# Orange response to the ERG Paper "Principles of Implementation and Best Practice for WACC calculation"

## I Introduction

Orange supports the Principles of Implementation and Best Practice (PIBs) set out in the ERG Paper on WACC Calculation. The table below summarises our view on the PIBs contained in the document. We emphasise how important it is for each regulator to take into account the local market conditions when calculating the WACC whilst adhering to the principles of best practice.

Our key comments on the paper are confined to Appendix A on real options which we believe does not do proper justice to the theory of real options in the mobile telecommunications context and as such could be developed further to put real options firmly on the European regulatory agenda.

## II) Comments on the Principles of Implementation and Best Practice

| PIB | Orange comments |
|---|---|
| 1) IRG acknowledges that the WACC methodology as a method to calculate the cost of capital is a widely accepted method, understood by both the finance community and the industry, and is already used by many regulators. | Orange agree that the WACC methodology is the widely accepted approach to calculating the cost of capital. |
| 2) In the view of the IRG, the level of gearing should be determined using a method consistent with the relevant cost base, although some adjustments may be introduced, if required. | No specific comments. |
| 3) IRG acknowledges that the cost of debts can be calculated: i) using accounting data, such as the current loan book rate to derive the interest rate; ii) by the regulator calculating an efficient borrowing level and the associated cost of debt iii) using the sum of the risk free rate and the appropriate company specific premium. These approaches should consider the quality and relevance of the information available in order to obtain an estimate as accurate as possible. | Orange support the consideration of alternative approaches with the most relevant method selected at the time. |

| PIB | Orange comments |
|---|---|
| 4) IRG observes that there are empirical shortcomings in the CAPM methodology. On the other hand, alternative models also have their problems such as weak empirical foundations and empirical challenges. Therefore, at the moment CAPM is widely used for the purpose of calculating the cost of capital. | Orange favours the use of the CAPM methodology. |
| 5) IRG acknowledges that the use of CAPM as a method to estimate the cost of equity is supported by its relatively simple implementation and by its wide use among regulators and practioners. | Orange currently support the use of CAPM to estimate the cost of equity through the estimation of the CAPM beta to capture the sensitivity of the firm's equity to "systematic" risk. |
| 6) IRG considers that the return on the freely traded investment-grade government bonds can generally be used as a proxy for the risk free rate. The relevant market, the maturity of those bonds and the kind of information to use (current/historical values, average, short-long period…) should be defined considering the circumstances of the local markets. | Orange agree and recommend that as best practice, Regulators should use the most recent data set available in order to fully reflect current and expected market conditions. |
| 7) Estimating the equity risk premium can be made through use of one or more of the following approaches:<br>▪ Historical premium<br>▪ Adjusted historical premium<br>▪ Survey premium<br>▪ Benchmark<br>▪ Implied premium<br>These approaches should be balanced considering the quality and relevance of the information available in order to obtain an estimate as accurate as possible. | No specific comments |
| 8) The estimation of the firm's beta can basically be made through use of historical information, benchmark or through the definition of a target beta. The choice of the approach depends on local market conditions, whether the firm is quoted and on the amount and quality of information available. | No specific comments |

| PIB | Orange comments |
|---|---|
| 9) In order to estimate a pre-tax WACC a headline or effective tax rate can be used. When making the choice the cost base should be considered as well as the fact that the effective rate is more volatile. | No specific comments |
| 10) IRG recognises that in theory the adoption of a differentiated WACC is reasonable from a regulatory point of view. However, the lack of capital market information at divisional level makes the theoretically correct determination of beta in some cases difficult. | No specific comments |
| 11) IRG is of the opinion that every proposed methodology to calculate a divisional WACC has its pros and cons. Therefore, the best approach for NRAs is to compare the results obtained using the different methodologies prior to selecting a final value. | No specific comments |
| 12) IRG believes that, when estimating the cost of capital for non-quoted companies or companies which did not issue debt securities, or when estimating the cost of capital in young financial markets, NRAs should use proxies, benchmarks and peer group analysis, taking into account country specific conditions. A number of issues should be considered, including:<br>▪ What the appropriate comparator companies are, considering a number of relevant criteria for selection;<br>▪ Performing a high/low scenario approach and sensitivity analysis to average out possible errors in individual parameters' estimation. | No specific comments |

## III) Real Options

Orange is pleased to see the inclusion of real options in the IRG's analysis but disappointed that the subject has not been given adequate treatment in the context of mobile telecoms. The appendix on real options correctly explains that real options arise in the telecommunications context due to the interaction between irreversibility and uncertainty in investment and that options arise for operators as to whether to undertake an investment now or not. The real option as to whether or not to invest creates an opportunity cost which is not factored into the overall cost of capital. However, this opportunity cost is not a straightforward increment to the cost of capital. The cost of capital is not investment specific, whereas the true opportunity cost of capital is. Therefore it is not a case of simply adding to the cost of capital but of factoring in a way that operators can expect a return on their investment equal to the cost (including opportunity cost) that they bear when making the decision about whether to invest or not.

In response to the criticisms of the real option approach raised by the paper, we would like to make the following points.

1. The paper asserts that delay reduces the uncertainty and the risk of investment which should be reflected in a lower risk premium required to make the investment thus implying that the value of option is included via the risk premium.

   This is not the case. The WACC is the opportunity cost of capital, it is not the rate of return needed to justify an investment which is irreversible or where the firm has the option to delay that investment. When an investment is irreversible the net present value (NPV) of the project must be greater than zero. The NPV rule of investing is incorrect as it compares the return from investing today with never investing, it does not allow for the option to delay investment. Once the firm has made the decision to invest it has exercised its option value and lost the option to make a different investment either at the same time or at a later date. This lost option value is an extra opportunity cost that must be included as part of the total cost of investment.

   As noted a comprehensive study on the subject[1] "the WACC will prevail on average, but for any specific irreversible investment (most mobile investments), the opportunity cost is the WACC *plus the cost of exercising the firm's option to invest.* Thus the WACC alone does *not* account for the option value."

2. The comment about new entrants and timing does not apply to mobile telecoms where operators, old and new, face real options about when,

[1] "Mandatory Unbundling and Irreversible Investment in Telecom Networks" Robert. S Pindyck, NBER Working Paper 10287, February 2004

how and whether to invest. In mobile telephony, where network operators simultaneously roll out individual networks, new entrants do not have to wait for the incumbent to invest. A new entrant appraises the option of investing in their own network now or leasing capacity from another network operator. The opportunity cost over and above the cost of capital continues to exist because the new entrant is contemplating an uncertain and irreversible investment but is able to delay this investment by leasing capacity from another operator. In this way, the new entrant needs to be sure of a higher rate of return above the NPV to cover this opportunity cost where the alternative (infrastructure leasing) is low risk but low return. The opportunity cost to the new entrant is the option to wait and see how the market develops and what would be the best technology to invest in.

3. As the paper points out, the calculation of real options is not easy. But equally it should not be ignored. If the real cost of investment is not taken into account, then there is a negative impact on welfare which suggests that sometimes investment takes place when it should not and vice versa ie it is not efficient. We refer the ERG to a paper recently written by Mason and Weeds[2], and submitted to Ofcom as part of the calls to mobile consultation. We encourage the ERG to undertake a full review of real options and would be happy to participate in this process.

[2] Mason and Weeds, Real Options and Investment in Mobile Networks, 28 October 2006