



## THE FAMOUS 5G ADVENTURES IN PORTUGAL

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During the second half of the 1900's, several generations followed the entertaining holiday adventures of Enid Blyton's *Famous Five* through the English and Welsh countryside. In each of the twenty-one novels, turned TV shows, the intrepid Julian, Dick, Anne and Georgina (George) – and their dog Timmy, get caught up in an adventure involving villains and lost treasures.

In the late 2010's, for those following the Portuguese communications market it seemed that another novel of a famous five was unfolding. This novel involved a cast of five – the four mobile service providers with 98% of market share<sup>1</sup> and their watchdog<sup>2</sup> - and evolved around another five, the 5G, whose full name is the dry IMT-2020 standard.

This market novel, began with a public consultation held in March 2018, regarding the implementation of 5G and became the fighting ground of an unusually bitter dispute between the Regulator and key market players, with the latter accusing the first of failing to create adequate regulatory conditions for its roll out and the ANACOM claiming that it was following the schedule agreed at EU level.

This dispute eventually subsided when, in February 2020, ANACOM published a consultation on a draft regulation to a 5G spectrum auction<sup>3</sup>.

### THE LONG STORY OF A CLOSED MARKET

It may be said that this is the latest of a three-decade long string of spectrum licensing procedures in which the Regulator attempted to reshape the market by bringing new players.

Throughout the 1990's, the award of spectrum licences for mobile services, either mobile telephony, paging or trunking systems<sup>4</sup> even for fixed wireless services<sup>5</sup> became a key instrument to gradually open the market communications to new services and players.

These award procedures were essentially beauty contests that awarded fixed price licenses based on mostly qualitative criteria.

With the full liberalization of fixed services, fixed spectrum licenses became redundant and, in the mobile segments, the supremacy of GSM, fuelled by pre-paid services and market consolidation, led to the gradual phase out of less versatile technologies.

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<sup>1</sup> Altice, Vodafone, NOS and Nowo (the latter operating solely as an MVNO).

<sup>2</sup> ANACOM.

<sup>3</sup> The consultation may be found [here](#).

<sup>4</sup> Along with licenses awarded to the incumbent (TMN and Telemensagem), a 2G licence was awarded to Telecel, (now Vodafone), with licenses for paging (awarded to Telechamada and Contactel) and trunking (Radiomovel – it should be noted that these frequencies are still licensed to Dense Air).

<sup>5</sup> The award procedure, with the frequencies to be licensed may be found [here](#) (in Portuguese only).



By the end of the decade, with the award of a third mobile spectrum licence, three large communications conglomerates emerged and solidified their position.

With the market still expanding, in the early 2000, ANACOM attempted to use the introduction of 3G to bring a new player by awarding a fourth licence, again using the traditional beauty contest system. This time however conditions had shifted and in the adverse international context of the burst of the telecom bubble, lack of technology availability and a far more belligerent market highlighted the frailties of both the Regulator and the regulatory framework and the Portuguese new entrant suffered the same fate as most its 3G European new ventures – was shut down without a single customer.

The aftermath of this process virtually dictated the end of ANACOM's attempts to reshape the market via the award of spectrum for nearly two decades.

In 2011, with the country in the middle of the sovereign debt crisis and in a recession-stricken market, a 4G auction was held. This time, it was meant to serve as little more than a way for an income starved State to increase fiscal revenues and alleviate the enormous financial burden it was facing: the auction started and ended without virtually no bids made above the reserve price.

We would have to wait for the second half of the decade for the Portuguese market to settle and show signs of change.

The Portuguese mobile markets share most of the characteristics of its European counterparts: there are decreasing growth rates as they reach near saturation in most segments, there is erosion of the traditional revenue streams caused by OTT providers, while, at the same time, there are particularities that should be noted, particularly for newcomers.

In the second half of the 2010 decade, two key events reshaped the market, the first was the takeover by Altice of the former incumbent PT Group, who was dragged into near bankruptcy by the collapse of its major shareholders, and the second, the merger between Optimus/ZON merger (i.e., the merger of the third mobile operator and the largest cable operator, who also had a small MVNO operation), creating the NOS group.

While battling a long recession throughout most of the decade, Portuguese operators were forced to look for innovative ways to counter the erosion of their traditional revenue base and the saturation of the market. In order to do so, they used a particular feature of the Portuguese market: the fact that all key players are horizontally integrated, i.e., they all own fixed and mobile networks, thus allowing them to bundle services and capturing revenue by diversifying their offer across market segments.

This strategy proved successful as, according to ANACOM, in 4Q2019, virtually all households (98,8%) subscribed to a multiple play bundle (double play or higher), more significant still is the fact that quadruple or quintuple play (i.e. an integrated offer of fixed telephony, fixed internet, television, mobile telephony and mobile internet services) account for nearly half of these bundles (48,8%).

In such a scenario, there aren't many incentives for new entrants, which explains why MVNO's account for only 1,8% of mobile voice traffic, and why, of the two major MVNO's, only one is a stand-alone operation while the other is essential mobile arm of a triple play fixed operator.

Current 4G (and 4G+, or LTE) networks represent a considerable upgrade, after all, they are roughly 500 times faster than 3G, and are able to support high-definition mobile video streaming, video



conferencing and much more. When a device is moving, as when one is walking with one's phone or is in a car, the top speed can be 10s of mbps, and when the device is stationary, it can be 100s of mbps.

In Portugal, given both the market characteristics and the economic context mentioned above, 4G rollout became virtually unnoticed and ended up having only a marginal impact in the whole market structure.

The excessive market concentration has been voiced by several entities. As far back as 2012, the Competition Authority wrote that in comparison with its previous reports, the Portuguese mobile communications market *"maintained the level of concentration as measured by the market share of the two major providers (...), who recorded a combined market share of 83%, close to the highest of the EU and far above its average. (...) This high concentration level is fostered by the marginal impact of MVNO, who have a market share of only 1,4%, by a low level of consumer mobility between operators and increased network effects"*.<sup>6</sup>

Although this assessment was written almost a decade ago it could have been written today.

#### **NEW WINDS....**

Over the last two years, however, in an unprecedented change of mood, ANACOM not only voiced its displeasure with the status quo but also signalled its intention of actively intervening in the market in order to change its structure. As expected, these assertions were met with fierce resistance and disbelief by operators and was followed by an unprecedented vocal dispute between operators and the Regulator.

Considering that the technical features of 5G make it much more than a simple evolution of existing standards, it is not surprising that ANACOM is once again trying to use the spectrum award procedure for the new technology as a catalyst to foster a change in the market structure.

This explains the reason why for the first time in 20 years, ANACOM is actively pursuing the appearance of new players by providing clear incentives for new entrants. If in the 3G spectrum award procedure the sole incentive was a fourth license, in the current 5G auction draft regulation these incentives for new entrants only range from (i) direct discounts and deferred spectrum payments, to (ii) creating for incumbents the obligation to negotiate fair MVNO and national roaming and, (iii) in an attempt to prevent incumbents from buying off new competitors, a two year waiting period for spectrum resale.

In addition to the favourable spectrum award conditions of the 5G proposed regulation, new entrants will also be able from the externalities of the Government's digital transition policies, a complete set of plans put forward to accelerate the use of electronic platforms throughout society as a whole.

As mentioned above, Portugal's electronic communications networks are on par with the country's EU partners, e.g., in 2019, more than 4/5 households had broadband access, while mobile broadband penetration rose to 84,1%, which compares reasonably well with the EU average.

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<sup>6</sup> AdC – Competition Authority, Electronic Communications and Media Report, 2012 (our translation, the whole document may be retrieved [here](#)).



From 2010 to 2019, the year-on-year growth rate of broadband penetration as a whole averaged 5,1% and currently nearly 99,6% of students and people who have completed secondary and tertiary education are internet users (96,9% and 98,7% respectively).<sup>7</sup>

Nevertheless, the availability of a good infrastructure evidenced by the investment made through the last decades hide a less favourable picture. In fact, at the same time as penetration rates grow steadily toward saturation only 76.2% of the whole resident population aged 16 to 74 (roughly the country's active population) was an internet user and, more worryingly, only 38,7% used e-commerce.

Interestingly, almost half of the users limited their Internet activities, such as the purchase of products or services, internet banking or the ones implying the provision of personal data, due to security concerns. We mention this point because, considering that Portuguese Internet is not particularly more dangerous than anywhere else in Europe<sup>8</sup>, security concerns do not justify *per se* why such high percentage of users refrain from making a wider use of digital services.

At the same time, we do not consider also that these concerns are mere wrong perception of reality either, these worries are real. However, we consider them as the consequence, rather than the cause, of the phenomenon: this is, arguably, a simple case of distrust of the unknown.

In fact, there is an ample perception that the Achilles heel of "digital Portugal" is a mix of digital illiteracy and resistance to change, worsened by an ageing and less educated population and a general lack of actual incentives to use electronic services.

For these reasons, over the last years of the 2010/2019 decade, successive Governments insisted on a series of initiatives to enhance the country's digitalization. These initiatives targeted not only public administration, but also the private sector, both for individuals and businesses.

The latest example occurred, on March 5<sup>th</sup>, 2020, the Government proposed an "Action Plan for Digital Transition", which, according to its promoters is a cross-sector, multi-channel, ambitious, pragmatic, comprehensive and quantifiable plan to make Portugal as an international reference using the benchmark of the world's best practices.

Therefore, with a Regulator keen on welcoming new players, a technology available to cater for new services and a Government willing to expand the usage of digital services to the whole population, 5G would be certainly be a natural and critical part of these plans.

It seemed that like the in Blyton's famous five adventure, this "famous 5G" headed for a happy ending.

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<sup>7</sup> See Statistics Portugal, *Information and knowledge society – household survey*, 2019 (you may find the full document [here](#)).

<sup>8</sup> Over the last decade, there were on average 611 reported cases of computer crime. It should be noted that this definition is very broad as it includes all cybercrime but also unlawful interception of communications and even copyright infringement (such as illegal copy of protected material). See the Homeland Security Annual Report, 2018 (the full report in Portuguese only may be found [here](#)).



### **UNTIL, SUDDENLY, IN THE IDES OF MARCH ...**

Unfortunately, less than a week after the presentation of this plan and while the consultation for the 5G auction was undergoing, the COVID19 pandemic made a dramatic appearance.

With the country in virtually complete lockdown, with operators trying to cope with the limitation on movements and, on the other hand, the additional strain on their networks caused by millions being suddenly forced to use their home communications for virtually every aspect of their lives, ANACOM, regrettably but understandably, decided to suspend the auction consultation until the end of the State of Emergency.

It is obvious that the short and midterm effects of the pandemic in the Portuguese economy (and in the worlds for that matter<sup>9</sup>) are as unknown as they are expected to be dire.

In Portugal, in the weeks from 6 to 10 April 2020<sup>10</sup>, i.e., three weeks into the lockdown, a survey by Statistics Portugal confirms that nearly 69,3% of companies in the information and communications sectors expect a severe reduction in company turnover.

This percentage is naturally higher in other sectors that are currently suffering the greatest impacts, such as the accommodation and food services, as well as non-essential retail.

Nonetheless, when looking at the whole universe of businesses, only 2% of the companies declared they were definitively closed, i.e., the vast majority of businesses 98% remain in full or partial operation. More importantly, only 26% of the companies reported a reduction of more than 50% in the number of persons employed effectively working.

It is natural that the number of bankruptcies and liquidations will increase in the short term, as well as the unemployment rate, however, considering the severity of the lockdown measures it is a significant sign of hope that so many remain in operation.

Regarding the communications market, however, in the same period, ANACOM<sup>11</sup> reported an average growth of 1,5% in relation to the previous week, with the decrease of mobile voice and data (of respectively -1% and -7%) compensated by an increase in fixed voice and data traffic (respectively 3% and 7%).

While the impact of the crisis is unknown and volatility is expected in the coming quarters, one trend is emerging when discussing the post lockdown stage<sup>12</sup>: remote work in all roles that do not require physical presence and the usage of webinars and remote training (e.g., for schools and universities but also for in company training) will be greatly encouraged.

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<sup>9</sup> See, e.g., the IMF webpage [here](#) or the OECD perspective [here](#).

<sup>10</sup> Statistics Portugal and Bank of Portugal *Fast and Exceptional Enterprise Survey (COVID-IREE)*, a monitoring survey on the impact of the pandemic on enterprises (see full document [here](#)).

<sup>11</sup> See ANACOM data [here](#) (in Portuguese).

<sup>12</sup> See, e.g., the McKinsey featured report *Europe needs to prepare now to get back to work—safely* (full report [here](#)).



Moreover, the forced shutdown of most services open to the public have forced a significant number of persons to use overnight digital services, which they probably would never do otherwise, thus expanding the usage of digital platforms to unprecedented levels.

It may be possible that remote work, remote teaching and a population suddenly familiar with digital services, may provide in the near future the increased demand for electronic communications networks that the market will have to cater. How and when they will do it remains to be seen.

For more about the incoming Portuguese 5G auction read our paper on it [here](#).

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