Research project and supervisor team

Supervisory Team	Supervisor Name (better to hyperlink staff profile page) Prof. Patrick Chau Dr. Jenny Pu
Short introduction & description of research project	**Leveraging inter-organizational IT capabilities to achieve multi-tier supply chain resilience** The COVID-19 pandemic has exposed the vulnerabilities of global supply chains and highlighted the importance of improving supply chain resilience to flexibly respond to and recover from disruptions. Because traditional supply chain management practices have mainly focused on tier-one suppliers, most firms failed to establish effective communication channels with lower-tier suppliers. These "invisible" lower-tier suppliers present significant risks because unexpected events at one point in the lower-tier chain can have a ripple effect disrupting the entire network. Therefore, the key to improving supply chain resilience is to enhance information visibility into lower-tier suppliers to track supply chain risks and take preventive measures. However, past studies have mainly adopted a bilateral relationship perspective, which fails to take into account the complex, multi-tier nature of supply chain network. The multi-tier structure of supply chains not only exacerbates their vulnerability to external risks, but also increases the complexity of developing supply chain resilience. **This study aims to address the current gap in the literature and practice by investigating the mechanisms facilitating supply chain resilience from the perspective of multi-tier supply chains.** To improve the visibility of multi-tier supply chains, it is imperative for firms to establish digital connections with key suppliers at various supply chain tiers (Saraf et al., 2007; Rai and Tang, 2010; Rai and Tang, 2014). This highlights the importance of developing inter-organizational IT capabilities to facilitate the integration of information flows in supply chain networks. However, the inconsistent information exchange standards and heterogenous information systems of different supply chain partners have created immense challenges for a focal firm to exploit IT capabilities to facilitate inter-firm information sharing. In addition, the extent to which a focal firm could leverage inter-organizational IT capabilities to improve supply chain visibility hinges on the network structures of its suppliers. If a supplier has more supply chain partners, the broader and more heterogenous the information it could provide to the focal firm, which may enable the focal firm to achieve greater information visibility by leveraging IT capabilities. Therefore, it is important for a focal firm to assess the network

	structure of its suppliers to deploy appropriate inter-organizational IT capabilities to maximize information visibility and promote supply chain resilience.
	The objectives of this PhD project are three-fold. First, it aims to investigate how to deploy and balance different inter-organizational IT capabilities to enhance the depth and breath of multi-tier supply chain visibility. Second, it will explore how the network structure of suppliers will enhance the potential of inter-organizational IT capabilities in facilitating supply chain visibility. Third, this project will examine how multi-tier supply chain visibility will help firms enhance supply chain resilience. This study will collect both primary and secondary data to address the methodological limitations previous studies to derive complex supply chain network maps and quantify supply chain visibility.
Contact points	Candidates who are interested in this project may first contact Dr. Jenny Pu <jenny.pu@nottingham.edu.cn> for more details of this project.