

**Revolution of Chinese Offshore Development Business Model**

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**Abstract**

This document presents the introduction of offshore software development between Japan to China and discusses four business models that have been practiced. Now we are practicing the new business model that we would like to introduce which is called “Business OEM (Original Equipment Manufacture) Model”.

**1. Introduction**

While Internet connects the world as one, the global specialization is becoming more and more natural in various fields. The software development is not an exception. As global specialization continues, the offshore software development increases as well. This paper is based on the examples of Japan and China, introducing the business model of offshore software development.

Offshore from Japan to China, which began in earnest around 1985, has steadily increased. However, there have a lot of problems in offshore development because of the cross-cultural environment. To solve these problems, in the past, several business models as Competitive Bidding, Laboratory Contracts, Subsidiary Company Establishment, Joint Venture Establishment etc. have been practiced, but it seems that it still needs continued evolution.

Then, considering the business model which is best suited for offshore development business, the “business OEM model” is proposed.

**2. Problems of Chinese Offshore Development**

In recent years, orders of offshore software development from Japan to China have become increasingly active. As for Japan and China has a historic exchange background, the Japanese companies had been actively promoting the offshore software development in China, but they also have to face many problems.

**2.1 Cross-culture Communication**

The most difficult problem of offshore development is the value judgment differences between Japan and China that are led by cultural differences. It means the problems of cross-culture communication. Taking Japan and China as an example, they are neighbors and both belong to Asia. They both use Chinese characters. It is even said that Japanese culture was spread from China in the past. Actually, from the language, culture, the way of people's thinking, and the mode of action, to the values and etc. In many ways, there are great differences between China and Japan. For example, even the same word may have different meaning (Table 1). It is true that cultural differences between China and Japan are smaller than that between China and America or Europe. But it's still a very big difference.

**Table1. The Same Word with Different Meaning in Japan and China <sup>[1]</sup>**

<b>Word</b>	<b>Meaning in China</b>	<b>Meaning in Japan</b>
Set with blank	Space or Null	Space
End of the year	End of the December	End of the March

After all, as for offshore development, problems have appeared preponderantly in specification decision, communication and the like. <sup>[2]</sup>

Many companies are making an effort to understand the culture of Japan and China. But it is almost impossible to completely understand the culture built up in the long history. <sup>[3]</sup>

One of our solutions is the management of Q&A (Question & Answer). Chinese side put a certain number of questions to Japanese side. Then by confirming the answers we can understand exactly what should be done. Meanwhile, Japanese side can understand how much the Chinese side can understand the specifications of the project according to the content and the amount of Q&A. Through this way the value judgment difference caused by cultural difference can be reduced and the same recognition can be obtained. The detail will be introduced in the last chapter of business OEM model.

## 2.2 Bottle Neck Caused by Depending on the Certain Person

The past solution to the problem of cross-culture communication was to offer some BSE (Bridge System Engineer) who are familiar with both cultures. BSE grasp the problem and try to solve it. This is an effective way, but there are also some problems. Quality differences always occur because the success is depending on the level of the BSE. For example, Japanese company's level is 10, but if the BSE's level is 2, it can only achieve 2 at China no matter how high the Japanese company's level is.<sup>[4]</sup> In many cases BSE is the bottle neck of quality assurance.

And even if the BSE is excellent and can solve all the quality problems, the order quantity from Japan to China will be restricted by the quantity of work that BSE can complete. Because the quantity that a person can complete is knowable so can't correspond to the enormous quantity that Japanese company request.

That is to say, on the quality problem and order quantity problem, BSE has been a bottleneck. Although many companies tried to bring up a large number of excellent BSE, so far there is no successful case.

Our solutions are to let the software development process as factory production line and to standard all the development process. The development process standard contains ISO9000 & CMMI's contents and special expertise for the offshore development procedure and quality management.

## 2.3 Problems of the Conventional Business Models

About the offshore development that was started from the end of 20th century, if we look at the order form from the Japanese viewpoint, there are mainly four models as follows.<sup>[5]</sup>

### 1) Competitive Bidding Model

The Japanese companies cut out a part of certain large-scale project and choose several contractors to do estimate. By judging from the estimate and the integrated situation, they'll select the best one to sign the contract with it. The later maintenance work might be continuous if good relationship was developed.

But unevenness occurs in quality and quantity in this model, because it is estimated and executed in every case.

### 2) Laboratory Contracts Model

Laboratory contracts mean that contract with fixed engineers during the certain period by guaranteeing the works. The Japanese companies always hold uneasiness with the labor turnover in China. This is one of the solutions to address that concern. Benefits are the stabilization of talented persons, accumulation of the business knowledge, and the protection of intellectual property. The disadvantage is that you must continue even if there is no work, so it has a big risk. Then, it is difficult to adjust because the workers are restrained.

### 3) Subsidiary Company Establishment Model

For further pursuit of the convenience of personnel and reduction of the cost and aiming at Chinese domestic market, some Japanese companies are establishing the subsidiary companies in China.

But the establishment procedure of the subsidiary is complicated and it's hard to handle local labor management. Moreover, because it takes considerable fixed costs, the management risk is high.

### 4) Joint Venture Establishment Model

Recently Japanese companies begin to establish the joint venture with Chinese companies instead of establishing the subsidiary companies in China. But there are also many problems in those joint ventures such as cognitive dissonance on commanding right and the way of expanding business. Also frequently encountered is the problem that the talented persons can't be ensured and so on.

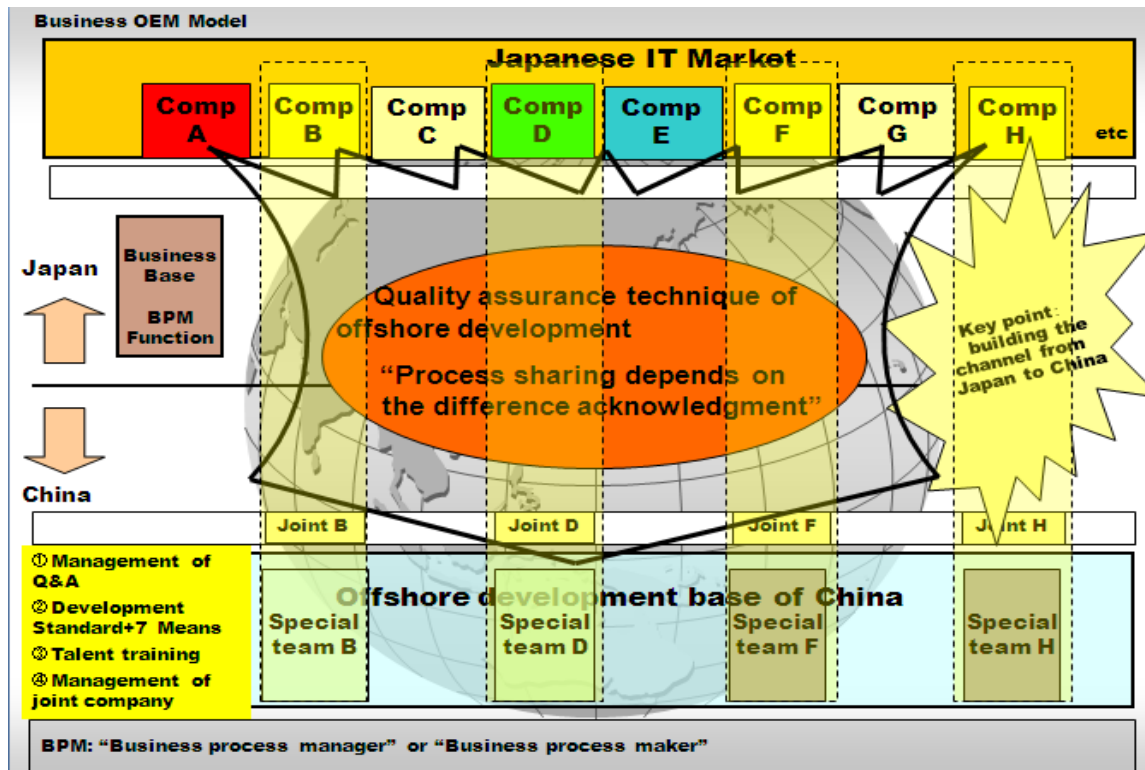
For Japanese companies, each of the four models has a lot of demerits, details as follows (Table 2)

**Table2. Merit and Demerit of Business Models from the Viewpoint of Japanese Company**

Model	Merit	Demerit
Competitive Bidding	Order if necessarily, with low risk.	1. Futureless for Chinese market etc. 2. Unevenness in quality and quantity
Laboratory Contracts	Stabilization of talent	1. Risk of order guarantee 2. Futureless for Chinese market
Subsidiary Company Establishment	Possibility of Chinese market	1. High risk for fixed costs 2. Difficulty for getting talent resource 3. Awkward with local labor management
Joint Venture Establishment	1. Possibility of Chinese market 2. Acquire some resource from Chinese company	1. High risk for fixed costs 2. Easy to occur conflict 3. Limit with talent resource

### 3. Business OEM Model

We have created and practiced a business model named “business OEM model” which not only can ensure the merits mentioned above but also can solve those demerits. Based on this model, there is no limitation for Japanese company to transfer any kind of business from Japan to China just like do it in Japan. Chinese company will supply all related necessary environment. The basic situation is as follows (Graph1).



**Graph1. The Basic Situation of Business OEM Model**

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The base of business OEM model is sharing of the process depend on difference acknowledgment. It means that to take action that is on the basis of understanding the value judgment differences between Japan and China. The business OEM model is made up of four elements as follows.

- 1) Management of Q&A which can solve the problem caused by value judgment difference.
- 2) Development procedures and quality management plus 7 means.
- 3) Talent training mechanism which can provide applicable talents at the necessary time.
- 4) Setting up and operation of joint venture.

Beside the joint venture, Chinese company should build the development base that can provide personnel. It provides special development teams for the joint venture and they are all working on the same process.

**3.1 Q&A Management for Value Judgment Differences**

In our practice, the same recognition can be obtained by questioning of a certain quantity. As in the case of software development, it is necessary to exchange questions (Q & A) by means of telephone or email, TV conferences and so on, to solve the difference of value judgment. Our practice is as follows.<sup>[6]</sup>

- 1) Setting Q&A Amount Indicator

The number of Q&A is one of the quality indices. It's set as 35 pieces/100 pages (corresponding to 7pieces / KL). The index will be revised once a year according to the execution condition.

- 2) Standardization of Q&A Description

About the description method or contents, use formatted sentences to reduce the misunderstanding. As a principle, the content of the questions are to be in forms of proposing three reasonable answers.

- 3) Confirmation of Replies for Q&A

We'd confirm whether it is necessary to analysis the influence range or to do the lateral spreading by the replies. Sometimes it is necessary to examine at early stage because it may influence the entire progress.

- 4) Q&A Situation Analysis

As the reference data of the project management, we use some tools to analyze, the situation of every module and the transition, such as the total situation of Q&A.

**3.2 Standardization of not Depend on the Certain Person – “Development Procedures and Quality Management” plus 7 Means**

To expand the business model, it is important to carry out the business not depending on a certain person. This is the second element of the business OEM model.

In order to achieve the goal of not being dependent on a certain person, we must develop very detailed criteria. That is “Development Procedures and Quality Management”. That all the projects are not exceptions to complying with this standard. 7 means they are added on the base of development procedures and quality management to form the mechanism of not depending on certain person. The 7 means are as follows.<sup>[7]</sup>

**Table3. 7 Means**

No	Contents of the Means
1	Before begin the dealings, customer's executives will execute the inspection to the site by, then they'll decide whether to start the dealings according to results of inspection.
2	After the start of the dealings, we require the customer to explain the specification of the first task at the spot of development site.

3	In the total process of the offshore development, “Development Procedures and Quality Management” standard is observed and executed thoroughly.
4	All the documents and sources related to the development will be saved at a common server and managed by the same folder constitution.
5	In each stage of the project, the number of Q&A is managed as one of the quality indices. Thus the questionnaire is managed.
6	The quality assurance department will check the standard observance situation of the project as a third party.
7	To require the estimation from the customer by a regulated route at the end of the development.

In this mechanism, even if there is a lack of experience, it is possible to carry it out even if there are many projects at the same time. No matter what kind of process the customer has, or wants, we can carry out the business in the same way. The goal of not depending on a certain person can be realized by this.

**3.3 Talent Training Mechanism to Provide Applicable Talents at the Necessary Time.**

It is the third element of OEM business. Because the business is carried out by talents, so it is key point to provide the applicable talents. To following the talent training mechanism, even the new staff that is completely amateur for information technology, as long as teach them the required minimal skill and knowledge for software development and strictly follow the development standard and quality management, they will do quite well. It can be achieved during only a few months’ thorough training.

The methods of training have the following characteristics.

- 1) Students are graduated from polytechnic majors and had studied some software development language.
- 2) Focused on Japanese education to achieve the ability of reading and writing in three months.
- 3) A thorough education of development procedures and practice in exercise project.
- 4) Exercise project which is managed as the same of the formal project centers on coding and unit testing.

Therefore, after some time of actual works, they can get the higher lever of development like module design and so on. When the joint venture has been set up, various experienced developers will be assigned to the joint venture as the key member. Like this talent training mechanism absorbs the new staff every year. After being trained into the experienced developer, they will be applied to the joint venture.

**3.4 Establishment and Management of Joint Venture in Business OEM Model**

The fourth element of OEM business is establishment of the joint venture that achieves win-win by exchanging the qualities.

The real win-win in the offshore business should be the equivalent exchange. The exchange of which is worthless for one's own side but it is very important for the other side, it is equal to each other and both will be satisfied with the exchange, in this meaning, it is an “equivalent exchange”. It is an exchange of qualities, not quantities. (Table4)

**Table4. Qualities in the Equivalent Exchange (Japan-China)**

Japanese Companies(Seeds)	Chinese Companies(Needs)
High technology	Marketing capability (propose ability)
High brand effect	Human affairs and labor power
High management ability	Procurement capacity
-	Licensing power

In the business OEM model we practice it by establishing the joint venture. The joint venture under the business OEM model is different from the past normal one. For the normal joint venture they cooperate with each other on the basis of fifty-fifty such as the balance of capital investment ratio and the number of staff and etc. The joint venture under the OEM model is not on the basis of fifty-fifty. We try to use the lowest

proportion of investment. We set up the rule that no matter of the types of business, as long as the scope can be covered by quality management mechanism, Japanese companies only need to order a necessary amount when it is necessary.

**3.4.1 Promotion Method of Business OEM Model**

For promoting the business OEM model, we introduced the concept of BPM. It means that the idea, the methodology, and the structure of approach to offshore development do not depend on BSE. In other word, there are composed of two factors, one is thorough management for the standard of “Development Procedures and Quality Management”. The other one is to make up the difference of the value criteria of the cross-cultural communication by “Process sharing depends on the difference acknowledgment”.

There are two qualifications: intermediate BPM (Business Process Manager), and senior BPM (Business Process Maker) <sup>[8]</sup>

Intermediate BPM is between the Japan companies and the development base who promote all the business and work related to the mechanism of the development. This role’s responsibilities include management of order, progress, quality, etc. In another word this person manages the business model. They are familiar with quality assurance mechanisms (7 means) and manage the offshore development in a systematic way. They aim to satisfy the customer’s requirement by understanding the customer and solving the problems.

The senior BPM make use of the advantage and characteristic of Chinese company to propose the solution for all the problems that happened with the offshore development when Japanese companies come to China. Also, the joint venture will be established efficiently as one element of the business OEM model.

BPM and BSE, the substance is different though the name is similarly. (Table 5)

**Table5. BPM and BSE**

Concept	Management Object	Requisite Ability
BSE	Project	Communication, Professional business knowledge, Development skill, Project management
BPM	Business process of company unit	Communication, Business planning, Presentation, etc.

Moreover, because BSE manages the project, it needs a large amount of BSE when the business scale increases. While BPM corresponds to the number of joint venture, the number of BPM can be achieved comparatively easily.

**3.4.2 Essential Factors of Establishing a Joint Venture**

To establish a joint venture, there are some essential factors that Japanese and Chinese companies should be capable of. (Table6)

**Table6. Requirement for Japanese and Chinese Companies**

Japanese companies	<ol style="list-style-type: none"> <li>1. Provide high qualities for exchanged by win-win mode at own fields skilled in</li> <li>2. Take the leadership of the joint venture and use the talented person resource of the Chinese side.</li> <li>3. Aiming at Chinese and world market</li> </ol>
Chinese companies	<ol style="list-style-type: none"> <li>1. Give up the leadership of the joint venture.</li> <li>2. Be able to providing the human resources anytime as necessary.</li> <li>3. Be able to meet the requirement of the joint venture.</li> </ol>

Because of having their own expertise, Japanese companies are equipped with high technology and brand strength which are the necessary qualities when they want to do equivalent exchange with Chinese companies.

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Moreover, Japanese companies always take the leadership of the joint venture by holding 80 percent or more capital. But, as to the human resource, Japanese companies just should to use the Chinese talents who are grown up on the software development base of Chinese companies.

When the Japanese companies begin to expand in Chinese market, Chinese companies will not only do the software development, they will also provide fully support to help solving the problems that are difficult for Japanese companies. This joint venture is becoming the base for Japanese company to exploit not only the Chinese market but also the global market.

Furthermore, because Chinese companies give up the leadership of the joint venture, Japanese companies needn't worry about whether their action policy be influenced by Chinese companies.

When a Japanese company advances to Chinese market, the problem they will be facing firstly is about the talent persons. Especially when they need a local top or senior manager, the recruitment of a well-qualified person is difficult. It's necessary for Chinese companies to solve this problem by establishing a system of talent training and continuing to keep up with the increasing demand for talent persons.

On the other hand, talent persons whom are provided by Chinese companies are promoting and carrying out the business, So Japanese companies need not be involved in the practical part of business. That is to say, they only need to concentrate on what to do originally. Chinese companies will do the practical part and make sure how to achieve the goal that the Japanese company has planned out. Therefore, the strength of the management, the personnel and the procurement is really required for Chinese companies.

### 3.5 Effect of Business OEM Model

With the operation of business OEM model, quality assurance organization specifically for the joint venture will work smoothly. As Chinese companies implement the mechanism initiatively, Japanese companies can obtain the result of good quality even if not understand the mechanism. All the problems caused by cross-culture communication and depending on the certain person can be solved by this way.

Under the business OEM model, Japanese companies need not worry about complex procedures for company registration /Preparation for the office /Local personnel management/Securing of excellent talent/Negotiation with the local government/License matters, etc. They only have to be concentrated on the duties or the business that they should do originally. That is to say, the fixed expense such as personnel expenses and the building, the machinery, etc. has turned into variable costs generated by a necessary order amount when in necessary. This is revolutionary change on business operation. Through this way, the troublesome problems of talent training and local management affairs can be solved, so, the business risk is reduced.

Any Chinese company with a short history and a lack of business experience can quickly develop strong management ability with the business OEM model from a Japanese company. As the business is expanding, the information system development and operation will bring a large amount of work without any business activities. By business OEM model the exchange of which is worthless for one's own side but it is very important for the other side, it is equal to each other and both will be satisfied with the exchange, in this meaning, it is an "equivalent exchange". Then we can reach "win-win" situation.

Merits for Japanese company and Chinese company are as the follows. (Table 7)

**Table7. Effects of Japanese and Chinese Companies on the Business OEM Model**

Japanese companies	<ol style="list-style-type: none"><li>1. Easy to progress the quality control mechanism (QC)</li><li>2. Easy to transfer the business from Japan to China with low risk.</li></ol>
Chinese companies	<ol style="list-style-type: none"><li>1. Be able to progress without any business action.</li><li>2. Be able to learn the advanced management and technology ability from Japanese companies.</li></ol>

Since the model was established, the estimation of project result which we got from customers is as the follow. (Figure2)

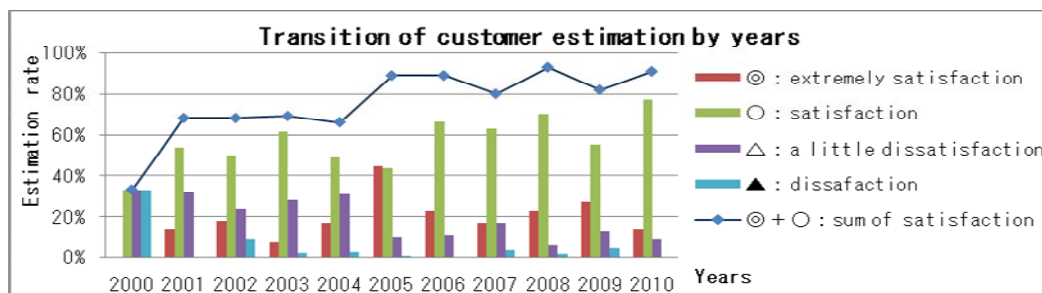


Figure2. Transition of Customer Estimation form 2000 to 2010

It's showing customer's satisfaction by the polygonal line. We began to introduce the process which is based on the recognition of value judgment standard in 2001, and promoted 7 means overall from 2005, and then in the flow that joint ventures are established from 2008, the customer's estimation is tending to be improving.

#### 4. Conclusions and the Future Challenge

Our practice proves that Business OEM model is effective and it not only has the merits of conventional models but also reduces the demerits of it.

Under this model, Japanese company and Chinese company achieve a win-win situation through "equivalent exchange". We establish a mechanism that carry out business on the same business process, set up joint venture the same way and supply the human resource, progress stably, earlier and cheaper. Japanese company can transplant their business to China smoothly. This is so-called "business OEM".

The win-win method of "equivalent exchange" is not limited to software development business. It can spread to all the other business fields theoretically.

Furthermore, besides China and Japan, all the other counties in the world are able to practice this model. Now it has expanded to China and Korea. We plan to cooperate with European and American companies under the business OEM model. It will be possible for the "equivalent exchange" contents can be replaced according to the countries characteristics. So far we have not a case on cooperating with European and American companies on the OEM model. We will take it as a topic problem to solve.

At present in Chinese development base, the problem of leakage of know-how has not happened because the work is mainly about coding and unit testing. In the future, when the higher lever work such as design is expanded in large scale, how to avoid the leakage of know-how will become another topic problem.

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