

# Chapter 16

## Universal Service

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### 1.0 What is Universal Service?

There is now widespread agreement on a definition of universal service in telecom which in the words of OFTEL in the UK, is the provision of “affordable access to basic voice telephony or its equivalent for all those reasonably requesting it, regardless of where they live”. The problem for the regulator is that neither affordability nor reasonableness are terms that can be defined with scientific precision. They remain a matter for subjective judgement by the regulator.

The EC Draft Interconnection Directive defines universal service more narrowly as “the provision of service throughout a specified geographical area, including – where required – geographical averaged prices for the provision of that service,” but introduces the additional concept of common tariffs.

Universal service can be widened to include the provision of other services considered, for what ever reason, to be socially desirable, such as public payphones. Within the context of the information society debate, the question is now widely raised as to whether the definition of universal service should be broadened to include the provision of service levels above that of simple narrowband dialtone, for instance services provided by digital exchanges such as itemised billing, call forwarding, caller line identification, etc.

From a regulatory point of view there are thus two sets of issues raised by universal service provision, depending on whether we are dealing with established services over a mature network, or new services where the network facilities are still in the role-out phase. In the former case the issue is: What services should licensed public telecom operators be required to deliver that they would not otherwise deliver under competitive market conditions, why and how should these obligations be funded? In the latter case, whether we are dealing with basic telephony in less developed national contexts or with information society type developments of a mature telephone network, there is the issue of whether, through regulatory intervention, to attempt to accelerate network and service role-out beyond that which market demand pull would produce.

### 2.0 The History of Universal Service

Current debates on universal service are largely based on myth and a dangerous misunderstanding of history. It is assumed that pre-liberalisation monopoly PTTs, or in the US, the monopoly regulated private operator AT&T, were obliged to provide and did

in fact provide universal service and that this was made possible by a system of cross-subsidy and cost averaging which is unsustainable under competitive conditions as prices are driven closer to costs.

In fact the concept of universal service was dreamt up by Theodore Vail as part of a deal with the state and federal governments to maintain AT&T's monopoly. It was always more rhetoric than reality. In the conditions of the US, AT&T could use cross-subsidies derived from its monopoly control of the continental long distance network to price local access artificially low as a barrier to entry. Thus local telephony was more "affordable" than it would otherwise have been. But AT&T never provided geographical universality of access; the growth of telephone penetration rates followed a normal demand driven curve, not taking off to achieve penetration levels we would now regard as those approaching universal service until the 1960s.

European PTTs have not even resorted to the rhetoric of universal service, and in general the provision of telephony lagged behind demand. Operations were governed by principles not of universal service, but of public service, which derived from the absolute powers of monarchy. The public service mission, although this was never explicitly stated, implied that the State took responsibility for providing universal geographical coverage within its borders and for providing a guarantee of continuity, rather than universality of supply. It gave citizens no right to telephony; to the contrary it protected the operator against legal action for damages for failing to provide service.

The concept of Universal service has been placed on the European regulatory agenda by liberalisation. It and the mythic history I have just outlined, have been mobilised as an attempted defence of the telephone monopoly. In fact the scare stories of people being priced off the network in significant numbers as a result of rate rebalancing have not been realised and in liberalised regimes, such as the UK, penetration rates have significantly risen. This does not mean that such rises, and the related fall in the real cost to subscribers of telephone service, can be *attributed* to competition. They can just as easily be attributed to the effects of technology and rising income levels. This however, is not to say that there do not remain pockets of socially and economically sub-optimal levels of penetration which properly require regulatory attention.

### **3.0 Universal Service Today**

In the context of a regulated competitive telecom market universal service obligations have to be seen as one of a range of regulatory interventions designed to achieve economic or socially desirable outcomes that would not be achieved by market players if left to their own unregulated devices.

All such interventions, however desirable the goal, bring with them two well known dangers. First, the distortion of economic incentives may bring with it losses to overall efficiency which outweigh the gains. For instance in the case of universal telephone penetration cross-subsidies designed to raise the affordability and thus penetration of telephone service may be cancelled out by rising costs such that real prices and thus real barriers to entry remain static. Second, subsidy tied to the consumption of a given service, in this case residential telephony, may override consumers actual preferences and thus distort consumption patterns. Any form of support for the economically or socially disadvantaged which, in effect, forces them to consume a given pattern of goods and services rather than allowing them to choose requires special

justification. There is danger of policymakers attaching more relative importance to telephone service than those potential subscribers whom universal service is meant to benefit. It is this problem that makes the concept of “affordability” less than useful in the definition of universal service. Affordable to whom and in comparison with what?

### *3.1 The Economic Case for Universal Service*

Notwithstanding the caveats above, there is special case for universal service in telecom not shared by most other markets for goods and service. These derive from:

- Network externality – the greater the size of the network the greater the benefit to other users of the network. Therefore, the true economic value of service to customers is greater than the willingness to pay of the individual customer and it is appropriate to provide support to some customers whose costs of service provision exceed the revenues that they generate.
- The special levels of network externality in a two-way network – users may generate significant levels of profitable incoming traffic, while themselves generating, and thus paying for, few, if any, outgoing calls.
- Telecom use as a substitute for other services, such as transport, may generate economy wide benefits which are not reflected in the price of telecom itself.
- Increasingly, in an information society and economy, telecom may provide vital infrastructural access to other goods and service, especially vital public services, which justify a general subsidy to ensure universal access, as with the analogy of roads.

## **4.0 Universal Service and the Regulator**

### *4.1 The Mature Network*

The provision of universal service is regarded as a regulatory problem because it is assumed that provision in the past has required cross-subsidy – and will continue to require cross-subsidy in the future. And further, competitive market entry, by forcing prices closer to costs, will make such cross-subsidy unsustainable. This then raises the following questions for the regulator:

- Does the provision of universal service require cross-subsidy?
- If so is such subsidy justified?
- How much subsidy is required?
- What mechanism is best for providing the subsidy? In particular, should the money be raised from the telecom industry and distributed within the telecom regulatory structure, or by and through the general system of taxation and social security payments?

#### 4.2 *How Much Subsidy?*

It is clear from recent studies that the levels of cross-subsidy claimed by incumbent dominant operators have been grossly exaggerated. Recent detailed studies undertaken in the UK by OFTEL in collaboration with BT, when taking into account the benefits to the operator (incoming traffic generated, costs of connection and reconnection, market presence, brand visibility), as well as the cost of providing universal service, have whittled the annual net costs down from BT's opening claim of £400 million to between £0 and £40 million per annum depending on assumptions. The results of such studies are likely to differ from country to country depending upon such factors as the density or otherwise of population, nature of terrain to be covered, income levels and usage patterns. They are, however, unlikely to differ significantly. And, they are an essential starting point for any regulatory intervention.

If the costs to the dominant operator of its universal service obligations are marginal it may make sense either to ignore them and simply regard them as their costs of doing business, or to provide support to low income customers through general taxation and the social security budgets rather than by elaborate, distorting and potentially expensive interventions in the telecom market itself.

#### 4.3 *Funding Methods*

In the real world there will be persistent pressure from the dominant operator, and from regulatory economists who like tidy models, to "level the playing field" by off-loading some of the costs of provision onto its competitors through a form of access charging. This can be done either by factoring it into interconnection charges or by setting up a Universal Service Fund financed by a levy on the industry based on some estimate of share of use of the access network.

Whichever method is chosen, any attempt to reimburse the costs of universal service obligations through intra-industry transfers will generate pressure for increased accounting separation and transparency, and will suck the industry and regulator into increasingly arcane, costly and ultimately unresolvable disputes over cost allocation.

A universal service levy and fund if combined with a system of either an auctioning of universal service franchises or a subscriber-based universal service voucher, thus allowing any market player to provide the service, avoids this problem. The auctioning of franchises is particularly appropriate as a means of dealing with geographical universality and ensuring service delivery to rural areas.

#### 4.4 *Barriers to Universal Access*

Research increasingly demonstrates that many of the barriers to universal access do not lie, in any simple sense, in the cost to the consumer, but in the way that service and billing and payment options are structured. A major disincentive for low income users are relatively high up-front connection and rental charges and the inability to control usage and thus cost. The availability of digital exchanges makes it increasingly easy for operators to offer a range of services and tariffs to minimise these disincentives at no net cost to themselves. If maximising penetration is the name of the game, regulators are probably more usefully employed ensuring that operators offer such services than in setting up elaborate cross-subsidy mechanisms.

#### 4.5 *Developing Networks and Services*

The above considers universal service as the regulatory problem of maximising access to telephone service penetration in the context of a mature network. The situation is quite different as regards the roll-out phase of the basic telephone network or the provision of more advanced service, such as broadband, in addition to access to telephone dialtone. Insofar as the development of the basic network is concerned, the mythic version of universal service is placing quite unrealistic pressures on telecom operators and regulators who face this situation.

The roll-out of a network requires long-term investment planning, and the installation of capacity ahead of demand. Nonetheless, no network in the world has been rolled out without regard to the flow of revenues from realisable demand. The result has been that high use business subscribers have always taken priority over residential subscribers and the growth of penetration levels has broadly mirrored per capita income growth, both nationally and regionally. The availability of wireless to distribute telecom traffic eases the problem of targeting high revenue producing groups in order to finance a faster expansion than would have been possible with a pure fixed link network. But, in my view, the case has not been made for an acceleration of network development beyond the norm in the name of universal service. Such an acceleration is likely to lead simply to highly inefficient patterns of investment with a large amount of fixed plant earning unacceptably low rates of return. The result of this will either delay long-term network development and traffic growth, by asking existing subscribers to pay more than they otherwise would for this excess capacity, or by diverting tax revenue from where it could be spent more efficiently and with equal or greater social and economic benefit.

This is not of course to say that it is not reasonable for regulators to ensure that those building and operating developing networks maximise coverage and roll-out speed within existing economic constraints and do not divert revenues to other purposes.

#### 4.6 *Widening the Definition of Universal Service*

There is at present much discussion as to whether to widen the definition of universal service beyond the provision of telephone dialtone. This is taking place, in particular, within the context of the so-called Information Superhighway. The same considerations apply here as to developing telephone networks. Is regulatory intervention required or justified with the aim of accelerating the general availability of advanced services beyond that which the industry would supply subject to market forces? If so what services should be covered by a new universal service obligation, over what time scale, and who should pay?

In my view, no convincing general case has been made for such an intervention, or for the massive diversion of investment funds that would be required. The uncertainties of demand and the dangers of wasteful investment are simply too great.

There may be a case for a wider definition of universal service which is based upon the change in the social and economic status of a service once it passes a certain penetration threshold. One can argue that once a service becomes very widely used access to it becomes a definition of social membership and a condition of full economic participation. Thus one could argue that once, say 2 Mbit access to Internet reaches 70 percent penetration, regulatory steps should be taken to ensure universal access. But it needs to be stressed that even if one does accept this argument such a situation lies a long

way in the future. And historically the telephone was never regarded in this light. Thus a very strong, and historically unprecedented, case would have to be made.

## **5.0 Conclusions**

1. The provision of universal service is not mandated by history and is thus not threatened by liberalisation.
2. Industry or service specific subsidies need to be viewed with suspicion in terms of their market and consumption effects. They cannot be assumed to be favouring those they are designed to help.
3. The cross-subsidies involved in meeting universal service obligation are likely to be minimal to zero and thus the necessity and desirability of elaborate and costly, industry-specific, mechanisms for income transfers need to be examined with care.
4. The case for accelerated network development in the name of universal service provision or the redefinition of universal service to cover higher levels than simple telephone dialtone are weak to non-existent.

There are steps that can be taken in the design of service and tariff packages, not involving subsidies, to ensure maximum penetration. Regulatory effort should be focused on these.