



## **Flat Rate versus Per Minute Charges for Telephone Service: The Relationship between Internet Access and Telephone Tariffs**

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The vast majority of residential Internet users and many business users currently access their Internet Service Provider (“ISP”) via the telephone network, by making a local telephone call. Since telephone companies in a number of countries charge consumers for local telephone calls on a per minute basis, dial-up Internet connections between users and their ISPs are often billed on a per minute basis, resulting in extremely high access costs. This pricing structure restricts the ability of consumers to use the Internet, and thereby stunts the growth of the Internet and associated applications (e.g., electronic commerce).

Although many developing countries are hoping to use information and communications technologies (“ICT”) to develop their economies, some of these countries have been reluctant to revise their underlying pricing structures for telephone services. International data suggest, however, that regulators in developing countries can greatly facilitate Internet development by shifting away from per minute pricing regimes to pricing mechanisms that permit greater flexibility in billing for dial-up Internet access.

### **I. Background**

Many countries have recognized that the diffusion of the Internet and its associated applications (e.g., electronic commerce) can fuel the growth of a nation’s economy. Many governments, therefore, seek to encourage Internet growth and usage. To achieve this goal, governments should recognize that the development of Internet is influenced by a variety of factors, one of most significant of which is the cost to consumers for Internet access.

Currently, the vast majority of residential Internet users, and many business users, access their ISP via the public switched telephone network (“PSTN”), rather than through cable, DSL or other dedicated means.<sup>1</sup> The price of Internet access via dial-up service is generally composed of a fee paid to an ISP for Internet service and a fee paid to the telephone company for use of the

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<sup>1</sup> According to the Organization for Economic Cooperation and Development (“OECD”), nearly all of the 122 million Internet subscribers at the end of 1999 used dial-up connections via the public switched telephone network. Although broadband access will be attractive and available to some users, analysts and market research predict that dial-up access will remain the dominant method by which residential users and small businesses connect to the Internet for the foreseeable future.

underlying telecommunications network. This cost of telephone service generally includes several elements: (i) fixed charges for the line connection and rental; (ii) any government tax applied to telecommunications; and (iii) usage charges, or tariffs charged for making calls to the ISP's gateway to the Internet.<sup>2</sup> The most significant and controversial portion of these costs is the third one: the price applied to calls from the user to the ISP's Internet gateway.

In many countries, local telephone calls, including calls made by consumers to their ISP provider for Internet access (i.e., connections made via a dial-up modem), are billed on a per minute or "metered" basis. Since the cost of using the Internet increases with the amount of time that a user spends on-line, users confronting this type of pricing mechanism have less incentive (and in many cases simply lack the financial resources) to spend a significant amount of time on-line. Several studies confirm that the high cost of this dial-up access has been a major barrier to Internet use.<sup>3</sup>

Regulators seeking to establish an environment that is conducive to Internet growth have recognized the important role that pricing decisions for the underlying telephone services can play in determining growth of the Internet and e-commerce. As a result, regulators in several countries have been experimenting with a variety of flat rate ("unmetered") or discounted pricing options for Internet services.

## **II. Per Minute Pricing vs. Flat Rate Pricing**

Economically, per minute pricing is subject to criticism because metered tariffs do not directly reflect the cost of the service provided to users. The cost of using the telephone network does not increase by the minute. To the contrary, network costs are fixed and are determined by the amount of capacity that is built into the network. Using assumptions regarding expected call lengths, telephone companies using a metered rate approach recover a portion of these fixed costs through the cost of each individual call. However, under a per minute billing system, Internet users pay a disproportionate share of the estimated fixed cost. These payments for local calls result in significant profits for incumbent operators, so they are often reluctant to change this pricing system.

While these billing practices may be beneficial for the local telephone provider, they can be quite detrimental to a nation's Internet and economic development. Countries with lower access prices tend to have more Internet development and usage. For example, an OECD study indicates that the number of Internet users and hosts grows at a faster rate in countries that have

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<sup>2</sup> OECD, Working Party on Telecommunications and Information Services Policies, Local Access Pricing and E-Commerce, July 27, 2000 ("OECD Local Access Report").

<sup>3</sup> Fischer & Lorenz, "Internet and the Future Policy Framework for Telecommunications, A Report for the European Commission," January 31, 2000 ("Fischer & Lorenz") at 61. <http://europa.eu.int/ISPO/infosoc/telecompolicy/en/Fischer31a.pdf> , <http://www.fl.dk/Study/firstpage.htm>

unmetered rather than metered access.<sup>4</sup> OECD studies have shown that the price of access to the Internet and the structure of this pricing are key factors in explaining the relative development of “e-commerce” among OECD members.<sup>5</sup> In addition, users tend to go online more frequently and for longer periods of time in unmetered billing environments. America Online has demonstrated, for example, that the average time spent on-line is much higher in markets where users have access to unmetered local calls.<sup>6</sup> This effect is significant because increasing the amount of time that users spend on-line is crucial to developing a critical mass of users that is sufficient to sustain applications such as e-commerce, advertising, etc.

These various studies indicate that the type of telecommunications pricing that is used in connection with Internet access (e.g., flat rate or metered pricing) greatly influences the growth of the Internet in a particular market.<sup>7</sup> It is evident that pricing mechanisms, such as flat rate pricing, that reduce costs that consumers must pay to access their ISPs will permit greater local usage of the Internet.

In light of these studies, it is not surprising that there is a growing trend towards offering unmetered telephone service, at least for access to the Internet.<sup>8</sup>

### **Adoption of Flat Rate Pricing Mechanisms**

Flat rate pricing of local calls is available in Australia, Canada, Mexico, New Zealand, Portugal, United Kingdom and the United States, among other countries.<sup>9</sup> In addition, a number of reforms promoting flat rate or unmetered access have been initiated in various parts of Europe, and in other parts of the world. For example, according to the OECD, unmetered dial-up pricing options during off-peak times are available in Hungary, Finland and Spain, while Japan offers unmetered access at some off-peak times for dial-up users.<sup>10</sup> France was planning to introduce

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<sup>4</sup> See OECD Local Access Report at 34.

<sup>5</sup> *Id.* at 5.

<sup>6</sup> *Id.* at 23-26.

<sup>7</sup> Fischer & Lorenz at 61.

<sup>8</sup> See [www.oecd.org/dsti/sti/it/sn/stats/isp-price99.htm](http://www.oecd.org/dsti/sti/it/sn/stats/isp-price99.htm)

<sup>9</sup> OECD Local Access Report at 35. The OECD notes, however, that there is a history of metering ISP charges in some of these countries.

<sup>10</sup> OECD Internet Access Price Comparison, August 2001, <http://webnet1.oecd.org/oecd/pages/home/displaygeneral/0,3380,EN-document-41-1-no-21-3163-29,00.html> (“OECD Internet Access Comparison”).

unmetered dial-up Internet access during 2001.<sup>11</sup> These reforms have been actively sought by consumer groups, as well as content and service providers, such as America Online.

One example of the success of flat rate pricing can be found in the UK, where telecommunications regulator issued decisions in May of 2000 and February of 2001 requiring British Telecom (“BT”), the dominant local service provider, to make wholesale flat-rate Internet access call origination (“FRIACO”) services available to competing service providers.<sup>12</sup> This requirement enabled those companies to offer flat rate Internet access to individual users. The results were immediate. Within months, the OECD reported that the introduction of unmetered tariffs in the U.K had a significant and positive effect on Internet usage.<sup>13</sup> Due to these reforms, average on-line times in the U.K. are now equivalent to markets that have traditionally had unmetered service. These trends have provided a “substantial boost to electronic commerce” within the U.K.<sup>14</sup>

Despite this and other successes, commentators warn that there “is no common agreement that flat-fee unmetered access is the solution”<sup>15</sup> for boosting Internet access in all cases. For example, an OECD report cautions that the preferable response to the digital divide is not necessarily to mandate a particular tariff structure, even if that approach would be appropriate to foster Internet and e-commerce applications.<sup>16</sup> Flat fee pricing structures may increase demand in ways that require ISPs to acquire significantly more bandwidth or capacity from carriers, which could prove to be prohibitively expensive for smaller ISPs.<sup>17</sup> In developing countries where there is a shortage of bandwidth, it may be beneficial to apply time-sensitive rates to certain uses of the Internet that consume disproportionate amounts of bandwidth.

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<sup>11</sup> *Id.* Germany’s incumbent telecommunications carrier withdrew its unmetered offer despite the package’s reported popularity with users.

<sup>12</sup> See e.g., “BT Forced to Provide Unmetered Access”, Claire Woffenden, at <http://www.vnunet.com/news/1113942> .

<sup>13</sup> OECD Internet Access Price Comparison.

<sup>14</sup> *Id.* at 1.

<sup>15</sup> Fischer & Lorenz at 67.

<sup>16</sup> OECD Local Access Report at 10. The OECD suggests that this “would be a retrograde step in that it would return policy makers to setting telecommunications tariffs.”

<sup>17</sup> Fischer & Lorenz at 67. When changing pricing mechanisms, regulators should be aware that the introduction of new tariff options, such as unmetered access, will fundamentally change Internet usage patterns, especially in countries that have a history of metered telephone access. OECD Local Access Report at 9. This in turn could require service providers to redesign their networks. Specifically, local access infrastructures may need to be upgraded to manage and supply interconnection between the public switched telephone network and the Internet. *Id.*

Nonetheless, the importance of creating special billing rates or fees to encourage use of the Internet is widely recognized. The OECD suggests, for example, that rather than mandating particular tariff structures, regulatory authorities should consider a greater range of tariff options and pricing mechanisms that are favorable to Internet applications. These options may include flat rate pricing. Just as importantly, regulators must support policy reforms that create competition in the provision of the underlying telecommunication services. Such reforms should include fostering infrastructure competition, unbundling the local loop and developing high-speed access options.

### **III. Additional Pricing Options for Local Access**

An OECD report indicates that by March of 2000, “nearly all of the leading telecommunications carriers in OECD countries had Internet specific discount schemes or separate PSTN pricing aimed at Internet users, including structural changes such as unmetered options.”<sup>18</sup> Various countries are experimenting with a variety of pricing mechanisms that seek to provide affordable Internet access, yet stop short of flat rate pricing. Some of these trends are briefly described below.

#### **A. Separate Pricing of Telephony and Internet Calls**

Several countries with metered local telecommunications charges have adopted pricing structures that distinguish billing for local voice calls and for Internet access,<sup>19</sup> offering lower rates for Internet use.

For example, Argentina’s two telephone companies have established special codes (“0610”) for Internet access, which provides users a discounted price for Internet access after the first fifteen minutes of the telephone call. When this special access code is used, a one-hour Internet session costs 45 percent less than a call billed at the normal per minute metered rate.<sup>20</sup> The OECD reports that these types of pricing techniques have led to significant reductions in the price of Internet access.

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<sup>18</sup> See OECD Local Access Report at 43.

<sup>19</sup> See Fischer & Lorenz at 42. The OECD Local Access Report also indicates that this trend emerged largely in response to tariff rebalancing of local calls, which was being undertaken in preparation for market liberalization efforts. OECD indicates that the tariff rebalancing effort, which lowers long distance prices and increases local call prices), had a significant and negative impact on Internet use in many countries with metered local access. These pricing mechanisms sought to counter the negative effects of rate rebalancing on Internet usage.

<sup>20</sup> See “Argentina: Land of Free ISPs,” Ricardo Sametband, October 3, 2001, [www.wired.com/news/business/0,1367,47079,00.htm](http://www.wired.com/news/business/0,1367,47079,00.htm)

## **B. Special Access to an ISP's Point of Presence**

Some telecommunications carriers have begun to offer special national access numbers for Internet access. These pricing mechanisms allow users to access the Internet for the price of a local metered call regardless of the consumer's geographic location within a country. Without this type of access plan, consumers who are not geographically located near an ISP's point of presence would only be able to reach their ISP by placing a long distance call,<sup>21</sup> which would be even more expensive. The creation of national access numbers saves consumers from having to make long distance calls to an ISP. Since this type of plan permits all users to reach an ISP for the price of a local call, it can be a useful tool for minimizing the digital divide between urban and rural users.<sup>22</sup>

## **C. Free ISPs**

It is also worth noting that ISPs in some countries have found a way to compete at a relatively low cost in the per minute metered environment. These ISPs offer "free" Internet service to consumers, meaning users do not pay a subscription fee to the ISP for Internet access. Subscribers, however, do pay fees to the telephone operator for the price of the access call. These "free" ISPs negotiate a revenue sharing agreement with the local telecommunications provider and then receive a percentage of the fees that their Internet customers generate for the local telephone service provider.<sup>23</sup> These non-subscription ISP services also avoid the administrative costs associated with sending monthly bills to customers.

Free ISP services have been popular with consumers who are not heavy Internet users and who do not want to commit to a fixed fee each month for Internet service. These billing arrangements have been used in the United Kingdom and in various parts of Europe. However, the OECD notes that this business model reached its zenith in 1999 and has become less popular

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<sup>21</sup> Internet users can reach their ISP by making a local phone call if the ISP has established a point of presence (POP) in the user's local calling area. ISPs locate their POPs to maximize the number of users who can reach them with a local call. Therefore, in many countries, this local calling option will not always be available to users who are located outside of large, heavily populated urban areas.

<sup>22</sup> For example, the Government of Brazil has acknowledged the need to establish alternate pricing structures for Internet access. ANATEL, the telecommunications regulator, is conducting studies in an effort to implement a new numbering format for Internet access providers. This proposal would treat all calls made to an ISP as local calls, although there would still be per minute pricing for Internet access. This proposal would reduce the cost of Internet access and also encourage the dissemination of ISPs throughout a wider geographic area in Brazil.

<sup>23</sup> See e.g. "Argentina: Land of Free ISPs," Ricardo Sametband, at <http://www.wired.com/news/business/0,1367,47079,00.html>

in many markets with the emergence of unmetered plans.<sup>24</sup> Nonetheless, press reports indicate that these arrangements continue to be used successfully in some markets, such as Argentina.<sup>25</sup>

#### **IV. Importance of Concurrently Establishing Policies to Create Competition in the Telecommunications Infrastructure**

Pricing reforms alone are not sufficient to promote Internet access. It is important for countries to also adopt policies that support competition throughout the various layers of the telecommunications infrastructure.<sup>26</sup>

In most countries, incumbent telephone operators provide have demonstrated a strong reluctance to offer a variety of pricing options for Internet access, even in cases where businesses and residential users have voiced a demand for such choices. The absence of competition in the local loop permits incumbent operators to “disregard or delay meeting the changing needs of business and users.”<sup>27</sup>

Unless local loop pricing “is coordinated with policies that also increase liberalization in areas such as leased lines and backbone networks, it is questionable whether the networks of telecommunications carriers, with dominant national positions in backbone markets, will be able to cope.”<sup>28</sup> The introduction of competition in these sectors will also lead to lower Internet access prices.<sup>29</sup>

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<sup>24</sup> In the United Kingdom, for example, consumer demand for flat rate Internet access has forced many ISPs to migrate from the free ISP service and towards an unmetered billing model.

<sup>25</sup> The OECD also notes that subscription free access also has been introduced in the Czech Republic and Korea and that this innovation has greatly reduced the price for Internet service during off-peak periods. OECD Internet Price Comparison at 1.

<sup>26</sup> For example, a report by the U.S. Department of State on Internet development in Poland concludes that “the single greatest factor in lowering the cost of Internet access prices would be deregulation of telecommunications, which likely would introduce greater competition into domestic phone service; which would in turn increase total investment in facilities and lower prices for consumers.” See “Internet Development in Poland,” at <http://usinfo.state.gov/journals/ites/0500/ijee/poland2.htm>

<sup>27</sup> OECD Local Access Report at 9.

<sup>28</sup> *Id.* In the absence of competition, innovation in pricing structures and networks for Internet and e-commerce applications will occur at the pace defined by the incumbent or dominant operators rather than at the pace dictated by the market.

<sup>29</sup> See OECD Internet Access Comparison at 1.