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Cross-functional relationships during NPD projects have received considerable research attention with an emphasis on achieving successful integration and avoiding harmful conflict. The purpose of this paper is to develop and test an exploratory model examining the effects of managerial signalling behaviour, at top management and functional level, on conflict in cross-functional working relationships. Focussing on working relationship between marketing managers and R&D managers in 184 new product development projects in Australia this study examines the antecedents of conflict as reported by the R&D Manager. This study provides empirical support for the proposition that while top management actions are useful in facilitating integration, the way a manager perceives their functional counterparts motives and intentions is a greater predictor of conflict within NPD projects.

Keywords

Does, managerial, signalling, behaviour, affect, conflict, during, NPD, projects, exploratory, study

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Does managerial signalling behaviour affect conflict during NPD projects: an exploratory study

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Key words; new product development, signalling behaviour, managerial interest, functional, dysfunctional conflict

Abstract

Cross-functional relationships during NPD projects have received considerable research attention with an emphasis on achieving successful integration and avoiding harmful conflict. The purpose of this paper is to develop and test an exploratory model examining the effects of managerial signalling behaviour, at top management and functional level, on conflict in cross-functional working relationships. Focussing on working relationship between marketing managers and R&D managers in 184 new product development projects in Australia this study examines the antecedents of conflict as reported by the R&D Manager. This study provides empirical support for the proposition that while top management actions are useful in facilitating integration, the way a manager perceives their functional counterparts motives and intentions is a greater predictor of conflict within NPD projects.

Introduction

When people interact they make judgments about each other based on previous experience and other evidence at hand (Blau, 1964). The way managers perceive other managers has long been of interest to integration researchers as it affects behaviours in the NPD process. As the role of senior management is to integrate functional specialists in complex NPD tasks, the role that interpersonal perceptions play in facilitating or hindering that process is relevant for the study of cross-functional working relationships.

The very nature of NPD work, with non-routine and time pressured decision-making, new technologies, shifting consumer demands, creates risk for the managers involved in terms of reputation and career. To achieve these goals functional specialists have to form effective working relationships with their counterparts, they have to integrate and behave in a harmonious manner (Griffin and Hauser, 1996, Song, Neeley and Zhao, 1996). Unfortunately, to complete their goals they have to rely on other people who often they have: (1) widely contrasting backgrounds and work experiences (Dougherty, 1992), (2) little or no experience of as they are not co-located (McDonough, 2000), (3) differing priorities and agendas (Workman, 1998), and (4) whom they often have no hierarchical power (Olsen, Ruekert and Walker, 1995). It is with these people that they are routinely

required to set NPD goals jointly, negotiate timelines, and resolve engineering and customer-need trade-offs (Gupta, et al 1986; Griffin and Hauser, 1996).

As such the NPD process does cause considerable conflict between Marketing and R&D personnel because of these conflicting goals, objectives and priorities (Gupta and Wilemon 1985; Souder 1981, 1988; Dougherty 1992; Workman 1998; Song, Xie and Dyer 2000, Dawes and Massey, 2005; Massey and Dawes, 2007). Much of the NPD integration literature has taken the traditional view of conflict as a negative which should be minimised or managed (Pondy, 1967, Souder, 1981, Shaw and Shaw, 1998). However, Menon et al (1996) proposed that conflict should be measured on two dimensions, firstly, as dysfunctional i.e., as unhealthy behaviours within an organisation such as the distortion and withholding information to hurt other decision makers, hostility and distrust during interactions ... and creating obstacles to impede the decision-making process and, secondly, as functional conflict i.e., which refers to the healthy and vigorous challenge of ideas, beliefs and assumptions. They found strong empirical support for functional conflict improving interdepartmental relations, communication quality, and "esprit de corps". Functional conflict leads to consultative interaction, with useful give-and-take among organisational members, where opinions and feelings are expressed freely, and where there is a willingness to consider new ideas and changes (Menon et al 1996).

In this paper we focus on cross-functional working relationships during the NPD. Specifically, technically trained manager's (other titles include R&D manager, Operations Manager, Technical Manager, Engineering Manager, Manufacturing Manager) perceptions of functional and dysfunctional conflict with the key marketing decision maker (other titles may include Marketing Manager, Marketing Director, Sales and Marketing Manager, New Products Manager) during NPD projects. Specifically, we the extent to which technical managers perceptions of functional and dysfunctional conflict are affected by *signalling behaviours*, the cues they take from managerial action (Song, et al 2000) from top management as well as from their functional counterparts behaviours. We do so by two new formative scales to measure top management interest and managerial level interest in the NPD project and include these in our conceptualization.

We focus on signalling behaviours as Souder (1981) in his seminal work examining disharmony between marketing and R&D functions concluded that top management management should take a proactive stance toward the R&D/marketing interface problems, breaking projects into smaller ones, avoiding power and status differentials, rotating personnel, encouraging dyadic relationships at lower organisational levels, using new product committees, implementing open door policies, selecting effective project managers, using nominal-interacting meetings, and developing decision authority policies. Such top management behaviour is designed to improve functional interactions and working relationships, we extend this approach to the functional managers and examine to what extent their behaviours in facilitate better relationships during NPD projects.

The paper is structured as follows. First we present the main theoretical framework we draw upon, then we introduce, define, and justify our choice of antecedent and outcome variables. Next we present our model and hypotheses, our methodology, and details regarding the measurement and operationalization of our variables. Last, we

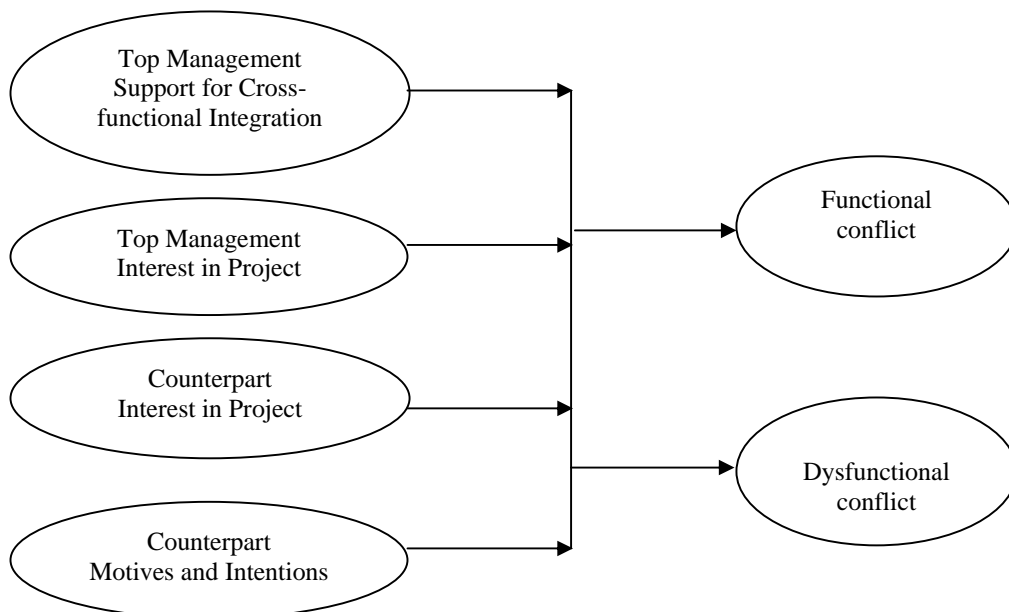
discuss our results and their implications, limitations of the paper, and directions for future research.

Theoretical Framework

Within the context of NPD work much emphasis has been on the role of effective communication (information processing perspective) and the NPD systems approach on preventing dysfunctional conflict by better integrating the functions. The information processing perspective of NPD clearly identifies information transfer between Marketing and R&D as one of the key antecedents to effective cross-functional working relationships (CFRs) and NPD success as it breaks down misunderstandings, thought worlds and silo walls (Ruekert and Walker 1987; Dougherty, 1992; Moenaert et al, 1992; Brown and Eisenhardt, 1995). Whereas the NPD systems approach structural and process approaches focus on top managements role in providing formalized processes with the intent that mutual understanding and conflict resolution can occur through interaction (e.g., Ayers, Dhalstrom, and Skinner, 1997; Olson, Walker and Ruekert, 1995).

This research draws upon the interaction approach to cross-functional relations, a theoretical framework that has been used in many important studies of marketing's relationships (e.g., Ruekert and Walker 1987; Moenaert *et al* 1994; Fisher, Maltz and Jaworski 1997), and focuses on how factors such as communication predict satisfaction, performance, and relationship continuity in various contexts, e.g., buyer-seller and channel relationships (e.g., Anderson and Narus 1990; Morgan and Hunt 1994), and cross-functional relationships (e.g., Ruekert and Walker 1987). The interaction approach is an appropriate theoretical framework, as it relates to communication between functional specialists (Moenaert *et al* 1994).

Figure 1: Hypothesized Model of Managerial interest and Conflict outcomes



Key Conflict Outcome Variables and Hypotheses

Outcome Variables: Functional and Dysfunctional conflict. March and Simon (1958) defined conflict as the “breakdown of the standard mechanisms for decision-making (p.891)”. When two parties interact there are inevitably going to be *differences of opinion* or *conflict*. In this paper we use Menon et al’s (1996) definitions of conflict and define dysfunctional conflict as unhealthy behaviours within an organization such as distortion and withholding information to hurt other decision makers, hostility and distrust during interactions. Whereas functional conflict is the healthy and vigorous challenge of ideas, beliefs and assumptions.

Antecedent variables: Brown and Eisenhardt (1995) find that senior management *support* is critical to successful new product development activities (c.f Cooper and Kleinschmidt, 1985, Gupta and Wilemon, 1990) where support is provided by the way of resources to project teams, political and financial. Therefore, drawing on this perspective we examine the role that top management have in facilitating effective cross-functional relations and also their signalling role in terms of their behaviours.

Top Management Support for Cross-Functional Linkages: The role of organizational climate in facilitating functional integration has been of key interest to NPD researchers for a considerable period of time (Souder 1981, Gupta, Raj and Wilemon, 1988, Ruekert and Walker, 1987). Souder (1981) emphasizes the role of top management and their actions in providing an organizational climate which will promote integration between functions and avoid the dysfunctional “Severe Disharmony” state which he identified as existing in many organizations between R&D and marketing functions. McDonough (2000) identifies that management support is an important factor in effective NPD teams as they enable, support, and motivate team members to overcome obstacles. Song et al (2000) also provide empirical support for top management support for organizational linkages as an important factor in effective cross-functional integration thus showing that they value effective cross-functional working relationships. Swink (2003) found that top management support (TMS) for NPD projects in terms of vision, clear direction, enthusiasm, priority and access to resources had a strong positive effect on NPD success. Such top management support not only provides the necessary financial and political resources but also signals that the organization values cooperation. As co-operation is an element of functional conflict, we hypothesize:

*H1: The greater the **top management** support for cross-functional integration (a) the higher the level of functional conflict, (b) lower the level of dysfunctional conflict between the functional managers*

Top Management Project Interest: A separate yet related concept is that of top management interest in the NPD project. Sethi (2000) argues that top management involvement helps develop a super-ordinate team identity which overcomes functional differences in the pursuit of resources necessary to complete the project. More recently, Im and Nakata (2008) found that active top management involvement in terms of monitoring NPD project progress and emphasizing the importance of new products to

firms success had a positive effect on cross functional integration. This was due to top management involvement acting a subtle control mechanism which facilitates positive interactions and reduces conflict. Accordingly we hypothesize that:

*H2: The greater the **top management** interest in the project (a) the higher the level of functional conflict (b) lower the level of dysfunctional conflict between the functional managers*

Marketing Manager Project Interest: Gouldner's (1960) principle of reciprocity suggests that people will respond in kind to positive behaviour from others. This is seen as a foundation many relationships, interpersonal and professional. So expanding this principle to interactions between functional managers is important as studies have shown that these specialists often focus on their own departmental issues and become reluctant to engage with others on NPD issues. (Dougherty 1992; Fisher, Maltz and Jaworski 1997). We argue that in the case of one functional manager *signalling* their commitment to the project through their actions will help overcome many of the causes of conflict (Shaw and Shaw, 1998) and be a positive factor in the working relationship. Accordingly we hypothesize:

*H3: The greater the **counterpart manager** interest in the project (a) the higher the level of functional conflict, (b) the lower the level of dysfunctional conflict between the functional managers*

Marketing Managers Perceived Motives and Intentions: Smith and Barclay (1998) define this as the extent "to which partners perceive the purpose or agenda behind the other's actions as being benevolent or benign; it is concerned with underlying causes of behaviours p.6". An assessment of whether or not your counterpart will take advantage of you or not will have an effect on your behaviours towards that person, especially in regards to making oneself "vulnerable" to their actions. This is particularly important in interdependence situations where managers can engage in defensive or monitoring behaviours if they are unsure of the intentions of the other manager (McAllister (1995). Smith and Barclay (1998) found that benevolent motives and intentions had a strong predictive effect on relationship investment. Accordingly, it is hypothesized that:

*H4: The greater the **counterpart manager** belief that the Marketing manager has positive motives and intentions (a) the higher the level of functional conflict, (b) the lower the level of dysfunctional conflict between the functional managers*

Sampling Procedure, Operational Measures and Model Testing

Data was collected from R&D Managers in Australian firms, acting as key informants on the relationship with their counterpart Marketing Manager. The survey used a pretested, mailed, self-administered questionnaire. This resulted in a 184 usable responses, a net response rate of 54%. The sample of 184 firms comprised mostly goods producers (96.2%), while the remainder (3.8%) were software producers. Consumer marketers accounted for 47.0%, B2B 23.5%, and 29.5% sold into both markets.

There were two new formative scales developed for this study; top management interest and marketing manager interest in the project. The 3 items include the extent to which managers (1) showed great enthusiasm for the project, (2) closely followed the progress of this project, (3) made all of their resources available for the project.

Partial Least Squares (PLS) was used to estimate our structural model as: (1) the primary concern is prediction of endogenous variables (cf. Chin 1998; Diamantopolous and Winklhofer 2001; Fornell and Bookstein 1982), (2) both formative and reflective measures are used, (3) PLS allows the use of constructs that are lower in theoretical development, without as great a risk of model misspecification (Chin 1998), (4) no assumptions are made about multivariate normality, and (5) the final sample size is not large ($n = 184$). The stability and significance of the parameter estimates were established by computing t-values using 500 bootstrap samples. See Table 1 for results.

Table 1: Antecedents of Functional and Dysfunctional Conflict

Construct	Hypoth. Sign	Beta Coeff	T-values
Top Management Support for Cross-functional Integration → Functional Conflict	H1a (+)	0.284	3.596**
Top Management Support for Cross-functional Integration → Dysfunctional Conflict	H1b (-)	0.005	0.071
Top Management Interest in Project → Functional Conflict	H2a (+)	- 0.096	1.307
Top Management Interest in Project → Dysfunctional Conflict	H2b (-)	0.005	0.066
Marketing Manager Interest in Project → Functional Conflict	H3a (+)	0.276	4.212**
Marketing Manager Interest in Project → Dysfunctional Conflict	H3b (-)	- 0.294	4.086**
Marketing Manager Motives and Intentions → Functional Conflict	H4a (+)	0.424	5.837**
Marketing Manager Motives and Intentions → Dysfunctional Conflict	H4b (+)	- 0.505	7.070**

* $p < 0.05$ ** $p < 0.01$ One-tailed tests.

Results and Managerial Implications

The purpose of this study was to examine the extent to which signalling behaviours during NPD projects affected functional and dysfunctional conflict. Five of the eight hypotheses were supported. As expected top management support for cross-functional integration had a positive effect on functional conflict providing further evidence that proactive top management actions can facilitate better functional relationships. Surprisingly, top management interest did not have any effect on conflict. In contrast the marketing manager's project interest had a strong positive effect on functional conflict indicating that the technical managers took significant cues and responded positively to the actions of their counterpart during the project. Similarly, when the marketing manager was viewed to have positive motives and intentions there was a strong positive effect on functional conflict, whereas the strongest effect in the model was when the technical managers perceived that there were negative motives and intentions, with a strong negative effect on dysfunctional conflict.

This study provides empirical support for the proposition that while top management actions are useful in facilitating integration, the way a manager perceives their functional counterparts motives and intentions is a greater predictor of conflict within NPD projects. The main implications of these findings for top management are

that emphasis should not be placed solely on their proactive approaches to integration but that they should focus on the eliminating any sources of mistrust or doubt that may exist between functional managers over differing reward systems, resource disputes, and competing research priorities. A focus on the functional manager relationship from a socio-political perspective may be warranted to ensure that potentially harmful politics do not emerge to the detriment of working relationships and new product success (Gandz and Murray, 1980; Vigoda, 2000).

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