

**Activity Based Costing System
In Telecommunications Industr**

- With Allocation of Joint Costs for fair Interconnection Pricing -

written by Hak Ju Kim

This paper described the background that costing became the main issue in telecommunication industry, the introduction of "Activity Based Costing" (ABC), and the application of ABC as a work to find the appropriate allocation basis of joint costs in telecommunication network. To the extent, the detailed work for costing through ABC can overcome the abnormal phenomenon that is the loss of local call and the profit of toll. Also ABC can provide useful cost data when the interconnection charge among carriers for new services and the voluntary tariff system are introduced. However, to achieve a successful introduction of ABC in telecommunication industry, it needs additional works such as the development of computer technology to measure the various statistical data, the establishment of asset classification system, and the enough capacity of accounting system.

Summar

Communication networks in the digital world make possible joint production of a range of different services for a diverse group of customers. Moreover, their use is flexible and changes constantly, and facilities existing now may be used in the future in ways we can not foresee. In the case of telephony, technological development has increased economies of scope far beyond joint production of voice and fax connection. And much more is to come in the next few years. Also, internationalization offers a broader geographic range for all those services, beyond national telecommunications.

For most calculation purposes, this means that the old costing systems and allocation assumptions stemming from the days of national voice telephony simply do not offer relevant facts any longer. This is true for internal decision making in the telecommunications, but perhaps more importantly for setting interconnection charges. As there will influence the utilization of and investment in networks and facilities, this is a matter of importance. Pricing of partial interconnect along value chains has hitherto probably been more the result of a political process, rather than based on such facts.

Most national telecommunications are dominant actors in each country, still working under the shield of regulation. This is now about to change. What changes will be necessary in its costing system? There will be a requirement of "fair" pricing of interconnection and other services. How should this be constructed, given flexible joint production and "natural monopoly" - like economies of scope in many countries?

Debates on rate restructuring have cost orientation as goal has noted the relative arbitrariness in allocation of joint production costs. From a theoretical standpoint, we may distinguish between internal (profit-maximization) purposes of costing, and external demands for cost information. Internally, there is no need for full costing in the case of joint costs. The need arises for external purposes, like interconnect pricing, government supervision, and tax calculation.

Societies can be expected to remain interested in full costing in some broad sense, due to continued market failures in deregulated telecom networks. Competition will not fully do the job. Thus, a fair costing system is needed.

Let us first look at present costing systems and problems they pose. These are quite similar across countries, as they share similar traditions where costing was adapted to the situation of national monopolies. Old systems do not logically and fully discern between different main products on one hand, and between different logical processing stages, on the other. For example, in vertically non-separated national telecommunications, local calls plus subscription often seem to bear the full cost of access stages of production. This will influence both demand and competition in questionable ways when it come to partial interconnect in open systems. Especially when the loop is concerned.

My view is that full cost, like in other industries, should include all the process stages utilized by a particular product, customer or partially interconnecting operator, without discrimination. Only in this way true cost oriented tariffs can be achieved.

Activity Based Costing (ABC) has been discussed widely in industry in the past five years as an alternative to or improvement of previous costing practices. In most full (or absorption) costing systems, overhead has been allocated by adding pre-calculated percentage charges to the direct costs. To applying for ABC, telecommunication networks have to be standardized, flexible, and value-added chain. Also cost is measurable and homogeneous in each process step. The activity in telecommunication network can be process steps and switching is a typical process. For example, a long distance call passes by several switching processes. In this case, we can calculate cost per switching following to call time and distance used by subscriber. In the central process steps in telecommunication network, cost varies according to traffic. In the access process, access is getting shorter by multiplexing and switching decentralization and expense becomes to decrease, while it will be happened the additional cost

with the demand of the increase of access capacity. Call consists of switching, connection before call, and call connection. In this operating level, cost driver is the number of switching (or CPU process time) in switching process and the time to call in channel and transmission process respectively.

Applying procedure of ABC in Telecommunication Network is as following. First step, organizing systems to measure labor hour, varied statistical data, and production cost occurred in the process. Second Step, recognizing cost driver in each process. Third step, separating non-traffic sensitive cost (NTS) with traffic sensitive cost (TS) in each process. Fourth step, coding in product unit and beginning to measure and record statistical data to separate direct cost based on activities. Fifth step, allocating indirect cost following to allocation standard based on cost driver analysis.

Until now, I described the background that costing became the main issue in telecommunication industry, the introduction of "Activity Based Costing" (ABC), and the application of ABC method as a work to find the appropriate allocation basis of joint costs in telecommunication network. To the extent, the detailed work for costing through ABC can overcome the abnormal phenomenon that is the loss of local call and the profit of toll. Also ABC can provide useful cost data when the interconnection charge among carriers for new services and the voluntary tariff system are introduced. However, to achieve a successful introduction of ABC in telecommunication industry, it needs additional works such as the development of computer technology to measure the various statistical data, the establishment of asset classification system, and the enough capacity of accounting system.