

A Work Project, presented as part of the requirements for the Award of a Master's Degree  
in Finance from the NOVA – School of Business and Economics.

**Potential M&A between TIM Brazil and Oi S.A:**  
**The irreversible force of Telecommunications convergence**

Alexis Emanuel Escorche dos Santos, 357.

A Project carried out under the supervision of:

**Professor Paulo Soares Pinho**

7<sup>th</sup> January 2015

## **The irreversible force of Telecommunications convergence**

The intrinsic forces of market aiming for telecom industry convergence has arrived to Brazil. This case presents real characters, a sequence of events and other public information that has been impacting two corporations studied in this case. TIM Brazil and Oi S.A, two top players in the Brazilian telecom industry mobile and fixed segment respectively. While a merge between the two of them looks perfect and simple in an operational perspective due to its vertical complementarity, bring to them opportunities to win over a bundle offer (multi service package) that will consolidate their market predominance. Macroeconomic and internal corporate contrasts between these companies' environment might signal that an impulsive could have a high price to pay in the future.

## **Welcome to Brazil**

Finally the most expected year for the Brazilian population has arrived. Being the host of the most important international national sport competition The 2014 FIFA World Cup football, represents the ultimate symbol of national pride to the International community. A key roadshow opportunity for the country to open its doors, not only to show the world a strong and wise economy that was able to upturn from one of the hardest inflationary path of economic history, but also a reversal trend on democratic, human rights and corruption issues when compare to its Latin American neighbors. Despite all the spotlight, the Brazilian national motto “*Ordem e Progresso*” meaning “Order and Progress” will in fact reveal a loss in momentum in the first quarter of the year. In one hand, the presidential election taking place in the end of year could be the trigger to reverse all the negative figures of the Brazilian economy and corruption scandals that came to light in 2014, on the other hand the financial community is not so optimistic if former president Dilma Rousseff from the Worker’s Party (Centre-left political party) continues in the power for more four years. Although likely, the reelection is seen as serious threat scenario that may lead to the failure of two previous decades of great structural economic reforms that started with Fernando Henrique from the Brazilian Social Democracy Party and finally achieved the peak with the popular Lula da Silva from the Worker’s Party with GDP growth at the level of 6.5% in 2010<sup>1</sup>. The fact is that up to now Brazil has outperformed the average of the emerging economies. The dark past of an inflationary economy that lead to continuous internal financial crises and IMF interventions have put Brazil in a more conservative exposure to international assets

---

<sup>1</sup> Appendix - Macroeconomics

allowing to hedge most of the worldwide financial crises of 2007-2008 consequences. With no signs of political extremism like other leading economies, such as China, a total area of 8,515,767 km<sup>2</sup> and a population of 201.774 up to 2013<sup>2</sup>, makes Brazil the world's fifth largest country both by geographical area and by population and seventh largest economy according to the World Bank. Taking this broad macro figures and the economic heterogeneity across the regions with high concentration in the southeast region of the country<sup>3</sup>, with São Paulo and Rio de Janeiro contributing with 32,1% and 11,5% respectively to total GDP, it sets the appropriate ingredients for foreseeable economic growth expansion in the other regions. Due this, telecommunications play a central role as essential groundwork to speed economic growth. Like other emerging economies, Brazil's lack of highways and railroad presents a huge challenge for the country's competitiveness. Aware of this situation, in 2012 the former president Dilma promises to build 70 new regional airports by 2015, a total of 800 for the next decade. This measure entitles to see the mobile technology as the strategic path for the telecom industry in the country. It is already evident the huge potential for the mobile sector<sup>4</sup>, J.P. Morgan and regulator reports<sup>5</sup> assigns Brazilian mobile 25% average EBITDA margins as the lowest in Latin America with an average of 30% margin. Not only low, but also relatively well distributed among competitors, Brazilian market rivalry is relatively fierce when comparing international peers through the HHI Index (*Herfindahl-Hirschman Index*)<sup>5</sup>scope. Brazil has a level of 2543 that has been stable over time says the regulator ANATEL and so one of the lowest market concentration around major economies.

---

<sup>2</sup> Appendix - Macroeconomics

<sup>3</sup> Source: [ftp://ftp.ibge.gov.br/Contas\\_Regionais/2012/pdf/tab01.pdf](ftp://ftp.ibge.gov.br/Contas_Regionais/2012/pdf/tab01.pdf)

<sup>4</sup> Appendix – Brazilian telecommunication industry

<sup>5</sup> Appendix – HHI Index

Associated to this, by 2013 the mobile market penetration was already 134%, making Brazil the most penetrated market. On the other hand, by its natural monopolistic features worldwide and also in Brazil the fixed market reflects the results of past stated owned monopoly privatized in the last decades. In the present, the fixed segment is dominated by two major forces Oi 38,92% the previous stated owned and Telefonica 22,96%<sup>6</sup>, the overall access growth is weak despite the high geographical concentration<sup>7</sup>, with very shirk margins due to regulation policies pricing, past incentives for high investments were low but the industry has been presenting new trends of investments<sup>8</sup> Despite stagnation, it continues to play an important role for stable revenues and a key desirable infrastructure for the worldwide service consolidation trend driven by the multimedia sub-segment that presents 60 BRL ARPU the highest of the all industry. In a large country such as Brazil, one sub-segment common to both fixed and mobile communication is the so called national long distance connections LDN *Ligação Longa Distância*. The pricing fees structure of this segment is a combination between the distance and time schedule of the call, very similar to the common international call fee. HHI<sup>8</sup> Also shows in the Brazilian LDN segment, despite the relative low 0,24 HHI level it does not considers the full impact of the of VoIP (*Voice over IP*) through a diverse range of internet platforms also known as OTT (*Over the Top*), such as Skype, that offers to the user a *flat fee*, is evident on the industry structure. According to the telecom consultancy firm TeleGeography<sup>9</sup> by 2012 Skype reached a 41% growth becoming

---

<sup>6</sup> Appendix – Brazilian telecommunication operators

<sup>7</sup> Appendix - Brazilian telecommunication industry

<sup>8</sup> Appendix – HHI

<sup>9</sup> <https://www.telegeography.com/products/commsupdate/articles/2009/03/24/skypes-share-of-the-international-long-distance-pie-on-the-increase/>

the largest long distance VoIP provider worldwide. To reinforce this trend, study on consumer behavior performed by AT Kearney<sup>10</sup> concluded that more people are spending more time online than ever. This is even greater in countries with younger generations with appetite for technology, like Brazil. The study concludes that 51% of the Brazilian sample spend all day in the internet.

This allow us to foresee opportunities for a first move advantage benefits, if a “multi service” convergence is set in place in order to create a new strategically positioning opportunities for network operator providers in the value chain of an increasingly competitive industry.

### **TIM Brazil<sup>11</sup>**

With a degree in Electrical Engineering from the University of Campinas, a Brazilian top institution, and a master degree in Management from Stanford University, Rodrigo Modesto de Abreu has accumulated more than 20 years of experience in telecommunication industry. In the last decade as a President of Cisco systems in Brazil, and since the beginning of 2013 Rodrigo Modesto is the former CEO of *TIM Participações S.A* replacing Luca Luciani that renounced from his role as CEO of *Telecom Italia* and so of the Brazilian operations, after a scandal of fraud came into light in Italy. *TIM Participações S.A* is a holding Company of Telecom Italia group with 67% of participation. Since its establishment in 1998, the flag was the wireless business, provide mobile telecommunication services all across Brazil was the very first conquer. The second will be an acquisition path looking for diversification and

---

<sup>10</sup> [http://www.atkearney.com/consumer-products-retail/connectedconsumers/full-study/-/asset\\_publisher/Aj6WmQ8WDHBx/content/connected-consumers-are-not-created-equal-a-global-perspective/10192](http://www.atkearney.com/consumer-products-retail/connectedconsumers/full-study/-/asset_publisher/Aj6WmQ8WDHBx/content/connected-consumers-are-not-created-equal-a-global-perspective/10192)

<sup>11</sup> Appendix – TIM financials

strengthening its position as the second largest player in the mobile market. This implied the acquisition in 2009 of Intelig, an important move for strengthening the position in data services switching, by renting (optimizing OPEX) to operator network provider (Fiber optical that enables to speed 3G networks). From the market perspective, gains in all corporate segment, including all sub segments, and looking forward the household segment. Again in 2012, the acquisition of AES Atimus now TIM Fiber, was looking for an increase in power as a provider for fixed data services in the fiber optic network in two strategically geographical areas, Rio de Janeiro e São Paulo. Not only it is expected 8.5 million households, but also, together representing the two engines of Brazilian economic business environment and so more than 550 thousand companies sounds the perfect place for corporate segment consolidation. TIM Brazil enters 2014 with a total market share in the mobile sector of 27% only 2% behind VIVO the TOP player, with 29% market share in the mobile prepaid segment and accounting to 62% of its total revenues, which is a great indicator position achieved by minimizing client's bad debt and working capital requirements. The EBITAD margin of 26%, is also above the sector's 25%, and even better if handset sales are excluded, a jump to the 32%. Focus on embracing 3G and 4G technologies, a 90% Capex was attributed to infrastructure, and it now accounts to 23,6% and 31% of market share respectively. With this, TIM Brazil strategy is data and internet, where the market points for a 60% of household without internet access and financial indicators seeing high margins in the VAS (value added services) with an actual revenue growth of 20% in 2013. Along the year TIM Brazil may find operational challenges, threatens from regulatory policies in the MTR *Mobile Termination Rate* may hurt its high margin interconnection revenues; more regulatory pressure for the Quality Plan execution; 4G auction for 700Mz Spectrum that could determine TIM's Brazil

4G dominance; reinforcing its strategy in the data segment by increasing its business segment on smartphones and tablets penetration in order to complement a diverse and innovative offer in VAS content.

## **Oi S.A<sup>12</sup>**

Oi's history is no different than the usual past state-owned privatized telecom. After a merger of sixteen state-owned Incumbent local Exchange Carriers (the ultimate possessor and so the provider of telecommunication source and infrastructure like copper wire and networks). With a total coverage of the northern, northeastern and the southeastern of the country. Together, these regions contributed for 5,3%, 13% and 55,2% respectively for total GDP by 2012<sup>13</sup> These regional characteristics give it the initial name of Telemar (derived from Tele + Mar, telecom and “mar” from Portuguese meaning sea). Only in 2007 for marketing reasons, expanded the name of its mobile segment for the whole group to Oi S.A. Presently, Oi with no surprise is the number one market share operator in the fixed given a monopolistic heritage reflected in its strong and expensive assets needed to be a pure wired network provider. But this leadership in the fixed mobile have been threatened in the last years by new operators like Embratel and GVT. Oi also occupies the fourth place in market share in an aggressive mobile business environment a difference of 6% separates Oi from the 3<sup>rd</sup> but 10% from the Top mobile peer<sup>14</sup>. Additionally, its leverage levels are more than headaches for its management. Although it ended the year with the expected level of around 30 B of BRL more than 3 times its market value still delivered shareholder dividends. But

---

<sup>12</sup> Appendix – Oi financials

<sup>13</sup> Source: IBGE : [ftp://ftp.ibge.gov.br/Contas\\_Regionalis/2012/pdf/tab01.pdf](ftp://ftp.ibge.gov.br/Contas_Regionalis/2012/pdf/tab01.pdf)

<sup>14</sup> Appendix – Brazilian telecommunication operators

financial market community emphasized the operational struggle that must come if Oi's does revert this critical situation, Oi's debt capacity came to an end and not only competitors have much less debt cost but also maturities of 10 years compare to 3 to 4 years maturity of Oi. At the same time, Oi announced in 2013 a merged will take place with the largest Portuguese telecom operator PT *Portugal Telecom* to enter in an strategically partnership to create one of the Biggest telecom named Corp Cop. the idea is to keep the brand names for their services but to simply its complex shareholder's structure. So, it is expected for Oi to: 1. Gain in corporate restructure (capital access to alleviate Oi's debt levels is the key element); 2. Expand of market share to a total of around 100 million (Due to the strong presence of PT in some Africa countries); 3. Know-how and technology (Portugal is a world reference country in the telecom industry for innovation. The responsible player of this advance in technology, of course PT s past stated owned country). For PT this represents a way to come back for a growing environment after the sale off in 2010 of its stake on VIVO to TEF, at the same time this avoids of being an easy target in a European market that is leaving a moment of high telecom consolidation. Despite de challenging scenario in market share of local operator back supported by international giants and its leverage constraint. Oi still has the first move advantage in infrastructure, technology and knowhow, the additional PT knowhow to offer the worldwide trend of integrated services (fixed+mobile+data).

### **The Deal – The intrinsic market force**

Digital data has no borders and so capital, ironically, the local drivers (network providers) of a major worldwide web of traffic information are the ones who feed their main challengers (OTT). This new telecommunication layers (Facebook, Sportify, Google, etc) positing at the

end of the value chain drag network operators to lose their ancestral market power with comfortable margins although regulated prices. This way three convergence forces, technological (vertical integration of providers), services (all-in-one for households) and consequently the market. Until then operator will be limited to efficiently manage the tradeoff between CAPEX and OPEX, network providers only way out is to push for capacity to provide integrated multi service.

### **The Deal – Backstage Role play**

Naturally the convergence of forces for an industry consolidation are not alone in the Brazilian case, also across border web of shareholders' participations in giant worldwide operators are playing a dynamic role on the backstage towards Brazilian sector movements. Back 2007 TEF *Telefonica* the Spanish giant telecom acquired a stake of 22,4% in TI *Telecom Itália* through Telco. Next in 2010, the complete acquisition from TEF of Portugal Telecom stake in VIVO (the leading Brazilian mobile operator) gave TEF a greater power in Brazilian grounds. At the time this was the maximum participation that TEF could take under Brazilian competition authority CADE restrictions, promising unaltered its position on TI. But with the continuously economic recession in Europe, TI immerse in a deep financial depression that could be ultimately alleviated with a capital rise. With no surprises TEF, instead of selling its stake on TI, took advantage of this situation and again through Telco rose its participation in TI. From the last event, CADE gave 18 months to TEF to abdicate from its direct and indirect stakes in TIM Brazil, or else it had to sell its own directly controlled telecom operation in the country to VIVO. Over the table are the two leaders in the mobile sector and one of them as a potential overall market winner in delivering

integrated fixed and mobile services in the near future, VIVO. The catalyzer for a wave of media speculation about TIM Brazil sell off was in place to shake the market along the year.

### **The Deal – The watchdog is to come**

Regulation will only assume the spotlight in the right time, there's no rush. Still, financial analysis already started looking for risks and potential regulatory limitations. JPM analysts are sure that CADE would not authorized a deal that generates more than 50% of subscribers share in any Brazilian state<sup>15</sup>. Still, a sell off of operations is feasible in any restructuring allowing the new company to keep the leadership in the state at the same time that sell off operation for a welcome cash in. Note that the ARPU is the ultimately key performance indicator, subscriber top market share does not guarantee higher revenues than its peers. JPM report shows how TIM and Oi are close to spectrum caps<sup>15</sup>. Yet this three important indicators have to be consider in case of a merger: 1. Spectrum can be sold back to regulator, which means cash in; 2.Operators often do not use all the spectrum capacity, because you need the even towers and networks for that. It means that for a potential deal, gains from the sum of the infrastructure to explore more spectrum capacity and give back the demand by the regulator; 3. The upcoming 4G takes other individual capacities not included in the JPM figure.

### **The Deal – Financials, the light at the end of the tunnel**

A deal is a deal, but before its fulfilment it has to go through out an intensive battle of negotiation. This last, an ultimate duel of forces, typically between two counter parts who

---

<sup>15</sup> Appendix – Brazilian telecommunication operators

pursue to push their actual boundaries of action. This expansion of action could have a short term perspective (a certain level of cash today to gain financial flexibility) or long term perspective (strength in operational infrastructure to obtain market power and consolidation). Defining a new structure for Oi+TIM is a challenge, what we know is that TI CEO already stated that TIM Brazil is the most important Group's unit asset when it comes to revenue generation and it has an increasing strong presence in an emerging leading economy. Implying that a potential merged will demand TI controlling power over the new entity. But selling for TI will also be a solution given its financial situation back in Europe. On the other hand, Oi's hunger for consolidation and deleverage seems opposite. A potential merge with TIM seems ideal given its negative net debt position and the business vertical integration looking forward to convergence on service (fixed+mobile+data) and so market dominance. Synergies are high there's no doubts, JPM estimates BRL 22 billion pointing for OPEX and CAPEX gains in efficiency. But so premiums have to be high, last deals on GVT and ePLUS where 10x EBITDA. Also the tag a long rights of shareholders could increase the price to pay for the total deal.

### **Year 2014 Replicating a Timeline Social Network**

We are in the 3Q4 of 2014 and a storm of events from Macro level to Micro have shaken all the Brazilian market, particularly the telecom industry. "Rousseff scores narrow victory in Brazil" The newspaper *Financial Times* shows a splinted country between rich and poor, Southeast and Northeast. With a second round tight winning by 3% former president Dilma lacks in an absolute majority, facing a decrease support for political decision. An even hard

schedule, when the agenda demands for a rise of an economic giant that have been the underperforming in last two years. Not only a national demand but also across border, adding the announcement by the US FED to progressively stop its quantitative easing policy, that can be easily analyzed by the evolution USD/BRL<sup>16</sup>. The Brazilian economy now ends the year in historical levels of 10 years of maximum depreciation against USD. The major impact will be in the balance sheet with high levels of debt mainly composed by EUR or USD currencies. Companies like Oi may struggle even more than expected. Relatively to the Telecoms industry in Brazil, the Financial Times labelled as “Telecoms “soap opera” of consolidation drives M&A”. Along the year the media flooded the public eyes with a wide range of creative and continuously innovative news about how TIM Brazil could be splintered by major market players and how this highly complex deals could take place. But most of the speculation was about Oi acquiring TIM due to its huge asset complementarity and so an expected speed in vertical integration. To this news TI answered that “it all depend of the size of the cashier’s check” signalling that a BRL 19 per share for the 67% stake that TI has on TIM Brazil will be necessary make then change the idea. The fact is that looking for convergence TIM makes an incredible offer to Vivendi, the owner of the fixed telecom new start, but it loses the race against TEF, a possibility do enter high in the wire lost. The whole economy and so the telecoms suffer with another economic break down environment adding the structural 25% cut in the MTR by the regulator. But not all was bad news, TIM Brazil won the action for the 4G and its continuous pursuit in the data segment positioning, sending a clear message to the market when content provider Netflix pointed TIM Live services as

---

<sup>16</sup> Appendix - Macroeconomics

the fastest provider of broadband in Brazil. Also a record of 20k new clients in the fiber broadband just in the first quarter of the year. Not only quality but also speed, 40Mbps vs 2.6 Mbps of Brazil's average. Finally, despite the consensus analysis, the target price was inflationary due to the potential deal stock price didn't react with such news, probably because an official proposal has never seen daylight<sup>17</sup>. An overall recognition of strong cost control from JPM analysis to the company started to rise symptoms that TIM Brazil is in the near future best alone. Throughout the year Oi's news were mostly due to its corporate restructuring rather than its operational performance that has been disappointing. Oi didn't run for the 4G auction (700 MHz) which may imply that consolidation is near with an acquisition of a Brazilian peer says JPM. But just in the middle of the merge process the bankruptcy news of Rio Forte, a Holding Portuguese company come to up, involving in a major scandal of its owner BES - *Banco Espírito Santo*. In the past PT lended almost 900 million euros to Rio Forte that appears to not have been paid back, to not hurt even more the financial leverage stability of the new entity CorpCO (Oi+PT). Therefore PT was forced to reduce its percentage participation in the new company in the amount of almost BRL 3 billion, this forced a reduction to 25,7% and so it gave away its controlling position. Overall, this situation couldn't be worst, losing the operational focus this leaves Oi's with no controlling position and so a solid focus on strategy for the whole new group. Also the increase of an internal uncertainty inside de group because of suspicion of more unexpected surprises from PT, pressured the CEO Zeinal Bava to announce his resignation. The last speculation about Oi, was the PT sell off to gain power for a takeover on TIM Brazil.

---

<sup>17</sup> Appendix – Brazilian telecommunication operator

## **Teaching Objectives**

To analyze how macroeconomic and political climate may impact in the delay of corporate decision and operations. To performed pure analytical number crunching valuation in a telecom in emerging country. Attention must be paid when choosing the valuation method because the firms may be confronted with financial distress (Oi leverage). Key inputs like inflation or exchange rates in emerging counties are critical, since sudden movements of the exchange rates make all the difference in balance with high levels of debt in foreign currency. Also inflation may play an important role when defining the growth rates and cost of capital. Understand corporate business strategy decisions in a convergence industry like telecom. Simple analyses of telecom business in a managerial/financial approach always with the convergence issue in order to understand what are the sources for synergies.

## **Questions:**

- 1- How much are you willing to pay for TIM Brazil in a standalone basis? Explain your assumptions.
- 2 – The public information media seems to be sure about a short term takeover of Oi over TIM. Does Oi represent a potential peer to merge in the short term? Justify.

3 – No one seems to have doubts about the complementarity operational business between Oi and TIM. Do you agree this could be enough? If Oi goes for TIM in the short run how it would look like and what can be expected in terms of synergies? Analyze the premium range scenario to contrast.

**Teaching notes:**

Why telecommunication matters for economic growth or how important is the role of telecom for the economic growth. To allow the finance/business student to become familiar to basic terms of the industry such as spectrum, arpu, etc. The students may be able to understand what are the forces and the layers that are driving the industry to convergence in order to identify the true value of the asset. Identify the new layers (content development for instance and its increasing market power) so the student realized that there's no other path for the network providers rather than merge. There is the intent for the student to learn the basic from the Brazilian economic environment since it has been a popular and growing economic player. So there's the objective to submerge the student in the Brazilian environment and understand the political impact presents big challenge for corporate decision. The student have to be able to understand why so much M&A in this industry, is because of the technology? Is it because of the market share? What are the sources of synergy? From the status report part "Time line events" the ability of the student to identify the relevant a reliable information that comes to the market and that should be considering in his valuation analysis scenarios. Is not all about the valuation, I want the students understand the assets of the companies. What is the key asset of a mobile operator and a fixe operator? And how the convergence of the sector is the main force for this transaction. Note that after performing a

detail analysis on Oi's financial<sup>18</sup>, is evident that it does not represent a good peer for the run. Its leverage capacity and corporate governance crisis make it almost impossible to foresee a big deal. Also the valuation perform on TIM Brazil<sup>18</sup>, it is evident that it needs a boost from wired business to become big enough to confront the giant TEF. At the same time looks better as if Tim Brazil stays alone than enter in a complex big deal that might be full of surprises from Oi's leverage and Opex inefficiency. From the consensus of analyst reports and public information it was possible to estimate expected synergies mainly in revenues due to market convergence. Still, the scenario for Oi's shareholder EPS accretion is high.

---

<sup>18</sup> Teaching notes appendix

## Macroeconomics – Appendix

### - Exchange rate USD/BRL<sup>1</sup>



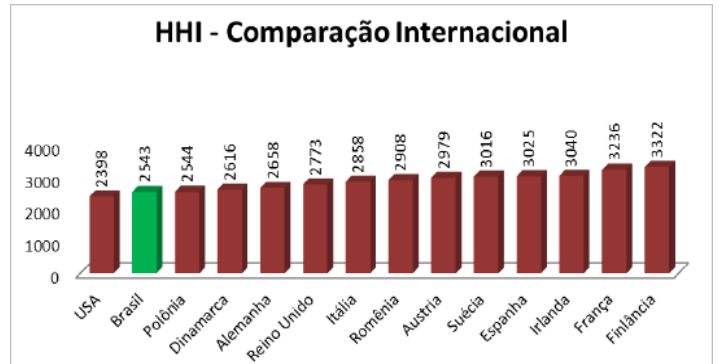
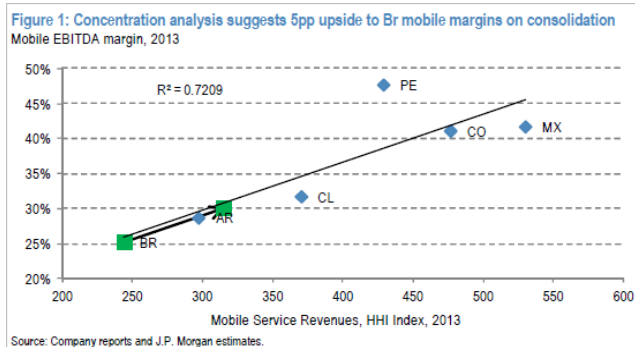
Brasil	2009	2010	2011	2012	2013
Population	194.351	196.289	198.172	200.000	201.774
GDP Billions reais	3.239	3.770	4.143	4.392	4.838
GDP Anual growth	-0,30%	7,50%	2,70%	1,00%	2,30%
GDP US\$ Billions	1.626	2.144	2.475	2.253	2.070
GDP per capita R\$	16.737	19.284	20.988	22.044	24.065
GDP Anual growth	-1,40%	6,50%	1,70%	0,10%	1,40%
GDP per capita US\$	8.399	10.966	12.538	11.279	11.142
Inflation - IGPM* (%)	-1,72	11,32	5,1	7,81	5,53
Inflation - IPCA** (%)	4,31	5,92	6,5	5,84	5,91
USD/BRL exchange - close	1,74	1,67	1,88	2,04	2,34

Source: IBGE - Instituto Brasileiro de Geografia e Estatística

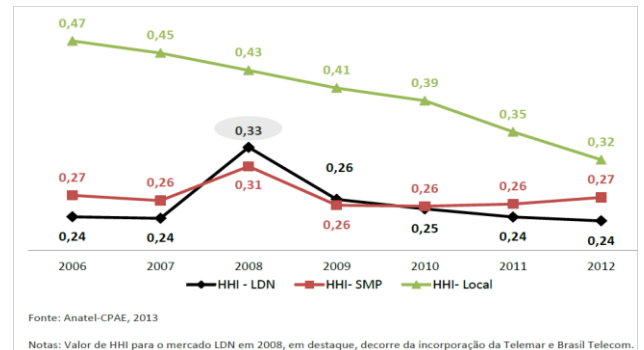
\*Índice Geral de Preços do Mercado - From FVG

\*\*Índice Nacional de Preços ao Consumidor Amplo - from IBGE

## HHI Herfindahl–Hirschman Index – Appendix<sup>2</sup>



**Market competition HHI Herfindahl–Hirschman Index.** The Federal Trade commission (FTC) says: *HHI below 100 (or 0,01) – highly competitive ; HHI less than 1500 (or 0,15) – low concentration; HHI between 1500 and 2500 (0,15 to 0,25) – HHI moderate concentration; more than 2500 (or 0,25) – HHI High concentration.*



<sup>1</sup> Source: [www.xe.com](http://www.xe.com)

<sup>2</sup> Source: “HHI – Comparação Internacional” is a ANATEL relatório de acompanhamento Econômico;

## Brazilian telecommunication industry – Appendix<sup>1</sup>

Operators	Fixed	Cellular	Broadband	Pay TV
Telefonica/Vivo	Telesp	Vivo	Telesp	TVA
Oi	Oi	Oi	Oi	Oi
Claro/Embratel/Net	Embratel	Claro	Net+Embratel	Net and Embratel
Tim	*	Tim	Tim Fiber	-
Vivendi	GVT	-	GVT	GVT
Nextel	-	**	-	-
Sky	-	-	Sky	Sky

source: ANATEL

\* TIM operates long distance for fixed telephony and has a small participation in local telephony.

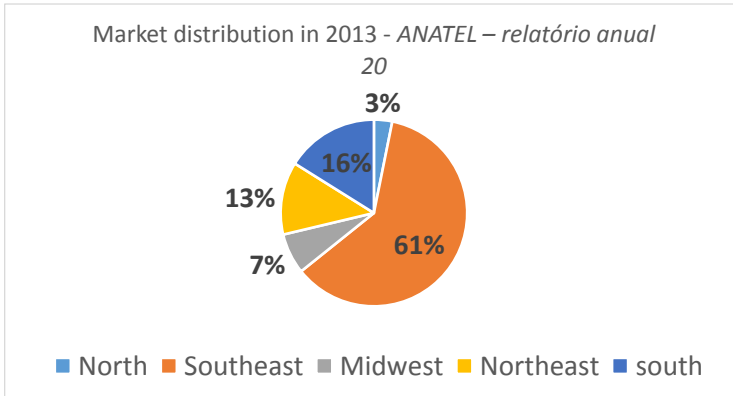
\*\* Nextel is a SME (Trunking) operator and acquired 3G license in 2010.

CAPEX - BRL Billions	2010	2011	2012	2013
Fixed	9,7	12,6	15,6	17,2
Mobile	9,2	10,2	10,1	12,1
Total	18,9	22,8	25,8	29,3

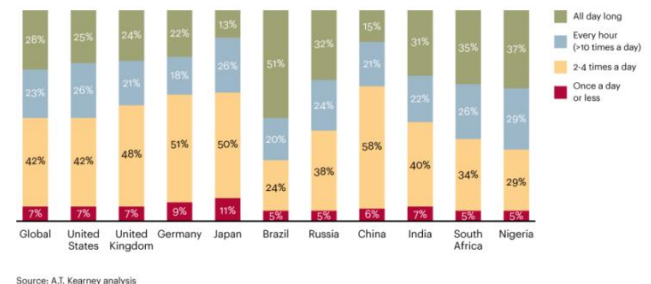
source: ANATEL

Access (in millions)	2009	2010	2011	2012	2013
Mobile	174	202,9	242,2	261,8	271,1
Fixed	41,5	42	43	44,3	44,8
Broad band	11,4	13,8	16,3	19	21,3
TV subscriptions	7,5	9,8	12,7	16,2	18
Internet (PNAD)	67,8	73,9	77,7	84,2	85,6
Density / 100 Hab					
Mobile	89,5	103,4	122,2	130,9	134,4
Fixed	21,4	21,4	21,7	22,2	22,2
Broad band	5,9	7	8,2	9,5	10,5
TV subscriptions	3,8	5	6,4	8,1	8,9
Households coverage %					
TV	95,60%	95,00%	96,90%	97,20%	97,20%
Fixed + Mobile	84,10%	87,90%	89,90%	91,20%	92,50%
Microcomputer with internet access	27,30%	N.D.	36,50%	40,30%	42,40%
Total of households (millions)	58.566	57.324	61.292	63.768	65.130

source: ANATEL



Frequency of connection  
(% of respondents)



<sup>1</sup> “frequency of connection” A.T. Kearney study [http://www.atkearney.com/consumer-products-retail/connectedconsumers/full-study/-/asset\\_publisher/Aj6WmQ8WDHBx/content/connected-consumers-are-not-created-equal-a-global-perspective/10192](http://www.atkearney.com/consumer-products-retail/connectedconsumers/full-study/-/asset_publisher/Aj6WmQ8WDHBx/content/connected-consumers-are-not-created-equal-a-global-perspective/10192)

## Brazilian telecommunication operators – Appendix<sup>1</sup>

Mobile Subs Market Share				
	2010	2011	2012	2013
Vivo	30%	30%	29%	28%
TIM	25%	26%	27%	27%
Claro	25%	25%	25%	25%
Oi	19%	19%	19%	19%
Algar	0%	0%	0%	0%
Nextel	-	-	-	0%
Sercomtel	0%	0%	0%	0%
Outras*	0%	-	0%	0%

Source: Anatel 2014

Mobile Market Share 2014					
	VIVO (TEF)	TIM (TI)	Oi (PT)	Claro (AMX)	Nextel
Subscribers	29%	27%	18%	25%	2%
Postpaid	39%	18%	14%	22%	6%
Prepaid	25%	29%	20%	26%	
Revenues	36%	25%	14%	18%	7%

Source: Anatel 2014

Table 6: Subscriber share

Jul-14						
Region	State	Total Subs	Claro	Oi	Vivo	Tim
North	AC	898	64.0%	22.1%	6.1%	7.8%
North	AM	4,109	64.9%	7.4%	19.1%	8.6%
North	AP	927	60.3%	5.9%	21.9%	11.9%
North	PA	9,233	34.5%	9.3%	38.4%	17.8%
North	RO	2,399	22.8%	43.6%	13.1%	20.5%
North	RR	508	64.3%	6.5%	20.2%	9.1%
North	TO	1,962	19.6%	35.5%	14.0%	31.0%
Northeast	AL	4,062	14.1%	30.6%	33.0%	22.3%
Northeast	BA	18,366	24.8%	29.4%	22.9%	22.9%
Northeast	CE	11,318	5.4%	26.2%	35.0%	33.3%
Northeast	MA	6,517	19.9%	13.5%	33.0%	33.6%
Northeast	PB	5,028	10.6%	24.7%	32.1%	32.6%
Northeast	PE	12,797	9.2%	29.0%	31.4%	30.4%
Northeast	PI	4,014	14.0%	39.7%	31.1%	15.1%
Northeast	RN	4,599	7.5%	28.7%	35.5%	28.3%
Northeast	SE	2,683	59.3%	13.1%	11.7%	15.8%
Southeast	ES	4,480	73.6%	9.4%	7.4%	9.6%
Southeast	MG	26,508	31.8%	13.8%	26.9%	23.9%
Southeast	RJ	24,473	29.1%	34.7%	17.0%	17.1%
Southeast	SP	66,789	33.1%	24.8%	28.0%	12.9%
South	PR	14,950	16.3%	18.5%	54.6%	10.3%
South	RS	16,494	41.0%	29.4%	13.2%	16.4%
South	SC	8,938	22.7%	19.7%	43.8%	13.8%
Center-west	DF	6,219	22.6%	33.4%	20.4%	23.6%
Center-west	GO	9,419	22.6%	41.9%	17.9%	17.2%
Center-west	MS	3,777	45.1%	35.0%	13.8%	5.9%
Center-west	MT	4,686	52.7%	25.0%	11.7%	10.6%
<b>Brazil</b>	<b>Total</b>	<b>276,153</b>	<b>28.8%</b>	<b>25.0%</b>	<b>26.9%</b>	<b>18.5%</b>

Source: Anatel and J.P. Morgan estimates. In bold, states that Tim+Oi are higher than 50% that could

Fixed Subs Market Share				
	2010	2011	2012	2013
Oi*	48%	44%	42%	39%
Embratel	17%	20%	22%	24%
Telefônica*	27%	26%	24%	24%
GVT	5%	7%	8%	9%
Algar	2%	2%	2%	2%
TIM	1%	2%	1%	1%
Outras	1%	1%	1%	1%

Source: Anatel

\*Only Oi and TEF are network providers

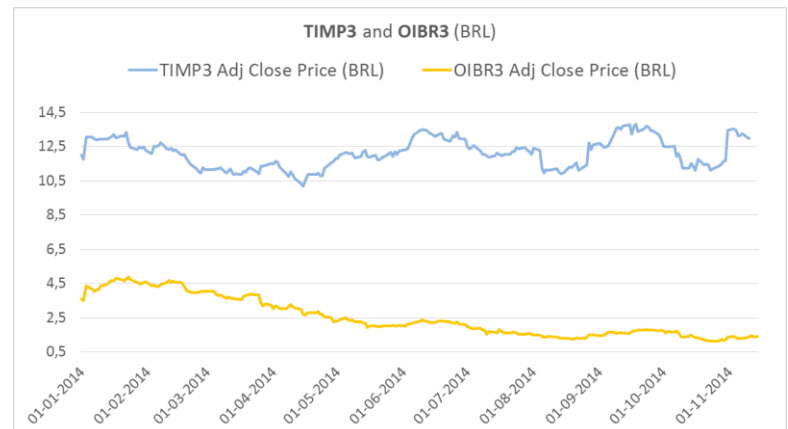
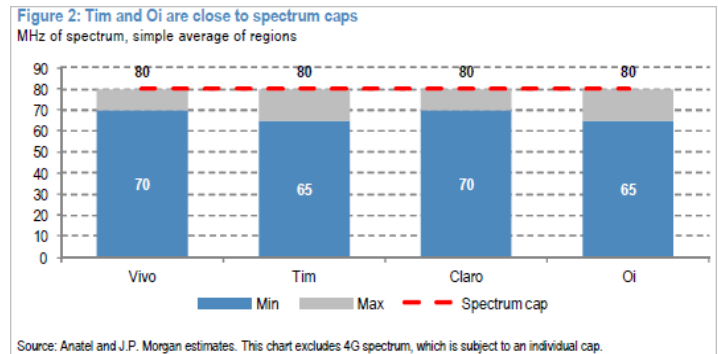
TOTAL DEBT					
	2008	2009	2010	2011	2012
Oi	4.664	4.443	4.365	8.105	33.346
TEF	2.736	3.520	1.826	5.735	7.967
TIM	3.549	4.090	3.235	3.661	4.390

ANATEL - relatório acompanhamento econômico

Investment % / EBIT	2010	2011	2012	average investment
GVT	90%	107%	83%	93%
SERCOMTEL	24%	84%	23%	44%
INTELG*	21%	29%	0%	17%
CTBC	9%	12%	12%	11%
TELEFONICA	6%	8%	10%	8%
EMBRATEL	6%	5%	8%	7%
Oi	4%	6%	7%	5%

Source: ANATEL – relatório de acompanhamento Econômico 2013

\*acquired by TIM Brazil



<sup>1</sup> Source: Subscriber Share and Spectrum Cap from JPM report

## Appendix - TIM financials<sup>1</sup>



TIM income statement (R\$ Millions)	2010	2011	2012	2013
Revenue	20.319	24.758	27.756	29.662
- Deductions from gross revenue	(5.862)	(7.672)	(8.992)	(9.740)
<b>Net Revenues</b>	<b>14.457</b>	<b>17.086</b>	<b>18.764</b>	<b>19.921</b>
- Operating Expenses	(10.099)	(12.086)	(13.332)	(14.298)
% Sales	34%	41%	45%	48%
<b>Operating Profit - EBITDA</b>	<b>4.359</b>	<b>5.000</b>	<b>5.432</b>	<b>5.624</b>
% Margin	21%	20%	20%	19%
<b>D&amp;A</b>	<b>(3.013)</b>	<b>(2.596)</b>	<b>(2.689)</b>	<b>(2.768)</b>
% Sales	10%	9%	9%	9%
<b>Operation Profit - EBIT</b>	<b>1.346</b>	<b>2.404</b>	<b>2.744</b>	<b>2.856</b>
% Margin	7%	10%	10%	10%
Financial income (expense)	(245)	(244)	(170)	(303)
<b>Income Before taxes - EBT</b>	<b>1.100</b>	<b>2.160</b>	<b>2.574</b>	<b>2.553</b>
Income tax and social contribution	1.257	(546)	(705)	(631)
<b>Net income</b>	<b>2.357</b>	<b>1.615</b>	<b>1.869</b>	<b>1.922</b>
% Margin	8%	5%	6%	6%
S/O	2.476	2.264	2.417	2.418
EPS	1,0	0,7	0,8	0,8

TIM Operating cost % Sales	2010	2011	2012	2013
Personnel expenses	2,9%	2,6%	2,6%	2,8%
Selling & marketing expenses	17,1%	15,9%	13,8%	13,3%
Network & interconnection	20,7%	19,1%	19,3%	17,9%
General & administrative	2,4%	2,0%	2,0%	2,1%
Cost of Goods Sold	5,0%	8,3%	9,4%	11,3%
Bad Debt	1,5%	0,9%	0,9%	0,8%
Depreciation and Amortization	14,8%	10,5%	9,7%	9,3%
Financial expenses	1,9%	2,9%	2,3%	2,5%

TIM Revenues Breakdown	2010	2011	2012	2013
Telecommunications Services	92,3%	89,7%	87,7%	84,5%
Mobile	86,0%	83,6%	82,4%	80,9%
Usage and Monthly fee	43,9%	41,5%	39,9%	38,1%
Value added services - VAS	11,0%	12,8%	15,9%	18,0%
Long distance	11,7%	12,8%	11,6%	11,2%
Interconnection	18,1%	15,5%	14,3%	12,7%
Others	1,3%	0,9%	0,7%	0,8%
Fixed	6,3%	6,2%	5,3%	3,6%

KPI's	2010	2011	2012	2013
<b>Total</b>	<b>9.914</b>	<b>13.055</b>	<b>16.293</b>	<b>19.055</b>
Net Additions (000's)	9.914	13.055	16.293	19.055
Churn	0	0	0	1
Total ARPU	24	21	19	19
Total MOU	116	129	136	148
SAC	54	34	29	28
Handsets Sold (000's)	8.012	11.780	10.227	12.511
CAPEX (R\$ Mn)	4.478	3.693	3.786	4.046

TIM Balance Sheet (R\$ Millions)	2010	2011	2012	2013
<b>Assets</b>				
Cash and cash equivalents	2.376,2	3.262,9	4.429,8	5.287,6
Accounts receivable	2.660,6	3.285,8	3.650,9	3.513,0
Inventories	228,7	273,2	269,1	296,8
Income tax receivable	856,0	1.224,3	1.237,3	1.283,8
Other current Assets	215,6	239,7	380,6	359,5
<b>Total Current Assets</b>	<b>6.337</b>	<b>8.286</b>	<b>9.968</b>	<b>10.741</b>
Long term receivables	36,8	59,7	61,3	36,0
Financial assets	13,7	25,9	21,8	28,7
Deferred tax assets	1.732,7	1.489,6	1.252,0	1.064,7
Other Non-current Assets	849,3	1.178,9	1.250,4	1.624,6
PP&E	5.863,7	6.732,2	7.566,5	8.207,2
Intangible	4.563,9	5.761,2	5.989,2	6.436,2
<b>Total Non-Current Assets</b>	<b>13.060</b>	<b>15.248</b>	<b>16.141</b>	<b>17.397</b>
<b>Total Assets</b>	<b>19.397</b>	<b>23.533</b>	<b>26.109</b>	<b>28.138</b>
<b>Liabilities</b>				
Account payable	3.103,5	3.709,3	4.293,1	5.255,3
Financial Debt	957,5	1.090,2	951,0	966,7
Income tax payable	795,8	1.147,8	840,0	695,7
Other payables	860,7	878,8	1.291,1	1.130,4
<b>Total Current Liabilities</b>	<b>5.718</b>	<b>6.826</b>	<b>7.375</b>	<b>8.048</b>
Financial Debt	2.277,1	2.570,4	3.439,1	3.780,0
Deferred tax liabilities	83,7	145,2	196,8	337,8
Provisions	249,1	229,5	311,3	372,1
Other Non-current liabilities	769,1	808,9	953,7	1.005,6
<b>Total Current Liabilities</b>	<b>3.379</b>	<b>3.754</b>	<b>4.901</b>	<b>5.495</b>
<b>Total Equity</b>	<b>10.301</b>	<b>12.953</b>	<b>13.833</b>	<b>14.595</b>
<b>Total Equity &amp; Liabilities</b>	<b>19.397</b>	<b>23.533</b>	<b>26.109</b>	<b>28.138</b>

Debt Schedule maturity	(R\$ Mn)
31-12-2015	767,4
31-12-2016	1.401,4
31-12-2017	613,2
31-12-2018	320,6
01-01-2019	677,3

<sup>1</sup> Source: Company reports <http://ri.tim.com.br/Default.aspx?linguagem=en>

## Appendix - Oi financials<sup>1</sup>



Oi Income statement (R\$ Millions)	2010	2011	2012	2013
Revenue	17.619	16.407	39.901	45.253
- Deductions from gross revenue	(7.356)	(7.161)	(14.740)	(16.830)
<b>Net Revenues</b>	<b>10.263</b>	<b>9.245</b>	<b>25.161</b>	<b>28.422</b>
- Operating Expenses	(6.239)	(6.148)	(17.284)	(20.054)
% Sales	35%	37%	43%	44%
<b>Operating Profit - EBITDA</b>	<b>4.024</b>	<b>3.097</b>	<b>7.877</b>	<b>8.368</b>
% Margin	23%	19%	20%	18%
<b>D&amp;A</b>	<b>(1.057)</b>	<b>(1.044)</b>	<b>(3.221)</b>	<b>(4.278)</b>
% Sales	6%	6%	8%	9%
<b>Operation Profit - EBIT</b>	<b>2.967</b>	<b>2.053</b>	<b>4.657</b>	<b>4.090</b>
% Margin	17%	13%	12%	9%
Financial income (expense)	(80)	(72)	(2.216)	(3.274)
<b>Income Before taxes - EBT</b>	<b>2.887</b>	<b>1.981</b>	<b>2.441</b>	<b>815</b>
Income tax and social contribution	(408)	(490)	(759)	(519)
<b>Net income</b>	<b>2.479</b>	<b>1.492</b>	<b>1.682</b>	<b>296</b>
% Margin	14%	9%	4%	1%
S/O	2.034	2.034	1.640	1.640
EPS	1,2	0,7	1,0	0,2

### Debt Schedule maturity (R\$ Mn)

31-12-2015	3.424
31-12-2016	4.883
31-12-2017	6.991
31-12-2018	3.161
01-01-2019	13.668

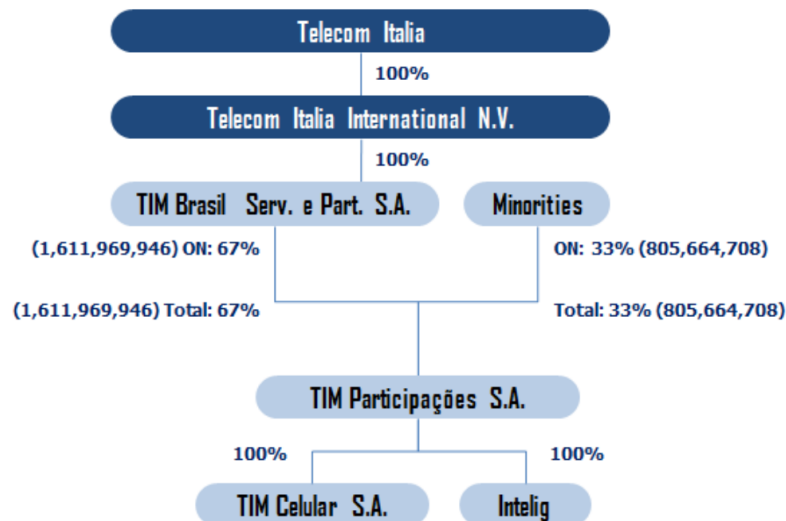
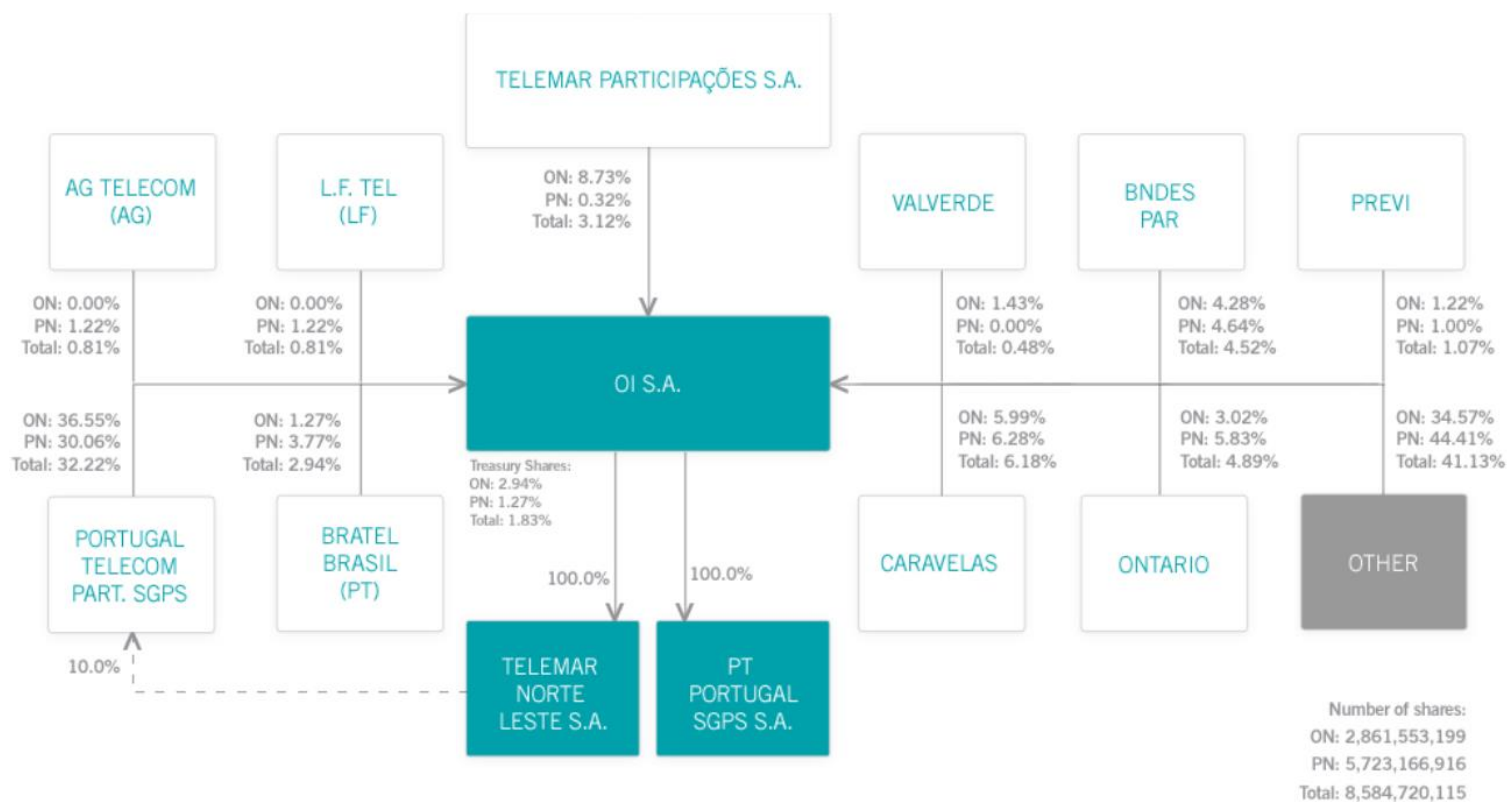
Oi Balance Sheet (R\$ Millions)	2010	2011	2012	2013
<b>Assets</b>				
Cash and cash equivalents	3.217	6.005	4.408	2.425
Accounts receivable	2.070	2.010	7.018	7.097
Inventories	14	13	385	433
Income tax receivable	752	1.137	3.283	2.382
Other current Assets	2.434	3.081	6.044	5.351
<b>Total Current Assets</b>	<b>8.487</b>	<b>12.246</b>	<b>21.138</b>	<b>17.687</b>
Financial assets	5	22	592	1.894
Deferred tax assets	5.276	4.982	8.316	8.274
Other Non-current Assets	4.571	5.318	11.805	13.535
PP&E	5.317	5.794	23.103	24.786
Intangible	1.318	1.085	4.196	3.919
<b>Total Non-Current Assets</b>	<b>16.488</b>	<b>17.201</b>	<b>48.012</b>	<b>52.409</b>
<b>Total Assets</b>	<b>24.975</b>	<b>29.446</b>	<b>69.150</b>	<b>70.096</b>
<b>Liabilities</b>				
Account payable	1.636,6	1.840,6	4.657,9	4.732,2
Financial Debt	1.044,2	1.143,5	3.113,6	4.158,7
Income tax payable	1.088,2	1.663,8	3.413,3	2.645,2
Other payables	2.921,7	3.971,3	5.908,2	4.004,4
<b>Total Current Liabilities</b>	<b>6.691</b>	<b>8.619</b>	<b>17.093</b>	<b>15.540</b>
Financial Debt	3.320,9	6.961,7	30.232,5	31.694,9
Deferred tax liabilities	703,9	502,8	2.238,6	1.747,0
Provisions	3.635,3	3.677,5	5.617,4	4.852,1
Other Non-current liabilities	1.198,5	1.313,7	2.859,2	4.737,5
<b>Total Current Liabilities</b>	<b>8.859</b>	<b>12.456</b>	<b>40.948</b>	<b>43.031</b>
<b>Total Equity</b>	<b>11.337</b>	<b>10.589</b>	<b>11.109</b>	<b>11.524</b>
<b>Total Equity &amp; Liabilities</b>	<b>26.886</b>	<b>31.664</b>	<b>69.150</b>	<b>70.096</b>

Oi Revenues Breakdown	2010	2011	2012	2013
Fixed telephony/data	77,6%	75,5%	60,0%	59,5%
Mobile telephony	16,9%	18,8%	36,4%	35,5%
Other	5,5%	5,7%	3,5%	5,0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Oi Operating cost % Sales	2010	2011	2012	2013
Thir-part services	12,0%	9,3%	13,3%	13,3%
Interconnection	11,2%	10,4%	9,8%	8,8%
Personnel	4,3%	4,5%	4,6%	5,4%
Grid maintenance service	2,3%	5,4%	5,1%	5,2%
Rents and insurance	2,0%	3,2%	4,0%	4,6%
Advertising and publicity	0,6%	2,0%	1,1%	1,2%
Other	5,9%	5,6%	5,1%	3,1%

<sup>1</sup> Source: Company financial reports [http://ri.oi.com.br/oi2012/web/default\\_en.asp?conta=44&idioma=1](http://ri.oi.com.br/oi2012/web/default_en.asp?conta=44&idioma=1)

## Shareholders' Structure<sup>1</sup> – appendix



Ownership Breakdown	Common	%	Total	%
Tim Brasil Serviços e Participações S/A	1,611,969,946	67	1,611,969,946	67
Others	805,664,708	33	805,664,708	33
<b>Total</b>	<b>2,420,136,000</b>	<b>100</b>	<b>2,420,136,000</b>	<b>100</b>

<sup>1</sup> Company data

## Teaching notes - Appendix

TIM Statements of cash flows (R\$ Millions)	2013	2014	2015	2016	2017	2018
Net Income	1.922	1.413	1.556,8	1.796,6	2.082,9	2.372,1
Depreciation and Amortization	2.768	2.914	2.983,4	2.952,7	2.956,4	2.995,6
Δ Decrease (Increase) operating Assets	(358)	1.103	20,8	(335,2)	(416,5)	(447,1)
Δ Increase (Decrease) operating Liabilities	(427)	(317)	375,7	392,9	539,7	524,3
<b>Cash from operating activities</b>	<b>(786)</b>	<b>786</b>	<b>396</b>	<b>58</b>	<b>123</b>	<b>77</b>
Additions to PP&E	(3.564)	(1.780)	(1.707,1)	(1.790,6)	(1.898,8)	(2.540,0)
Additions intangibles	(3)	(1.483)	(1.138,1)	(1.193,7)	(1.265,9)	(1.351,6)
<b>Cash (used in) investment activities</b>	<b>(3.567)</b>	<b>(3.263)</b>	<b>(2.845)</b>	<b>(2.984)</b>	<b>(3.165)</b>	<b>(3.892)</b>
Leasing	2	(10)	(9,6)	(9,6)	(9,6)	(9,6)
Dividends	(735)	(454)	(500,0)	(577,0)	(668,9)	(761,8)
New borrowings	1.110	879	1.304,4	903,4	869,9	832,1
Repayment of borrowings	(1.219)	(967)	(1.151,1)	(1.401,4)	(1.134,1)	(1.073,5)
<b>Cash used in financing activities</b>	<b>(845)</b>	<b>(551)</b>	<b>(356)</b>	<b>(1.085)</b>	<b>(943)</b>	<b>(1.013)</b>
Increase (decrease) in cash and equivalents	(441)	1.300	1.735,3	738,2	1.055,3	540,6
Cash and equivalents at the beginning of the year	4.430	5.288	6.587,3	8.322,5	9.060,8	10.116,0
<b>Cash and equivalents at the end of the year</b>	<b>3.989</b>	<b>6.587</b>	<b>8.323</b>	<b>9.061</b>	<b>10.116</b>	<b>10.657</b>

Ratio analysis		2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>(Values for TIM and Oi respectively)</i>										
<b>Liquidity</b>										
Current Ratio	TIM	1,1	1,2	1,4	1,3	1,4	1,5	1,6	1,7	1,7
	Oi	1,3	1,4	1,2	1,1	0,7	0,3	(0,1)	(0,5)	0,2
<b>Activity</b>										
Average collection period (days)	TIM	48,5	48,4	48,1	43,2	35,9	32,2	32,3	32,3	32,3
	Oi	42,9	44,8	64,2	57,2	57,2	57,2	57,2	57,2	57,2
Average payment period (days)	TIM	112,2	112,0	117,9	134,2	119,1	120,8	123,0	124,2	121,8
	Oi	95,7	109,6	98,4	86,1	92,2	92,2	92,2	92,2	92,2
<b>Leverage</b>										
Debt ratio	TIM	47%	45%	47%	48%	46%	45%	43%	42%	40%
	Oi	58%	67%	84%	84%	84%	86%	84%	83%	87%
Debt to Equity	TIM	31%	28%	32%	33%	30%	29%	24%	21%	18%
	Oi	39%	77%	300%	311%	307%	280%	227%	186%	296%
EBITDA times interest earned	TIM	17,8 x	20,5 x	32,0 x	18,6 x	15,4 x	17,1 x	17,3 x	19,8 x	22,3 x
	Oi	3,8 x	2,1 x	1,8 x	1,8 x	1,3 x	1,9 x	2,1 x	2,4 x	1,7 x
Total Debt / EBITDA	TIM	74%	73%	81%	84%	87%	86%	73%	64%	56%
	Oi	108%	262%	423%	428%	803%	452%	392%	335%	524%
<b>Profitability</b>										
Gross Margin	TIM	71%	69%	68%	67%	69%	69%	69%	69%	69%
	Oi	58%	56%	63%	63%	57%	57%	59%	60%	61%
EBITDA - Operational margin	TIM	21%	20%	20%	19%	19%	19%	19%	19%	19%
	Oi	23%	19%	20%	18%	9%	16%	15%	15%	14%
Return on Sales - Net margin	TIM	12%	7%	7%	6%	5%	5%	6%	6%	7%
	Oi	14%	9%	4%	1%	-4%	1%	1%	1%	-1%
ROE	TIM	23%	12%	14%	13%	9%	9%	10%	11%	11%
	Oi	22%	14%	15%	3%	-15%	4%	2%	2%	-5%
ROCE	TIM	10%	14%	15%	14%	12%	12%	13%	14%	15%
	Oi	15%	9%	9%	7%	1%	6%	6%	5%	5%
ROIC	TIM	9%	13%	14%	15%	13%	15%	17%	19%	20%
	Oi	12%	7%	7%	6%	1%	4%	4%	4%	3%

DCF Valuation	E2014	E2015	E2016	E2017	E2018	Terminal value
Net Revenues	19.556	20.512	21.751	23.224	24.871	
EBITDA	5.343	5.604	5.943	6.345	6.795	
<i>Margin %</i>	27%	27%	27%	27%	27%	
EBIT	2.428	2.621	2.990	3.389	3.799	
<i>Effective tax rate</i>	26%	26%	26%	26%	26%	
<b>NOPLAT</b>	<b>1.802</b>	<b>1.945</b>	<b>2.219</b>	<b>2.515</b>	<b>2.820</b>	
Depreciation and Amortization	2.914	2.983	2.953	2.956	2.996	
Δ Net working Capital	786	396	58	123	77	
CAPEX	(3.263)	(2.845)	(2.984)	(3.165)	(3.892)	
<i>Sales %</i>	11%	10%	9%	9%	11%	
<b>FCFF</b>	<b>2.240</b>	<b>2.480</b>	<b>2.245</b>	<b>2.430</b>	<b>2.001</b>	<b>34.917</b>
<b>Discounted Cash Flows</b>	<b>718,5</b>	<b>2.171,3</b>	<b>1.779,4</b>	<b>1.743,0</b>	<b>1.299,2</b>	<b>22.667,1</b>

<b>Firm Value</b>	<b>30.379</b>
Equity value	32.448
Shares Outstanding	2.418
<b>Fair Value</b>	<b>12,8</b>

Sensitivity Analysis	
Total Price Per Share	

	Terminal Perpetuity nominal growth rate					
	-2%	-1%	5,5%	+1%	+2%	+3%
<b>10,0%</b>	12,94	13,86	16,29	20,12	22,99	33,03
<b>11,0%</b>	11,20	11,85	13,48	15,85	17,47	22,34
<b>11,4%</b>	10,64	11,21	12,62	14,62	15,96	19,83
<b>12,0%</b>	9,90	10,37	11,53	13,12	14,15	16,99
<b>12,5%</b>	9,36	9,77	10,77	12,10	12,95	15,21

WAC

WACC		
<b>Cost of Debt</b>	<b>12%</b>	
Effective tax rate	34%	
After tax cost of Debt	7,6%	
<b>Cost of Equity</b>	<b>11%</b>	
Risk free rate	2,3%	
Market Premium	12,3%	
Beta	0,70	
<b>Capital Structure</b>	<b>Market value</b>	<b>Weights</b>
Debt	4.747	14%
Equity	28.962	86%
Total	33.708	100%

WACC	
	<b>10,5%</b>

TIM income statement (R\$ Millions)	2013	2014	2015	2016	2017	2018
Revenue	29.662	28.452	29.843	31.646	33.789	36.186
- Deductions from gross revenue	(9.740)	(8.896)	(9.331)	(9.895)	(10.565)	(11.314)
<b>Net Revenues</b>	<b>19.921</b>	<b>19.556</b>	<b>20.512</b>	<b>21.751</b>	<b>23.224</b>	<b>24.871</b>
- Operating Expenses	(14.298)	(14.213)	(14.908)	(15.809)	(16.879)	(18.076)
<i>% Sales</i>	48%	48%	50%	53%	57%	61%
<b>Operating Profit - EBITDA</b>	<b>5.624</b>	<b>5.343</b>	<b>5.604</b>	<b>5.943</b>	<b>6.345</b>	<b>6.795</b>
<i>% Margin</i>	19%	27%	27%	27%	27%	27%
<b>D&amp;A</b>	<b>(2.768)</b>	<b>(2.914)</b>	<b>(2.983)</b>	<b>(2.953)</b>	<b>(2.956)</b>	<b>(2.996)</b>
<i>% Sales</i>	9%	10%	10%	10%	10%	10%
<b>Operation Profit - EBIT</b>	<b>2.856</b>	<b>2.428</b>	<b>2.621</b>	<b>2.990</b>	<b>3.389</b>	<b>3.799</b>
<i>% Margin</i>	10%	12%	13%	14%	15%	15%
Financial income (expense)	(303)	(347)	(327)	(343)	(320)	(305)
<b>Income Before taxes - EBT</b>	<b>2.553</b>	<b>2.081</b>	<b>2.293</b>	<b>2.647</b>	<b>3.068</b>	<b>3.494</b>
Income tax and social contribution	(631)	(668)	(736)	(850)	(985)	(1.122)
<b>Net income</b>	<b>1.922</b>	<b>1.413</b>	<b>1.557</b>	<b>1.797</b>	<b>2.083</b>	<b>2.372</b>
<i>% Margin</i>	6%	5%	5%	6%	7%	8%
S/O	2.418	2.418	2.418	2.418	2.418	2.418
EPS	0,8	0,6	0,6	0,7	0,9	1,0

TIM Balance Sheet (R\$ Millions)	2013	2014	2015	2016	2017	2018
<b>Assets</b>						
Cash and cash equivalents	5.287,6	6.587,3	8.322,5	9.060,8	10.116,0	10.656,6
Accounts receivable	3.513,0	2.798,3	2.635,5	2.789,3	2.988,2	3.197,6
Inventories	296,8	263,6	255,8	267,5	296,3	311,4
Income tax receivable	1.283,8	1.202,4	1.273,0	1.324,3	1.388,6	1.472,1
Other current Assets	359,5	297,3	308,9	344,0	362,4	372,3
<b>Total Current Assets</b>	<b>10.741</b>	<b>11.149</b>	<b>12.796</b>	<b>13.786</b>	<b>15.152</b>	<b>16.010</b>
Long term receivables	36,0	41,3	39,5	39,6	40,4	45,9
Financial assets	28,7	28,7	28,7	28,7	28,7	28,7
Deferred tax assets	1.064,7	1.021,3	1.071,2	1.136,0	1.212,9	1.298,9
Other Non-current Assets	1.624,6	1.451,3	1.470,8	1.489,3	1.517,5	1.555,2
PP&E	8.207,2	8.418,8	8.517,3	8.680,5	8.920,7	9.756,2
Intangible	6.436,2	6.573,0	6.336,2	6.204,6	6.172,6	6.233,1
<b>Total Non-Current Assets</b>	<b>17.397</b>	<b>17.534</b>	<b>17.464</b>	<b>17.579</b>	<b>17.893</b>	<b>18.918</b>
<b>Total Assets</b>	<b>28.138</b>	<b>28.683</b>	<b>30.259</b>	<b>31.364</b>	<b>33.044</b>	<b>34.928</b>
<b>Liabilities</b>						
Account payable	5.255,3	4.635,9	4.932,9	5.311,2	5.745,3	6.030,0
Financial Debt	966,7	1.151,1	1.401,4	1.134,1	1.073,5	930,0
Income tax payable	695,7	982,6	998,3	970,3	1.031,9	1.167,9
Other payables	1.130,4	1.011,2	1.051,3	1.082,8	1.123,0	1.156,2
<b>Total Current Liabilities</b>	<b>8.048</b>	<b>7.781</b>	<b>8.384</b>	<b>8.498</b>	<b>8.974</b>	<b>9.284</b>
Financial Debt	3.780,0	3.507,9	3.410,8	3.180,2	2.976,6	2.878,8
Deferred tax liabilities	337,8	337,8	337,8	337,8	337,8	337,8
Provisions	372,1	372,1	372,1	372,1	372,1	372,1
Other Non-current liabilities	1.005,6	1.131,0	1.144,4	1.145,9	1.140,1	1.201,0
<b>Total Current Liabilities</b>	<b>5.495</b>	<b>5.349</b>	<b>5.265</b>	<b>5.036</b>	<b>4.827</b>	<b>4.790</b>
<b>Total Equity</b>	<b>14.595</b>	<b>15.554</b>	<b>16.610</b>	<b>17.830</b>	<b>19.244</b>	<b>20.854</b>
<b>Total Equity &amp; Liabilities</b>	<b>28.138</b>	<b>28.683</b>	<b>30.259</b>	<b>31.364</b>	<b>33.044</b>	<b>34.928</b>



Oi Income statement (R\$ Millions)	2013	2014	2015	2016	2017	2018
Revenue	45.253	43.216	41.920	40.662	41.069	41.479
- Deductions from gross revenue	(16.830)	(18.617)	(18.058)	(16.703)	(16.460)	(16.210)
<b>Net Revenues</b>	<b>28.422</b>	<b>24.599</b>	<b>23.861</b>	<b>23.959</b>	<b>24.609</b>	<b>25.270</b>
- Operating Expenses	(20.054)	(20.651)	(17.281)	(17.707)	(18.508)	(19.299)
% Sales	44%	48%	41%	44%	45%	47%
<b>Operating Profit - EBITDA</b>	<b>8.368</b>	<b>3.949</b>	<b>6.580</b>	<b>6.252</b>	<b>6.101</b>	<b>5.971</b>
% Margin	18%	9%	16%	15%	15%	14%
<b>D&amp;A</b>	<b>(4.278)</b>	<b>(3.496)</b>	<b>(3.907)</b>	<b>(4.048)</b>	<b>(4.149)</b>	<b>(4.219)</b>
% Sales	9%	8%	9%	10%	10%	10%
<b>Operation Profit - EBIT</b>	<b>4.090</b>	<b>453</b>	<b>2.673</b>	<b>2.204</b>	<b>1.952</b>	<b>1.752</b>
% Margin	9%	1%	6%	5%	5%	4%
Financial income (expense)	(3.274)	(2.846)	(2.102)	(1.871)	(1.551)	(2.587)
<b>Income Before taxes - EBT</b>	<b>815</b>	<b>(2.393)</b>	<b>571</b>	<b>333</b>	<b>401</b>	<b>(835)</b>
Income tax and social contribution	(519)	814	(194)	(113)	(136)	284
<b>Net income</b>	<b>296</b>	<b>(1.579)</b>	<b>377</b>	<b>220</b>	<b>265</b>	<b>(551)</b>
% Margin	1%	-4%	1%	1%	1%	-1%
S/O	1.640	1.640	1.640	1.640	1.640	1.640
EPS	0,2	(1,0)	0,2	0,1	0,2	(0,3)

Oi Balance Sheet (R\$ Millions)	2013	2014	2015	2016	2017	2018
<b>Assets</b>						
Cash and cash equivalents	2.425	(3.604)	(10.125)	(16.442)	(20.944)	(10.924)
Accounts receivable	7.097	6.777	6.574	6.359	6.441	6.505
Inventories	433	319	345	349	351	356
Income tax receivable	2.382	2.462	2.507	2.539	2.592	2.643
Other current Assets	5.351	5.351	5.351	5.351	5.351	5.351
<b>Total Current Assets</b>	<b>17.687</b>	<b>11.306</b>	<b>4.653</b>	<b>(1.843)</b>	<b>(6.209)</b>	<b>3.932</b>
Financial assets	1.894	1.894	1.894	1.894	1.894	1.894
Deferred tax assets	8.274	8.274	8.274	8.274	8.274	8.274
Other Non-current Assets	13.535	13.608	13.651	13.686	13.713	13.739
PP&E	24.786	26.826	28.026	28.988	29.741	30.455
Intangible	3.919	4.719	4.799	4.819	4.796	4.792
<b>Total Non-Current Assets</b>	<b>52.409</b>	<b>55.322</b>	<b>56.644</b>	<b>57.661</b>	<b>58.419</b>	<b>59.154</b>
<b>Total Assets</b>	<b>70.096</b>	<b>66.627</b>	<b>61.297</b>	<b>55.819</b>	<b>52.210</b>	<b>63.085</b>
<b>Liabilities</b>						
Account payable	4.732,2	5.219,1	4.367,6	4.462,9	4.677,6	4.877,5
Financial Debt	4.158,7	3.924,1	5.382,6	7.991,4	3.161,1	13.668,3
Income tax payable	2.645,2	2.911,5	2.900,1	2.736,6	2.697,8	2.795,6
Other payables	4.004,4	3.420,3	3.173,3	3.193,1	3.261,0	3.312,3
<b>Total Current Liabilities</b>	<b>15.540</b>	<b>15.475</b>	<b>15.824</b>	<b>18.384</b>	<b>13.798</b>	<b>24.654</b>
Financial Debt	31.694,9	27.770,8	24.388,2	16.496,8	17.285,6	17.640,6
Deferred tax liabilities	1.747,0	1.980,7	1.981,5	1.856,3	1.821,0	1.898,6
Provisions	4.852,1	5.708,9	5.500,4	5.502,0	5.565,7	5.605,3
Other Non-current liabilities	4.737,5	5.352,0	4.980,7	4.892,4	4.854,0	4.814,8
<b>Total Current Liabilities</b>	<b>43.031</b>	<b>40.812</b>	<b>36.851</b>	<b>28.747</b>	<b>29.526</b>	<b>29.959</b>
<b>Total Equity</b>	<b>11.524</b>	<b>10.340</b>	<b>10.622</b>	<b>10.787</b>	<b>10.986</b>	<b>10.572</b>
<b>Total Equity &amp; Liabilities</b>	<b>70.096</b>	<b>66.627</b>	<b>63.297</b>	<b>57.919</b>	<b>54.310</b>	<b>65.185</b>

Oi Statements of cash flows	2013	2014	2015	2016	2017	2018
Net Income	296	(1.579)	377	220	265	(551)
Depreciation and Amortization	4.278	3.496	3.907	4.048	4.149	4.219
Δ Decrease (Increase) operating Assets	1.881	279	89	144	(163)	(146)
Δ Increase (Decrease) operating Liabilities	(4.845)	1.874	(1.689)	(260)	234	427
<b>Cash from operating activities</b>	<b>(2.964)</b>	<b>2.153</b>	<b>(1.600)</b>	<b>(116)</b>	<b>71</b>	<b>281</b>
Additions to PP&E	(4.739)	(4.525)	(3.889)	(3.773)	(3.660)	(3.696)
Additions intangibles	(2.031)	(1.810)	(1.296)	(1.258)	(1.220)	(1.232)
<b>Cash (used in) investment activities</b>	<b>(6.770)</b>	<b>(6.335)</b>	<b>(5.186)</b>	<b>(5.030)</b>	<b>(4.879)</b>	<b>(4.928)</b>
Other receivables (payable)	(835)	0	0	0	0	0
Dividends	(1.280)	395	(94)	(55)	(66)	138
New borrowings	3.435	0	0	0	3.950	14.023
Repayment of borrowings	(3.568)	(4.159)	(3.924)	(5.383)	(7.991)	(3.161)
<b>Cash used in financing activities</b>	<b>(2.248)</b>	<b>(3.764)</b>	<b>(4.018)</b>	<b>(5.438)</b>	<b>(4.108)</b>	<b>11.000</b>
Increase (decrease) in cash and equivalents	1.983	(6.029)	(6.521)	(6.317)	(4.503)	10.021
Cash and equivalents at the beginning of the year	4.408	2.425	(3.604)	(10.125)	(16.442)	(20.944)
<b>Cash and equivalents at the end of the year</b>	<b>2.425</b>	<b>(3.604)</b>	<b>(10.125)</b>	<b>(16.442)</b>	<b>(20.944)</b>	<b>(10.924)</b>

Oi Revenues Breakdown	2013	2014	2015	2016	2017	2018
Fixed telephony/data	59,5%	59,5%	59,5%	59,5%	59,5%	59,5%
Mobile telephony	35,5%	35,5%	35,5%	35,5%	35,5%	35,5%
Other	5,0%	5,0%	5,0%	5,0%	5,0%	5,0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Oi Operating cost % Sales	2013	2014	2015	2016	2017	2018
Thir-part services	13,3%	14,2%	11,9%	13,0%	13,4%	13,8%
Interconnection	8,8%	11,4%	9,7%	9,8%	10,1%	10,7%
Personnel	5,4%	5,7%	4,8%	5,1%	5,4%	5,5%
Grid maintenance service	5,2%	5,7%	5,1%	5,2%	5,4%	5,6%
Rents and insurance	4,6%	5,7%	4,2%	4,6%	4,8%	5,1%
Advertising and publicity	1,2%	1,2%	1,3%	1,2%	1,3%	1,3%
Other	3,1%	3,9%	4,2%	4,7%	4,7%	4,6%

DCF Valuation	2014	2015	2016	2017	2018	Terminal value
Net Revenues	24.599	23.861	23.959	24.609	25.270	
EBITDA	3.949	6.580	6.252	6.101	5.971	
Margin %	16%	28%	26%	25%	24%	
EBIT	453	2.673	2.204	1.952	1.752	
Effective tax rate	35%	35%	35%	35%	35%	
<b>NOPLAT</b>	<b>294</b>	<b>1.738</b>	<b>1.433</b>	<b>1.269</b>	<b>1.139</b>	
Depreciation and Amortization	3.496	3.907	4.048	4.149	4.219	
Δ Net working Capital	2.153	(1.600)	(116)	71	281	
CAPEX	(6.335)	(5.186)	(5.030)	(4.879)	(4.928)	
Sales %	15%	12%	12%	12%	12%	
<b>FCFF</b>	<b>(392)</b>	<b>(1.141)</b>	<b>334</b>	<b>609</b>	<b>711</b>	<b>12.378</b>
<b>Discounted Cash Flows</b>	<b>(126)</b>	<b>(999)</b>	<b>264</b>	<b>437</b>	<b>461</b>	<b>8.032</b>

Firm Value	8.069
Equity value	(24.867)
Shares Outstanding	1.640
<b>Fair Value</b>	<b>(15,2)</b>

Sensitivity Analysis						
Total Price Per Share						
Terminal Perpetuity nominal growth rate						
	-2%	-1%	5,5%	+1%	+2%	+3%
9,5%	-9,85	-9,45	-8,36	-6,55	-5,11	0,69
10,0%	-10,23	-9,91	-9,04	-7,68	-6,66	-3,10
10,5%	-10,23	-9,91	-9,04	-7,68	-6,66	-3,10
11,0%	-10,83	-10,61	-10,03	-9,19	-8,61	-6,88
11,5%	-11,07	-10,88	-10,39	-9,71	-9,26	-7,96
<b>WACC</b>						

Balance Sheet (R\$ Millions)	Oi 2014	TIM 2014	Adjustments	Oi + TIM	Assumptions	
<b>Assets</b>			<b>Write-up</b>	<b>Financing</b>		
Cash and cash equivalents	(3.328)	6.833		(250)	1.000	<i>Transaction Price</i> 16,0
Accounts receivable	6.891	3.277			9.086	<i>Equity consideration</i> 67%
Inventories	324	309			531	<i>Percentage of Cash</i> 50%
Income tax receivable	2.477	1.303			3.350	<i>Cost of Debt for transaction</i> 8,5%
Other current Assets	5.351	337			5.577	<i>TIM Long term Debt assumed</i> Yes
<b>Total Current Assets</b>	<b>11.715</b>	<b>12.059</b>			<b>19.545</b>	<i>Advisory Fees</i> 1%
Financial assets	3.050	264			3.227	<i>Financing Fees</i> 1%
Deferred tax assets	8.274	386			9.497	<i>% Allocated to Identifiable Intan</i> 0
Other Non-current Assets	12.452	2.117		131	13.038	<i>Amortization period (years)</i> 5
PP&E	26.826	8.869	0		32.768	<i>Depreciation period (years)</i> 10
Intangible	4.719	6.906			24.588	
Goodwill	234	611	15.652		15.885	
Other	4.485	6.295	0		8.703	
<b>Total Non-Current Assets</b>	<b>55.322</b>	<b>18.542</b>			<b>83.118</b>	
<b>Total Assets</b>	<b>67.037</b>	<b>30.601</b>			<b>102.663</b>	

<b>Liabilities</b>					
Accounts payable	4.296	5.428,8			7.932,9
Financial Debt	3.424	1.348,0			4.327,3
Income tax payable	2.959	1.150,7			3.729,5
Other payables	3.155	1.093,1			3.887,1
<b>Total Current Liabilities</b>	<b>13.833</b>	<b>9.021</b>			<b>19.877</b>
Financial Debt	28.271	3.691,2		13.112	43.855,4
Deferred tax liabilities	2.930	722,3	0		3.414,4
Provisions	5.498	373,2			5.747,7
Other Non-current liabilities	4.173	824,1			4.725,2
<b>Total Current Liabilities</b>	<b>40.872</b>	<b>5.611</b>			<b>57.743</b>
<b>Total Equity</b>	<b>12.332</b>	<b>15.970</b>		(3.258)	<b>25.043</b>
<b>Total Equity &amp; Liabilities</b>	<b>67.037</b>	<b>30.601</b>			<b>102.663</b>

DCF TIM + Oi	2014	2015	2016	2017	2018	Terminal value
Net Revenues	47.912	51.820	58.002	64.416	73.566	
EBITDA	14.272	16.168	18.911	20.896	24.591	
<i>Margim %</i>	30%	31%	33%	32%	33%	
EBIT	7.861	9.122	11.433	12.936	16.068	
<i>Effective tax rate</i>	35%	35%	35%	35%	35%	
<b>NOPLAT</b>	<b>5.110</b>	<b>5.929</b>	<b>7.431</b>	<b>8.409</b>	<b>10.444</b>	
Depreciation and Amortization	6.410	7.046	7.478	7.959	8.523	
Δ Net working Capital	1.456	493	229	311	647	
CAPEX	(10.382)	(9.635)	(10.147)	(10.811)	(11.851)	
<i>Sales %</i>	0%	0%	0%	0%	0%	
<b>FCFF</b>	<b>2.595</b>	<b>3.833</b>	<b>4.992</b>	<b>5.869</b>	<b>7.762</b>	<b>129.369</b>
<b>Discounted Cash Flows</b>	<b>832</b>	<b>3.356</b>	<b>3.955</b>	<b>4.208</b>	<b>5.037</b>	<b>83.947</b>

Sum of Cash Flows	17.389
Equity value	54.153
Shares Outstanding	8.755
<b>Fair Value</b>	<b>6,2</b>

<b>Synergy</b>					
Revenue		817,0	1.763,0	1.933,6	3.226,2
%		1%	2%	2%	3%
Opex		360,1	797,8	888,2	999,5
%		1%	2%	2%	2%
Capex		191,7	299,5	520,8	633,5
%		5%	6%	7%	6%
Total Syn Post-tax 34%		<b>903,4</b>	<b>1.887,8</b>	<b>2.206,1</b>	<b>3.207,1</b>
<b>NPV</b>		<b>5.949,6</b>			

Pro Forma Income statement	2014	2015	2016	2017	2018
Transaction Price (R\$)	16,0				
Mobile	41.845	44.493	47.757	52.061	57.333
synergies	0,0	444,9	955,1	1.041,2	1.720,0
% Sales	54%	54%	54%	54%	53%
Fixed	27.049	26.727	26.995	27.313	27.654
synergies	0,0	267,3	539,9	546,3	829,6
% Sales	35%	33%	31%	28%	26%
Other	8.364	10.482	13.400	17.306	22.552
synergies	0,0	104,8	268,0	346,1	676,6
% Sales	11%	13%	15%	18%	21%
Total Revenue	77.258	82.520	89.915	98.614	110.766
Deductions from gross revenue	(29.347)	(30.700)	(31.912)	(34.198)	(37.199)
<b>Net Revenues</b>	<b>47.912</b>	<b>51.820</b>	<b>58.002</b>	<b>64.416</b>	<b>73.566</b>
COGS	(20.516)	(21.869)	(24.159)	(26.784)	(29.999)
synergies	0,0	218,7	483,2	535,7	600,0
% Sales	27%	26%	26%	27%	27%
Selling expenses	(8.228)	(9.061)	(10.210)	(11.667)	(13.514)
synergies	0,0	90,6	204,2	233,3	270,3
% Sales	11%	11%	11%	12%	12%
General and administrative expenses	(4.896)	(5.082)	(5.520)	(5.957)	(6.462)
synergies	0,0	5082,2%	110,4	119,1	129,2
% Sales	6%	6%	6%	6%	6%
<b>EBITDA</b>	<b>14.272</b>	<b>16.168,1</b>	<b>18.911</b>	<b>20.896</b>	<b>24.590,9</b>
% Margin	29,8%	31,2%	32,6%	32,4%	33,4%
Depreciation	(4.054)	(4.385)	(4.666)	(4.971)	(5.316)
New Depreciation	0,0	0,0	0,0	0,0	0,0
	5%	5%	5%	5%	5%
Amortization	(2.357)	(2.661)	(2.812)	(2.989)	(3.206)
New Amortization	0,0	0,0	0,0	0,0	0,0
	3%	3%	3%	3%	3%
<b>D&amp;A</b>	<b>(6.410)</b>	<b>(7.046)</b>	<b>(7.478)</b>	<b>(7.959)</b>	<b>(8.523)</b>
% Sales	13%	14%	13%	12%	12%
<b>EBIT</b>	<b>7.861</b>	<b>9.122,2</b>	<b>11.433</b>	<b>12.936</b>	<b>16.068,1</b>
% Margin	16%	18%	20%	20%	22%
Financial income (expense)	(3.246)	(2.944)	(2.583)	(2.304)	(3.336)
Incremental Interest from the transaction	(1.114)	(1.114)	(1.114)	(1.114)	(1.114)
Other nonoperating income (expense)	0,0	0,0%	0,0	0,0	0,0
<b>EBT</b>	<b>3.501</b>	<b>5.063,3</b>	<b>7.735</b>	<b>9.518</b>	<b>11.617,8</b>
Income tax and social contribution	(1.513)	(1.632)	(2.055)	(2.552)	(2.761)
	0,0%	0,0%	0,0%	0,0%	0,0%
<b>Net income</b>	<b>1.988</b>	<b>3.432</b>	<b>5.680</b>	<b>6.966</b>	<b>8.857</b>
% Margin	4%	7%	10%	11%	12%
<b>EPS</b>	<b>0,2</b>	<b>0,4</b>	<b>0,6</b>	<b>0,8</b>	<b>1,0</b>
Shares Outstanding	8.755	8.755	8.755	8.755	8.755
Oi Standalone EPS	0,7	0,5	0,8	0,9	0,6
<b>Accretion / (Dilution)</b>	<b>(0,4)</b>	<b>(0,2)</b>	<b>(0,1)</b>	<b>(0,1)</b>	<b>0,4</b>
<b>% Accretion / (Dilution)</b>	<b>-65%</b>	<b>-28%</b>	<b>-14%</b>	<b>-14%</b>	<b>62%</b>

#### Purchase Price Ratio Analysis

BRL Reais, except per share data

	TIM	DCF	Transaction prices per TIM share										Oi
			13,45	16,02	12,00	13,00	14,00	15,00	16,00	17,00	18,00	19,00	
Shares Outstanding	2.418	2.418	2.418	2.418	2.418	2.418	2.418	2.418	2.418	2.418	2.418	1.640	
Total Equity Value	32.515	38.719	29.010	31.428	33.845	36.263	38.680	41.098	43.515	45.933	2.990		
Net Debt	(541)	(541)	(541)	(541)	(541)	(541)	(541)	(541)	(541)	(541)	(541)	32.936	
Total Enterprise value	33.056	39.260	29.551	31.969	34.386	36.804	39.221	41.639	44.056	46.474	(29.947)		
Total equity consideration (Purchase Price)	67%	21.785	25.942	19.437	21.057	22.676	24.296	25.916	27.535	29.155	30.775		
Tag along impact	33%	10.730	12.777	9.573	10.371	11.169	11.967	12.764	13.562	14.360	15.158		
Premiums Analysis	TIM											Oi	
Current Price	13,45	0%	19%	-11%	-3%	4%	12%	19%	26%	34%	41%	0%	1,82
52-Week High	13,83	-3%	16%	-13%	-6%	1%	8%	16%	23%	30%	37%	-63%	4,88
52-Week Low	10,19	32%	57%	18%	28%	37%	47%	57%	67%	77%	86%	64%	1,11
30-Day Trading Average	12,00	12%	33%	0%	8%	17%	25%	33%	42%	50%	58%	42%	1,28
60-Day Trading Average	12,55	7%	28%	-4%	4%	12%	20%	28%	35%	43%	51%	23%	1,49
90-Day Trading Average	12,31	9%	30%	-3%	6%	14%	22%	30%	38%	46%	54%	25%	1,46