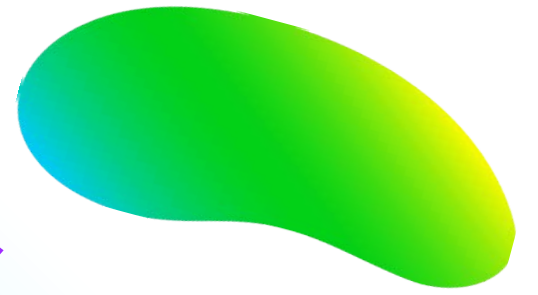


# OI'S REGULATORY CHALLENGES – CONCESSION AGREEMENT REVISION & TERMS OF ADJUSTMENT OF CONDUCT

NEW YORK | JUNE 2016



Revision of the concession agreement and celebration of the TAC will enhance Oi's position through a more robust and balanced regulatory model

### **REVISION OF THE CONCESSION AGREEMENT**

- Focus on the exoneration of obligations
  - Universal service for voice
  - Reversible assets for voice
  - Concession fee (2% revenue voice),...
- Unique regulatory window to revise the concession model

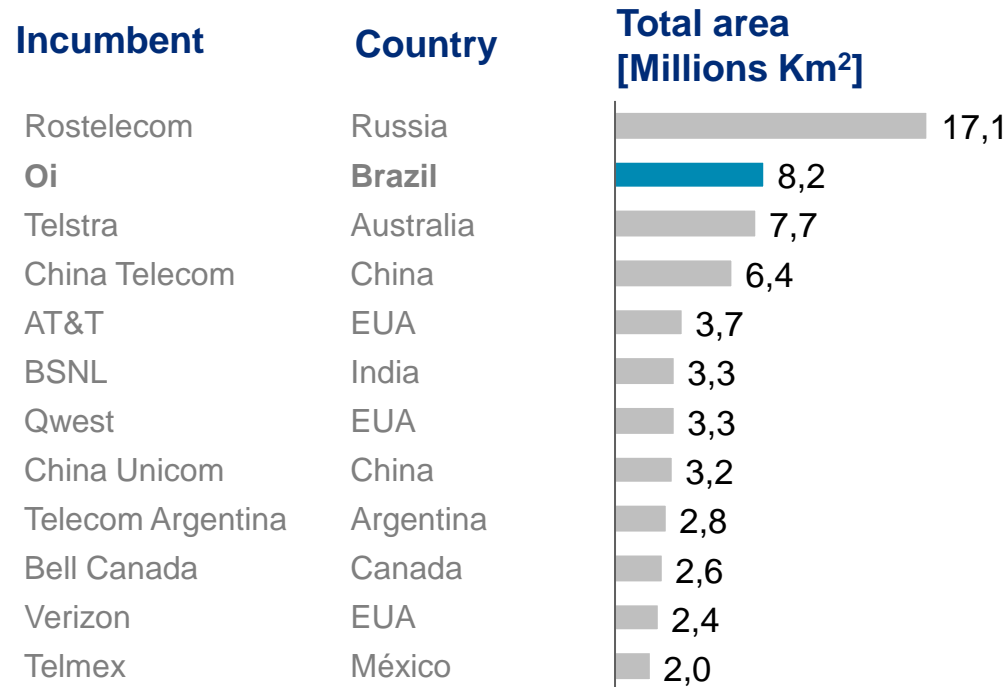
### **TAC: TERMS OF ADJUSTMENT OF CONDUCT**

- Regulatory mechanism that enables the exchange of fines for projects and / or benefits to customers
- Opportunity to transform the Oi operation and improve the quality of service

*Focus of the following slides*

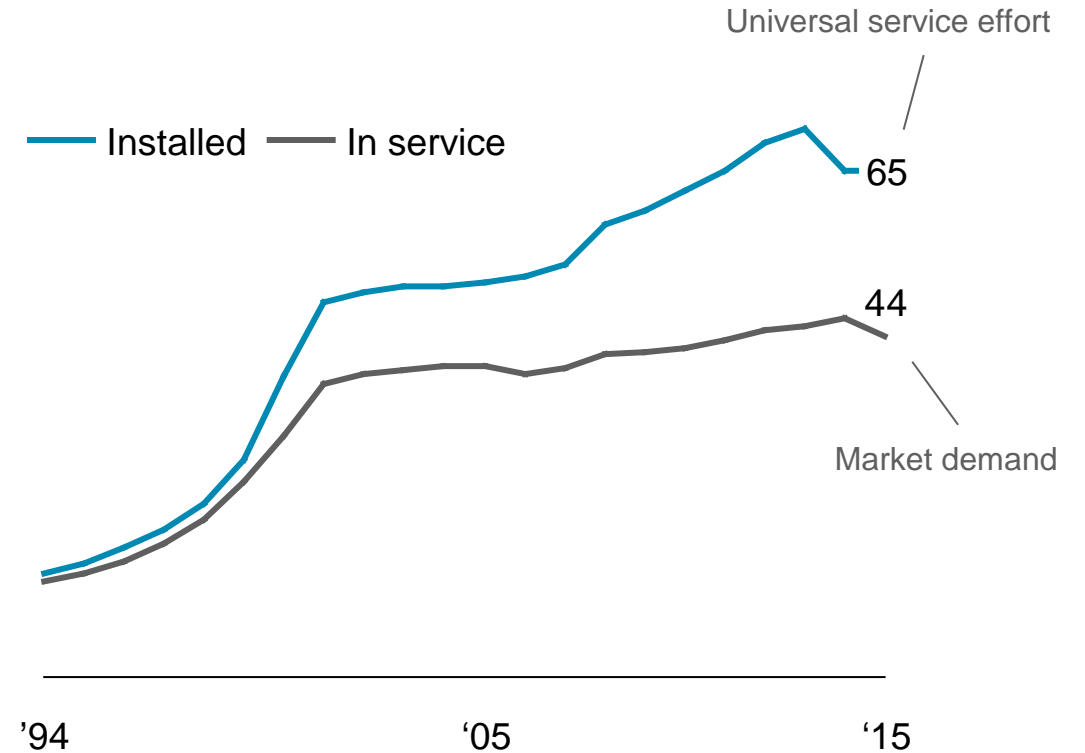
Over the past 15 years, Oi has delivered one of the largest and most aggressive fixed-line universalization efforts in the world; today, however, the concession model has lost it's importance ...

### Country area In Km<sup>2</sup>



2nd largest fixed line universal service effort

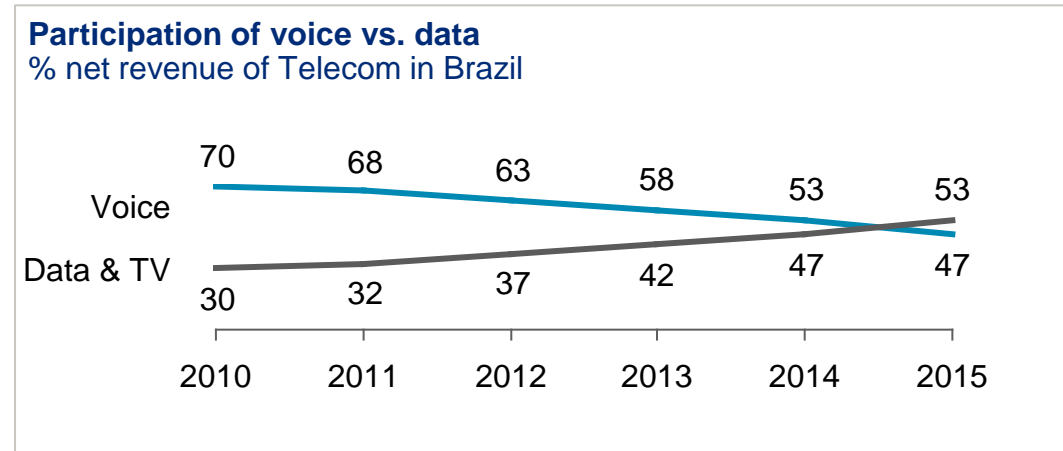
### Fixed lines – entire sector In millions of lines



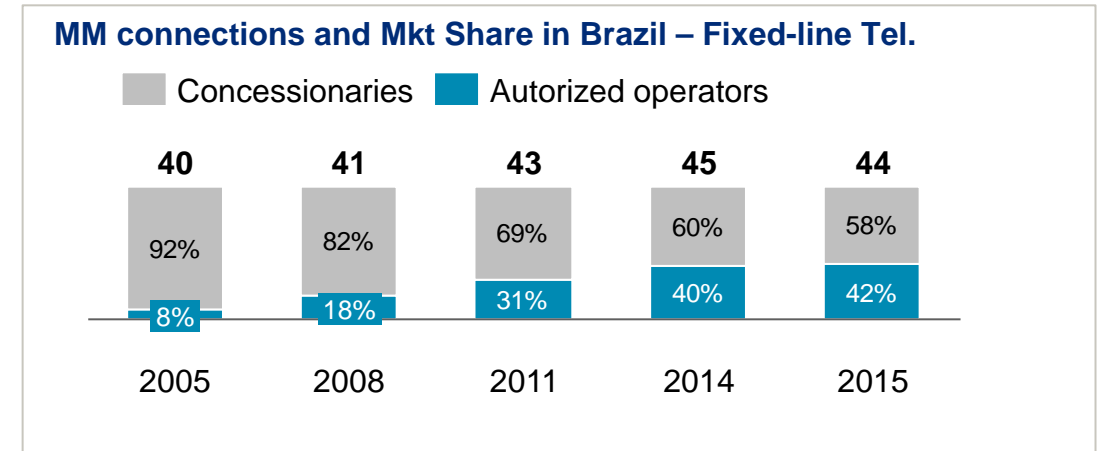
Huge gap in 'installed' vs. 'in service' lines

..., additionally, the attractiveness of the fixed line concession is decreasing due to the effects of competition between services and regulatory asymmetry between players

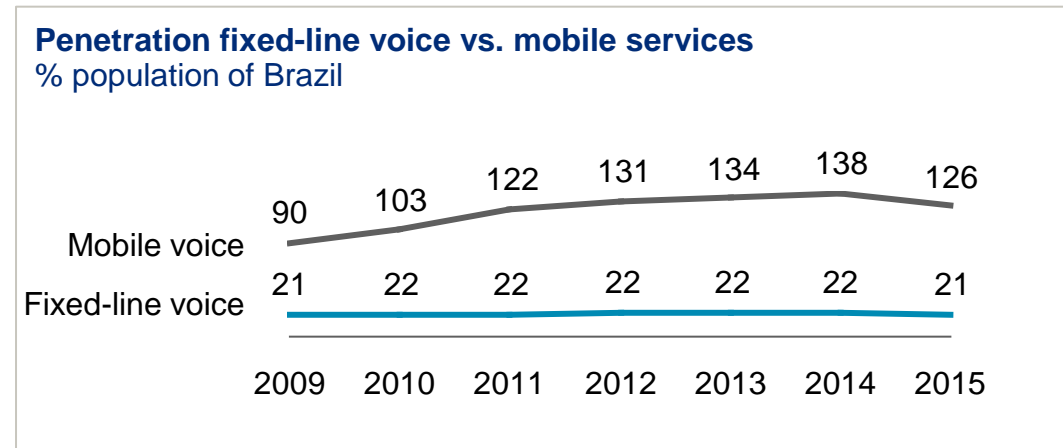
### Substitution of services: voice vs. data



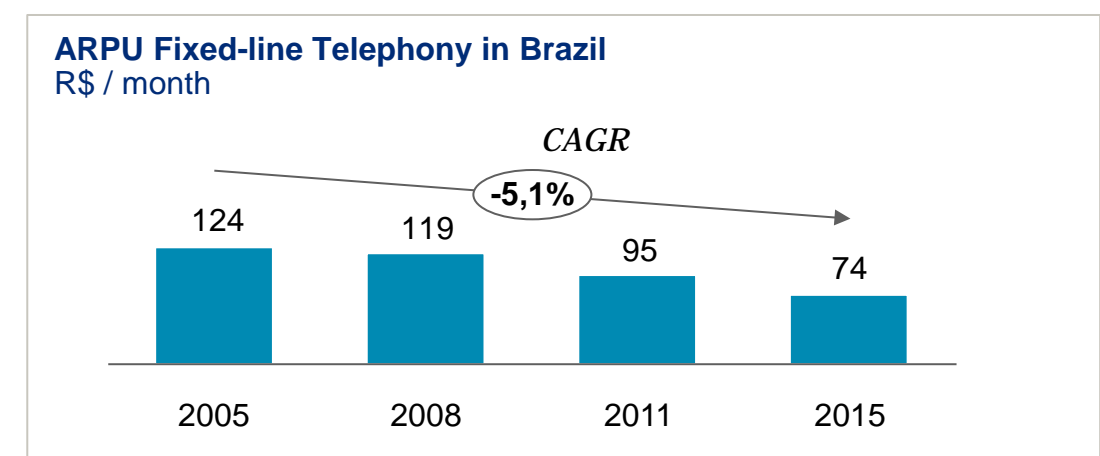
### Regulatory asymmetry: ↑ Mkt share authorized players



### Substitution of services: mobile vs. fixed-line



### Reduction in ARPU – Fixed-line Telephony



Despite the loss of relevance in fixed telephony, Brazil continues to be an outlier in many aspects, including the regulatory model, asset reversion scheme, universal service obligations, etc.



### Regime<sup>1</sup>

- **Only 3** of the **50** biggest countries today are **concessions** – **Brazil** is one of them



### Asset reversion<sup>1</sup>

- Of the **8** countries that have used (or still use) concessions, only **2** have asset **reversion schemes**, including **Brazil**; there has been no real case of asset reversion



### Pay-phones<sup>2</sup>

- Brazil is the **4<sup>th</sup> most aggressive** in payphone density (**4.2** payphones / 1000 inhabitants), despite having the **5<sup>th</sup>** highest mobile penetration (**~140%**)



### Individual fixed-line<sup>3</sup>

- Brazil is the **most aggressive** in terms of fixed-line obligations, with the need to install **100%** of lines in **7 days**, w/o flexibility or progressive targets (possible in other countries)



### Quality<sup>4</sup>

- Brazil is the **2<sup>nd</sup> most aggressive** in terms of fixed-line quality indicators (**21 indicators**), losing only to Costa Rica



### Penalties<sup>5</sup>

- Brazil's penalty ceiling is **R\$ 50M** (**4.5x** higher than the 2<sup>nd</sup> country); ANATEL is the **3<sup>rd</sup> largest** issuer (e.g. Oi has been fined **R\$ 1.3M** for failing to deliver an editable PDF!)

Notes: (1) 50 biggest countries considering GDP criteria; – there was not always up to date information for all countries - comparisons with the countries with information; (2) Analysis of 24 different countries with the most current data available in 2015 by country; (3) Analysis of 24 countries with the most current data available in 2015 by country; (4) Regulatory situation in 2014 - internal data Oi, considering analysis of 11 countries; (5) Regulatory situation in 2014 - internal data Oi, considering analysis of four countries to fine ceiling and 6 countries to issue fines; Ranking considers issuing fines over industry revenue; Source: Nera and Oliver Wyman research; ITU; Worldbank; Anatel; Telebrasil; Teleco

Many relevant stakeholders have already publically expressed their views regarding the need to urgently modernize Brazil's fixed line regulatory model

*“..it is essential for us to rebuild the foundations of the Brazilian economy. And **significantly improve the business environment for the private sector.** So that it can resume its natural vocation to **invest, produce, and generate employment and income.**”*

*Michel Temer*  
Interim President of Brazil  
Globo.com – May 2016

*“There's a **complete loss of attractiveness and essentiality** of fixed line...We can't continue to make companies **sustain services that no one buys anymore.** Funds have to be invested in **what the population demands.**”*

*Igor de Freitas*  
ANATEL Commissioner  
Telesíntese (analysis of Igor's vote) – February 2016

*“**Revision** of the **concession model** is an opportunity to **deregulate** the industry.”*

*João Resende*  
President of ANATEL  
Teletime News – September 2015

A reduction of concession obligations would generate important benefits: 1st for greater financial balance of the fixed line unit, and 2nd to meet public policies (broadband expansion)

### 1<sup>st</sup> step: greater fixed line financial sustainability

- Significantly reduce fixed line obligations
- Ensure financial stability of the fixed line business
- Generate additional obligation reductions for public policy investments



### 2<sup>nd</sup> step: meet public policy agenda

- Invest and expand broadband in Brazil
- Ensure economically viable solution for Oi
- Use public funds to support broadband expansion



*Government has been highly resistant towards negotiating both separately*

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All interests can align around the objective of enabling the evolution of the concession towards a scenario of fixed line sustainability and around the growth of broadband in Brazil

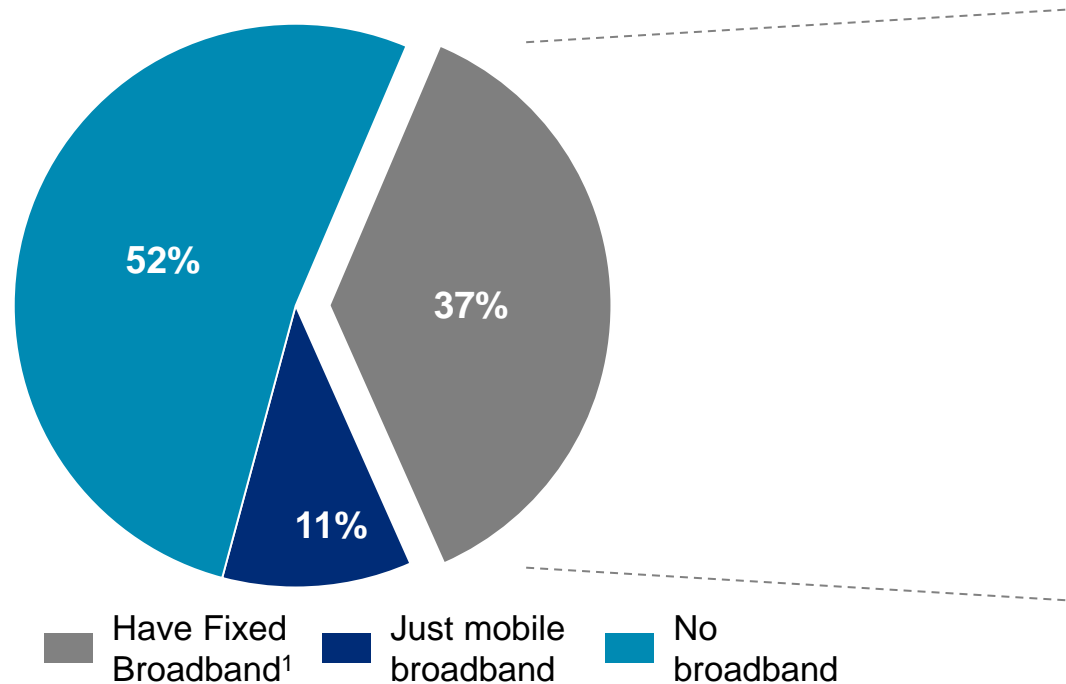
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In terms of broadband expansion (the government's public policy priority), Brazil has 2 challenges: (1) activating new broadband users, and (2) increasing the average broadband speed

### Households by broadband usage

% of households

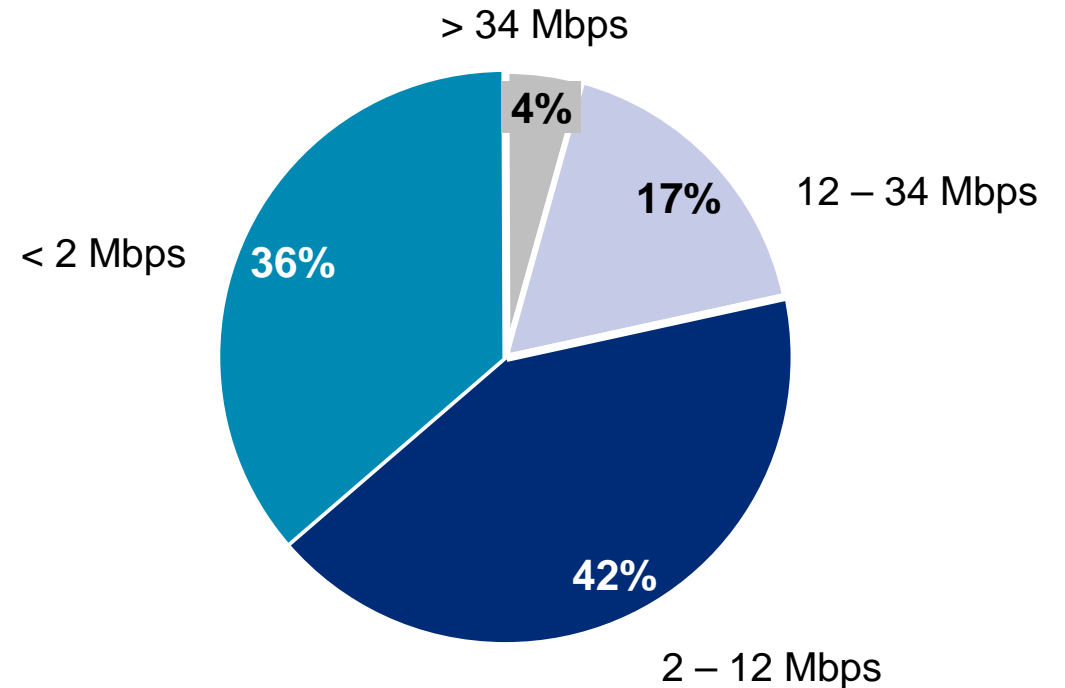
Total = 65 MM domiciles



Challenge 1: Enable broadband in more than half of all Brazilian households

### Households: Fixed broadband by speed range<sup>2</sup>

% of households

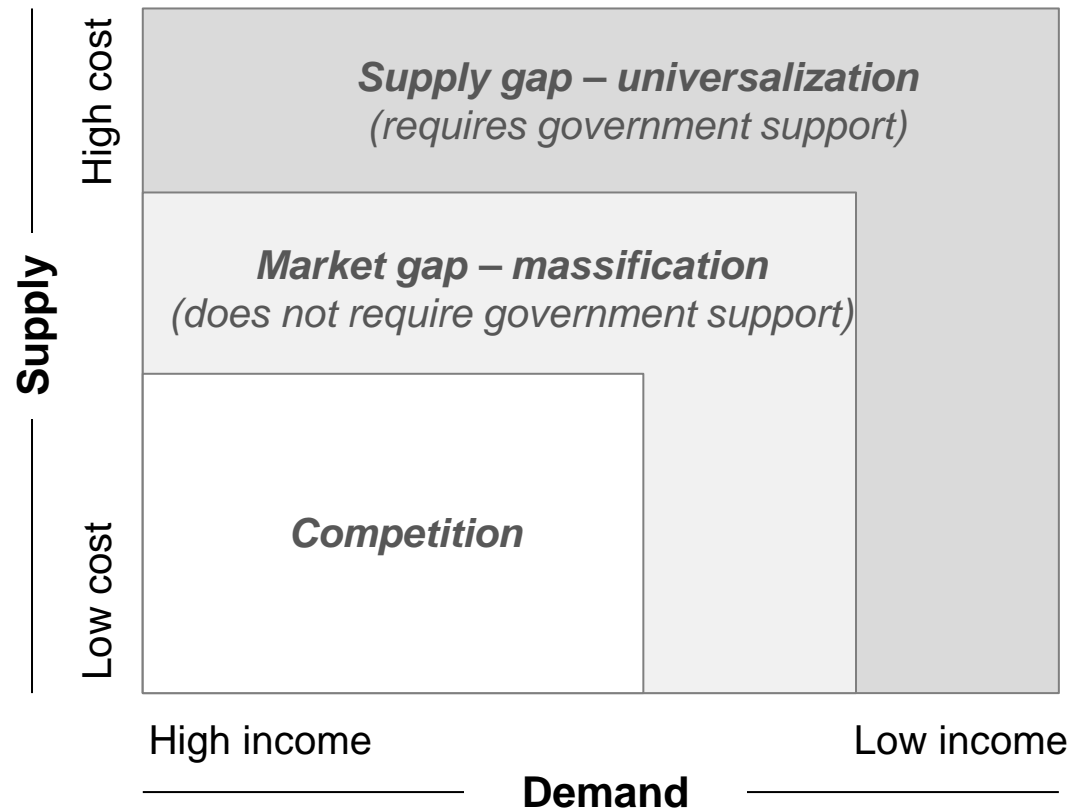


Challenge 2: Increase average speed contracted by current users

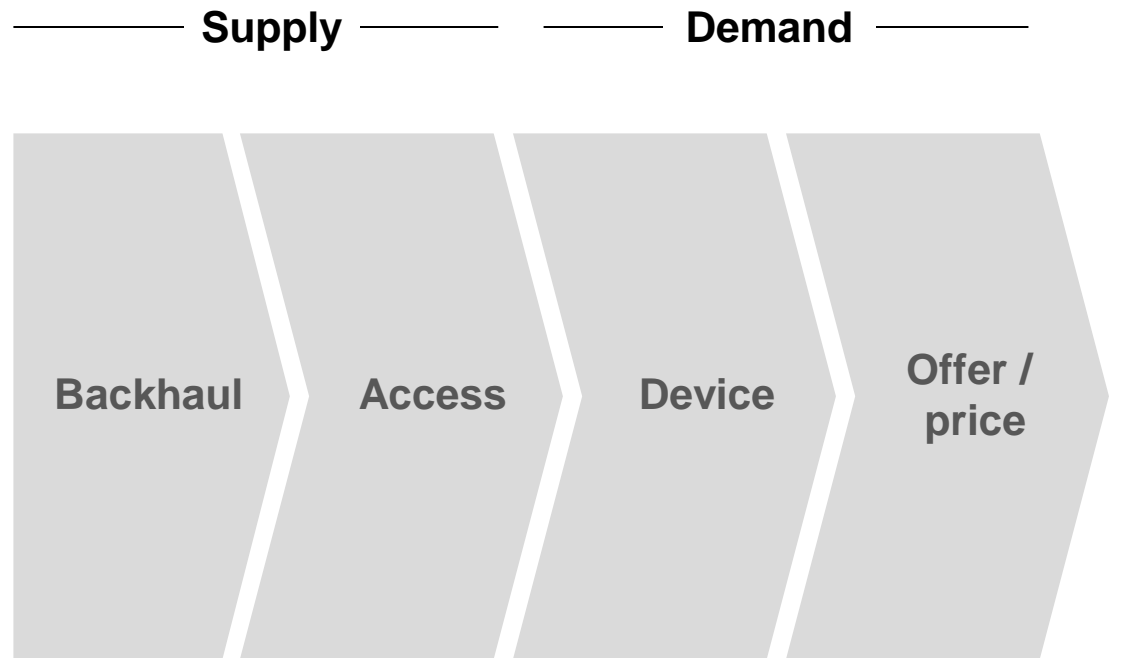
Source: IBGE PNAD 2013; Notes: (1) Domiciles with just fixed broadband = 16.656 ; (2) Anatel SCM analyses

The expansion of broadband has to distinguish between massification and universal services and consider not only supply (building network) but also demand (take up of clients)

### Oi proposal for broadband expansion



### Incentives for broadband take-up



# Oi's position and points of discussion with the government regarding the revision of the fixed line concession regulatory model has the following key requests:

## What needs to be done?

## Why it needs to be done?

- |          |   |   |  |
|----------|---|---|--|
| <b>1</b> | <ul style="list-style-type: none"><li>• <b>Convert the concession regime (public) to an authorization / private regime</b></li></ul>  |    | <ul style="list-style-type: none"><li>• It allows greater competitiveness of Oi; more robust model, flexible regulatory model, and in line w/ global benchmarks</li></ul>  |
| <b>2</b> | <ul style="list-style-type: none"><li>• <b>Unburden the fixed-line phone service, even if converted into a private regime</b></li></ul>   |    | <ul style="list-style-type: none"><li>• Helps to reduce opex / capex, reverse value destruction and restore the financial sustainability of the fixed-line service unit</li></ul>  |
| <b>3</b> | <ul style="list-style-type: none"><li>• <b>Remove the reversibility of fixed-line related assets, with reasonable investment trade-offs</b></li><li>• <b>Consider a multi-service asset</b></li></ul> |    | <ul style="list-style-type: none"><li>• Allows more productive and efficient investments as well as asset monetization (i.e. real estate), unlocking relevant value</li><li>• Functional view should consider multiservice assets (fixed &amp; BB)</li></ul> |
| <b>4</b> | <ul style="list-style-type: none"><li>• <b>Expand broadband (reasonably), focusing not only on supply but also on demand</b></li></ul>  |   | <ul style="list-style-type: none"><li>• Meets the interests of society, market, government and operators; would help stimulate Brazil's economy</li></ul>  |
| <b>5</b> | <ul style="list-style-type: none"><li>• <b>Use sector funds to provide fixed-line and broadband universal services</b></li></ul>  |  | <ul style="list-style-type: none"><li>• Covers universal service costs associated with high-cost regions, demand stimulation, among others</li></ul>   |

Oi has exhaustively approached and interacted with multiple external stakeholders to enable relevant changes in the regulatory framework

Non exhaustive



"Radar" with Oi's dimensions of activity



There are different views under discussion for the revision of the concession contracts and regulatory model – we list 4 of the most relevant

### Recent key recommendations on the concession review (*not exhaustive*)



#### Regulatory Commissioner – Igor vote

- Reducing the scope of the Concession (payphones)
- Concessionaires become private / authorized for individual access
- Convergent license should be further evaluated
- Does not address the issue of reversibility of assets



#### Regulatory Commissioner - Zerbone vote

- Tactical and immediate adjustment of the *PGMU* and the Concession contract (Light Concession)
- Concessionaires that meet investment targets can migrate to an authorized / private model
- Convergent license model is part of the migration package



#### Working Group Minicom & Anatel

- Published guidelines for a new regulatory model (to be followed by regulator), including:
  - Broadband as the focus of public policy
  - Concession model review (from concession to private), to be proposed by regulator
- Universal service reductions followed by broadband investments



#### Law Project – Lower House

- New law to convert concession model to private regime passed in the lower house (Jun/16) and submitted to Senate
  - New law alters existing Brazilian Telecoms Law (LGT)
- Conversion to private regime possible in competitive areas
  - Includes tech. neutrality (e.g. mobile coverage as substitute)
- Asset reversion valuation based on multiservice criteria

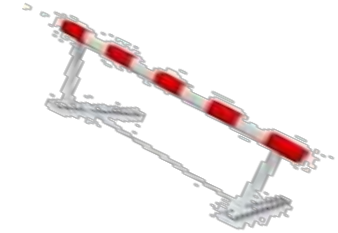
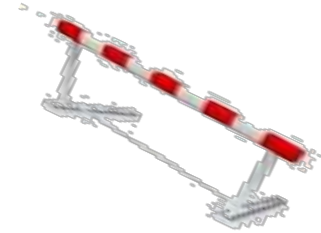
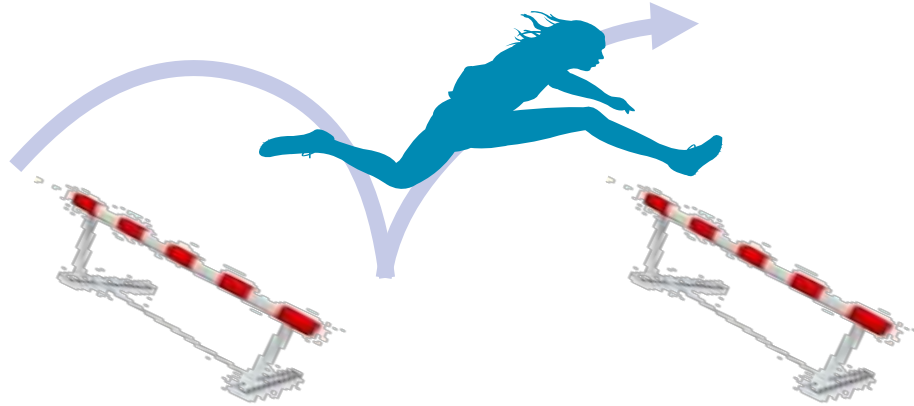
\_\_\_\_\_ *2 out of 5 commissioners have voted* \_\_\_\_\_

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Other relevant stakeholders (e.g. Planning and Finance Ministries, BNDES (national development bank), FGV (renowned academic institution), among many others, have also favorably expressed their views

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There are uncertainties and risks that we need to address to ensure a high degree of comfort and commitment from the operators, before making any decision regarding the regulatory framework



## 1 Fixed line obligation reductions

- Ensure that fixed line obligations (payphone and landlines) be reduced to support Oi financial stability
  - Hybrid model (concession + private) possible
- Obligation reductions could turn into “zero sum” game

## 2 Asset reversion scheme

- Valuations of assets should be reasonable
  - Operators own the assets
  - Use of multiservice concept
- Still low level of consensus on valuation methods

## 3 Broadband expansion

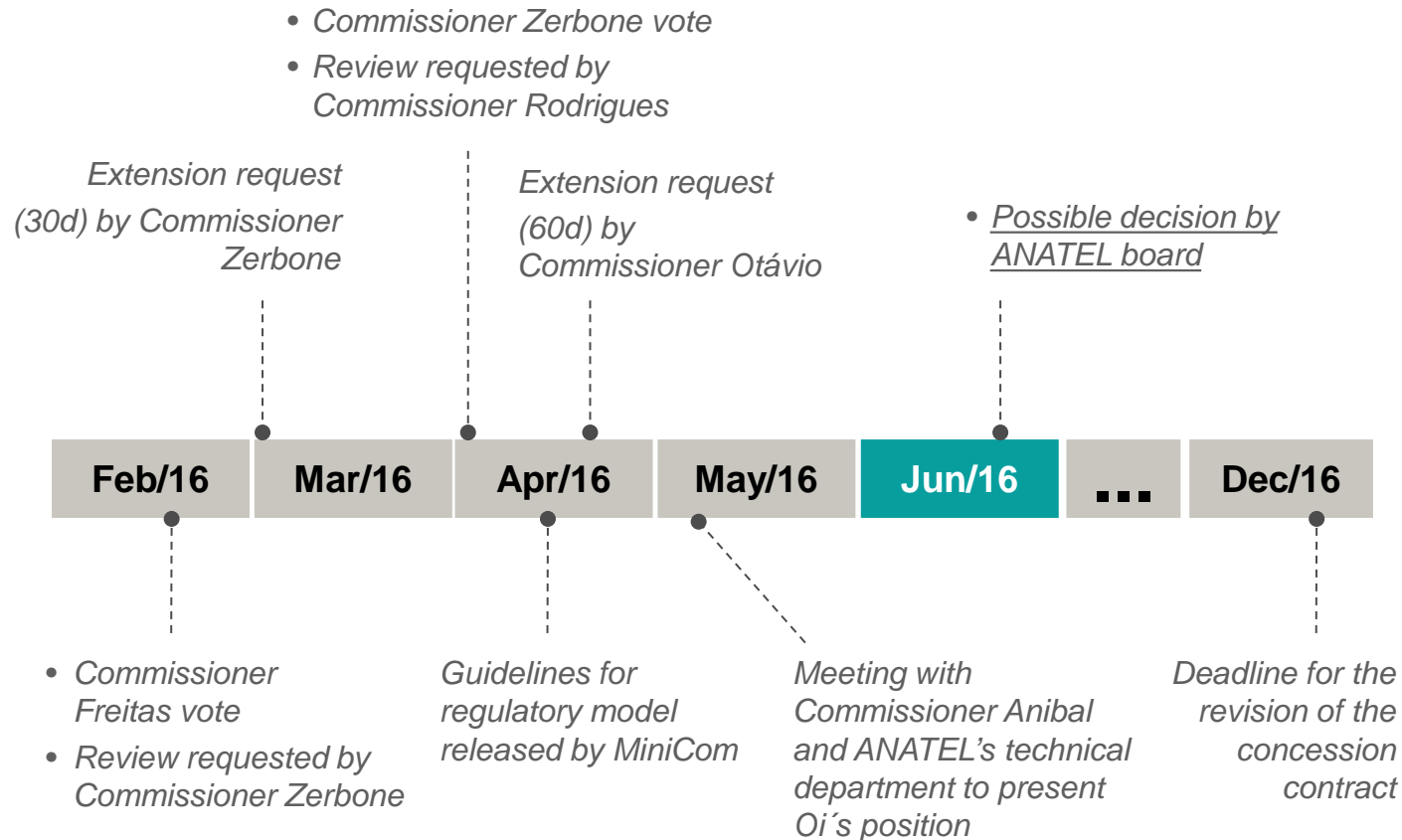
- Broadband expansion plans should be reasonable and economically viable
  - Timelines, implementable, should consider current NW, tech. neutrality,...
  - Operators should be able to choose regions

## 4 Financing universal services

- Telecom funds should be actively used (not today!)
- For universal service efforts, for both fixed telephony and broadband
- Depends on law approval by congress (more complex route)

In terms of status update, the project is reaching a decisive stage where the entire Telecom sector can benefit from structural changes in the regulatory model

## Concession project milestones



## Status update

- Deadline for concession contract extended to Dec/2016 (previously Dec/2015)
- 2 votes have been made by ANATEL commissioners regarding regulatory framework evolution
  - Net gains still uncertain (balance of fixed line unbundling, asset reversibility, broadband,...)
  - Pending review / vote from commissioner Otávio Rodrigues (June/2016)
- Oi defends that regardless of the vote, reducing fixed line obligations should have immediate impact
- Critical that the broadband expansion program to be launched be realistic and consistent with market needs
- Working group composed of local private concessionaires is underway to strengthen their position regarding common themes and mitigate risks / uncertainties
  - Development of a *position paper* with common topics

The new Science, Technology, and Communications Minister has recently taken office and promises to reevaluate all options, establish a point of view, and redefine efforts, if required

### Assess efforts up to date



- Assess all efforts and perspectives regarding the concession review
- Mainly ANATEL commissioner votes, MiniCom report, etc.

### Re-discuss w/ stakeholders



- Re-discuss w/ sector and gov. stakeholders, and create a point of view
- Have clarity of “pros” and “cons” regarding current model options

### Redefine outputs / efforts



- Mindset is focused on “improving” existing recommendation options,...
- ...and “getting it done faster”, to ensure rapid benefits for the sector

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Recent discussions with the new government indicate a desire to “improve existing” and “get it done faster”

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## Key next steps

- 1 | Continue to approach, discuss, and solve key uncertainties and risks (asset reversion, zero sum game, broadband expansion,...) with relevant stakeholders
- 2 | Evaluate and quickly address (if required) Commissioner Otávio Rodrigues's concession review vote – to be made in the next couple of weeks
- 3 | Publish solid position paper in current local private concessionaires working group effort, to create stronger and more credible position on high value topics
- 4 | Leverage / support the Science, Technology, and Communications Minister's desire to improve existing options and accelerate implementation

Revision of the concession agreement and celebration of the TAC will enhance Oi's position through a more robust and balanced regulatory model

### **REVISION OF THE CONCESSION AGREEMENT**

- Focus on the exoneration of obligations
  - Universal service for voice
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- Unique regulatory window to revise the concession model

### **TAC: TERMS OF ADJUSTMENT OF CONDUCT**

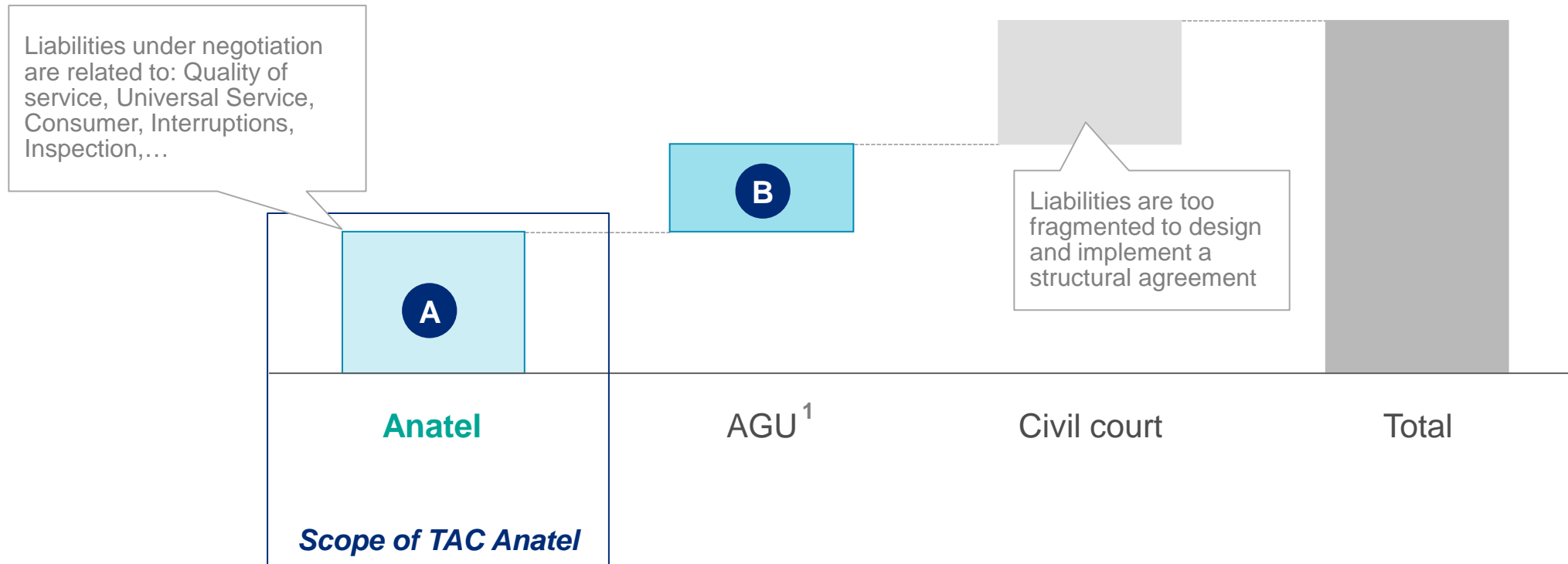
- Regulatory mechanism that enables the exchange of fines for projects and / or benefits to customers
- Opportunity to transform the Oi operation and improve the quality of service

*Focus of the following slides*

# Oi is currently negotiating at least 3 Terms of Conduct Adjustment (TAC) for the regulatory liabilities under Anatel's domain

## Oi's regulatory liabilities by process stage

X More details in the next slides



Oi is also seeking to incorporate liabilities under AGU's domain within a TAC agreement

A

TAC aims to clean up ~R\$5Bn in liabilities within Anatel's domain, avoiding new fines and enabling 4 years to achieve regulatory compliance

### Key TAC objectives

1 Fully deducts liabilities under Anatel's domain, with discount<sup>1</sup>

2 Avoids new fines through conduct adjustment

3 Allows 4 years to achieve actual regulation targets

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Anatel approved Oi's TAC for Quality & Universal Service themes (face value of R\$1,2Bn) on May 19<sup>th</sup> <sup>2</sup>; TCU<sup>3</sup> formal approval is now required to allow TAC agreement signing

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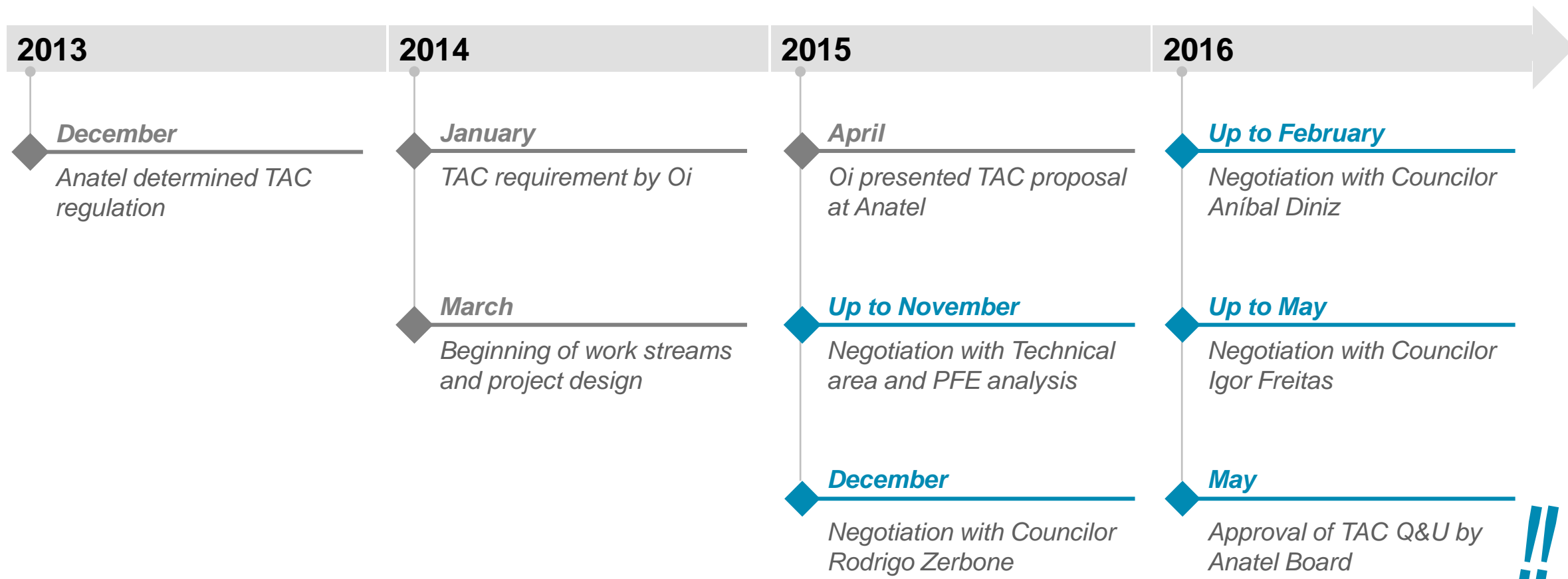
A

Quality and Universal Service TAC has been approved by Anatel Board after +2 years of intensive work by Oi to build and negotiate the proposal

### TAC core stages

◆ all TAC themes together

◆ only Quality and Universal Service TAC

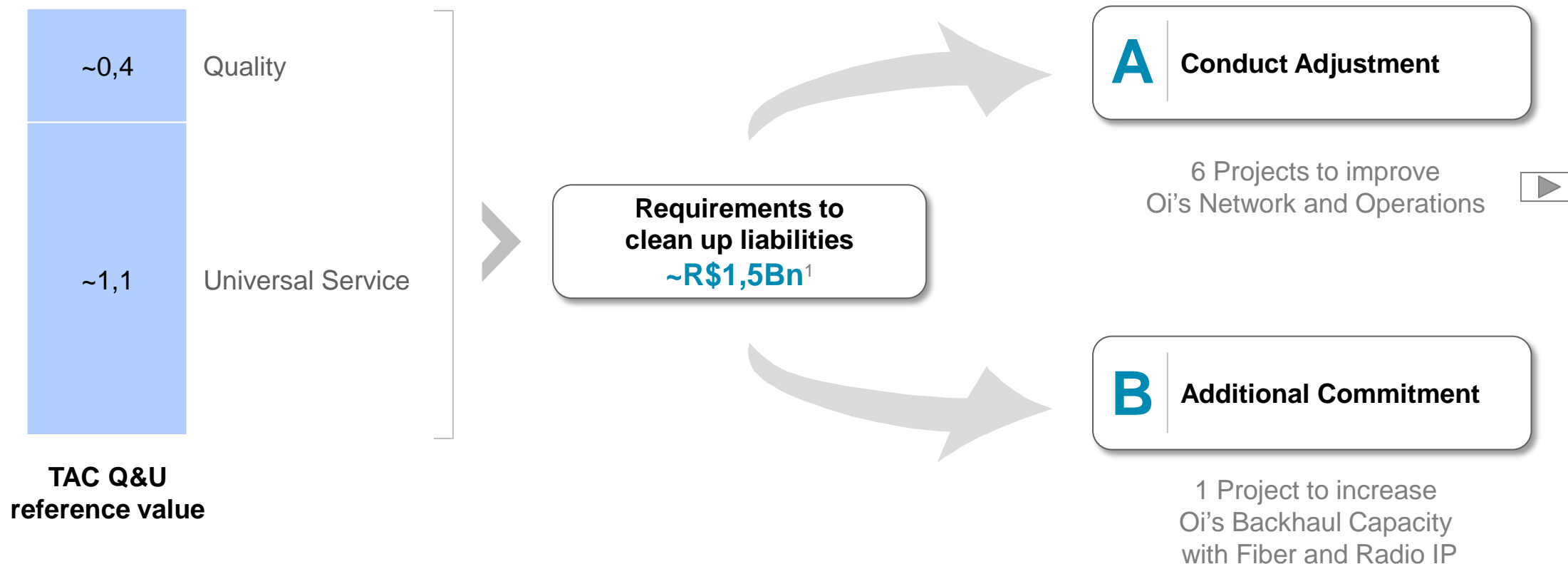


Approving the Q&U TAC, Anatel Board determined guidelines for the next TACs, which therefore should advance with greater speed; Anatel's decision is expected by the end of 2016

A

TAC proposal implies 2 work streams: Conduct Adjustment (expenditure not related to fines amount) and deployment of a Additional Commitment (expenditure proportional to contingencies)

**TAC Q&U contingencies**  
adjusted R\$ Bn



**Additional commitment CAPEX<sup>2</sup> amounts to ~R\$0,9Bn in 4 years**

Notes: (1) TAC face value approved by Anatel amounts to R\$ 1,2 Bn. Adjusted value based on interest rates until NOV/15 amounts to R\$ 1,5 Bn. Investment for the additional commitment amounts to R\$ 0,9 Bn in 4 years; (2) CAPEX may change after TCU formal approval

**A**

## Next steps and key implications to Oi after the approval of the Quality and Universal Service TAC by Anatel Board

### What steps are required to bring the TAC into practice?

- TCU is going to analyze the proposal that has been approved by Anatel board last week
- No further approvals (ex. Government, Federal Congress) are required
- TCU has no deadline to complete its analysis and give its formal approval to TAC (60 days is a best case scenario)
- After TCU's approval, Anatel and Oi are likely to officially sign the TAC agreement within 30 days
- After TAC signature, Oi has 4 years to complete the proposed investments

### Does the TAC approval allow Oi to reverse escrows and/or judicial deposits?

- TAC agreement won't replace any of the ~R\$ 1bn assets in escrow / judicial deposits
- Actually, all the regulatory contingencies under negotiation with Anatel didn't require any escrow / judicial deposits in the past

### What are the expected TAC impacts on cash flow and off-balance sheet?

- First of all, TAC agreement allows Oi to avoid to pay ~R\$ 1.5 Bn (adjusted) in fines or to make escrow / judicial deposits for the same amount during 2016
- Second, TAC agreement allows Oi to invest that amount to increase Network, Operation, Contact Center performances
- When all the negotiations with Anatel are positively concluded with an agreement (at least 2 further TACs are going to be discussed and hopefully approved by the end of 2016), Oi could eventually reduce some provisions according to auditing guidelines /rules

In the coming weeks Oi is going to be focused on settling on-going negotiations related to further TACs with Anatel's Technical departments

**B**

Considering the recent Congress approval of the “Mediation Law<sup>1</sup>”, Oi is also pushing to start TAC negotiations for liabilities under AGU’s domain, requiring low incremental costs for the adjustment of conducts

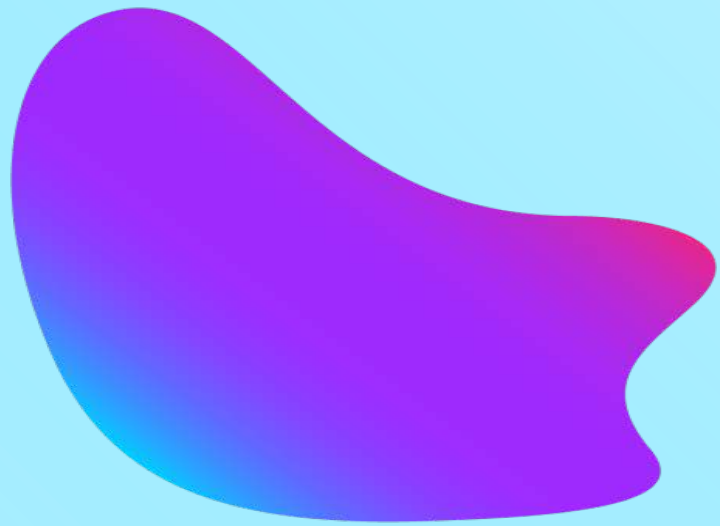
### Required solution

**Enable a “TAC AGU”:**  
through the extension of  
current agreement for  
liabilities under AGU’s domain

### Which alternatives to implement?

- 1 Anatel autonomously decides to execute the deal
- 2 MiniCom empowers Anatel to execute the deal
- 3 Congress approves a specific measure to define the solution path

Brazilian public entities need to define administrative and/or legislative instruments to enable the negotiation of a TAC agreement for liabilities under AGU’s domain



# BACK-UP SLIDES TAC



A

## Projects approved by Anatel Board as obligations for the conduct adjustment

Project		Description	Relevant KPIs
1	Structuring RJ (FTTH)	New FTTH network deployment: 950k home-passed in 4 years in the Rio de Janeiro State area	ARI, RAI, END, ART e TEP
2	Expand 3G Coverage	Increasing 3G mobile network coverage and capacity deploying 1632 sites in 840 cities (currently 681 cities has no 3G service coverage)	SMP 5 ao SMP 9 <sup>1</sup>
3	Increase IP transport network capacity	Increasing IP network capillarity to enable the 3G coverage expansion	SMP 5 ao SMP 9 <sup>1</sup>
4	Fixed Access Network Improvement	Executing corrective maintenance on the worst / most critical network elements	ARI, RAI, END, TEP e ART
5	Customer Care	New CRM roll-out	SMP12 ATT ILA
		Improving Contact Center Infrastructure	SMP12 ATT ILA
		Alternative channels	SMP12 <sup>1</sup> ATT <sup>1</sup> ILA
6	Upgrade Public Payphone	Technological upgrade of residual Public Payphone plant (after Concession model review) to enable new payments alternative to customers	ARI, RAI, END, TEP e ART

# BACK-UP SLIDES CONCESSION

## Fixed-line service – Oi’s proposal (1/2)

	Proposal assumptions	Rationale
Exoneration	1 In areas with mobile-phone coverage, immediate withdrawal of universalization obligations ...	<ul style="list-style-type: none"> <li>• Universalization of voice service was successful and fulfilled, loss of essentiality of fixed-line service (fixed-mobile substitution and voice-data), and unsustainability of concession model</li> <li>• Analyses presented in the 25/2016-GCIF vote</li> </ul>
	2 ... In areas without mobile coverage, term sheet to keep public-phones	<ul style="list-style-type: none"> <li>• Maintenance and availability of payphone offer where there is no voice coverage, with commitment until 2025</li> <li>• Analyses presented in the 25/2016-GCIF vote</li> </ul>
	3 End of the burden (% revenue) of concession	<ul style="list-style-type: none"> <li>• Universalization of voice service was successful and fulfilled, loss of essentiality of fixed-line service (fixed-mobile substitution and voice-data), and unsustainability of concession model</li> </ul>
	4 Obligation reductions should not revert to counterparts / CAPEX for broadband	<ul style="list-style-type: none"> <li>• If fixed-line service is not essential, concessionaires shouldn’t have to allocate obligation reductions as investments</li> <li>• In addition, the concessions fixed-line service is unsustainable and requires obligation reductions</li> </ul>
	5 Exoneration of sectorial funds	<ul style="list-style-type: none"> <li>• Exoneration of funds – discounts based on collections unused                             <ul style="list-style-type: none"> <li>– As in Law project 6.789</li> </ul> </li> </ul>

## Fixed-line service – Oi's proposal (2/2)

	Proposal assumptions	Rationale
Evolution	6 Migration to private regime	<ul style="list-style-type: none"><li>• Regulatory symmetry with private operators and more flexibility of the model</li><li>• In line with the rest of the world (&gt; 85% of the analyzed countries)</li></ul>
	7 Maintenance of the basic plan, without X Factor	<ul style="list-style-type: none"><li>• Commitment of operators to consumers</li><li>• Symmetry with private operators (without the X factor adjustment)</li></ul>
	8 Licensing structure should not be reviewed in this review process	<ul style="list-style-type: none"><li>• Topic should be treated later in a discussion that involves the entire ecosystem of Telecom, including OTTs</li><li>• Discussions today must first address the unburdening and sustainability of STFC</li></ul>

# Asset reversion – Oi proposal

Proposal assumptions	Rationale
1 End of the asset reversion scheme	<ul style="list-style-type: none"><li>• Fixed-line lost its essentiality in the voice market – mobile-line is the replacement</li><li>• Additionally, there are other mechanisms to ensure continuity (e. g. warranties)</li></ul>
2 Valuation should consider the use of the 'functionality' / multiservice concept	<ul style="list-style-type: none"><li>• Multiservice goods are not unique to the fixed-line service and may not be reversible in its entirety at the end of the Concession agreement</li></ul>
3 Ownership of the assets is owned by the concessionaries	<ul style="list-style-type: none"><li>• Assets belonging to companies of the Telebras group were acquired by existing concessionaires</li><li>• Telebras composition of capital already had 80% of private participation</li></ul>
4 The possession, not ownership, reverts to the state in 2025	<ul style="list-style-type: none"><li>• What reverses is the possession of the assets that are essential for the continuity of services to the extent of its use, not the ownership</li></ul>
5 Release / exoneration of reversible assets must be immediate	<ul style="list-style-type: none"><li>• Allows financial relieve to the concessionaries, mainly for investments in broadband; if not, there is no "new" money</li><li>• With the end of the concession, there should no longer be restrictions on the use of assets</li></ul>
6 Valuation of goods should consider RBR and DSAC factors	<ul style="list-style-type: none"><li>• Use tools reported to Anatel (RBR and DSAC) for delimitation of reversible assets and their proportionality</li></ul>
7 Reversible assets in unattractive areas should not be part of the calculation	<ul style="list-style-type: none"><li>• Assets in non attractive / competitive areas have limited potential for profitability and should not be considered as part of the balance</li></ul>

## Broadband – Oi's proposal (1/2)

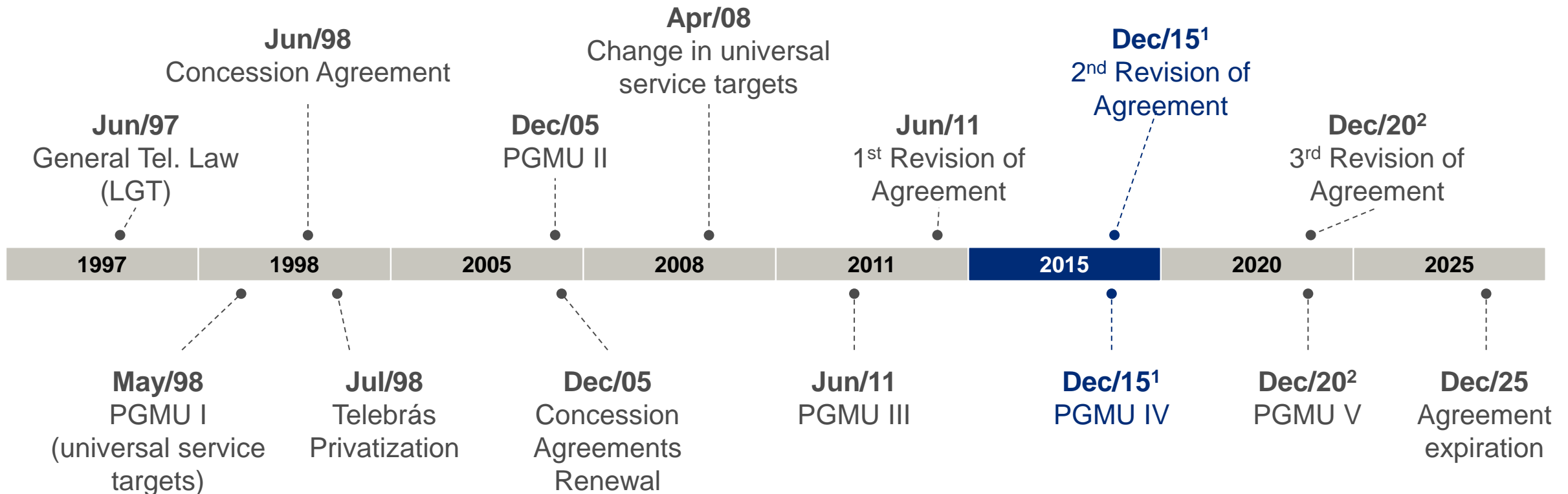
Proposal assumptions	Rationale
1 Commitments limited to the balance of reversible assets	<ul style="list-style-type: none"><li>• The financial and operational efforts to be made by concessionaries should be limited to the balance / amount of money associated with reversible assets (to be determined)</li></ul>
2 Choice of deployment cities should be made by operators	<ul style="list-style-type: none"><li>• Right to choose cities for broadband investments , regardless of the types of clusters in which they are inserted (1, 2, 3, or 4 – according to ANATEL)</li></ul>
3 Technological neutrality	<ul style="list-style-type: none"><li>• Possibility of use of the most efficient technology to meet broadband commitments (e. g. 4G network, IP radio, etc.)</li></ul>
4 Clustering based on gaps model (World Bank)	<ul style="list-style-type: none"><li>• Using the gap model promoted by the World Bank for expansion and universal services of broadband</li></ul>
5 Use of multipliers by location (for the consumption of asset balance)	<ul style="list-style-type: none"><li>• Implementation financial balance reduced based on different types of projects (e. g. schools, access, transport, etc.), areas (e. g. clusters, locations), and volumes</li></ul>
6 Immediate use of FUST for high cost areas (including incentives for demand)	<ul style="list-style-type: none"><li>• Immediate use of sector funds in high cost and low attractiveness areas, stimulating both supply and broadband demand</li><li>• Based on international best practices (e. g. USA, Chile, etc.)</li></ul>

## Broadband – Oi's proposal (2/2)

Proposal assumptions	Rationale
7 Use of the reversible asset financial balance as CAPEX, and not VPL	<ul style="list-style-type: none"><li>• Direct balance for investment (CAPEX), leaving the responsibility to operators the use and return of this investment</li></ul>
8 Utilization of the installed network	<ul style="list-style-type: none"><li>• The use of the already installed copper infrastructure should be considered as the basis of broadband expansion commitments</li></ul>
9 Operational and financial feasibility	<ul style="list-style-type: none"><li>• Feasibility of the commitments given investment capacity / implementation of operators and other commitments (e. g. TAC)</li><li>• Implementation by 2025, at least</li></ul>

The concessions agreement for fixed-line telephony was established in 1998, with expiration in 2025; we are currently in the 2nd revision

### Timeline of the key components of fixed-line telephony (STFC)



Notes: Has been extended by ANATEL until end of 2016

Concession model was developed in 1997 to fulfill unmet customer demand and lack of telecom infrastructure

**Waiting list to acquire fixed landline**  
# pending requests - 1997

**2,4 million**

**Price of a fixed landline installation<sup>1</sup>**  
R\$ in 1997 (Telebrasil)

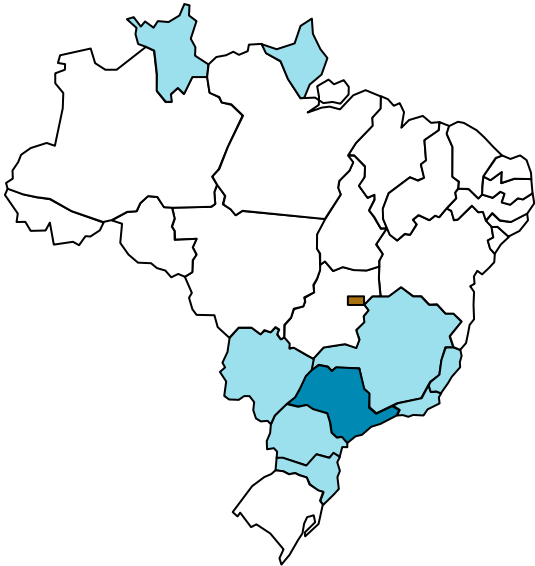
**R\$ 5.300<sup>2</sup>**

The fixed line concession met its initial objective - fixed telephony universal service was successfully delivered throughout Brazil

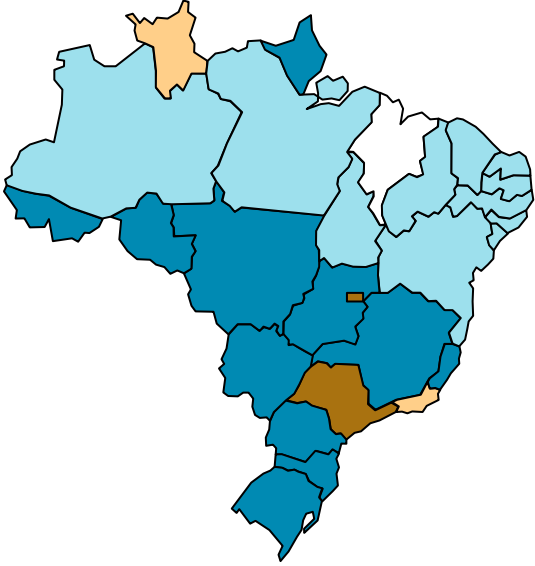
# lines per 100 households

- Up to 30
- From 30 to 50
- From 50 to 70
- From 70 to 90
- More than 90

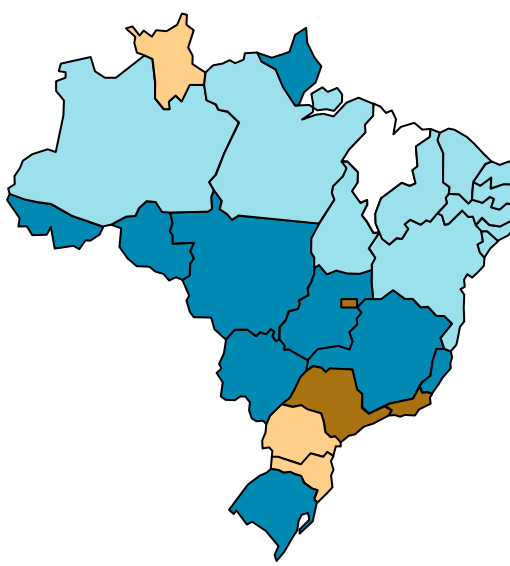
1994



1999



2014



# lines per 100 households

35

65

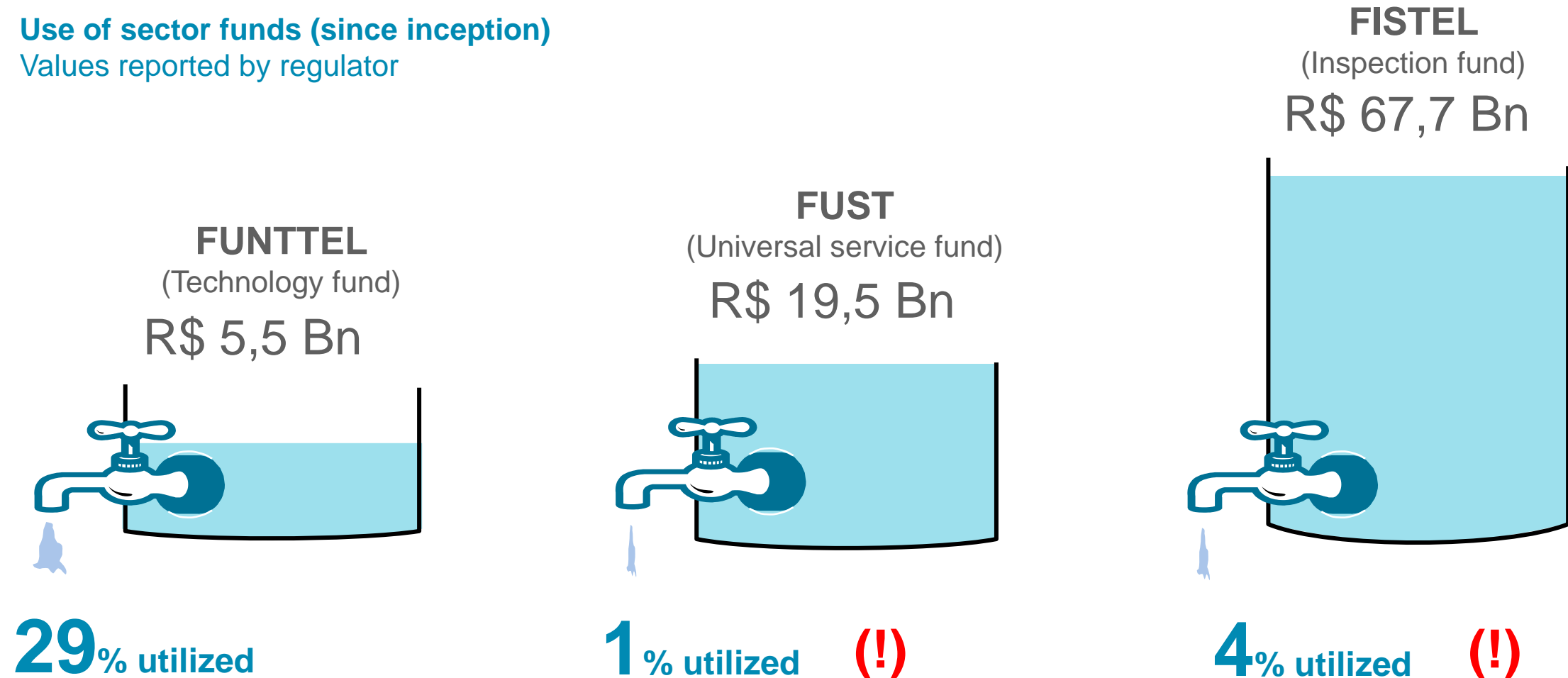
70

Note: 1994 and 1999 represent installed lines; 2014 represents line in service  
Source: Anatel; IBGE

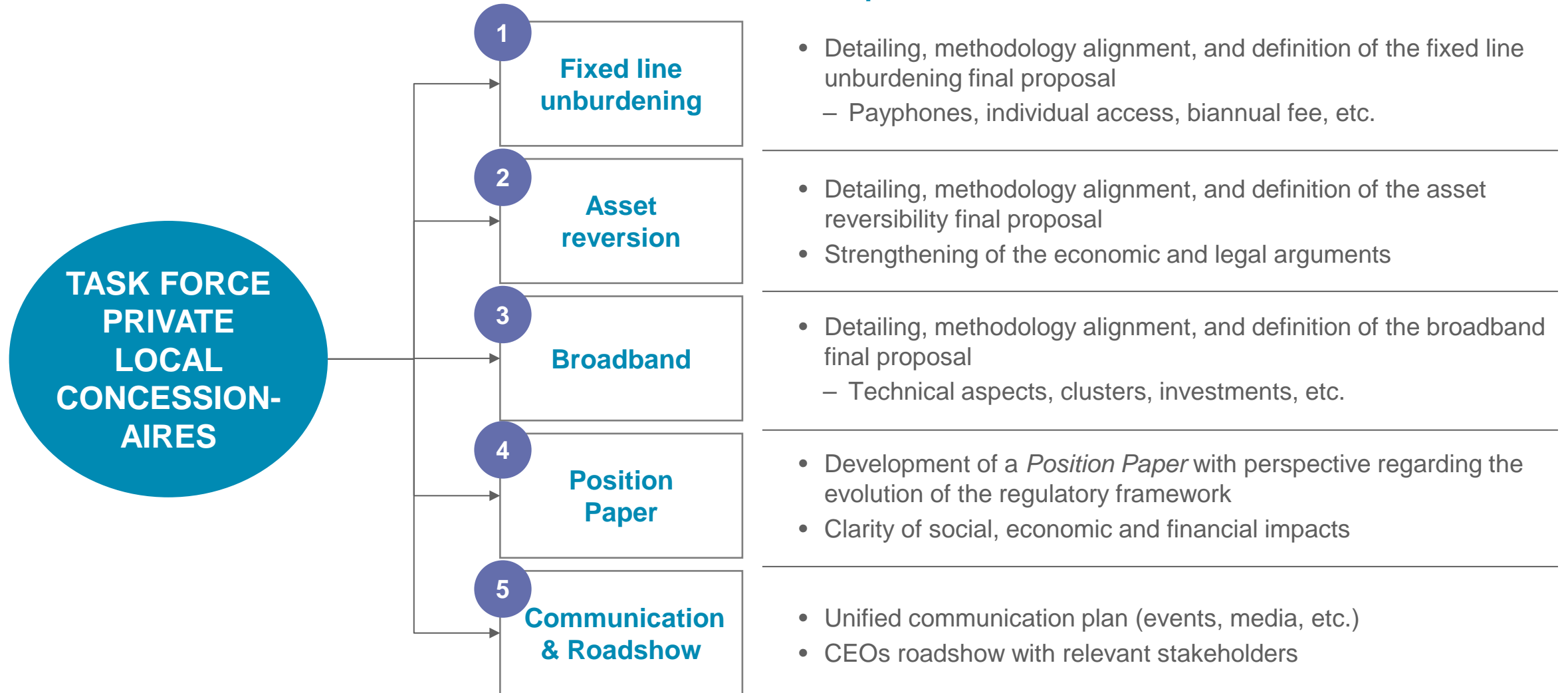
In Brazil, the key success factor of a massive broadband expansion and maintenance of fixed line universal services (where required) depends heavily on active use of Telecom funds

**Use of sector funds (since inception)**

Values reported by regulator



A working group composed of local private fixed line concessionaires is underway to strengthen their position regarding the regulatory framework evolution and mitigate key risks / uncertainties





## Fixed line telephony benchmark: key findings by regulatory layer (1/2)

### Layer

### Lessons learned

#### Regime

- Concessions are rare, outdated (only 3 in the world) and transitory (average of four years after market liberalization)
  - Most countries (~85%) have migrated to private-regime model
- 

#### Reversibility

- Concessions that migrated to private regime kept their assets; there are no cases of real reversibility of assets
  - Macau is the closest case to the Brazilian reality
  - There are other mechanisms used to ensure continuity of service (eg guarantees, transfer of responsibility, ...)
  - Reversibility in Telecom is complex vs. other sectors due to multiservice assets
- 

#### Universalization

- In the transition from a concession to a private regime, the existence of universal voice services is common
  - Most common models used to ensure the delivery of universal services are bids and "carrier of last resort"
  - Countries like the US and Canada exempt competitive areas from obligations
- 

#### Financing

- In most countries, the universalization of fixed telephony is guaranteed through active universal service funds
-



## Fixed line telephony benchmark: key findings by regulatory layer (2/2)

### Layer

### Lessons learned

#### Obligations and fines

##### Obligations:

- Brazil is an "outlier" in the public telephony provision - high density of public phones vs. mobile penetration
- Even with new public consultation (PGMU 4)
- Benchmarks show a reduction / termination of coverage obligations in various countries
- Brazil has aggressive obligations in fixed-line installation – limited time to install, no progressive goals, and very restrictive criteria of regionalization
- Even with new public consultation (PGMU 4)
  - Unlike the electricity sector, where there are regionalized goals

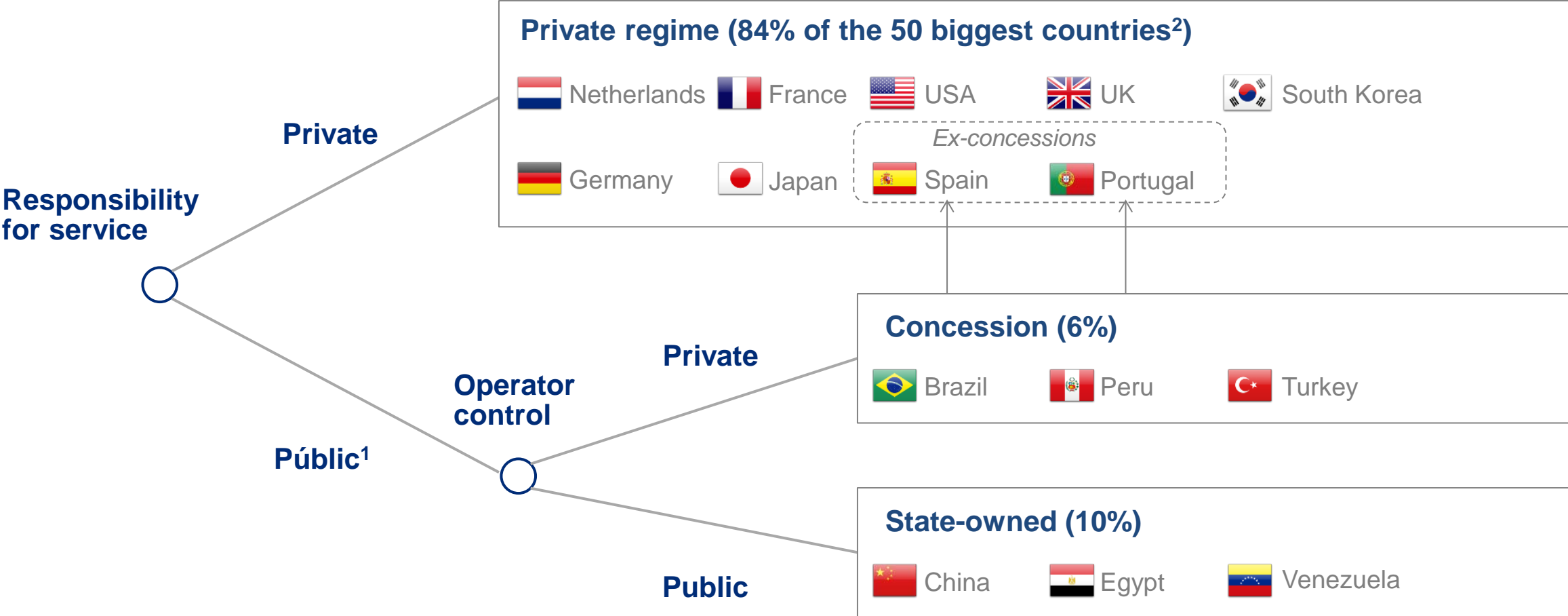
##### Fines application:

- The Telecom sector in Brazil is one of the largest issuers of penalties / fines in comparison with regulators in other sectors and countries
  - Regulator in Brazil manages excessive number of indicators vs. other countries
-

Currently, fixed telephony concessions are models very specific and rare

Non - exhaustive

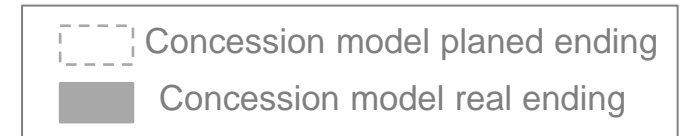
### Evaluation of responsibility vs Control



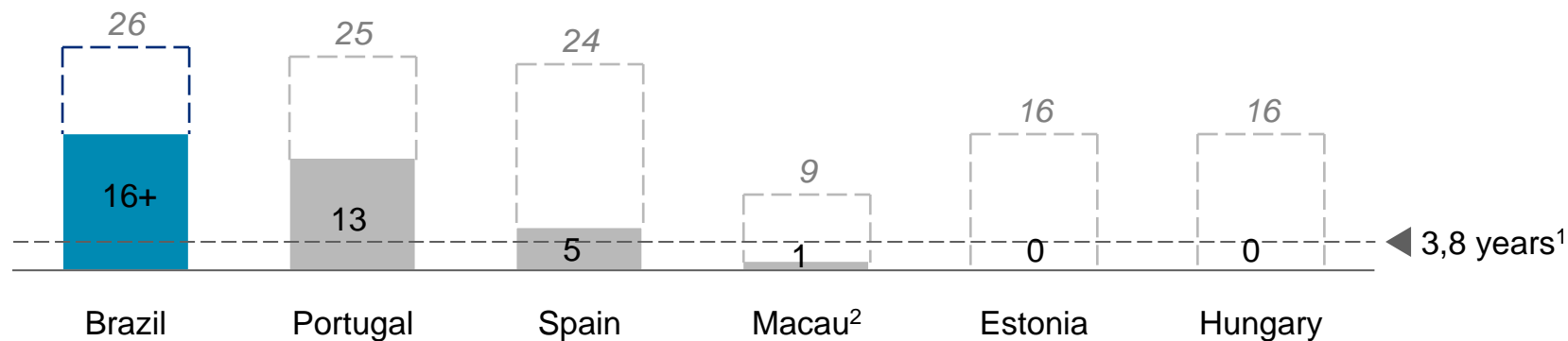
Notes: (1) Government has the ultimate responsibility for the fixed-line service; (2) Ranking of countries by PIB

While in other countries concessions were transitory, Brazil remains 16 + years with the same model

**Time between market liberalization and end of the concession**  
In years



Non-exhaustive

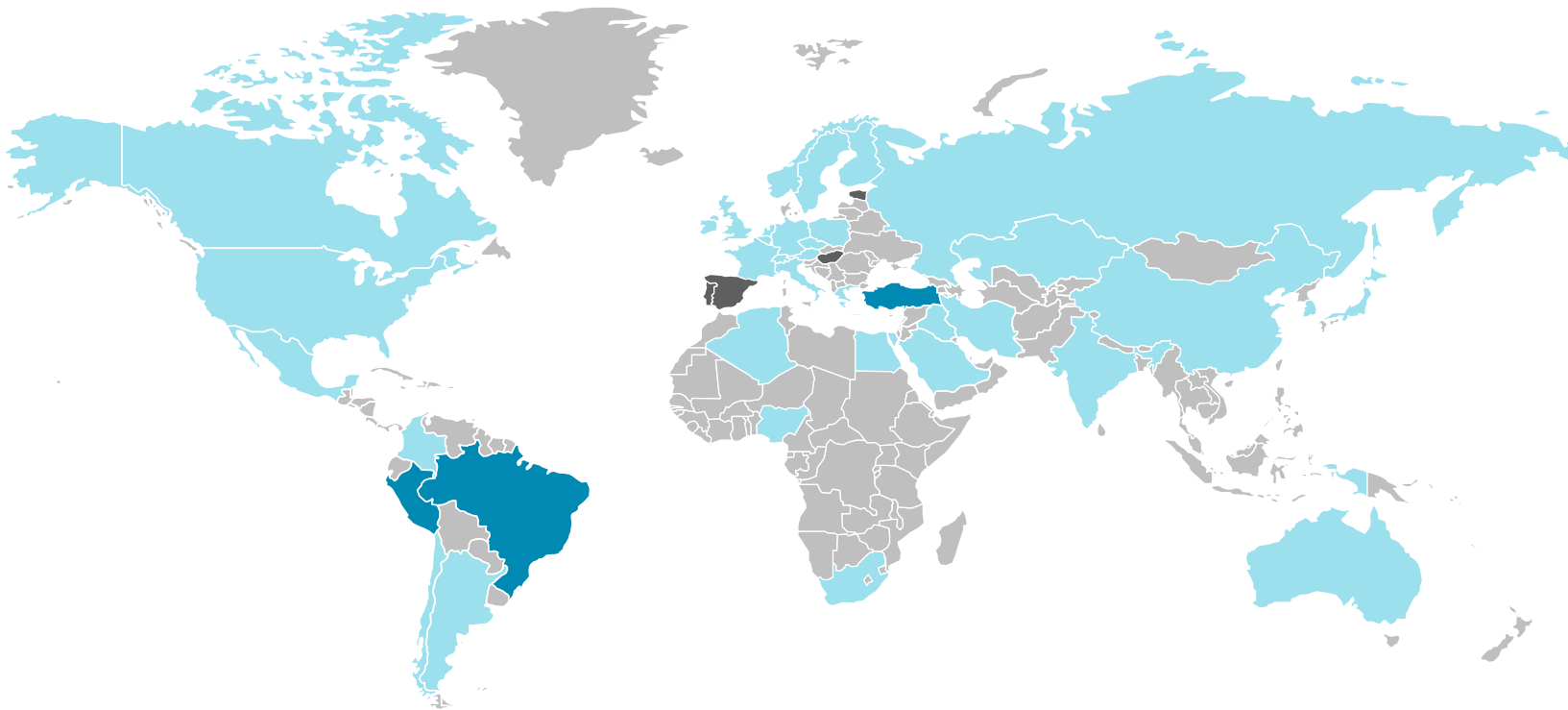


	Brazil	Portugal	Spain	Estonia	Hungary
Market liberalization	1999	2000	1998	2012	2001
Real end of concession	-	2013	2003	2013 <sup>2</sup>	2001
Planned end of concession	2025	2025	2022	2021	2017

Notes: (1) Does not considers Brazil (2) Partial migration - Residual concession continues in parallel with private regime  
Source: NERA and Oliver Wyman research

The concession model met its role and now needs to evolve; most used system in the world is and authorization regime (~85% of countries)

### Concessions countries benchmark

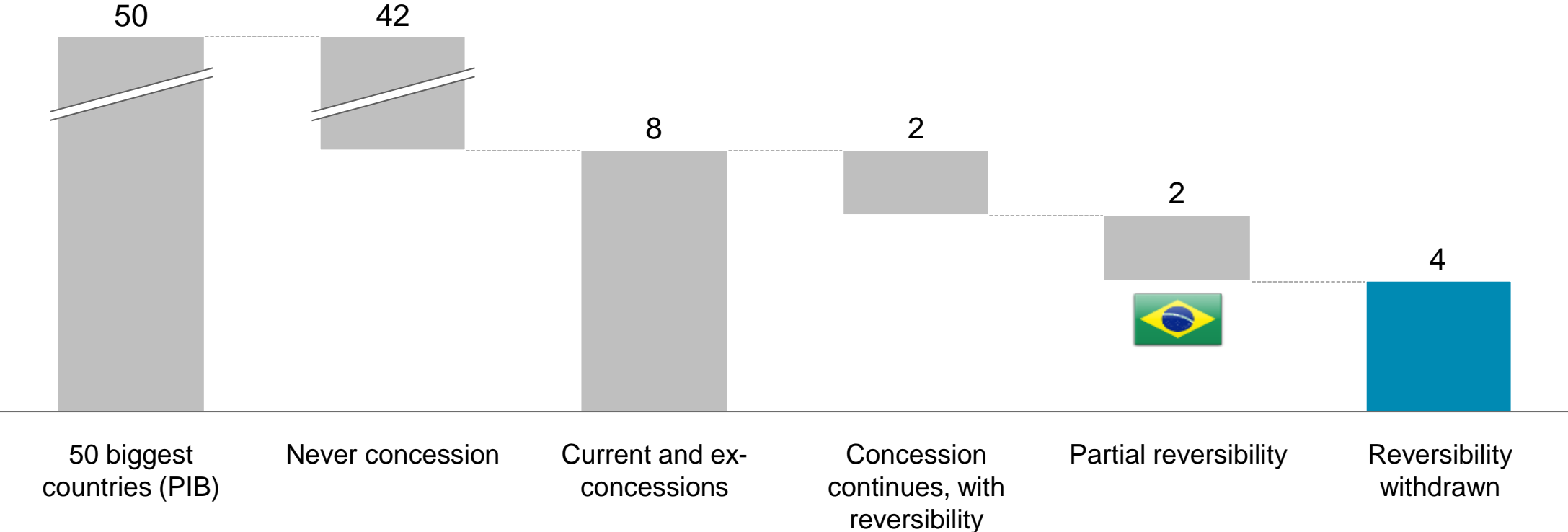


### Lessons learned

- International and national references
- Regulatory symmetry
- Service continuity and tariffs
- Incentive to investments
- Flexibilization

Model evolution implies in solving the asset reversion scheme, creating a long-term outlook for the sector (more productive and efficient investments / allocation, monetization of asses,...)

**Countries breakdown**  
# of countries



Notes: (1) Concessionaries forced to sell or auction off assets related to the service at the end of the concession, but do not revert to the state; (2) Despite the migration of the concessionaire operator for authorization contract is likely to be renewed in 2016 to its original end 2021 (20 years concession); (3) Fixed telephony concessions in the 50 largest countries in the world by GDP. Source: NERA Research and Oliver Wyman

Additionally, contractual regulatory obligations today still represent heavy financial burden for the fixed line business of concessionaires

## Topics

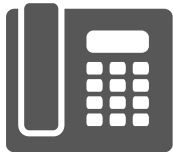
## Examples of issues faced

Non exhaustive



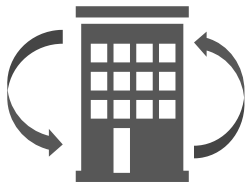
### Public payphones

- Obligations are distant from real market needs
- Aggressive targets and heavy financial burden (e.g. payphones every 300 m)



### Fixed telephony

- Investment obligations in very low demand regions, without government subsidies
- Restricted access to public funds (e.g. universal service fund FUST<sup>1</sup>)



### Asset reversion

- Does not contemplate multiservice platforms, inhibiting investments
- Does not allow operator to sell non reversible real estate



### Fines

- Disproportional fines that generate heavy liabilities

# Brazil is "outlier" when compared with other countries in terms of obligations and fixed-line overheads

## Agressiviveness in fixed-line obligations and overheads



**Fixed-line collective**  
Density of public phones<sup>1</sup>



**Fixed-line individual**  
Installation deadline<sup>2</sup>



**Quality**  
# indicators<sup>3</sup>



**Fine application**  
% sector net revenue<sup>4</sup>

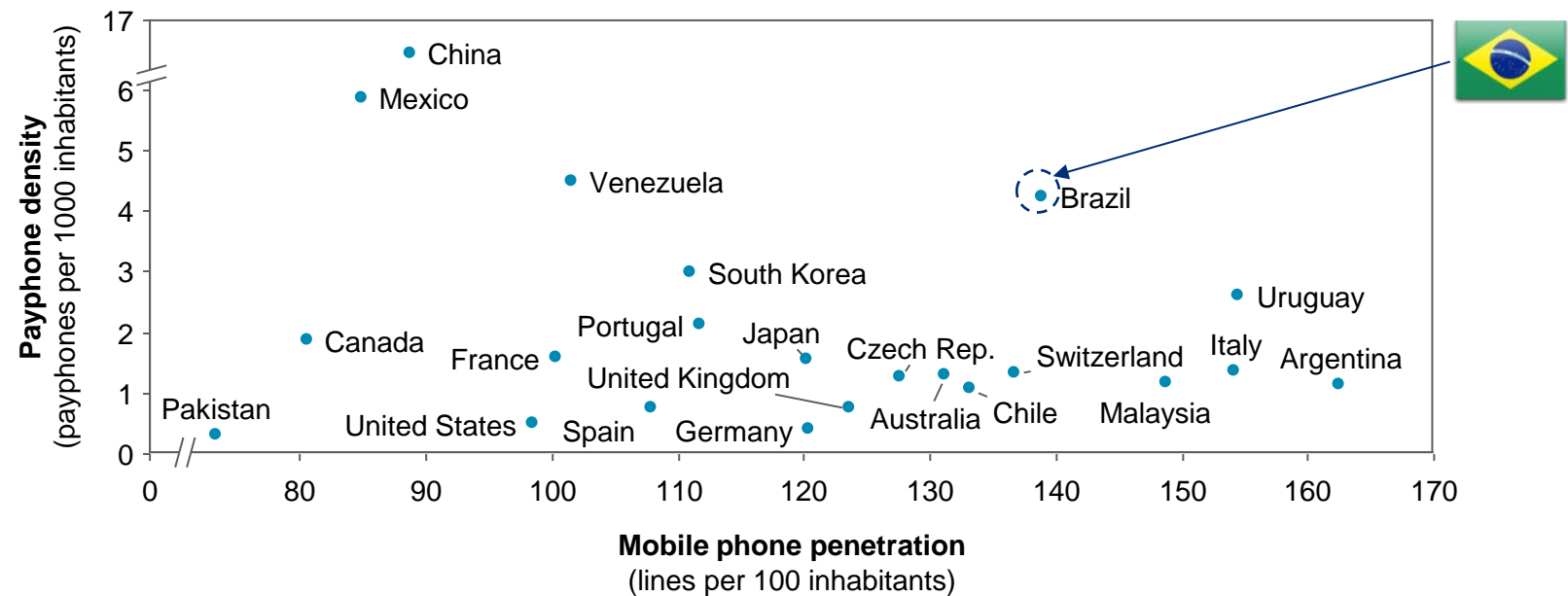


Source: NERA and Oliver Wyman research; Informe CP Anatel; Oi internal data; TCU 2013 report – Government bills, annual report 2013 OfCom, ACMA, AGCOM, TRAI e TRA- EAU;  
Notes: (1) Number of public phones/ 1000 inhabitants; (2) Days to urban area installation (% of installations); (3) Monitoring indicators; (4) Fines collected / Sector Net Revenues

# Benchmark example: Brazil presents high density of payphones in comparison with other countries, driven by heavy regulatory obligations

## Payphone density vs. mobile phone penetration – 2014

Non exhaustive



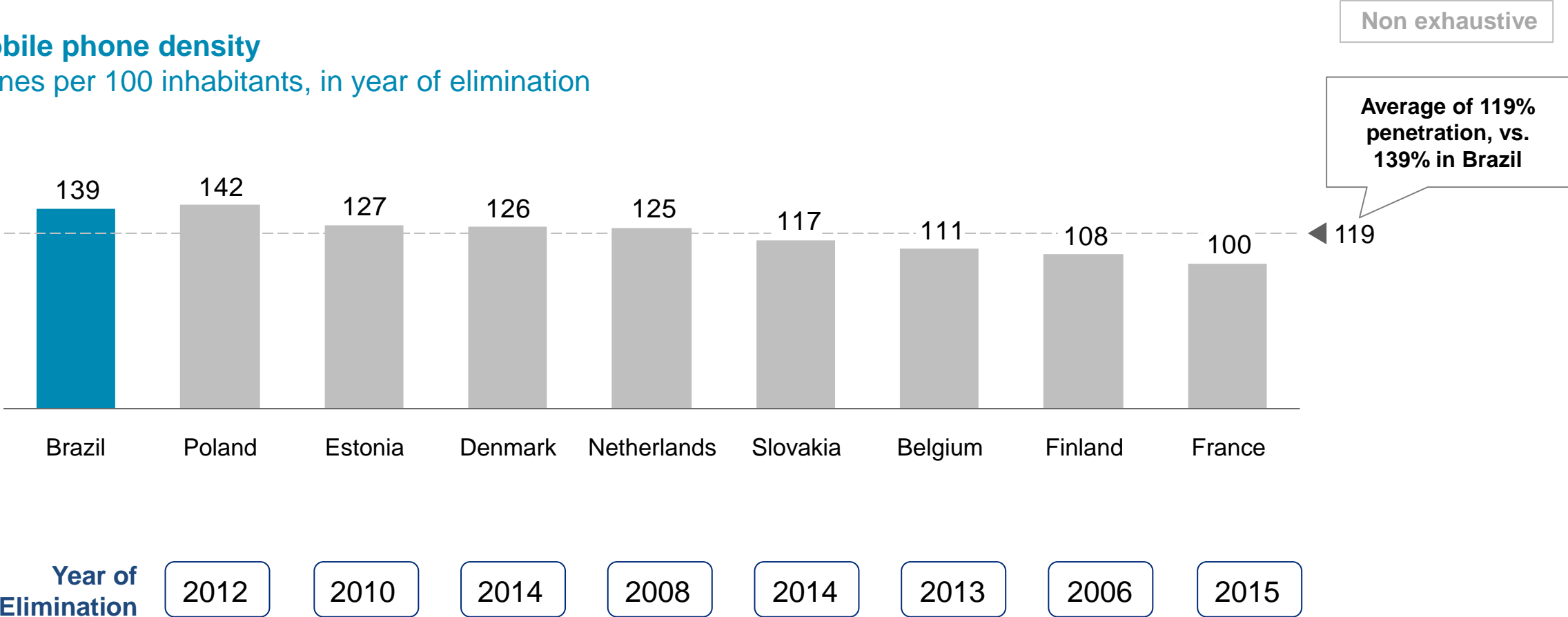
Benchmarks show Brazil as an outlier in the provision of payphones

Notes: 2013 data considered for Argentina, Australia, Canada, China, South Korea, Mexico, Czech Republic, Switzerland, Uruguay and Venezuela  
Source: NERA and Oliver Wyman research

# Benchmark example: Other countries, with lower mobile penetration than Brazil, have already eliminated their payphone obligations

## Mobile phone density

# lines per 100 inhabitants, in year of elimination




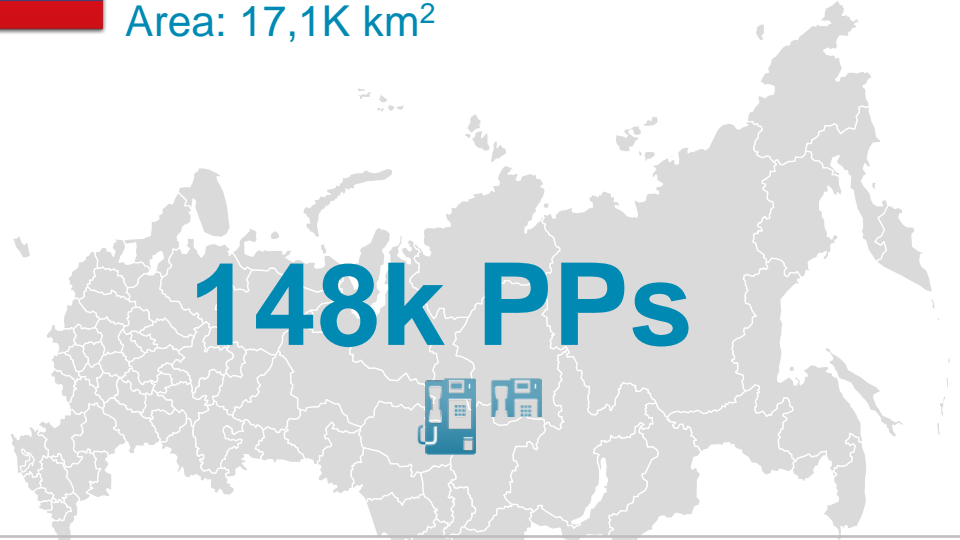
Loss of relevance in the service has led many countries to extinguish payphone obligations

Source: NERA and Oliver Wyman research




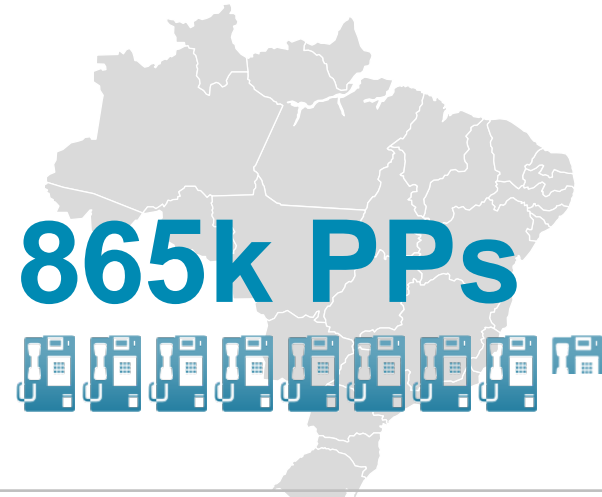
# Despite having characteristics similar to Russia, Brazil has a number of public phones 5.8x higher

 **Russia**  
Area: 17,1K km<sup>2</sup>



Population	142M inhab.
Density	8 inhab/km <sup>2</sup>
Rural population	26%
GDP	U\$2,1T
Fixed-line telephony penetration	28 lines/100 inhab.
Mobile telephony penetration	155 lines/100 inhab

 **Brazil**  
Area: 8,5K km<sup>2</sup>



Population	204M inhab
Density	24 inhab/km <sup>2</sup>
Rural population	15%
GDP	U\$2,4T
Fixed-line telephony penetration	22 lines/100 inhab
Mobile telephony penetration	139 lines/100 inhab

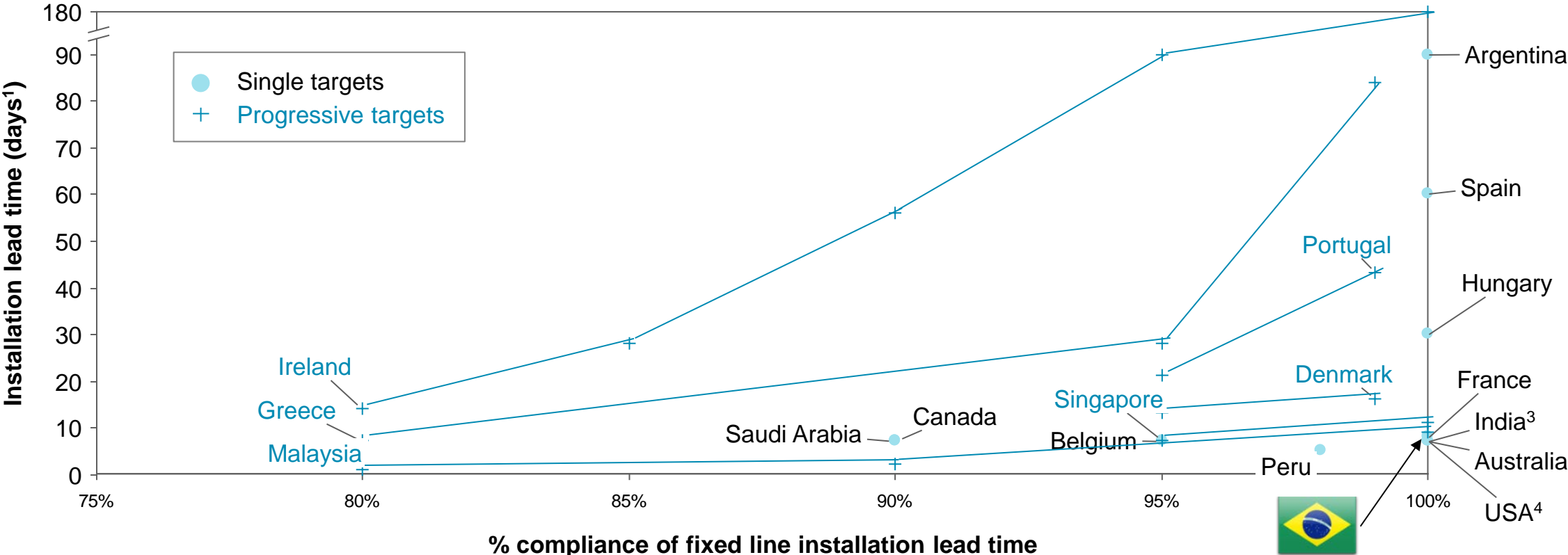
Source: World Bank, ANATEL

# Benchmark example: In terms of lead time landline installation requirements, Brazil has much more rigorous targets compared to benchmarks

## Installation obligations of individual access<sup>1</sup>

Days<sup>2</sup> to serve % of requests

Non exhaustive



Brazil is the most aggressive in installation compliance and does not have progressive targets

Notes: (1) Considers obligations applicable in urban areas, in locations with infrastructure available, without a previous connection, that require a visit for installation; (2) calendar days. Obligations in working days were converted to calendar days, e.g. 5 working days equals 7 calendar days; (3) obligations subject to technical feasibility; (4) Refers to the states of New York, Ohio and Illinois



# Broadband benchmark: key findings by layer

## Layer

## Lessons learned

### Technical aspects of goals

- Benchmark countries show a focus on expanding coverage, gradually increasing speed targets
  - Average speed of 25 Mbps is far from the current reality of Brazil (3.6Mbps) and even most of the leading countries
  - Family consumption analysis indicates that 10 Mbps is sufficient to meet most of home internet demand
  - Several countries with targets mismatched from the real need for consumption, revised their original plans
- 

### Massification model

- World focus is now on broadband massification: ~ 150 countries with massification plans
  - Studies in other countries indicate that broadband expansion boosts GDP and HDI
  - Main models of massification are: direct incentives, reverse auctions and PPPs
- 

### Financing

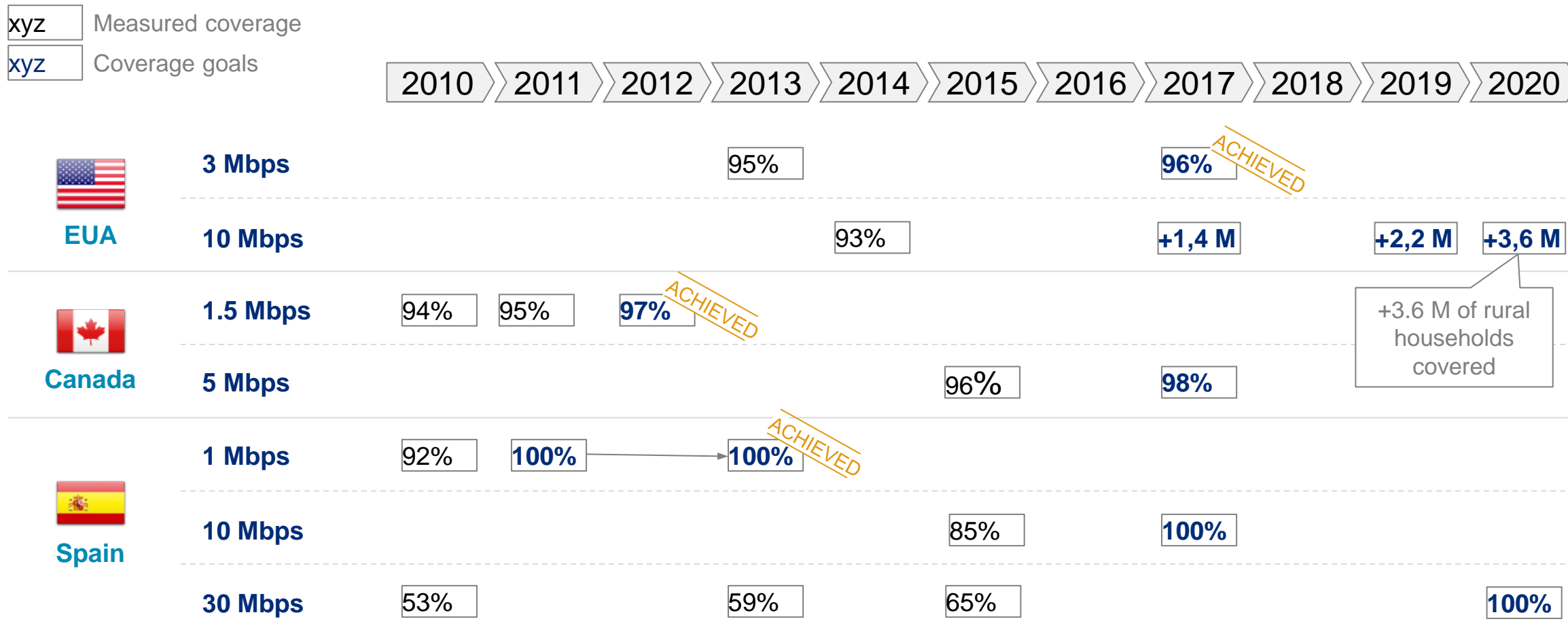
- Internationally, there is a strong public involvement in the financing of broadband massification programs
- 

### Demand stimulation

- Success cases act strongly in stimulating demand (vs. focus on offer)
    - Spain (spent 9x more w / actions to stimulate demand vs w / increase supply)
    - US subsidizes broadband plans and telephony through the universal service fund
-



# Benchmark countries show an initial focus on expanding coverage, gradually increasing speed targets

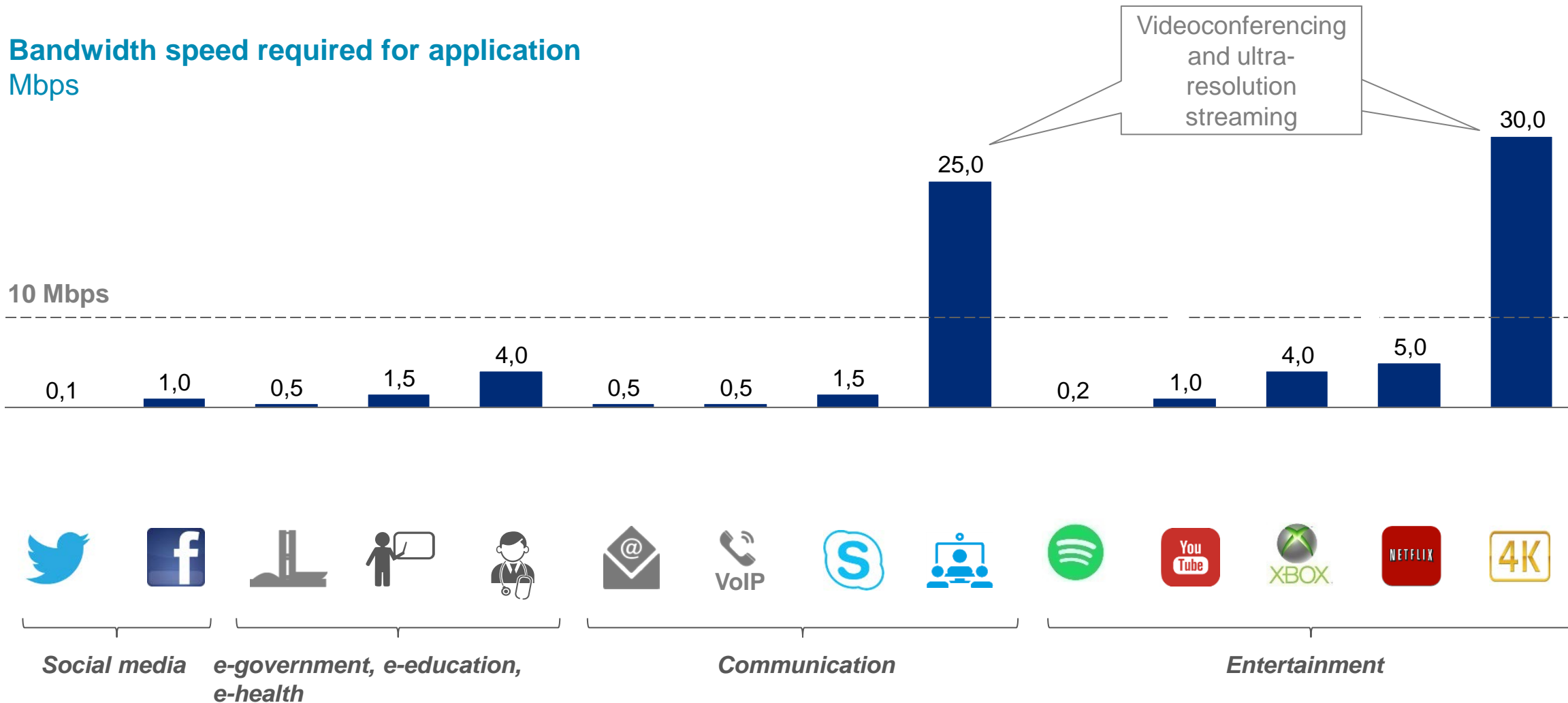


Sources: (U.K.) Broadband Delivery UK, (Canada) CRTC, Industry Canada, (Spain) MINETUR, Agenda Digital España, (Colombia) CRC, MINTIC



# Only a few applications without relevant social value require > 10Mbps

## Bandwidth speed required for application Mbps



Source Broadband Stakeholder Group (BSG) Report Nov/2013, ACG Research, SEGfL, FCC, NERA and Oliver Wyman Analyses



# Brazilian family consumption analysis indicates that 10 Mbps is sufficient to meet most of home internet demand

## Typical Brazilian household PNAD 2014<sup>1</sup>



### Couple with kids (43% of households)

- 2 Adults + 2 children
- With television
- Up to 2 Cellphones and/or 1 PC/Tablet

## Simulation of use in peak hour Assuming 100% of family connected

Dad watching **HD movie on TV**



5,0 Mbps

Mom watching **videos on tablet**



1,0 Mbps

Son **posting photos on Facebook**



1,0 Mbps

Daughter **studying on computer**



1,5 Mbps

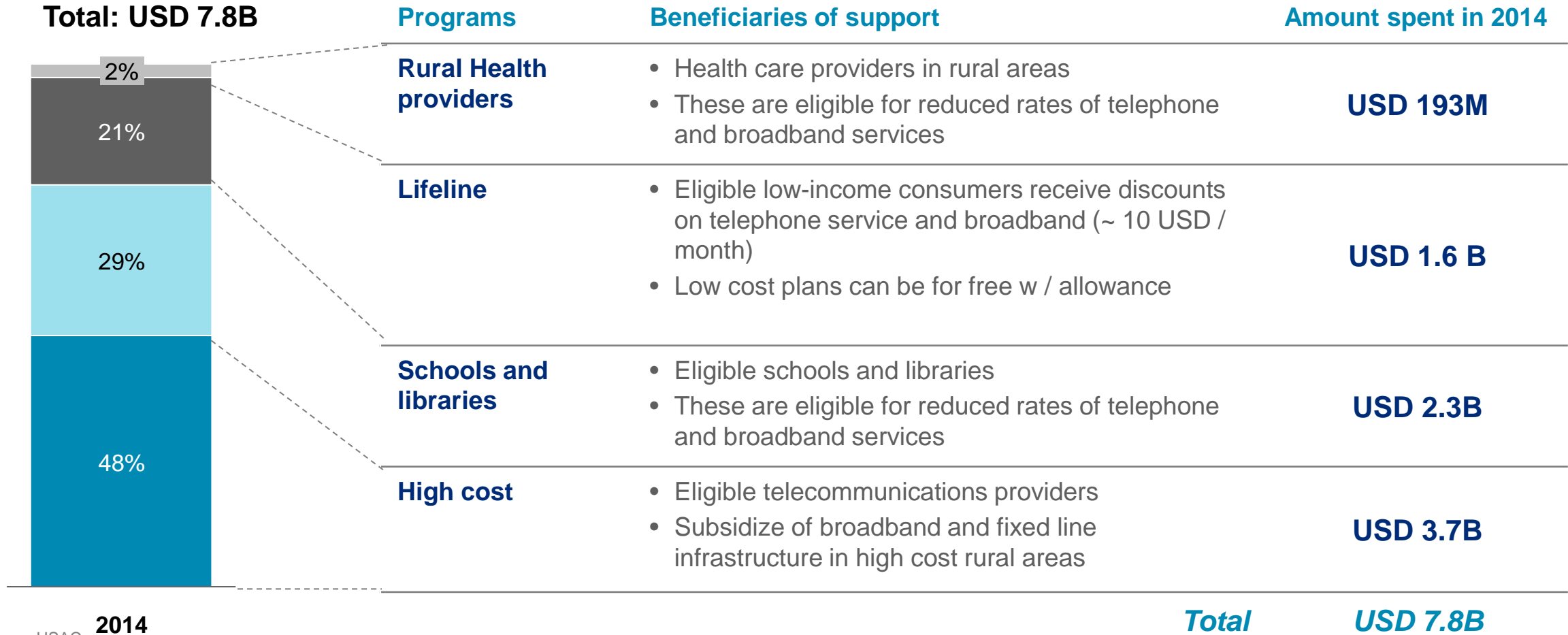
**Total<sup>1</sup> 8,5 Mbps**

Notes: (1) Assumes simultaneous access in the same household connection  
Source Síntese de Indicadores Sociais; NERA e Oliver Wyman Analyses



US universal service fund finances a number of programs in fixed-line and broadband - with annual spending of ~ USD 8.0 B

**Distribution of the Universal Service Fund (USF)**



Source: USAC **2014**

