

# Improving Product Quality through Conflict Management: A Study of Hong Kong ODM Suppliers

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## **Abstract**

Client-supplier collaboration in new product development (NPD) has been a strategy in response to fierce global competition. Traditionally, Hong Kong suppliers collaborate with worldwide clients through original equipment manufacturing (OEM) arrangement in which suppliers manufacture products according to clients' design. In recent years, a growing number of Hong Kong suppliers have transformed to original design manufacturing (ODM) in which they are assigned a design responsibility other than manufacturing products. The ODM arrangement necessitates a close interaction between clients and suppliers, which brings about intense conflict. Conflict has been recognized as an important factor affecting NPD performance including product quality. This paper studies the conflict handling practices of Hong Kong ODM suppliers based on 87 survey data. The results show that the suppliers frequently adopt effective conflict handling practices by which they can develop products of good quality through better design decisions. The results also suggest that the use of ineffective conflict handling behaviors, particularly avoiding, should be reduced for better product quality.

**Key Words:** Conflict management, new product development, client-supplier collaboration

## **1. Introduction**

Keen global competition has intensified client-supplier collaboration in new product development (NPD). Manufacturing firms pursue the early involvement of suppliers in NPD for such benefits as better product quality, faster development and reduced development cost (Ragatz et al., 2002). Hong Kong suppliers have been competitive to manufacture products for worldwide clients through original equipment manufacturing (OEM) arrangement. In such a collaboration arrangement, suppliers manufacture products based on the detailed product

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specifications developed by clients. In recent years, the blooming growth of the manufacturing capabilities of the nearby regions, including Mainland China, Malaysia and Thailand, has posed a fierce threat to Hong Kong suppliers. Other than low-cost production, improved product quality has also boosted the competitiveness of the competitors. More Hong Kong suppliers response to the challenge by moving towards the frond end of product development cycle so as to provide more value to clients. Such transformation is often called original design manufacturing (ODM) in which suppliers not only manufacture products, but also responsible for designing products for clients. A survey found that 63% of Hong Kong manufacturers are involved in ODM business, indicating that ODM becomes a major manufacturing mode (HKTDC, 2003). According to HKTDC (2000), ODM refers to “the production arrangement under which manufacturers provide the pre-production services, mainly product development and detailed product design, as well as manufacture the products under overseas buyer’s label”. In ODM arrangement, suppliers design products based on the conceptual or preliminary requirements provided by clients. Although design responsibility is shifted to suppliers, clients often retain a dominant role in making design decisions. The product design developed by suppliers needs to be subject to the examination of clients who may present disagreement over the design. The disagreement is called conflict which is induced as a result of diverse belief, goal and constraint, etc. Conflict, which affects product quality (Lam and Chin, 2004b), is inevitable throughout NPD processes where suppliers are involved. Conflict could be functional and dysfunctional, depending on how it is managed. This paper studies the conflict handling practices of Hong Kong ODM suppliers in collaborative NPD.

## **2. Conflict management in NPD**

The inevitable nature of conflict has broadly been recognized (Kezsbom, 1992) (Barker et al., 1988). Deutsch (1973) stated that conflict exists whenever incompatible activities occur. In collaborative NPD, clients and suppliers may be incompatible in terms of goal, culture, working procedure and view on design issues, thus conflict is a nature phenomenon. In addition, the ODM arrangement necessitates a close interaction between clients and suppliers for making design decisions. In the highly interdependent relationship, conflict is intense (Jehn, 1995) (Wilmot and Hocker, 2001) and the conflict management could be very complicated. In this study, conflict is defined as disagreement among working parties about tasks being performed, including differences in viewpoints, ideas, and opinions.

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The consequences of conflict, positive or negative, mainly depend on how effectively it is managed. Researches on conflict management have constructed various models of conflict handling styles which describe the behavior for managing conflict (Blake and Mouton, 1964) (Hocker and Wilmot, 1991) (Thomas, 1990). One of the widely recognized models was developed by Rahim and Bonoma (1979) who identified five conflict handling styles, namely, integrating, obliging, avoiding, forcing and compromising. Rahim (2001) presented the descriptions of the five styles:

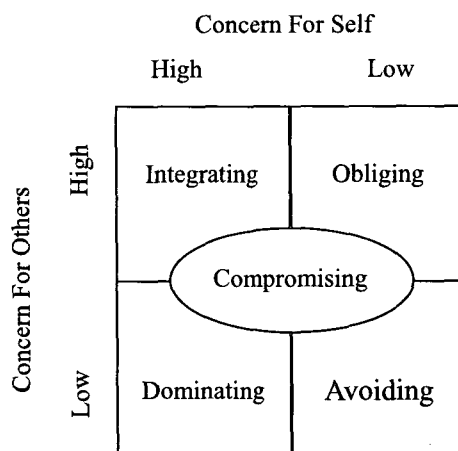
- Integrating** - It involves collaboration between the parties, i.e., openness, exchange of information, and examination of differences to reach a solution acceptable to both parties.
- Obliging** - This style is associated with attempting to play down the differences and emphasizing commonalities to satisfy the concern of the other party.
- Avoiding** - It may take the form of postponing an issue until a better time, or simply withdrawing from a threatening situation.
- Dominating** - This style has been identified with a win-lose orientation or with forcing behavior to win one's position. A dominating or competing person goes all out to win his or her objective and, as a result, often ignores the needs and expectations of the other party.
- Compromising** - It involves give-and-take or sharing whereby both parties give up something to make a mutually acceptable decision.

As illustrated in Figure 1, the model of five conflict handling styles was constructed on the basis of two dimensions. The first dimension is "concern for self" which indicates the extent to which a party tries to satisfy its own concern. The second dimension is "concern for others" which reflects the extent to which a party attempts to satisfy the concerns of others. It notes that "concern for others" shows the cooperativeness of a party in conflict resolutions. Integrating, obliging and compromising are cooperative styles, whereas avoiding and dominating are uncooperative styles. Many studies have found that cooperative styles are more effective than uncooperative styles (Rahim, 2001).

In NPD, various researches have studied the effectiveness of the five handling styles at an intra-organizational level (Gobeli et al., 1998; Xie et al., 1998). In an inter-organizational level, Lam and Chin (2004b) found that the five conflict handling styles have different relationships with NPD performance including product quality. Integrating and obliging correlate positively with product quality, indicating they are effective. Avoiding and

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dominating are ineffective as they associate negatively with product quality. Compromising, however, is a neutral style that has no relationships with product quality. The ways of conflict handling affect the quality of design decisions, thereby influencing product quality. This paper attempts to study the adoption of the five handling styles by Hong Kong ODM suppliers.



**Figure 1.** A two dimensional model of styles of conflict handling (Rahim and Bonoma, 1979)

### 3. Research methodology

The sample frame of the study was developed based on the Directory of Hong Kong Industries (2002-03) published by the Hong Kong Productivity Council. Questionnaires were successfully sent to 1328 manufacturing firms in the industries of electronics, toys, machinery, and watches & clocks. 245 questionnaires returned, forming a response rate of 18.4%. Out of the collected questionnaires, 87 responded that they are responsible for developing functional and engineering product specifications based on the conceptual ideas provided by clients, and manufacturing products. This paper is based on the data provided by the 87 respondents who are regarded as ODM suppliers. The measures for the five conflict handling styles were adapted from Dyer and Song (1998) and Rahim (1983). The details of the measures can be found in Lam and Chin (2003), with detailed analysis supporting the measures' reliability and validity.

#### 4. Results and discussion

Table 1 depicts the adoption of the five conflict handling styles by Hong Kong ODM suppliers. It notes that the adoption frequency of the styles can be split into two clusters. The first cluster is composed of frequently used handling styles which include compromising, integrating and obliging. The styles are either neutral or effective approaches. Avoiding and dominating, which are the ineffective handling styles, form the second cluster. From the results, we realize that Hong Kong ODM suppliers generally handle conflict in effective ways. They adopt effective approaches to handle conflict most of the times, and infrequently adopt ineffective conflict handling styles.

**Table 1.** Adoption of conflict handling styles by Hong Kong ODM suppliers

Ranking	Conflict Handling Style	Mean*	Standard Deviation
1	Compromising	6.09	0.94
2	Integrating	6.05	0.89
3	Obliging	5.49	1.03
4	Avoiding	2.78	1.25
5	Dominating	2.20	1.11

\*Seven-point Likert Scale: "1" indicates very infrequent, "7" indicates very frequent

Compromising is the most frequently adopted style. It is an approach that clients and suppliers both give up something to reach a mutually accepted solution. Compromising aims at satisfying both parties rather than optimizing a decision. Through compromising, conflict is resolved through arriving at a solution which is the intermediate between the preferred solutions of both parties (Thomas, 1990). As the judgments of both parties are incorporated in decisions, product quality, to some extent, can be assured. However, the adoption of compromising may not bring about high product quality as an optimized solution is not pursued there. Clients and suppliers have their own pursuits and constrains. When the pursuits of the two parties are incompatible or the constrains of the either parties cannot be released, compromising is an appropriate style.

Another prevailing handling style is integrating. In contrast to compromising, integrating strives for complete and mutual satisfaction through confrontation and problem solving

(Rahim, 2001). Amason (1996) argued that the synthesis of the diverse perspectives is superior to the individual perspectives themselves. A vast number of researchers have argued that conflict can lead to good decision making when it makes effective use of evidence and information from diverse perspectives (Cosier and Rose, 1977; Priem and Price, 1991; Putnam, 1994). By openly confronting and discussing conflict, conflicting parties are able to understand the alternative views and also see the limitations of their views (Tjosvold et al., 1992). A high quality decision can be reached when the opposing views are incorporated. The success of collaborative NPD relies on the joint effort of clients and suppliers. Most Hong Kong ODM suppliers are willing to adopt integrating for better product quality.

Hong Kong ODM suppliers also adopt obliging frequently. In collaborative NPD, suppliers usually have less influence than suppliers on design decisions (Kamath and Liker, 1994), which implies a power imbalance between clients and suppliers (Lam and Chin, 2004a). For client satisfaction and a long term relationship, suppliers apt to adopt obliging to resolve conflict. Quality of products is crucial to NPD, it is not uncommon for clients to demand strict quality requirements. Product quality is likely to be secured when suppliers are accommodating that attempts to meet the requirements of clients.

Avoiding is adopted less frequently by the suppliers. NPD is a complicated process that necessitates inputs from different perspectives. Conflict reflects discrepancies of the views of the two parties on design decisions, which indicates the existence of problems in achieving design objectives. The success of NPD, to a certain extent, depends on whether the diverse perspectives can be incorporated into design decisions. Thus, the quality of conflict resolutions seriously affects product quality. In most circumstances, avoiding is deleterious as it escapes conflict without facing with design problems.

Dominating, characterized by an uncooperative behavior aiming at pursuing one's own concern at the expense of other (Wilmot and Hocker, 2001), is the least frequently adopted style in the power-imbalanced relationship. The low figure indicates that Hong Kong ODM suppliers seldom employ dominating to resolve conflict. They recognize that dominating is not effective as clients may intensify arguments at later stages when they are unsatisfied with the outcomes of the insisted decision. As parties to design and manufacture products for clients, it is necessary for suppliers to satisfy clients rather than dominating.

## 5. Conclusion

Under the ODM arrangement, Hong Kong suppliers have involved more early and

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intensely in NPD. Conflict, as a natural phenomenon of collaborative NPD, must be managed in effective ways for securing product quality. This paper empirically studies the conflict handling practices of Hong Kong ODM suppliers. The results show that the suppliers adopt the effective styles more frequently than the ineffective styles. The suppliers incline to employ cooperative styles including compromising, integrating and obliging, which can resolve conflict in better ways. It is surprising that although avoiding ranks at the fourth place, its value is quite high. Avoiding is the most undesirable approach among the five handling styles as it is an uncooperative behavior that trying to evade problems. It does not lead to a real resolution of conflict, it would rather cause chronic conflict at the later stages of NPD. Based on the findings, we can conclude that Hong Kong ODM suppliers are adopting satisfactory conflict handling practices by which they can develop products of good quality through better design decisions. We suggest the suppliers should reduce the use of ineffective behaviors, particularly avoiding, to handle conflict with clients in collaborative NPD.

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