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CASENOTE
Economics of Competition & Regulation
October 2007

Bill and Keep

A solution to the termination monopoly problem?

Bill and Keep (BAK) has recently come to the fore as a possible solution to the problems associated with wholesale termination rates. Presently most networks interconnect on the basis that the calling network pays a termination or interconnection charge to the called network. Under BAK schemes inbound networks will no longer pay to terminate their calls on the called party's network. This will have financial, pricing and competitive ramifications across the communications sector. Here we consider the nature of BAK, and some of its possible effects.

What is BAK

BAK can be defined as a reciprocal pricing rule under which two 'two-way' networks agree to carry traffic from each others' network at no charge. Each network bills the traffic at its originating point and keeps the revenues. It is a barter system based on reciprocal carriage of voice and data rather than one mediated by financial payments and pricing.

BAK is most extensively used (for historical reasons) by top-level peers interconnecting backbone Internet traffic. It is also used by mobile network operators in the USA coupled with Receiving Part Pays (RPP) retail pricing; and for interconnection between Local Exchange Carriers where the volume of traffic is symmetric. Recently, the New Zealand Commerce Commission mandated BAK between mobile and fixed network operators.

Rationale for BAK

BAK is a radical departure from the present method of billing for the off-net termination of calls. Under Calling Party Network Pays (CPNP) the calling network must pay a wholesale charge for the carriage of a call or text on the called party's network. This wholesale termination rate can be either symmetrical/reciprocal where the same charge is paid irrespective of which terminating network, or asymmetric where termination rates differ between two interconnected networks.

CPNP-based pricing of call termination has led to growing regulatory intervention. The consensus regulatory position is that network operators have significant market power over termination prices because their subscribers are relatively insensitive to the interconnection charges passed-through to the inbound callers of other networks. As a result termination rates are alleged to be excessive and unlikely to be moderated by competition. Thus permanent price regulation is required, based increasingly on forward-looking LRIC cost models.

BAK is presented as competitively neutral and a relatively straightforward solution. It abolishes interconnection rates and leaves each network to bear and cover the costs of handling inbound calls. The receiving party's network must recover the costs of calls terminating on its network from its subscribers, and by assumption its subscribers are more sensitive to call charges than inbound callers. Thus competitive pressures will replace regulation in moderating overall call charges. In addition BAK stops inefficient termination rate structures and arbitrage, metering and monitoring costs, and the interminable regulatory inquiries over price controls on termination rates, their costs and a regime of micro-intervention.

Impact of BAK

The present system of termination payments leads to flows of revenues between operators. Thus the immediate impact of BAK is to abolish these payments for termination and to redistribute revenues between network operators that are net payers (winners) and recipients (losers) of termination payments.

Where terminating traffic flows between two networks are balanced (the call volumes are the same), the payments to and from networks for termination net out to zero. Indeed some CPNP schemes work on a net payments basis where terminating revenues and payments are netted and only a balancing payment is made. Such schemes would be a BAK scheme in all but name. In either case a change to BAK would have no financial effect.

On the other hand, where the volume of terminating traffic and/or termination rates are asymmetrical (different), then a BAK scheme gives rise to financial gains and losses. Those networks which make net termination payments will gain and those who were

recipients of net termination payments lose. The latter network operators will need to recover all or part of their termination costs from their subscribers. This will require an increase in the level of and changes to the structure of call origination tariffs. However, charges cannot be increased at will, and will be resisted as they transform from inbound call charges to call subscriber charges.

Network operators will therefore not easily restore their *status quo ante* financial position by merely raising origination charges. They will have to think carefully about the impact on subscriber numbers and call volumes, and this will especially affect those operators which have tended to rely on termination revenues. As it is assumed that the elasticity of call origination is greater than that associated with call termination (with respect to usage and subscriber numbers), then BAK will dampen the ability of operators with a disproportionate volume of terminating traffic to raises their subscriber tariffs to recover termination costs.

But this is precisely the attraction of BAK. By transforming termination charges into call origination charges BAK enhances competitive pressure on prices since what were previously externalised termination charges now being borne by the networks subscriber's. Thus the move to BAK will, it is claimed, lower overall call charges.

BAK with network asymmetries

Networks operating with disproportionate volumes of terminating traffic will have an additional cost burden and hence cost recovery problem. It is arguable that under BAK these networks will be 'cross-subsiding' termination as networks with large volumes of call origination do not covering the full costs of their inbound calls (as a group). Further, zero-priced termination may create incentives for each network to off-load terminating traffic as quickly as possible onto other networks (the 'hot potato problem'). In the longer run these effects may act to dampen incentives for network investment and lead to inefficient use of the existing network infrastructure.

Hybrid BAK schemes

It is therefore not surprisingly the debate over BAK has focused on schemes for cost recovery where networks have different volumes of terminating traffic. This has given rise to hybrid BAK schemes which have an element of CPNP wholesale cost recovery when terminating traffic is out of balance. As indicated above there will inevitably be some residual costs if the networks do not agree beforehand simply to split interconnection costs and/or the cost burden placed on networks terminating a disproportionate level of traffic.

The New Zealand Commerce Commission recently considered a relatively straightforward hybrid BAK. Under the proposed scheme termination would be free where traffic flows were broadly symmetric but if they asymmetrical, then there would be an interconnection charge calculated on a forward-looking cost-based method for the excess termination traffic. The Commerce Commission opted for a pure BAK scheme because a hybrid one would require cost models and cost-based pricing which vitiated BAK's major (regulatory) attractions – simplicity, self-enforcement and regulator withdrawal. Nonetheless it is possible that hybrid schemes may be adopted especially given the large differences in network size across Europe.

The cons of BAK

BAK has its critics. The UK telecom regulator (Ofcom) in its 2006 proposals for mobile termination rates rejected the case for BAK as a replacement for termination rates. It was not convinced that BAK would lower prices for mobile users as it felt that termination costs would simply be passed through in higher call origination charges. Ofcom also rejected evidence that there were significant consumer benefits (higher penetration and call usage and lower prices) in those countries where BAK had been used. In addition, there are the inefficiencies noted above.

Conclusion

BAK warrants serious attention. It is now on the regulatory agenda as a potential solution to the terminating monopoly problem, and has recently been adopted by regulators in some countries.

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