



# The Cost of Complexity

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## TITLE

### Summary:

Understanding the actual value of QoS is just one of the complicated factors that service providers will have to take into account as they build their business cases for investments in IMS. IMS provides the ability to bill in more fine-grained ways for content and services. So what are the benefits, costs, and risks? We find the answer to be not so much about IMS itself, but about the associated cost of complexity.



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## The Billing Challenges of IMS

In the last issue of Pipeline, I wrote about Quality of Service in the IMS environment. QoS is one area where IMS can potentially deliver a strongly differentiated service offering compared to what might be available over a “free and unfettered” IP network such as the Internet or its descendant. And it’s the kind of differentiator that some customers logically may be willing to pay extra for. What is less clear is just how much more they’d be prepared to pay, and how many would pay it. As technology developments further improve the capability of smart edge devices to deliver QoS over unmanaged or lightly managed networks, it’s also important to consider how long customers will agree to pay that premium.

Understanding the actual value of QoS is just one of the complicated factors that service providers will have to take into account as they build their business cases for investments in IMS. Today, we’ll explore another putative benefit of IMS from the business case perspective: the ability to bill in more fine-grained ways for content and services.

In recent years, there has been a trend in telecom billing to make things simpler for the end customer. Flat-rate calling plans are now common for long-distance and even international calls. It was just a few years ago that calling plans were complex combinations of factors like time-of-day, day of week, lower rates for weekends and holidays, multi-layered discounts, and apparently infinite bundling options. Services like caller ID and voicemail that for years attracted supplementary charges are increasingly bundled with the basic line charge. Not to mention DTMF – yes, remember when “touch tone” cost more than pulse dialing?

There were charges for “special” services such as WATS lines and FX/FCO services - if any enterprises are still paying premium charges for such services in a world of good quality flat-rate VoIP, then their accountants are asleep. Leased lines were once charged using complex distance-related formulae; today’s VPN technology makes distance irrelevant. And if you think cellphone charge structures are complicated today, have a look back at some examples from mobile services ten years ago.

Today, from the perspective of the end customer, rate structures are much simpler. It’s not that we don’t have the technical capability to make things complicated; it’s just that we’ve learned that most of that complexity simply irritated customers. I suggest that billing complexity actually didn’t add a lot to the bottom line either.

So let’s think about the notion that service providers can boost revenue by billing for more and more stuff. IMS is certainly an enabler for such a tactic. IMS will enable service providers to take control of the setting up of each session. They will consequently know a lot about the user at the end point of each session. Looking inside the packets of each session will enable the service provider to identify what sort of content is there.

It will be possible to consolidate charges per packet into a total for each session, making it possible to charge for a session, any session, just as if it was an old-fashioned phone call. It will be possible to charge the customers at both ends of the session according to the nature of the data. For example, a voice call may be seen to be more valuable per packet than an IM session - maybe. Why stop there? A business email is clearly worth more than a social email. Should documentary videos be carried at a premium because of their extra educational value? Or should feature movies cost more because the stars are paid more? Or how about the notion that service providers should earn a few cents commission from every eBay sale?

Content billing, enabled by IMS and specialized content billing systems could mean that customers will, once again, receive lengthy detailed bills, listing individual sessions and the applicable rates, just like their phone bills in the old days before flat rate dominated.

While some of this may sound like wishful thinking, it reflects the trend for service providers to look for ways to charge for transporting content, not just for use of the network. The CEO of AT&T (formerly SBC)

has famously given us an insight in a Business Week article (November 7, 2005) in which he is quoted as saying: “Now what they would like to do is use my pipes free, but I ain’t going to let them do that because we have spent this capital and we have to have a return on it. So there’s going to have to be some mechanism for these people who



use these pipes to pay for the portion they're using ... we and the cable companies have made an investment and for a Google or Yahoo! or Vonage or anybody to expect to use these pipes [for] free is nuts!"

Now everyone knows that Google and the others don't use the pipes for free. They already pay millions to various service providers for access to the Internet, so that's not the issue being discussed here. The problem, from AT&T's perspective at least, is that they do not pay extra money to the service providers to connect to their customers. AT&T's customers pay for access too of course, but they don't pay extra when they access a particularly valuable piece of content, or when they buy an expensive gadget on eBay. So charging for content is the clearly stated objective, but the exact form that will take is not yet clear. The imagination of the content billing experts is fertile, but realists in the big service providers know that they can't take this too far without sending their customers in search of alternatives.

And I'm pretty sure that alternatives will exist, because some service providers, large and small, traditional and new, will continue to provide simpler, non-IMS based access because every assessment of the "best" business model is different.. Some service providers will hedge their bets and continue to provide "free and unfettered" Internet access alongside more controlled services over an IMS-based network, in order to see which option the majority of customers prefer. Access competitors to the incumbents already exist – not just cable companies and CLECs, but also power companies, municipalities and housing developers – and choice will increase as they continue to deploy a range of network access technologies such as IP over power (PowerLine), broadband wireless, mesh WiFi and fiber-to-the-premises.

There may well be social and large-scale economic consequences of one charging approach over the other but that is a topic for another article. Businesses tend to adopt the strategies they consider to be best for their business performance as perceived by their shareholders, and most boards find that hard enough without taking into account those wider issues. Shareholders in the large incumbent phone companies will understandably applaud any initiative that promises to deliver extra profitable revenues, but only if promises are actually fulfilled.

So what are the benefits, costs, and risks? Answering such questions has always been part of planning the evolution of a telco. IMS doesn't make that any different. Service providers routinely have to make decisions about prices, service quality, and customer reaction based on less-than-perfect understanding of social drivers, future technological developments and as-yet-unknown novel business models that competitors have a habit of inventing. (There's something about this technology that seems to be spawning business creativity in new start-ups, and that adds much-needed spice and excitement to the lives of strategists and planners in the big incumbents.)

So the question to be answered is not so much about IMS itself, but about the associated cost of complexity. Customer billing is just one dimension, but is a useful example. The incumbent's strategists must take into account not just what it is possible to bill for, but how much extra it will cost to process and send those bills, and at what level of extra cost some customers will start looking for alternatives.

To help that process (maybe), here are a handful of easy questions that all high level telco executives should be asking as they review the business cases to support the vision of charging for everything in an IMS world...

- Have we factored in the higher cost of the bigger and more complex billing systems required to do all this?
- Does our billing system budget include a sufficient allowances for systems implementation, integration and data migration, bearing in mind that all of these escalate disproportionately with complexity?
- Do we know how much more it will cost to run and support these new systems?
- Have we taken into account the dynamics of the technology so that we can compare the capabilities of the IMS network of, say five years hence, with the edge-technology alternatives five years hence, not just with the Internet of today?



- Do we have customer research that lets me know with reasonable certainty how many of my customers are prepared to pay extra for IMS-delivered services, and how much?
- Have we factored in information from our previous experience (and others') that shows that the cost of handling customer enquiries and complaints increases with the complexity of the billing regime?
- Do we know through any objective research, which of our customer segments are most accepting of billing complexity, and how any of them are going to react negatively to our plans?

Needless to say, I'm not actually going to answer these questions myself, because the answer for each service provider will be different depending on their history, expertise, aspirations, and local economic environment. However I will make some general guesses as to how different groups of companies might respond.

My estimate of the climate just now is that, unless something unexpected happens, very large service providers with deep pockets, especially those that serve many large business customers, will somehow be able to answer 'yes' to most of those questions and are already on the road to position IMS-based networks and correspondingly complex billing and management systems as a central and dominant plank in their evolution strategy.

Some service providers, probably the smaller or the more consumer-oriented, will answer 'no' to a lot of these questions and so will eschew IMS entirely for the time being, unless there comes a point where they just don't get to play meaningfully without getting aboard the IMS boat. In the middle ground, many will say "don't know yet" and might defer a decision (or play in both games) until the future becomes a little clearer.

The case for investment is not simple, and what might be a smart investment for one service provider may not be the right path for another. I believe it is the case that the global market for communications connectivity and services is now big enough and varied enough that multiple approaches can coexist, and people can make money in different ways in a relatively free competitive market.

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