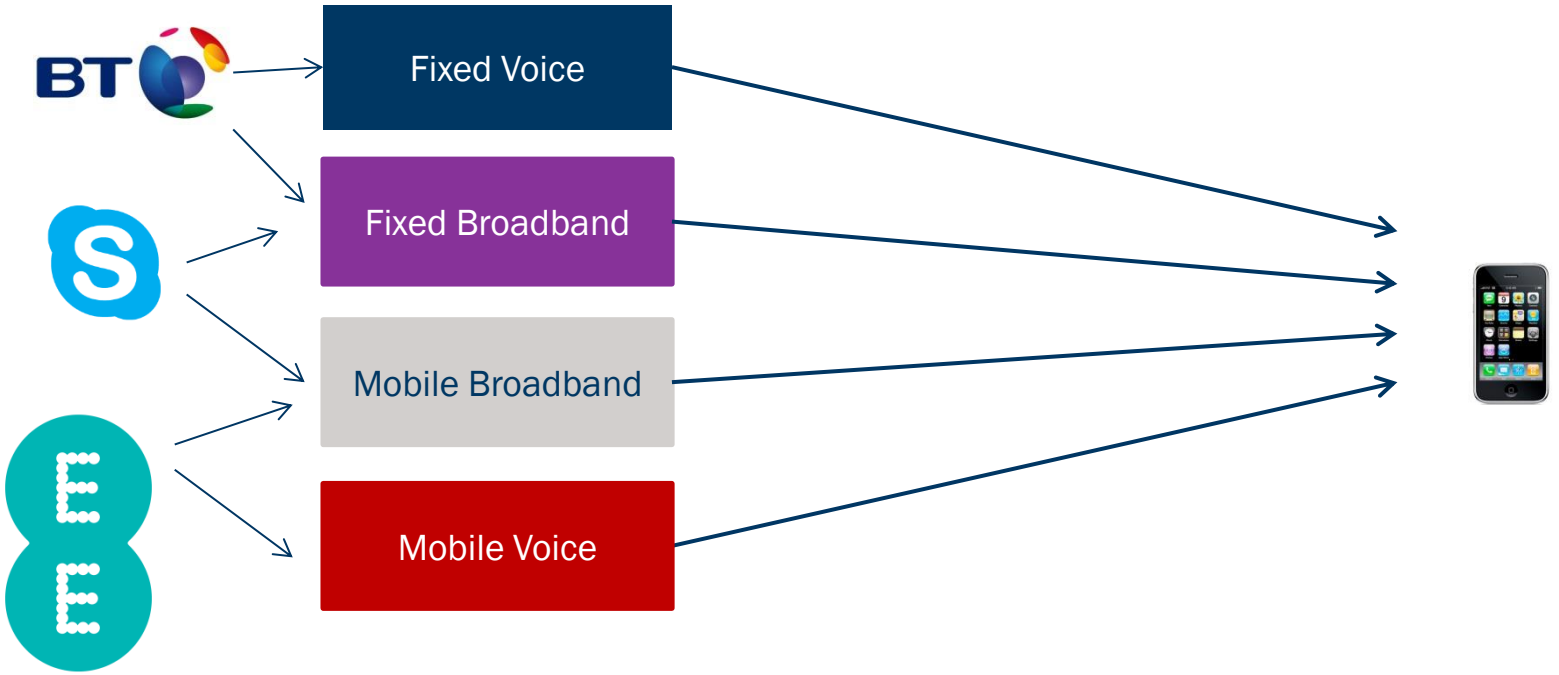



**"Cable TV service":** Service coming via a cable TV supplier, via a cable TV box, onto a TV.

**"Broadband service":** Service comes via a broadband supplier, via a router, onto a TV

**What's the difference to the consumer?**

# Voice: Same service – multiple delivery methods

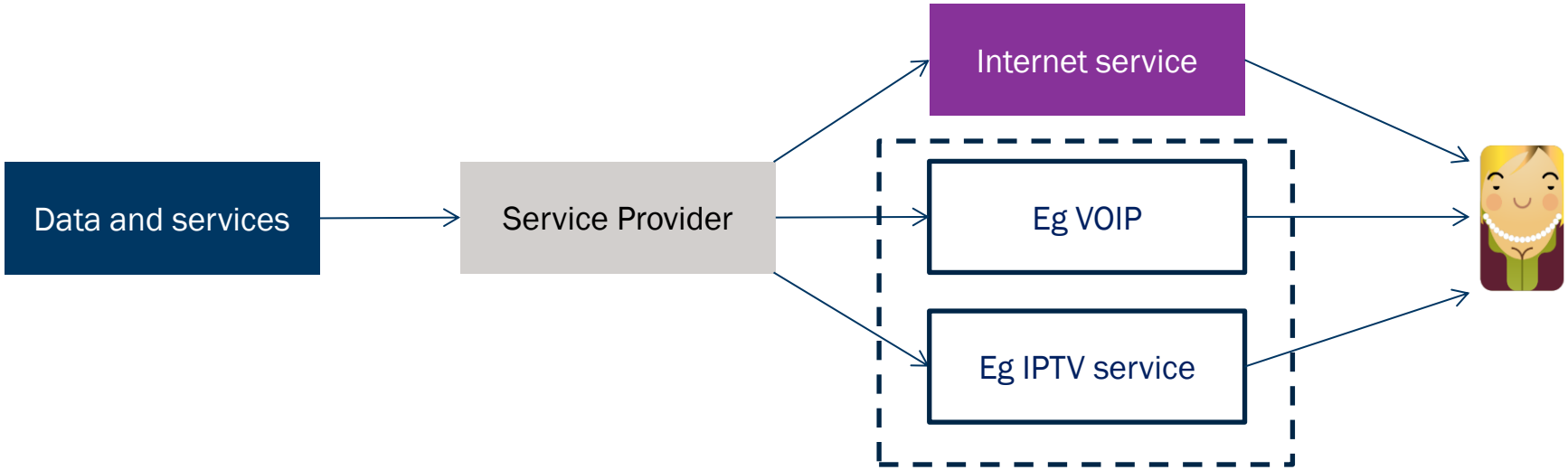



Consumers can make voice calls via:

- Fixed voice (via a traditional fixed operator)
- Mobile or Fixed broadband (via eg Skype)
- Mobile voice (via mobile operator)

Distinction between these services increasingly blurred

# Internet v “Non-Internet”




- **Internet v non-internet:** There has been an attempt to distinguish between “internet” and non-internet services in the net neutrality debate. However, the distinction is debatable:
  - “Non-internet” services could include dedicated IPTV service or VOIP service
  - An internet service might be watching TV over the internet (eg BBC iPlayer)
- **One access “pipe” may be used to deliver many services:** Cable firms (eg Virgin) deliver both their TV service and broadband service over joined infrastructure.

# Net Neutrality: EU and US perspectives

# Concerns over non-neutrality – EU and US perspectives differ

| | |
|---|---|
| Blocking | Blocking access to legal content and services |
| Throttling | Slowing down access to the internet for certain users. |
| Paid prioritisation | Creating of so-called “fast lanes” for some forms of internet traffic |
| Traffic management | Prioritising certain forms of traffic |

# Concerns over non-neutrality – EU and US perspectives differ

| | | EU | US |
|---|---|---|---|
| Blocking | Blocking access to legal content and services | Typically prohibited | Prohibited |
| Throttling | Slowing down access to the internet for certain users. | Prohibited, with limited exceptions | Prohibited |
| Paid prioritisation | Creating of so-called “fast lanes” for some forms of internet traffic | Allowed, must not affect “internet services” | Prohibited |
| Traffic management | Prioritising certain forms of traffic | Allowed in some circumstances | “Reasonable Network Management” |

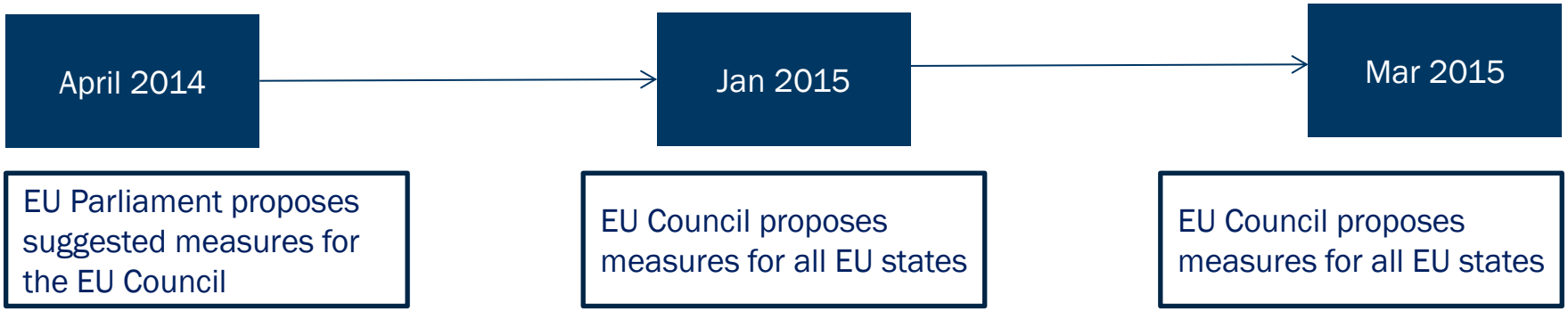
# EU in more depth – Proposed EU Council rules

| | | |
|---|---|---|
| Blocking | Blocking access to legal content and services | • May be required to block as a matter of public policy.<br>• Not allowed to block for business purposes |
| Throttling | Slowing down access to the internet for certain users. | • Allowed if different quality of service requirements exist and can be "objectively justified"<br>• Other throttling not permitted |
| Paid prioritisation | Creating of so-called "fast lanes" for some forms of internet traffic | • Allowed, but must not be a "replacement" for internet services<br>• Shouldn't affect "internet" services |
| Traffic management | Prioritising certain forms of traffic | • Allowed, should be transparent<br>• Rules should be made clear |

# EU in more depth – Proposed EU Council rules

| | |
|---|---|
| Blocking | Allowed for PUBLIC POLICY REASONS not for BUSINESS REASONS |
| Throttling | Allowed if there are OBJECTIVE DIFFERENCES between quality requirements |
| Paid prioritisation | Allowed, but must not affect STANDARD INTERNET SERVICES |
| Traffic management | Allowed, rules must be TRANSPARENT and COMMON RULES needed |

# EU Legislation – the path to Net Neutrality




- The March 2015 seems to allow EU Countries to enact the concept of Net Neutrality in a variety of ways allowing:
  - **Paid priorisation:** Although subject to the requirement that it doesn't affect "standard internet"
  - **Traffic management:** The exemptions from the general principle of no traffic management have been expanded over time to allow operators to take account of potential network congestion.
  - **Blocking/Throttling:** Operators wouldn't be typically allowed to do this for business reasons, but Governments could require it for public policy reasons.

# US Approach: Clear rules…almost

**Bright Line Rules**

- **No Blocking**: broadband providers may not block access to legal content, applications, services, or non-harmful devices.
- **No Throttling**: broadband providers may not impair or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices.
- **No Paid Prioritization**: broadband providers may not favor some lawful Internet traffic over other lawful traffic in exchange for consideration of any kind—in other words, no "fast lanes." This rule also bans ISPs from prioritizing content and services of their affiliates

**Applies to all broadband providers**

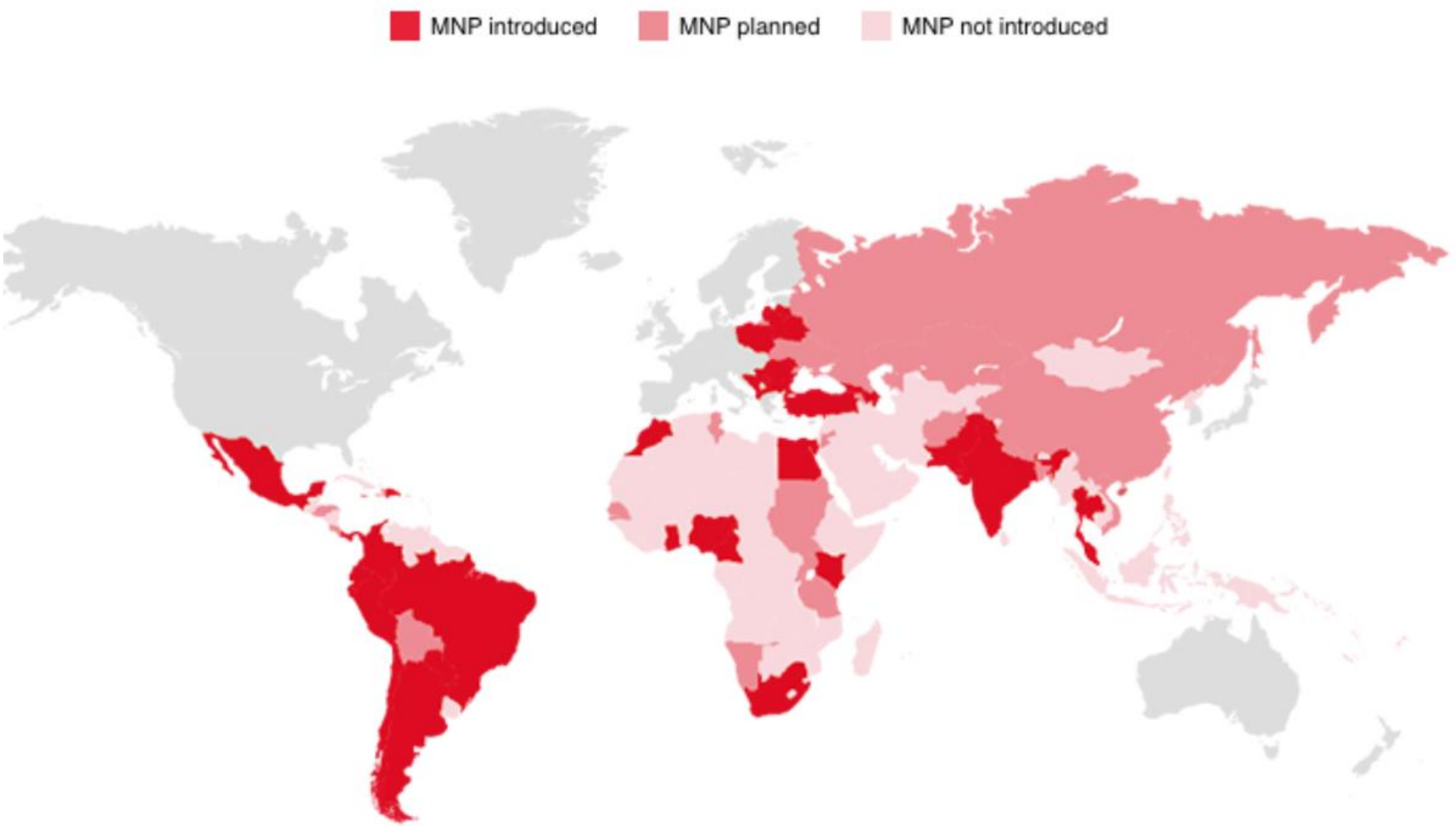
- **Broadband services considered "telecommunications" services:** The approach reclassifies broadband services as "telecommunications" instead of "information" services.
- **Applies broadly:** Applies not just to "open Internet" services, but other data services (eg VOIP from a cable service)

**Some ambiguity remains**

- **Unclear how this applies to bundled services:** Cable operators sell both TV and internet services together. Unclear whether the TV services are also subject to these rules

# Mobile number portability

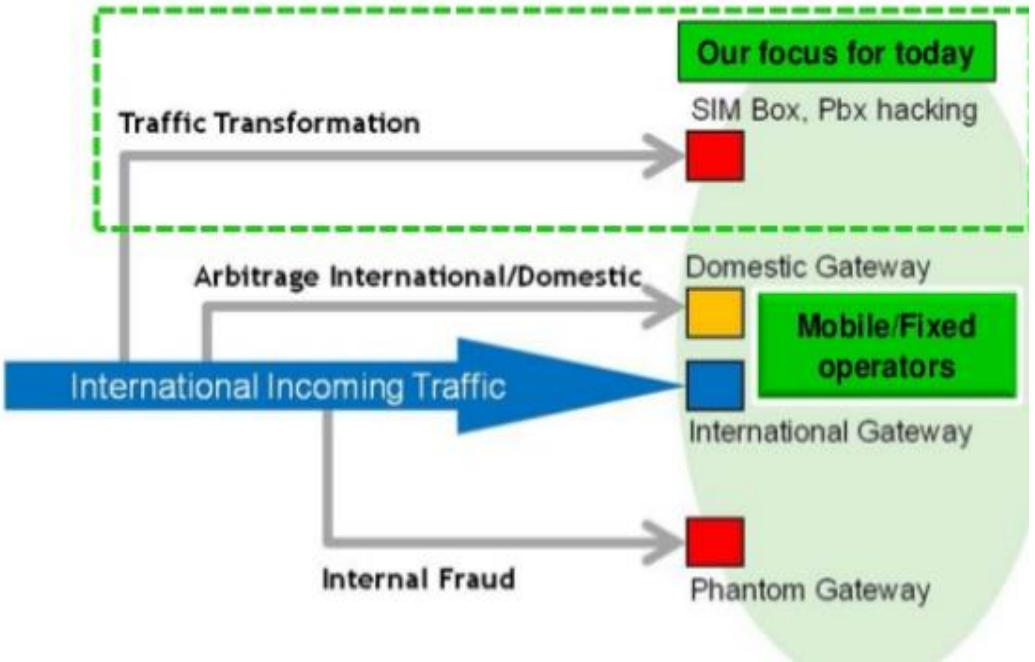
# MNP may be a more pressing issues for regulators




GSMA Intelligence, Majority of developing countries have no plans for MNP, November 2013

# Other regulatory topics

# Illegal international traffic by pass




http://www.slideshare.net/firdausf1/sim-box-issue

OECD (2014), "International Traffic Termination", *OECD Digital Economy Papers*, No. 238, OECD Publishing. http://dx.doi.org/10.1787/5jz2m5mnlvkc-en