

Chapter 9

Conclusion

Abstract Drawing on historical evidence and recent empirical data on the Vietnamese motorcycle industry collected through repeated rounds of in-depth fieldwork, this book has shown that (1) suppliers learning trajectories in this industry evolved over time, resulting in a divergence in learning performance across suppliers in later stages of industrial development and (2) the diverging performance can be explained by the combination of roles played by lead firms in inducing and facilitating supplier learning and the roles of suppliers in mobilising their own sources of knowledge. These findings not only provide highly dynamic and insightful accounts of supplier learning in a developing country context but also make key theoretical and methodological contributions to the research on value chain participation and supplier learning.

Keywords Supplier · Capability building trajectory · Capability building mechanism · Power of longitudinal research · Mutual influence by lead firms and suppliers

One of the major challenges for developing countries seeking to develop their own competitive industries is amassing a substantial pool of component suppliers equipped with sophisticated capabilities. This book attempted to look into the processes and mechanisms by which developing country firms starting at a low level on the technological ladder accumulate key capabilities over an extended period of time. Through an in-depth examination of the transformation of the Vietnamese motorcycle industry over the period of a decade, this book specifically examined the following two research questions.

Question 1: *How did local suppliers' capability building evolve from the late 1990s?*

Question 2: *What actor constellations and what knowledge flows led to critical learning events?*

This concluding chapter starts by summarising the findings of the empirical analysis of the Vietnamese motorcycle industry corresponding to the two research questions. Then, it discusses the wider implications of the empirical findings—for

general understanding of firm-level capability building in developing country suppliers and for the methodology to conduct research on capability building processes and mechanisms. This is followed by a brief discussion of the transformation of the Vietnamese motorcycle industry after 2009 and its implications for the findings of this book. The chapter ends by discussing the limitations of the analysis and suggesting the areas where further research is needed.

9.1 Empirical Findings of the Book

With regard to the first research question, the empirical analysis revealed the evolving capability building trajectories of local suppliers over time. Prior to entering the motorcycle value chain, the majority of the suppliers possessed very rudimentary levels of new product introduction and/or production capability that were barely sufficient to supply simple products such as household metal or plastic products, components for bicycles or agricultural machinery, or replacement components for domestic consumers. The only exceptions were a number of suppliers set up by managers and engineers after accumulating skills and experience via working in foreign-invested companies.

Towards the end of the period under investigation, suppliers had accumulated much more advanced levels of capability, although divergence was observed in learning performance even across suppliers participating in the same value chain, not to mention suppliers participating in different types of value chains. High-performing suppliers had even made significant headway in acquiring basic innovative levels of new product introduction or production capabilities—such as the capability to process high-precision engine components to the requirements of a major global motorcycle manufacturer, the capability to implement continuous improvement to production processes for meeting increasingly demanding quality and delivery requirements, and the capability to make minor functional or cosmetic modifications to the existing component designs in accordance with the consumers' needs. These suppliers are likely to become the bedrock not only for Vietnam's motorcycle industry but more generally for the country's mechanical engineering industry, as the types of capabilities acquired by these suppliers can be applied to activities in a wider variety of industries.

Findings with regard to functional types of capabilities were largely in line with the existing literature, but the systematic application of the classification of capabilities has made it possible for this research to provide important additional insights. Consistent with the literature, the types of capabilities acquired by the suppliers were loosely associated with the types of value chains in which the suppliers participated. That is, learning in Japanese chains concentrated overwhelmingly on production-related capabilities, whilst learning in Vietnamese–Chinese chains was observed in both new product introduction and production-related capabilities. However, our empirical analysis found variations among suppliers in Japanese chains with regard to the domains of emphasis, i.e., either

equipment-related activities and/or production management. Likewise, variations were observed among suppliers in Vietnamese–Chinese chains as well. Whilst most suppliers failed to invest in learning beyond routine activities in any of the functional categories, a few suppliers explicitly focused on the acquisition of new product introduction capabilities.

Most importantly, regardless of the type of motorcycle production value chain in which suppliers participated, the biggest leaps in capability level experienced by case suppliers were overwhelmingly concentrated in Stage III of industrial development. Although the China shock did bring about stimulus effects to firms in Japanese and Vietnamese–Chinese chains, the in-depth analyses presented in this book suggest its effects on suppliers' capability building turned out to be relatively modest. Despite largely neglected in the existing analyses of the Vietnamese motorcycle industry, Stage III was the most dynamic period in the history of the industry as lead firms and suppliers were released from the arbitrary and unstable policy environment that had prevailed in the previous period. It was only in Stage III that high performers in Japanese and Vietnamese–Chinese chains started to acquire basic innovative levels of capability in production and new product introduction activities, respectively. The findings also identified low-performing and/or intermediate groups in both Japanese and Vietnamese–Chinese chains, thus suggesting a growing divergence in learning performance across suppliers.

These findings, however, need to be interpreted with caution. As the cases were selected strategically rather than randomly, the results clearly show the heterogeneity of learning paths across suppliers but do not reveal anything about how prevalent each of the emerging patterns was. Considering that local suppliers have come to face high barriers to entry and intense competition in both Japanese and Vietnamese–Chinese chains by the latest stage of industrial development, the cases of high performers analysed in detail in [Chap. 8](#) are likely to be generalisable only to a narrow group of suppliers operating in the Vietnamese motorcycle industry. Nevertheless, considering the advanced capabilities these suppliers acquired, they are likely to be among the core companies driving the development of the local mechanical component industry in Vietnam.

Albeit subject to limitations, the above findings do make an important contribution to the research on firm-level capability building in empirically showing that capability building among suppliers at the lower end of the technological trajectory was an evolutionary process involving major leaps, slow progress, and/or even halted learning at different points in time.

With regard to the second research question which is concerned with the sources of supplier learning, the literature emphasises constellations that focus on *either* of the two main actors: the lead firm as the key actor structuring learning opportunities within value chains, or suppliers as the very agent of capability building. This book took the analysis of actor constellations as its starting point but then went further to examine the specific knowledge sources that contributed to key learning events.

This book elaborated on the mechanisms of supplier learning as two distinct learning models, i.e., the Japanese model characterised by thick one-way flow of

knowledge from the lead firm to its suppliers, and the Vietnamese–Chinese model based primarily on the suppliers’ own initiative in the mobilisation of internal sources of knowledge with limited knowledge flows between the lead firm and its suppliers. The contrasting learning models stemmed out of the distinct strategies pursued by the respective lead firms and suppliers.

Moreover, the analysis went further in exploring the evolution of the two learning models. It demonstrated that the roles played by lead firms and suppliers in Japanese and Vietnamese–Chinese chains changed over time, and that such changes were indeed critical in explaining the trajectories of supplier learning over the three stages of industrial development. The Japanese learning model initially combined active lead firm intervention and suppliers’ mobilisation of internal resources in accordance with the guidance of the former. However, over time, this model was transformed into two distinct variants—one providing greater scope for suppliers’ innovative initiatives in internal resource mobilisation to influence learning outcomes, and the other characterised by even more powerful intervention and guidance on the part of the lead firm. On the other hand, the Vietnamese–Chinese model was initially based on suppliers’ independent learning but eventually came to be characterised by a two-way knowledge flow driven by attempts by suppliers to actively engage with a large number of customers.

In summary, these empirical findings point to a much more dynamic picture of and provide greater insight into local supplier learning in the Vietnamese motorcycle industry than that illustrated by previous empirical research that relied on static analyses of a very small number of cases. In the recent dynamic Stage III of Vietnamese industrial development, supplier learning not only progressed to significantly advanced levels but was also driven by mechanisms that were qualitatively different from those in the previous two stages.

9.2 Implications for Research on Capability Building among Developing Country Suppliers

The empirical findings summarised above are significant in their own right. However, the results also make contributions of much more general relevance, specifically to the understanding of the trajectories and mechanisms of the development of local suppliers in developing countries as well as to the methodology for conducting empirical research on such trajectories and mechanisms.

First, the present analysis showed that the firm-level capability building trajectory was an evolutionary and non-linear process involving major leaps and slower and even halted learning at different points in time. The earlier analyses of the evolutionary dimension of firm-level capability building are based on single case studies of leading large-scale corporations acquiring sophisticated capabilities. This book, by contrast, highlighted the heterogeneity of learning paths across small suppliers at the low end of the technological trajectory. A notable feature of

the present analysis was the application of a systematic framework for assessing different types and levels of capabilities across different firms. The in-depth analyses of supplier learning trajectories identified a supplier progressing directly from the operational level to the adaptive level bypassing the assimilative level (i.e., the new product introduction capability of supplier B4—a typical case of a *leap*), as well as several suppliers failing to make progress during more than a decade (examples of *halted learning*).

Second, this book showed that supplier learning is indeed explained in terms of the interactions between two actors—namely, the lead firm and the suppliers—and that the relative roles of such actors may change over time. Whilst the importance of integrating the analysis of the endogenous process of firm-level capability development with the understanding of mechanisms allowing the flows of knowledge between actors in GVCs has been proposed (Morrison et al. 2008), systematic empirical analysis was yet to be conducted to date.

The empirical analysis presented in this book demonstrated that the dynamic of capability building is one of exerting mutual influence by both the lead firm and the suppliers. Even in Japanese chains, where the power and dominance of the lead firms have often been emphasised, suppliers were not necessarily passive implementers of what lead firms demand. The in-depth comparative analysis of Stage III showed that suppliers, through their own actions, could influence learning outcomes and even induce the lead firm to adjust allocation of orders and other sourcing practices—albeit within the constraints of the lead firm’s overall sourcing strategy. Where lead firm capability is limited—as was the case in Vietnamese–Chinese chains, suppliers may even become the key actor driving partial yet significant transformation of value chains away from market linkages. Although the paucity of capabilities possessed by the suppliers may have limited the extent of the transformation, the changes noted above were nevertheless critical in transforming Vietnamese–Chinese chains and generating competitive pressure on Japanese lead firms in the Vietnamese context. Where suppliers manage to acquire highly advanced capabilities, more dynamic industry-wide co-evolution may result.¹

This book also makes a key methodological contribution by elaborating a systematic method for tracing the processes of change involving multiple flows of knowledge over an extended period of time, and by demonstrating the application of such a methodology in fact makes a significant difference in terms of the findings derived.

Specifically, this book integrated the essence of the GVC and TC approaches—a challenge that was identified by Morrison et al. (2008) but had not been implemented in previous empirical analyses of supplier learning. Such a synthesis was achieved by combining two analytical apparatuses developed for the present study: (1) a conceptual framework that considered the roles of both lead firms and

¹ The most prominent examples are the Taiwanese electronics industry (Sturgeon and Lee 2005) and the Indian software industry (Lema 2010).

suppliers in shaping learning trajectories and (2) an event-based approach designed to analyse the trajectories of firm-level capability building. Together, these analytical apparatuses made it possible to systematically trace the complex and multiple knowledge flows that contributed to supplier learning and to effectively observe changes over time.

The empirical application of the above approach to analyse the trajectories of supplier learning indeed demonstrates the power of longitudinal research because the timing of analysis did have a profound impact on the judgement of capability building at small developing country suppliers. The earlier literature is characterised by static analysis that associates each functional capability acquired with a certain type of value chain because the research only addressed the less dynamic period of learning up to the early 2000s. By extending the coverage to include a more recent period of capability building, the present book found a remarkable dynamism and heterogeneity of learning trajectories even among those suppliers that participated in the same types of value chain.

In this respect, this book is an important addition to the stock of longitudinal research on firm-level capability building (Bell 2006). While Bell (*ibid.*) argues for the power of longitudinal research drawing on studies of particular industries conducted by different researchers at different points in time (which are likely to be conducted according to different conceptual frameworks and methodological approaches), the present book pushes the research frontier a step further by utilising a single decade-long longitudinal study of a fixed set of strategically selected firms that adopts a fixed conceptual framework and methodology—and done by the same researcher—to demonstrate that judgements about capability building in fact change remarkably depending on the timing of the observation.

The case study design adopted in this research also deserves attention. Whist the bulk of the existing empirical analyses of firm-level capability building have adopted either in-depth examination of one or a few critical cases (Figueiredo 2000, 2002; Dutrénit 2000) or quantitative analyses of large numbers of samples with the aim of testing a limited number of specific hypotheses (Romijn 1999; Calghirou et al. 2004), this study deliberately chose to conduct in-depth analysis of a mid-sized sample selected on the basis of theoretical sampling. In a way, such a research design made it possible to combine the benefits of the two approaches: (1) the in-depth case study approach, which makes possible to analyse the evolving learning trajectories over time and diverse knowledge flows that conducted to the key learning events, and (2) the incorporation of a sufficiently large number of samples, which makes it possible for the research to accommodate the wide heterogeneity of learning trajectories across suppliers. The advantage of the former approach is most evident in the analysis of transformation of learning mechanisms in a small number of the most illuminating cases in a later stage of industrial development (Chap. 8), while the benefit of the latter approach is most clearly observed in the aggregated analyses of the learning trajectories and learning mechanisms in the earlier stages (Chaps. 6 and 7).

The methodological approach and design adopted by this research is likely to be useful for analysing fast-changing industries driven by active involvement of both

lead firms and suppliers as well as industries in which dominant players are in a constant state of change. In such industries, research that systematically traces the complex and multiple knowledge flows that contributed to supplier learning over time, paying close attention to the heterogeneity across cases, may shed light on dimensions of supplier learning that would have been difficult to grasp with conventional methodological approaches.

9.3 Development after 2009 and Its Implications

The Vietnamese motorcycle industry made significant headway during the decade covered by this study. Although the industry remains heavily protected from imports, there are indications that it has steadily raised its performance, and the virtuous cycle of a growing market, the formation of a component supply base and increasing productive performance have begun to turn.

Can Vietnam continue to develop its motorcycle component supply base further to become regionally competitive in the Southeast Asian motorcycle industry? Will the development of the component supply base continue to be driven by the two learning models outlined in this book? Although any answer to these questions must remain speculative, developments after 2009 suggest that the growth of the industry is likely to be increasingly driven by the Japanese for the foreseeable future. In 2011, the country's total motorcycle sales climbed to 3.34 million units, with the three incumbent Japanese manufacturers (Honda, Yamaha and Suzuki) accounting for 79 % of total motorcycle sales (Industrial Research Institute 2011). In the meantime, the share of local assemblers had dropped to 8 % (ibid.). Japanese motorcycle manufacturers continued to make large-scale investment in Vietnam,² not withstanding the government's announcement in 2008 of a reduction of tariffs on imports of motorcycles from ASEAN countries to 60 % by 2013.³

Moreover, there are signs that the competitiveness of Vietnam's component manufacturing industry has also been significantly strengthened, driven primarily by further consolidation of the Japanese learning model outlined in this book, i.e., imposition of challenging QCD targets by the lead firm and tight monitoring of the supplier performance, combined with intensified competition between suppliers. In an interview at the beginning of 2010, the president of Honda's regional R&D centre in Thailand pointed out that the growing competitiveness of suppliers in Vietnam was likely to make the country a promising ASEAN component supply base along with Indonesia (interview with Honda R&D Southeast Asia #1)—a scenario that could hardly be imagined 15 years ago.

² Honda is set to expand its annual production capacity in Vietnam to 3 million units by 2013 (*The Nihon Keizai Shinbun Newspaper* 8 January 2012).

³ Decision of the Ministry of Finance 36/2008/QD-TTg dated 12 June 2008.

However, there are indications that these new developments have made it increasingly difficult for local incumbent suppliers to survive in this industry, not to mention for new local firms to enter into component manufacturing—especially at the first tier. On one hand, the growing production of Japanese motorcycle manufacturers has induced a large number of foreign suppliers, Japanese in particular, to invest in Vietnam. Due to the increasing sophistication of consumer demand and the growing size of production, the quality and delivery requirements demanded by Japanese lead firms have been significantly upgraded. The growing production volume has made it possible for Japanese lead firms to practice dual sourcing for an increasing variety of the components required, which means that local suppliers now need to compete intensely with suppliers of all nationalities for orders. On the other hand, with the decline of local assemblers, the space for local suppliers catering to the demand for a wide variety of components without stringent process requirements has diminished significantly.

The above developments seem to suggest that competition among lead firms over the rapidly growing market has created new lead firm-supplier dynamics in both Japanese and Vietnamese–Chinese chains. Within the Japanese chain, the lead firm is likely to have emerged as an even more powerful actor with the capacity to choose suppliers and enforce increasingly challenging performance targets on them. The importance of the Vietnamese–Chinese chains is likely to have diminished as local assemblers have lost out to foreign motorcycle manufacturers. Further empirical research is needed to explore whether these developments are indeed leading to diminished space for local suppliers in the industry and how the new lead firm-supplier relationships affect local suppliers' capability building trajectories.

9.4 Limitations of the Research and Issues for Future Research

As discussed above, this book covered much ground and made important contributions to theory and methodology. The research is nevertheless subject to limitations because of its focus and the specific analytical approaches or methodologies adopted. However, the rich findings do suggest areas where further research would be worthwhile. These will be briefly outlined below.

First, this book adopted a case study methodology focusing on a strategically selected sample of suppliers. As discussed above, this was an ideal strategy for achieving two aims at once: engaging in a detailed, in-depth examination of the processes and mechanisms by which individual suppliers accumulated their capabilities, and systematically highlighting the heterogeneity of such processes and mechanisms. Such a strategy, however, is limited in the sense that the findings cannot be generalised to suppliers in the Vietnamese motorcycle industry or more generally to firms in developing countries. Nor do they tell us anything about the

degree of prevalence of the emerging patterns of capability building processes or mechanisms.

Second, whilst the present analysis adopted a qualitative framework for systematically assessing the levels of supplier capabilities at different points in time, the research fell short of providing quantitative assessment of suppliers' capabilities. To what extent did HVN's suppliers (of different nationalities) improve their productivity? How did such outcomes compare quantitatively with the performance of suppliers serving local assemblers? The research failed to address these questions.

In order to address the above two limitations, future research would require quantitative analyses of systematically sampled suppliers, although such attempts are likely to be possible only over short periods of time.

Third, this book focused on capability building performance among suppliers but fell short of assessing the suppliers' profitability and financial performance. The question of *Did the sophisticated capabilities acquired by the suppliers indeed enable them to capture larger profits?* is of particular importance if we are to know whether or not capabilities allowed the suppliers in the Japanese or Vietnamese–Chinese chains to enter sustainable growth paths. To explore this question, future research should look into the dynamics of bargaining relationships between the lead firm and the supplier in order to examine whether, and to what extent, the acquisition of sophisticated capabilities by the suppliers altered the power relations between the two actors and the distribution of profits within the value chains.

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