Institutions and Public-Private Partnerships: 
Learning and Innovation in Electronics Firms in 
Penang, Johor and Batam-Karawang 

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Abstract: Using the systemic quad model, this paper seeks to examine the extent to which electronics firms are linked with the critical pillars of basic infrastructure, high tech infrastructure, global integration and network cohesion, and their impact on knowledge depth and technological capabilities in Penang, Johor, and Batam-Karawang. Penang’s superior systemic quad is reflected in higher firm-level knowledge depth and technological capabilities compared to Johor and Batam-Karawang. It is only in HR practices that technological capabilities of electronics firms in the three locations are not very different. The results show that attempts to stimulate technological catch up will require policy efforts to strengthen the four critical systemic pillars.