

Zeitschrift: Comtec : Informations- und Telekommunikationstechnologie = information and telecommunication technology
Herausgeber: Swisscom
Band: 81 (2003)
Heft: 4

Artikel: IP interconnection and content settlement
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DOI: <https://doi.org/10.5169/seals-876640>

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Download PDF: 29.03.2025

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IP Interconnection and Content Settlement

Is the growth of new "next generation" services the much-needed opportunity for network operators to raise serious revenues from their IP networks? With increasing numbers of commentators seizing on the need for real profits from telcos, and turning their focus to poor profitability of IP networks, is it time for operators to change their business model? Or is there a new business model emerging from the need to interconnect with new partners?

New types of content services will drive a new set of business models.

The truth is, all of the above are happening. But what is the impact on business models, processes and billing systems? To get to the answers, we need to consider where we have come from.

PAUL FITZGERALD

Interconnection agreements

In order for ISPs to provide ubiquitous access to the whole of the Internet, they have to make interconnection agreements with other ISPs, whether these are backbone networks or other local (usually national) networks. Exactly the same need has to be satisfied in voice networks, of course, but very different business solutions (and therefore technical ones) have been developed. Whereas every call or minute of traffic is monitored and separately costed in voice networks before a net "settlement" is calculated, only a bulk assessment of IP traffic is made. These relationships are captured in complex interconnection agreements for voice, and very simple peering and transit agreements for

IP¹. Specialist billing and settlement systems perform the calculations for voice networks, and the simplest systems can be used to calculate monthly recurring charges for IP transit services.

With the advent of new types of service provided over IP networks, for both fixed and mobile networks, there is an opportunity to re-examine the business model and then the technical solutions to support that model. Many new services can and will be billed to end users as a series of transactions – information services and messaging through to games and purchase of goods online can all be effectively billed on a per event basis. But does this mean that interconnection between networks needs to move to a per event model? And if so, will the process be similar to the transaction-based voice interconnect model?

Clearly IP interconnection can remain a bulk service, leaving ISPs to manage their

¹ Peering is usually an agreement where the cost is borne equally by both parties, and no revenue changes hands, on the basis that traffic between parties is roughly equal in volume and therefore value. Transit is a service paid for by smaller ISPs to backbone ISPs for access to the wider Internet, charged on a bandwidth basis.

Billing Systems 2003

Now in its 10th year, IIR's Billing Systems Conference and Exhibition is firmly established as the largest and most important event in the European Billing calendar, running from 13th–16th May 2002, Earls Court Conference & Exhibition Centre, London. For further details contact billing@telecoms.iir.co.uk or visit www.iir-billingsystems.com. Anite Telecoms is an exhibitor at Billing Systems 2003. This article has been written as part of a series of articles for this show.

retail revenues independently of their interconnection costs. However, there will be new partners involved, e.g. content providers, software owners, brand owners, all of whom are looking for a slice of the revenue. And if quality is not maintained, there is a potential need for service credits. There is a very strong case for a set of new business models for interconnection between partners providing next generation services.

What is about to come?

The new business models will feature revenue sharing, SLA management, accountability and volume commitments, and are very similar to those handled by typical wholesale voice operators with their interconnect agreements, interconnect settlements and billing systems. Moreover, they are not the type of revenues and costs that are easily handled by retail voice billing systems.

Some of these new business models are already in place and generating significant revenues. The most mature example is probably SMS information and gaming services, where each SMS constitutes an event that is separately chargeable. It also triggers a payment to the owner and/or provider of the service, the mobile operator's partners.

However, GPRS is not necessarily following this trend yet – services are typically billed by packet or byte volume, and using peering or transit at the point of interconnection – but as new service ideas become more popular, the new models will take over. And, in any case, the end user has no idea how much data is transferred whenever a transaction takes place, leading to the expectation that volume based billing is unlikely to be a long-term solution. The same argument applies to 3G. In conclusion, new types of content services will drive a new set of business models that will have a significant impact on the way IP interconnection will be handled. Peering and transit will most likely be retained as the primary means of interconnection between ISPs, but complex new settlements will be introduced between network operators, content providers and other partners. Interconnect billing solutions are best suited

to solve the new billing and settlement requirements – as long as they are volume or event-based, support revenue sharing and agreement definition, cope with SLA credits, and perform margin analysis. Above all, the billing solution must be highly flexible and enable, rather than restrict, the development of next generation services, e.g. through

the ability to support rapid deployment of new services. 6

Paul Fitzgerald, director of Anite Calculus.

Zusammenfassung

IP-Zusammenschaltung und Content-Abwicklung

Bietet das Wachstum der neuen Dienstleistungen der «nächsten Generation» Netzwerk-Betreibern die dringend nötige Chance, die Einnahmen aus ihren IP-Netzwerken merklich zu steigern? Nun, da immer mehr Kommentatoren auf die Notwendigkeit von realen Gewinnen der Telcos hinweisen und ihr Augenmerk auf die geringe Rentabilität von IP-Netzwerken richten, stellt sich die Frage, ob die Betreiber ihr Geschäftsmodell ändern sollten. Oder entsteht gar ein neues Geschäftsmodell, da eine Zusammenschaltung mit neuen Partnern unabdingbar geworden ist? In Tat und Wahrheit trifft all dies zu. Neue Arten von Content-Services werden neue Geschäftsmodelle entstehen lassen, was sich wiederum merklich auf die Art und Weise auswirken wird, wie IP Zusammenschaltungen zu vollziehen sind. Peering und Transit dürften unter Internetanbietern die bevorzugten Lösungen für eine Zusammenschaltung bleiben. Zwischen Netzwerk-Betreibern, Content-Providern und anderen Partnern werden sich jedoch neue Abwicklungsmodi einbürgern. Zusammengeschaltete Billing-Lösungen eignen sich am besten dazu, die neuen Anforderungen an die Rechnungsstellung sowie die Zahlungsabwicklung zu erfüllen – jedenfalls so lange sie auf Datenmenge oder Nutzungshäufigkeit basieren, ein Umsatzsplitting sowie die Einhaltung der Vereinbarung ermöglichen, die im SLA festgelegten Kredite einhalten und für eine Deckungsbeitrags-Analyse sorgen. Die Billing-Lösung muss vor allem äusserst flexibel sein und darf die Entwicklung von Dienstleistungen der nächsten Generation nicht hemmen, sondern muss diese im Gegenteil fördern, indem sie z.B. eine rasche Bereitstellung neuer Dienstleistungen ermöglicht.

Leise Zweifel an SoC

Die frühe Euphorie über die Machbarkeit kompletter elektronischer Grosssysteme auf einem einzigen Chip (Systems-on-Silicon, SoC) ist einer eher ernüchterten Betrachtung gewichen. Die Integration von Hochfrequenz- und Leistungskomponenten, von Speichern und analogen Funktionen in einen einzigen digitalen

Schaltkreis dauert wohl noch einige Zeit. Nicht nur, dass viele technische Probleme noch auf eine Lösung warten, sondern vor allem deshalb, weil die Zahl der benötigten Belichtungsmasken bei einer solchen Integration erheblich ansteigt. Und die gehen nicht nur ins Geld, sondern mit jeder weiteren Maske sinkt auch die Ausbeute und steigen die Kos-

ten. Ein weiteres Hemmnis liegt in der geforderten Verringerung der Leckströme auf den Chips um fast zwei Grössenordnungen. Diese und ähnliche Zweifel an der Realisierbarkeit von SoC waren auf der ISSCC in San Francisco Mitte Februar dieses Jahres zu hören.