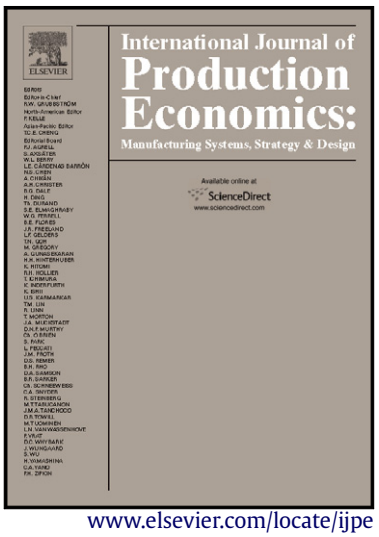

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So many mechanisms, so little action: The case for 3rd party supply chain coordination

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Abstract

Supply chain coordination (SCC) has been an area of intense interest for a while from multiple perspectives. Some focus on coordination models and mechanisms while others concentrate on collaboration methodology and practitioner experience. Little research has attempted to bridge these separate streams of research in a meaningful way. A proposal is made to use an independent and neutral third party coordinator to address the reported low application rates of the many coordination techniques available in the literature. A model is developed and payment options explored. A numerical example is presented.

Keywords: Supply chain integration, Supply chain collaboration, Supply chain coordination

1. Introduction

The literature exploring the areas of supply chain coordination (SCC) and supply chain integration (SCI)[1] is split into at least two major categories. The prior addresses the theoretical issues of supply chain optimization via specific models and coordination mechanisms. The latter typically takes a more holistic or system-wide approach to evaluating the performance of supply chains. These typically rely on empirical evidence of collaboration and coordination via surveys or case studies. A common conclusion in the surveys of practitioners reveals a staggeringly low utilization of the available mechanisms (Storey et al., 2006). Various reasons are cited for this low usage. The most commonly referenced reasons include low managerial ability or understanding (Lambert and Cooper, 2000; Ballou et al., 2000; Simatupang and Sridharan, 2002; Holweg et al., 2005), lack of experience (Fisher et al., 2000), and relatively powerful (non-cooperative) supply chain members (Simatupang and Sridharan, 2002). Some authors have even asserted that many or most company cultures are not currently capable of meaningful collaboration (Ireland and Bruce, 2000; Barratt and Green, 2001). These cultures, perhaps through historical inertia, undervaluing of collaboration, or some other combination of the above cited reasons, will actively dissuade and effectively deter any individual attempts at collaboration. However, it is a well accepted notion through both theory and experience that, overall, collaboration will improve the bottom line of participating firms (Park, 2005; Vereecke and Muylle, 2006; Van der Vaart and van Donk, 2008; Cao and Zhang, 2010; Prajogo and Olhager, 2012), so it is not surprising that improving collaboration remains a highly prioritized goal for many managers (Fawcett and Magnan, 2002). Because of such lack of collaboration between supply chain members, this paper seeks to redress the apparent disconnect between theory and practice through the introduction of a mediating third party.

It is difficult to expect small companies to have the time, the resources, the negotiating power, or the will required to effectively implement an advanced inventory coordination system. These firms, especially in highly competitive fields, may be satisfied to accept sub-optimal contract terms in an effort to increase utilization or improve cash flow. Larger firms have the resources and negotiating power required for an effective action, but it has been shown that those in the dominant position will use their power to maximize their individual profits instead of a joint maximum (Simatupang and Sridharan, 2002). Even firms that are relatively equal in size may be hesitant to adopt joint coordination for myriad reasons, predominantly centered on protecting market size information or other information viewed as proprietary (Fawcett and Magnan, 2002; Verespej, 2002). For an extreme example, consider the double marginalization problem, seen with multiple monopolies (or other firms with similar price setting capability) in a serial supply chain, where there are considerable losses and inefficiencies introduced due to the locally-optimizing behavior of the firms.

As Cachon (2003) points out, there is abundant literature on theoretical models but "little guidance on how the theory should now proceed." Much of the coordination literature presumes a spontaneous agreement between the buyer or seller to collaborate, or a dominant player that

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[1] We will use the terms integration and collaboration interchangeably, but it should be noted that some authors differentiate these terms (See e.g. (Cao and Zhang, 2010))