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研究課題名（和文）German and Japanese Auto-parts Suppliers' Project Management

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研究成果の概要（和文）：自動車部品企業は実際に顧客ごとに部品をカスタマイズする必要があることが分かった。
プロジェクト管理に関して、部品企業はプロジェクト間の情報共有とは別に、他の戦略的方法に頼る可能性があることが判明した。たとえば、部品産業はよりモジュール化された製品設計を採用する可能性がある。
全体として、これらの予備調査結果は、部品企業が組織内の情報共有やプロジェクト間の教訓を引き出す代わりに、標準部品のモジュール化や標準化された設計インターフェースの作成を利用できるため、プロジェクト管理が予想よりも重要ではない可能性があることを示唆している。

研究成果の学術的意義や社会的意義

The significance of the findings is that project management of automotive suppliers may be less important than anticipated as suppliers can use engineering-based strategies as an alternative to project management based information exchange and intra-organisational learning.

研究成果の概要（英文）：First, it was found that suppliers indeed have to customize components for each customer. In one case, a bearings supplier reported that while industrial bearings are standardized off-the-shelf products, automotive bearings were customized for each customer. Second, regarding project management, it was found that suppliers may resort to other strategic approaches apart from information sharing across projects. Suppliers may adopt more modular product designs, meaning that besides customer-specific parts of a design, there are parts which are standardized across a product family, suggesting that engineering-based strategy may substitute for project management. Overall, these preliminary findings suggest that project management may be less important than anticipated as supplier firms can use modularization of standard components and the creation of standardized design interfaces as an alternative to intra-organizational information sharing and cross-project lesson drawing.

研究分野：Business Management

キーワード：Project Management Automotive Industry

1 . 研究開始当初の背景

The automotive industry has been one of the main examples cited for the shift from management along functional divisions towards cross-functional project management (Midler 1995). While the role of suppliers in new product development has been explored in depth, the overwhelming majority of such investigations are conducted from the car-maker's perspective (Helper/Sako 1995; Midler/Navarre 2004; Beaume, Maniak & Midler 2008). This is unfortunate, because the largely integral product architecture in the automotive industry forces suppliers to adapt to car-makers' propriety specifications, suggesting that supplier firms need to manage their customer relationships via different channels and separate projects. It follows that project management and intra-firm linkages to functional departments may be utilised for learning processes and new product development of suppliers. While there has been some recent research into the question how suppliers handle similar projects with different customers (Cabigiosu, Zirpoli & Camuffo 2013), there is so far no detailed understanding of how automotive suppliers may utilise different projects to further their internal product development.

2 . 研究の目的

Regarding the purpose of the proposed research, it is twofold. First, it should be investigated how or to which degree automotive suppliers can employ project management plus intra-firm mechanisms to facilitate organisational learning, especially concerning product development as a means of firm strategy formulation. Second, as existing case research (Saeki/Horak 2014) indicates that there may exist differences in the way German and Japanese suppliers manage projects, this research should investigate this topic in a systematic fashion. As both countries have a large number of leading global automotive parts suppliers, investigating similarities and differences in the field of project management and its link to product development could further our understanding of how these firms operate. The scientific significance of the proposed research lies in the question if or to what extent supplier firms in a vertically structured industry can utilise project management and intra-firm mechanisms for knowledge transfer, organisational learning, and new product development. As aforementioned, there is a disproportionate degree of academic literature studying car-maker's utilisation of suppliers in product development. However, as an increasing portion of a car's value is generated by suppliers, partly in form of so-called modules (physically integrated subunits containing parts of various different functions), and car-makers assign increasing development workloads to suppliers, gaining a better understanding of supplier strategy appears crucial to make sense of overall industry development. Regarding the originality of the proposed research, it mainly lies in the shift of perspective away from car-makers to suppliers. Main difference between these firms is the fact that firm strategy of suppliers is constrained by the rather small number of car-makers. Investigating how project management may be employed to develop products and firm strategy under structural constraints caused by industry architecture is important due to a simple reason: The number of largely unconstrained firms is much smaller than the number of firms working under constraint conditions. Thus, the number of firms that could draw practical lessons from this research is arguably larger than additional investigations into the already well-researched unconstrained firms.

3 . 研究の方法

Initially, it was planned to carry out a survey of automotive suppliers from both Germany and Japan on project management routines. As existing case studies indicated that there is a difference regarding the existence of so-called heavyweight project managers, this point should be elucidated. Moreover, the question if institutionalized systems of information archiving and sharing, e.g. mandatory after-action reports of project managers stored in a firm-internal data base, exist could be explored this way. Based on survey responses, the author intended to conduct a number of detailed case studies on German and Japanese suppliers to investigate found differences and similarities in more detail.

While it was possible to conduct pilot case studies at two automotive suppliers in Japan, one from Germany and one from Japan, the survey could not be conducted, chiefly because previously established contacts to industry organizations such as JAPIA and VDA could not be maintained during the pandemic and utilized thereafter.

4 . 研究成果

Findings of this research project are very limited. The COVID-19 pandemic caused a major disruption of the research project as necessary field work could not be carried out. Even after the pandemic, it was not possible to cooperate with firms for the research project. Thus, the results summarized below are only based on an extended literature review and field work carried out before the COVID-19 pandemic, which was insufficient to answer the research questions.

First, it was found that supplier firms indeed have to customize components for each individual customer. In one case, a bearings supplier reported that while industrial bearings are standardized off-the-shelf products, automotive bearings were customized for each customer.

Second, regarding project management, it was found that suppliers may resort to other strategic approaches apart from information sharing across projects. For instance, suppliers may adopt more modular product designs, meaning that besides customer-specific parts of a design, there are parts which are standardized across a product family. This suggests that supplier firms may adopt a technology-based strategy to deal with customer requirements and demands for customized products instead of using strategies rooted in sophisticated project management.

Third, a shallow connection between project management and said modular design approach could be identified: As part of a standardized project management workflow of guest engineers, i.e. supplier application engineers seconded to a carmaker, these guest engineers had to systematically report not only the current product requirements but also everything they learned through observation. Hence, the seconded application engineers are a kind of forward-looking intelligence which anticipates future product requirements. All this information from project management is aggregated to serve as a basis for modular designs of future product generations.

Overall, these preliminary findings suggest that project management may be less important than anticipated as supplier firms can use modularization of standard components and the creation of standardized design interfaces as an alternative to intra-organizational information sharing and cross-project lesson drawing.

Finally, while the number of pilot case studies was limited, there was no evidence that project management of German and Japanese suppliers was significantly different.

5. 主な発表論文等

〔雑誌論文〕 計0件

〔学会発表〕 計1件（うち招待講演 0件 / うち国際学会 1件）

1. 発表者名 Martin Schroeder
2. 発表標題 Automotive Supplier Project Management: An Explorative Case Study
3. 学会等名 29th International Colloquium of Gerpisa (国際学会)
4. 発表年 2021年

〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
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7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関
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