

Software Transactions

By Dr. Wakasugi Ryuhei

In June 1993 the Industrial Structure Council Information Industry Committee, the consultative body to the minister for the International Trade and Industry Ministry, completed a report containing proposals for the drafting of rules that would make impartial, transparent software transactions possible in Japan. These are unprecedented policy proposals from the standpoint that, up until now, computer industry-related policy proposals have focused heavily on hardware while software policies were just debated and because they are not intended to further promote the software industry, but rather aim to rationalize software market transactions. Let me attempt to introduce and evaluate the report by way of a summary of its contents.

In *Japan's Software Factories* (1991) MIT associate Professor Michael A. Cusumano offers some interesting opinions regarding Japanese software: The Japanese computer industry is trying to adapt the quality control and

project administration principles that enabled the Japanese manufacturing sector to enjoy international competitiveness to software as well. Because European and U.S. companies require creativity and individuality in software production they emphasize an artisan-like approach, but Japanese companies apply factory engineering know-how and management techniques to software production and are putting quality control, production control, and plans for promoting re-use into place. If software production is standardized economies of scale can be realized and Japanese companies can increase their competitiveness in the software industry.

Economic transactions related to Japanese computer software are rapidly increasing. Software industry sales reached ¥2 trillion in 1990 and exhibited a 20% rate of increase during each of the preceding three years. It is believed that software industry growth will continue in the future as well.

However, whether or not Japan's software industry keeps growing is not solely dependent upon efficiency at the manufacturing level, but will be decided by whether or not the software that has been produced sells in the marketplace.

Compared with the U.S. and Europe, Japan's market is not currently organized. As a fundamental condition for the industry's continued growth, software must be seen to have a fair market value, just as with other commodities. While it is thought that market mechanisms enable fair and open transactions to a considerable extent in the case of packaged software, market mechanisms do not function for customized software transactions. The Industrial Structure Council's latest policy proposals derive from the recognition that rules must be formulated in order for customized software package transactions to be undertaken in accordance with market principles.

The report surveys actual business conditions with regard to customized software, basing its policy proposals upon the conclusion that software transactions are still in a stage of underdevelopment. It raises the following points, among others: (1) business transaction requirements are not delineated in contracts; (2) pricing decisions that fix the value of software are in many instances arrived at by adding a reasonable profit figure to costs—there is no system for assessing the inherent value of the software to determine prices; (3) data pertaining to software pricing and quality remains solely in the possession of the supplier—customers do not possess enough information; (4) cost accounting methods are not standardized.



As software sales have increased, moves are afoot to organize the software market for more efficient transactions.

Japan is distinct in that a high percentage of commodity and service transactions are long-term, continuous business deals and a contract is not necessarily important in the case of these kinds of transactions. If trouble arises, a mutual relationship of trust formulated through repeated, continual dealings forms the basis for attempts to solve the problem. It is safe to say that there are many cases in which the matter is cleared up even though not clearly specified in a contract. Further, because it is difficult to imagine the wide variety of situations that might lead to trouble in advance, putting the details down in the contract makes no sense.

However, even assuming that a contract does not play a particularly important role in the case of the usual commodity and service transactions, this cannot be applied as is to unstandardized software business transactions. The reason that most points are not included in the contract in the case of software is not because the parties to it have done business continuously and so see no need to write them down, but because the concerned parties have still not reached a decision regarding what should be delineated in the contract. This kind of business custom makes customized software transactions extremely unreliable.

A second custom regarding pricing decisions is even more important. There is essentially no relationship whatsoever between the costs required to produce a piece of software and its intrinsic economic value. Although there is absolutely no guarantee that software that entails high costs will possess high value, decisions regarding software prices in Japan are often established in accordance with the manhours and per-hour unit costs of the personnel invested.

Based upon this type of price-setting formula, incentives to undertake the supply of creative, highly value-added software are scarce. Neither software suppliers nor customers think that it is logical to set prices based upon costs. However, software is an information asset. If the content is disclosed prior

to the establishment of business dealings, all of the information will be conveyed to the consumer and the transaction will fall apart. The only thing to do is to conduct transactions that are based upon incomplete data and before the customer is completely versed in the software's contents. The parties to a transaction lack the expertise, experience and information required to sufficiently estimate the value a piece of software possesses and as a result this leads to attempts to set pricing in accordance with the costs incurred by the concerned parties.

In order to ameliorate this state of affairs, the report points out guidelines to be presented pertaining to items that the parties to a contract should include and methods for establishing market mechanisms for pricing decisions.

For the former, contract guidelines, the report suggests that the details of the system covered by the contract, procedures for altering the contents of the contract, and inspection and delivery methods be delineated in the agreement, as well as the ways that the costs will be borne when a system that differs from the contents of the contract is supplied. Although at a glance it would seem obvious that these kinds of items would naturally be put into a contract, they were proposed because most transactions up to now have been undertaken with nothing more than verbal promises which then ended up as trouble sources.

Further, the most important point is the need to develop definitions by having users outline the contents of the desired software in the initial stages of the transaction, in the form of a request for proposal (RFP). It is in fact true that users will need a fair level of expertise in order to clarify matters through RFPs. It might well be said that the key to whether Japan's software industry advances or not is in whether or not it is possible for users to present suppliers with RFPs.

Regarding the issue of pricing, a supply of information that will enable software's inherent value to be objectively assessed may be more important than anything else. In order to do this



The development of software at Nippon Steel Electronics and Information System Divisions Group is a reflection of Japan's transformation to an information-related society.

the report suggests that software produced by suppliers in the past be appraised and that third-party organizations and users actively participate in supplying the materials that will be needed to estimate suppliers' technical abilities. The report also attempts to open the way to the indirect estimation of software value by standardizing software cost accounting methods, as well as by ranking and grading the engineers put in software production. While cost accounting and the ranking of engineers will be employed to estimate a piece of software's value and the costs required, it is not necessarily the best way. For the short term it will be difficult to change the previous habit of setting prices according to costs so this should be interpreted as an idea for interim measures that need to be taken.

Fundamentally, the parties to business dealings should be the ones who establish the rules for market transactions, but there is no guarantee that this will happen. On the other hand, because the establishment of market rules for transactions increases the economic efficiency of both parties it may be said to possess the character of public goods. The publication of these software policy proposals is the first step in positioning the Japanese market for efficient software transactions.

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