DIXIEME RENCONTRE INTERNATIONALE DU GERPISA
TENTH GERPISA INTERNATIONAL COLLOQUIUM

La coordination des compétences et des connaissances dans l'industrie automobile
Co-ordinating competencies and knowledge in the auto industry

6-8 Juin 2002 (Palais du Luxembourg, 15, rue Vaugirard, 75006 Paris, France)

POOLING CAPABILITIES ABROAD FOR DYNAMIC WORLDWIDE COMPETITIVE ADVANTAGE: INVESTIGATING FORD-MAZDA COOPERATION IN TAIWAN AND THAILAND

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INTRODUCTION

Amidst the ongoing diversification, globalization, and growing complexity of today's markets, it is increasingly difficult for existing firms to survive on their own. While dependant to a degree on the industry, there is clearly a need for firms to look outside their own organizational boundaries to gain complementary resources and capabilities. To this end, there has been rapid growth in mergers, acquisitions, and alliances in recent years (Bleeke and Ernst, 1993).

At a glance, mergers, where two or more firms possessing effective capabilities combine to form a new entity, would appear to be the most effective means by which a firm can achieve the goal of rapidly obtaining valuable external resources and capabilities. In reality, however, the merging of two firms is seldom a smooth process and frequently fails to obtain its envisioned "synergies" (see Barney, 1997).

Firms have turned to strategic alliances as they seek to avoid the difficulties mergers can entail. Alliances can offer a means by which a firm can access or internalize outside resources. Firms with complementary capabilities can partner to create a mutually beneficial cooperative arrangement. Alliances come in many forms, from licensing agreements to joint ventures to firms taking minority equity-stakes in partners, and may be undertaken at the corporate level, functional level, or business unit level.

In considering alliances between large multinational corporations (MNCs), there is the added complexity that the firms already have a global presence. In addition, and particularly in certain industries, subsidiaries of MNCs must be viewed as parts of a differentiated network possessing their own resources, capabilities, and environmentally embedded relationships (Nohria and Ghoshal, 1997). Therefore, in most cases, it is an oversimplification to consider an alliance between, say, two MNCS, simply as a dyad relationship. Alliance effects on overseas subsidiaries, the interactions between the subsidiaries of the allied firms,

and joint efforts of allied firms towards their subsidiaries must also be considered. Topics such as these, however, have generally not been focal points of analysis in the literature on strategic alliances. As such, research has tended to overlook the actual complexity inherent in the coordinated cooperation of strategically allied MNCs.

The present paper seeks to address this understudied area by presenting a framework that conceptualizes possible patterns by which two allied MNCs can cooperate to transfer and pool their capabilities in third countries.[1] Case studies are then used to investigate further two of the cooperative patterns.

LITERATURE REVIEW

The international automobile industry is a suitable domain in which to investigate the phenomenon of the joint transfer abroad and pooling of capabilities of MNCs. While the major automobile manufacturers of the world all are headquartered in the Triad regions of Europe, Japan, and the U.S, both inter-triad country expansion of firms and expansion into emerging markets are key areas of the industry's global competition, as firms seek to expand sales and production bases by growing their presence in overseas markets. Recent research has shown that the realities of emerging markets tend to sharply curtail a firm's ability to achieve its global objectives for such markets (Humphrey, Lecler, Salerno, 2000). Somewhat similar findings exist for the inter-Triad expansion (e.g., Abo 1994). On the other hand, much research has argued that alliances can help a firm expand overseas (e.g., Doz and Hamel, 1998). However, the question of how this is so for the expansion of auto industry firms remains unclear. Thus, this paper considers how the coordinated transfer and pooling abroad of the capabilities of allied MNCs may enable the firms to achieve their global objectives better.

The remainder of this section selectively surveys the literature on MNCs, strategic alliances, and transferring capabilities for guidance on how to address the question of how allied firms can coordinate the transfer of their capabilities to regions outside of their home countries.

Research on MNC has tended to approach the issue of overseas growth of the firm by focusing on the transfer of the capabilities of a single firm (or the firms of a particular industry in a particular country) to host countries using an application/adaptation framework (e.g., Abo, 1994). This approach has been useful in advancing the understanding of how a firm (or firms) can benefit from its (their) internal advantages given the reality of a host country environment. More recently, the MNC has been described as a "differentiated network" made up of a firm's headquarters and subsidiaries, with capability transfers flowing not only from a firm's headquarters to third-country subsidiaries, but also from subsidiaries to headquarters and across subsidiaries themselves (Nohria and Ghoshal, 1997). Thus, an increasingly complex picture of capability transfers within MNCs has emerged. Nevertheless, the question of how multiple firms may cooperate to transfer and pool their capabilities overseas has not been a general subject of inquiry in the MNC literature.

Research on strategic alliances, on the other hand, has addressed the strategic and organizational dimensions of how multiple firms can partner to expand overseas (e.g., Doz and Hamel, 1998). In particular, with regards to the transfer of capabilities, forming a strategic alliance with another firm for the purpose of learning capabilities is not uncommon

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[1] The use of *transfer* here parallels usage of the word in the term "technology transfer". *Pool* means "combine for a common interest." Usage here is similar to Nohria and Ghoshal (1997:31).

and much research supports the contention that alliances are a viable means to learn from partners and internalize complex capabilities (Doz and Hamel, 1998; Yoshino and Rangan, 1995; Hamel, 1991). Kogut (1988) argues that the joint venture form of alliance is best suited to capability learning because this alliances form permits organizational replication, which facilitates the transfer of tacit and organizationally embedded knowledge. Supporting this view, Mowery, Oxley, and Silverman (1996) found that joint ventures outperform other alliance forms in learning.

The work of Kogut and Zander (1992) gives a framework for understanding the role of capability transfers in firm expansion. Investigating the ability of a firm to create and transfer knowledge efficiently, the authors introduced the concept of "combinative capabilities" that allow a firm to integrate its knowledge and then apply it to new situations in order for a firm to grow. They also highlight the role played by higher-level organizing principles as the location where a firm's capabilities largely reside, and argue that it is the effective transfer of these principles to new locations that underpin a firm's expansion.[2]

Building on these research streams, the present paper seeks to explore the subject of overseas capability transfer and pooling by allied MNCs through a proposed theoretical framework and case-based investigation. Thus, the paper can be viewed as an exploratory study that responds to the call by Nohria and Ghoshal (1997, see p. 19 and Ch. 9) for additional research into the "external network" of MNCs. The paper approaches this research field by examining the question of the coordinated action by allied firms in expanding into third-countries.

ANALYTICAL FRAMEWORK

Initial conditions

Two manufacturing-orientated multinational corporations, Firm A and Firm B, are assumed. Firm A possesses relatively strong strategic capabilities.[3] Firm B possesses relatively strong operational capabilities.[4]

Firm A and Firm B form an alliance

The two firms at some point in their respective historical development, recognizing and valuing the capability strengths of the other, form a corporate-level alliance and seek to coordinate the pooling of their complementary capability strengths abroad.[5] It is assumed that both firms continue to build their respective capability strengths after the alliance ties are formed. As such, it is assumed that, even if internalization of partner capabilities occurs, the relative positioning of the organizational strengths of the two firms will remain unchanged.

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[2] See Luo (2000) for discussion of the transfer of capabilities abroad in the case of MNCs.

[3] *Strategic* capabilities here refer to a firm's ability in strategy formulation and the supporting indirect (administrative) functions, such as finance, marketing, sales, etc.

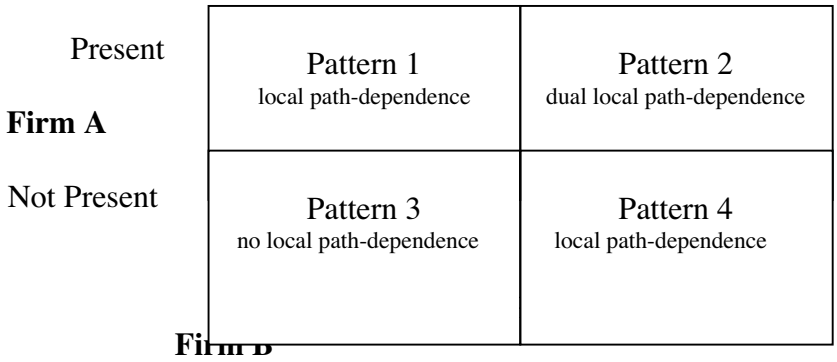
[4] *Operational* capabilities here refer to a firm's ability in direct (productive) functions, such as manufacturing, R&D, procurement, etc.

[5] Such organizational behavior is consistent with the traditional overseas expansion model dating back to Vernon (1966), where a firm seeks to apply its home-country competitive advantages to overseas markets to secure its advantages there.

Patterns of coordinated capability transfer

Four basic alliance patterns by which Firm A and Firm B may cooperate in the transfer of complementary capabilities in third countries are theorized and considered below. The four patterns correspond to whether or not Firm A and Firm B each have substantial productive operations in a particular third country at the time the firms formed their corporate-level alliance.[6] Existing local operations will be path-dependant.[7] To simplify the following analysis, it is assumed that there will be no third-party participation in any joint ventures formed by the allied MNCs.[8]

Figure: Patterns of overseas cooperation of allied MNCs by existence (non-existence) of allied firm operations in third country at time of alliance initiation



Pattern 1: Existing local operations of Firm A

This form of overseas capability transfer would essentially be an extension of existing operational-capability transfer by Firm B to Firm A. Since the local operations of Firm A have already been established, its operational routines would only be modified, not completely re-invented, due to the operational-capability transfer from Firm B. In other words, there will be some level of limitation due to the path dependence of the existing local operations. Firm B may also seek to enter the market, receiving strategic capability transfers from Firm A into a new local venture or joint venture. There will be no local path dependency in this case, since this venture would be newly formed.

Pattern 2: Existing local operations of both firms

Both firms already possess local operations in a third-country and the capability transfer aspect of the alliance relationship is extended to this country. Provided the capability strengths of the local operations reflect those of the firms at large, the local operations may themselves seek to transfer their respective capability strengths to each other directly. Or, the

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[6] Production operations must be substantial enough to require relatively high organizational skill levels to function. For example, in the case of the auto industry, this would refer to operations that produce vehicles with over 40% local parts content ("local" may also include intra-regional where appropriate.) Thus, plants that simply assemble KD kits shipped from overseas would be excluded. For model simplification, if more than one plant of an MNC exists in a particular country then they will be treated as a single operation.

[7] In other words, each will face capability and strategy constraints stemming from its own unique historical development. For additional discussion of the term *path dependency* as it is used here, see Teece, Pisano, and Shuen (1997).

[8] In reality, this assumption is somewhat unrealistic since there is often participation of a local partner when JVs are formed overseas, especially in emerging-market countries.

transfers to the local operations may be take place via the home-country headquarters and/or via subsidiaries. The firms may seek to transfer capabilities to the local operations or form a local joint venture. Since both firms have local operations, there will be some level of limitation imposed due to each of the path dependences of the two existing local operations.

Pattern 3: No existing operations of either Firms A or Firm B

Firms A and B decide to advance into a country market in which neither firm has existing operations. The firms may advance in the form of a joint venture or independently. In the case of a JV, each firm will supply its own capability strengths. In the case that the firms advance separately, assistance will be given by the allied firm in the area of its capability strength. There will be no local path dependence limitations since new venture(s) are formed.

Pattern 4: Existing local operations of Firm B

Pattern 4 is similar in logic to Pattern 1. This form of overseas capability transfer would essentially be an extension of existing strategic-capability transfer by Firm A to Firm B. Since the local operations of Firm B have already been established, its strategic routines would only be modified, not completely re-invented, due to the strategic-capability transfer from Firm B. In other words, there will be some level of limitation due to the path dependence of the existing local operations. Firm A may also seek to enter the market, receiving operational capability transfers from Firm B into a new local venture or joint venture. There will be no local path dependency in this case, since this venture would be newly formed.

Capability pooling

Capability pooling occurs when the complementary capabilities of the MNCs are replicated in a third country such that they are compatible and produce leading local operations.

In each of the four patterns, the transfer and pooling of capabilities in the third country is expected to differ according to whether or not each MNC has operations in the country. The reason for this is there will limitations imposed on the capability pooling due to the path dependencies of the local operations if they exist. Thus, it is assumed that the absence of local operations will allow the MNC greater flexibility in the coordinated transfer (pooling) of capabilities.

The decision of the MNCs to cooperate in the form of a JV or as independent entities is also expected to affect the capability pooling in a third country. In a JV, the interests of both the MNCs will be directly represented in the third country operations. As such, it is expected that there will be both more active capability transfer and pooling by the MNCs in a joint venture, whereas in the coordinated transfer to third countries where the local operations are owned by only one of the partners, the MNC without ownership will be less active and pooling of capabilities. More active capability transfer and pooling is expected to contribute positively to the success of local operations.

Dynamic worldwide competitive advantage

Extending Nitrin and Ghoshal (1997) to a two-MNC situation, local learning in local operations in their unique external environments based on the pooled capabilities of the MNCs will allow each to emerge as differentiated nodes of the networks of the MNCs. Diffusion of this local learning in the MNCs will stimulate other nodes in the network. As such, dynamic competitive advantage can be sustained. As the MNCs cooperate to transfer

and pool their capabilities in country after country, in the long term, their competitive advantage will extend worldwide. Maintaining this advantage is dependant on the firms remaining allied partners.

Framework examination

To explore the usefulness of the framework in explaining coordinated capability transfers and pooling abroad by allied MNCs, the next section applies the framework to Ford-Mazda cooperation in Taiwan and Thailand based on case studies undertaken by the authors.

CASE-BASED INVESTIGATION[9]

The Ford-Mazda alliance

Before examining the cases, some background of the Ford-Mazda alliance is mentioned. Please see Appendix 1 for more details of the history and current state of the Ford-Mazda alliance. Since 1979, Ford has been the largest stockholder of Mazda and the two firms have engaged in many different forms of cooperation over the past twenty plus years. Since 1996, when Ford raised its equity-stake in Mazda from 25% to 33.4%, the president of Mazda has been a dispatchee from Ford.

Ford-Mazda collaboration in Taiwan

Please see Appendix 2 for an overview of the Taiwanese auto market. The case of Ford-Mazda cooperation in Taiwan generally corresponds to Pattern 1 of the framework proposed in Section 3.

Historical milestones

Ford's subsidiary in Taiwan, Ford Lio Ho (FLH), was established 30 years ago in 1972, as a 70/30% joint venture between Ford and an industrially diversified but non-interventionist Taiwanese firm, Lio Ho. The FLH plant and administrative facility is located in Chung Li, a city which is about 1 hour by car from Taipei. FLH's initial products in the 1970s were CKD kits sourced from Ford of Europe. Beginning in 1980, however, product sourcing was gradually shifted to Mazda, which had what was considered to be more competitive vehicles for the Taiwanese market. In fact, throughout the 1980s, 1990s, and even today, the large majority of Ford's product volume in the Taiwanese market has consisted of Mazda-sourced vehicles assembled at FLH.

In the mid-1980s, Ford decided to upgrade the FLH production facility to make it into an export base. In 1986 the plant was expanded and plant capacity was more than doubled to over 100,000 units a year. Exports to Canada of the Laser, a Ford-badge version of the Mazda 323, began from mid-1986, but over the next few years total export volume would never exceed 20,000 units/year. Export growth was hindered by Taiwanese currency appreciation in the late 1980s. Rapid growth in the Taiwanese domestic market also made exports a less attractive use of plant capacity. So, even though a large export business never materialized, the upgraded FLH production facilities gave the firm a stronger competitive position in the local market than its rivals. Only FLH had the quality and capacity to take full advantage of the rapid market growth, and consequently market share for Ford products surged and high profits were earned. For six straight years, from 1988 to 1993, and again in 1995, Ford

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[9] The authors' local fieldwork includes interviews with managers from both Ford and Mazda in Taiwan (October 2000 and February 2002) and in Thailand (November 2000).

vehicles occupied the top market position in Taiwan.

In the early 1990s, the decision was made to switch the sourcing of C/D cars back to Ford of Europe. Precipitating this switch away from Mazda sourcing was the unclear state of the alliance ties between Ford and Mazda. C/D cars. At the same time, Ford of Europe was developing a world-car in the C/D class, the Mondeo. So, FLH selected this car as its C/D platform. However, the alliance between Ford and Mazda was subsequently reaffirmed in December 1993, and then solidified in 1996, when Ford acquired an additional equity stake in Mazda, raising its ownership percentage to 33.4%.

Ford's market share in Taiwan began to fall from the mid-1990s. A primary cause of the drop was deteriorating competitiveness of the Ford product line-up vis-à-vis its main rivals. This decline was due in part to increasingly severe market competition, by both existing firms and new entrants. Also, the distraction caused by the uncertainty of the Ford-Mazda alliance relationship appears to have played a role in causing the decreased competitiveness, as did a related slowdown in the renewal of FLH products.

In the late 1990s, the strengthened Ford-Mazda relationship was extended to Taiwan in a novel way. On 1 October 1998, FLH took over distribution of the Mazda brand in Taiwan from Mazda's local distributor.[10] A dedicated team inside FLH assumed responsibility for the Mazda brand, with backroom support being shared with the Ford brand. Through the synergistic utilization of existing Ford's local resources, the Mazda brand has rapidly gained market share in Taiwan despite a depressed market.[11] The case was the first attempt by Ford and Mazda to have both brands managed by one local organization.

Overview of operations

FLH's productive facilities consist of a body shop, paint shop, engine plant, and two final assembly plants. Total capacity is approximately 130,000 vehicles/year. The older final assembly plant was used by Toyota until it exited the Taiwanese market in the early 1970s.[12]

Productive Systems

There are some elements of FLH's productive systems that are typical of the so-called Japanese production system[13] and seem to have been introduced by Mazda. First, standard operating charts on the line are made by group leaders. At Ford, this job is typically done by technicians. Second, operators on the line can stop the line in case of errors. Traditionally this is not the case at Ford plants. Third, operators are encouraged to make line-side suggestions

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[10] Mazda has until recently been a very minor player in the Taiwanese auto market, with sales in the low thousands and market share not in the top ten. Mazda has not had a production facility in Taiwan, with Ford Lio Ho producing Mazda-badge vehicles for Mazda Taiwan under license.

[11] Mazda sales in Taiwan increased by 23% in 2001, growing to 11,943 vehicles, despite an overall passenger car market that was down 18% market. Mazda's market share since its distribution in Taiwan was taken over by FLH has been: 1998= 0.7%, (13th), 1999=1.4%, 2000=2.3%, 2001=3.4% (6th). Over this time period, market position has grown from 13th place to 6th. In January 2002, market share for Mazda was 5.3%, giving it the 5th highest total, ahead of Honda.

[12] Lio Ho originally had a JV with Toyota. After Toyota exited the market, Lio Ho, formed a new JV with Ford on the same site.

[13] See Abo (1994).

for improvements and to highlight line problems. Fourth, there are quality control circles, which have been in existence at the plant at least since 1986. Pokayoke suggestions that have been made by line workers are also displayed in the plant. On the other hand, there are also some elements from the Ford production system in the plant, too. For example, there is an active six sigma qualification system. So, the production model at FLH can be considered a mixed system.

Manufacuring Assistance

In the 1970s, Ford of Europe provided product manufacturing assistance for Europe-sourced vehicles that were assembled at FLH. The same is also true for the current FLH vehicles that are currently sourced from Europe.

Since the 1980s, when FLH switched its products to Mazda-sourced vehicles, FLH has dispatched engineers to Mazda in Japan for training at the start of new product launches. Experienced engineers from Mazda in Japan are also dispatched to FLH to assist in new product launches of Mazda-sourced vehicles. Over time learning has occurred on both sides and the total number of engineers dispatched has decreased dramatically, as have the duration of stays.

Product Development Assistance

Mazda contributes product development capabilities to FLH through the products assembled at FLH that have been developed in Japan. Ford of Europe also contributes product development capabilities to FLH through the products assembled at FLH that have been developed in Europe. Ford's Japanese subsidiary also provides some design assistance to FLH and when necessary acts as a liaison for FLH with Mazda in Japan.

Human Resource Management

Presently approximately 1800 people are employed at FLH. Ford headquarters dispatches only 2 executives, who head the Finance and Credit divisions. There are no long-term Mazda dispatchees. Since, FLH is a Ford subsidiary it participates in Ford's global human resource management systems. There does not seem to be have been much influence from Mazda in this function.

Other Strategic Capability Assistance

Ford headquarters has consistently dispatched a senior manager to head the finance function of FLH, providing a means of transferring this capability to FLH. Since the mid-1980s, Ford's Asian Pacific Regional headquarters has actively helped FLH improve its marketing function. In addition, as needed, FLH managers attend training sessions focused on a particular managerial function that are organized by Ford headquarters. In some cases, FLH brand mangers also visit and work with their counterparts in the U.S. to see how similar vehicles are being marketed in the U.S. Lessons learned and new ideas gained are then brought back to Taiwan, modified, and creatively applied to the local market. These various activities provide a means b which marketing capabilities are transferred from Ford to FLH.

Management Organization

FLH's local partner, Lio Ho, and Ford are represented on the firm's Board of Directors, with the local partner appointing the Chairman and Ford appointing the President of the

operations. Lio Ho is passive in the management of the operations.[14]

Capabilities and Characteristics of Local Operations

FLH has a long history and has developed its own strong organizational identity and characteristics within Ford. FLH possesses a local design capability for making local substantial minor changes in vehicle interiors and exteriors (cosmetic alterations of original vehicle designs). FLH engineers are also able to engineer the redesigned parts and coordinate their local prodction with suppliers in Taiwan.

Overall there is a positive rivalry between the Ford and Mazda brands within FLH. By bringing the management and distribution of the Mazda brand under the same entity that managers and distributes the Ford brand in Taiwan, there have been benefits to both brands. A good form of internal competition and synergy has emerged. The product positioning of Ford and Mazda supplement each other, and having the brands managed in the same facility forces each side to define better its position in the market to minimize cannibalization.

FLH has also created local innovations in dealer management and small-volume/high-variety manufacturing, some of which have been transferred to Ford operations in other countries.

Synopsis

Overall, FLH considers the cooperative relations between Ford and Taiwan in Japan favorably. This is especially true of the cooperation between the firms since the Mazda brand began to be distributed by FLH in the late 1990s. However, currently there may be the problem of a resource strain within FLH due to its managing both brands without having increased its staff. Resources that have been used for building the Mazda brand could not be directly deployed to help speed the recovery in the local market of the Ford brand. Nevertheless, at present a turnaround for the Ford brand in Taiwan appears to be emerging due in part it seems to the positive competitive relationship that has developed within FLH between the Ford and Mazda brands.

Mazda headquarters in Japan also evaluates the Taiwan case highly. Market share for the Mazda brand is growing rapidly and this generates positive revenue for Mazda headquarters with minimal local investment. Mazda headquarters is encouraging other subsidiaries to learn from the Taiwan case. However, the presence of what might considered case-specific environmental factors (e.g., the severely competitive environment in Taiwan, the strong local capabilities of FLH) would seem to limit the degree to which the lessons learned in Taiwan may be applied to other locations.

Ford-Mazda collaboration in Thailand

Please see Appendix 3 for an overview of the Thailand auto market. The case of Ford-Mazda cooperation in Thailand generally corresponds to Pattern 3 of the framework proposed in Section 3.

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[14] As such, the presence of a local partner is ignored in the paper's analysis and FLH will be treated simply as a subsidiary of Ford. This simplification is consistent with comments by a senior FLH manager. However, it is an area that may the authors intend to reexamine for verification in the future, if possible.

Historical milestones

As an example of one concrete strategic decision that was related to the December 1993 announcement of the strengthening of the Ford-Mazda alliance, in May 1994, both companies announced that they would establish a joint venture plant in Southeast Asia.

Why did the companies decide to build a brand new plant in Southeast Asia? For Ford, its sales in this region of the world were quite weak, so it wanted to strengthen them by building its own local plant to supply the region. On the other hand, for Mazda, the company wanted to expand its overseas production ratio, but due to a lack of cash flow, it wanted to reduce the required financial investment.

In August 1995, the companies announced a plan to build a brand new plant in Thailand that would produce 135,000 vehicles per year. In May 1998, the completed plant, AutoAlliance Thailand (AAT), began production of 1-ton pick up trucks for the domestic market. Approximately six months later, the plant began to produce models for export.

Overview of operations

At present, AAT is producing 1-ton pick-up trucks and C class passenger cars both of which were developed by Mazda in Japan.[15] Both models are sold domestically under the Ford and Mazda brands. The 1-ton pick-up trucks are also exported under both brands to many nations around the world (not including North America).

Influences from Mazda's existing KD assembly plant in Thailand

Before AAT started its production, Mazda had been assembling vehicles in the suburbs of Bangkok for sale under its own brand. However, virtually no managers nor line workers moved from this facility to AAT. In short, AAT received almost no influence and learning from this existing plant. So, it is reasonable to view AAT as having started as "green field" venture.

Common points with existing plants in home countries

The shape of production layout at AAT is a square, much the same as that of Mazda's Hofu Plant and AAI, the Ford-Mazda joint venture in the U.S., which was built by Mazda. With this layout, ventilation is improved as well as internal communication being easily achieved through a centralized plant office. So, we can understand that AAT's plant layout and process design have been led by Mazda.

Differences from existing plants in home countries

First, automation at AAT is limited, while Mazda's plants in Japan are highly automated. The reason for this is the difference is because of the inexpensive cost of labor in Thailand. The difference is much the same as what is found at other Japanese plants in Thailand.

However, since AAT has intended to export at a large scale from its inception, the facility has been aimed at achieving "world-class quality." So, important processes for quality assurance have been automated.

Second, AAT's method of coping with the large variety of pick-ups that must be produced due to AAT exports going to very many nations around the world under both the Ford and Mazda brands, is different from what is done at Mazda's domestic plants in Japan

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[15] Passenger car assembly from KD kits at AAT began from January 2000 when a short assembly line was added.

since the overall level of production skill is lower in Thailand. AAT has attempted to cope with model variety by limiting the scope of work for operators. Moreover, by adopting *pokayokes* much more than at the plants in Japan, AAT aims at avoiding mis-assembly and attain quality assurance.

Third, as most employees were unfamiliar with automotive manufacturing itself, Mazda dispatchees prepared detailed manuals and illustrated standard operation sheets that had never been prepared in Japan,

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These measures were carried out under direction of the former vice president of AAT who was the production director at Mazda's Hofu Plant before being dispatched to Thailand. So, these elements can be considered a "revised application" based on the notion of so-called Japanese production system.

Human Resource Management

Basically, AAT has followed Ford's system from the beginning. The HRM system at Mazda's old KD plant was deemed not to have succeeded. Thai people have been regarded as relatively status oriented. So, at Mazda's former KD plant, there were many hierarchical layers. However, Ford wanted to reduce the layers to as few as possible, as it has been doing worldwide. After discussion between two parent companies, AAT decided to adopt the Ford style. There are approximately 2,300 Local National Employees (LNEs) at AAT. On the other hand, the number of International Service Employees (ISEs) has been kept down to only 20. (16 Mazda dispatches and 4 Ford dispatches). At AAT's administrative office, Ford style of office layout has been adopted. For example, there were high partitions between each desk. AAT has adopted an ability-based payroll system to all employees including plant workers. Especially, a "Performance Review" carried out worldwide at Ford plants every year is employed.

International Service Employee (ISE)

In 1997, all the line positions above General Manager were dominated by ISEs. However, AAT is working hard to appoint Thai Nationals to these positions, for example, there is a Thai vice president already. As mentioned above, there are only 20 ISEs at AAT while Toyota dispatches about 40 employees to its Thailand operations. AAT aims at further reduction of ISEs. ISEs from Ford come from various countries. This is because core employees in Ford can move worldwide by international job postings in the firm.

Management Organization

On the board of directors of AAT (as of November 2000), basically, Ford and Mazda are equal partners, with the companies dispatching 4 directors each. From Mazda, there are 2 part-time directors and 2 full-time directors (the President of AAT and Vice President of AAT). From Ford, the Chairman of AAT (part-time), President of Ford ASEAN, Financial Director of Ford Asia Pacific Operation (FAPO), and the President of Ford Thailand (a Thai National). At the beginning, meetings were held 4 times a year, but recently they have been reduced to about twice a year.

AAT's Capital composition

Ford: 48% (At first, it was 45%)
Mazda: 45%
Mazda Sales Thailand: 5%

KPN Group: 2% (At first, it was 5%)[16]

Synopsis

As already mentioned, Mazda takes charge not only of manufacturing but also of the research and development function at AAT. Mazda's R&D center in Japan handles most of the product development processes. Ford takes charge of administrative functions, such as HRM, finance, marketing, etc., as well as purchasing. In short, regarding their joint venture in Thailand, the two companies each take charge of their respective capability strengths and complement one another. However, there are some points that to which consensus did not come smoothly. For example, it is expected that Mazda would be in charge of purchasing, since Mazda is in charge of R&D, process engineering, and manufacturing. However, due to Ford's strong intention, Ford took charge of purchasing.[17] So, we can understand from this that the bargaining power of the Ford side is stronger. Such a results may not be avoidable giving Ford's size and strength worldwide.

In any event, AAT is no doubt one of the best examples of Ford's production sites outside of North America. One reason for this is that AAT started as a Ford-Mazda joint venture from in inception and was established as a green field. Both parent companies organized a joint project team to lead the venture from the beginning. Especially, it is clear that Mazda highly valued this joint venture project, for instance it dispatched the production director of its main factory in Japan to be Vice President of the venture. As a result, AAT has been able to increase its production and it may be possible for the venture to become the top vehicle producer in Thailand before long.

AAT is a touchstone for the Ford Group that aims at a marriage of organizational capabilitties of Ford and Mazda.[18] If AAT emerges as a long-term success, and the lesson from AAT can be extended worldwide, Ford should be able to reduce costs related to the combining of its group organizational capabilities dramatically.

DISCUSSION

The previous section presented the results of the two case-based investigations into the framework hypothesized in Section 3. This section relates the case findings to the framework and draws some initial tentative implications.

Capability transfer and pooling

The first case, that of Ford-Mazda cooperation in Taiwan, corresponded to Pattern 1 of the framework. The emerging nature of the cooperation between the firms over a period of over 20 years is notable. Largely in accordance with the framework the firms were found to have mainly supplied complementary capabilities to the local operations, with Ford supplying operational capabilities and Mazda supplying strategic capabilities. There were, however,

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[16] Local partner influence in the operations of AAT was revealed to be quite low and is ignored in this discussion.

[17] Since many of the local suppliers in Thailand have relationships with Japanese suppliers, in reality, Mazda also plays an important role in purchasing at AAT.

[18] The term marriage is used to imply two entities being integrated together while organizational identities are still maintained.

some instances of overlap, with Ford also supplying some operational capabilities from its European operations. Alliance friction between Ford and Mazda may be a factor contributing to this overlap.

The second case, that of Ford-Mazda cooperation in Thailand, corresponded to Pattern 3 of the proposed framework. The deliberate nature of the joint transfer of capabilities by the allied firms to what was effectively a new country market for both firms is notable. Largely in accordance with the framework, the firms were found to have mainly supplied complementary capabilities to the local operations, with Ford supplying operational capabilities and Mazda supplying strategic capabilities. There was, however, some overlap, with Ford also supplying operational capabilities. Bargaining power considerations between Ford and Mazda may be a factor contributing to this overlap.

The pooling of capabilities was observed in both cases, but in different ways. Differences in part seemed to be due to the presence of path dependency of the existing Ford operations in the Taiwan case. Ford example, the fixed building size of the plant limited the degree to which Japanese manufacturing systems could be introduced. Also, the education of managers had already taken place limiting their receptivity to new methods.

In contrast to the Taiwan case, in Thailand a new JV was formed. While there were no local constraints due to path dependency, in this case we could observe some constraints on the cooperation being imposed by the bargaining power relations of the two firms. This finding is consistent with the existing literature on JVs, which holds that JVs are much more difficult to manage than single firm ventures (Harrigan, 1986).

The cases also revealed that one or both partners choosing to close existing operations and not carry-over learning from them allows the firms to mitigate path dependence in some cases.

At the present stage of the research, it was not possible to incorporate Kogut and Zander's (1992) discussion of the role played by the transfer of higher-order organizing principles in enabling capability transferring. Going forward this research perspective will be considered.

Movement towards dynamic worldwide competitive advantage

Limitations of the case data make it possible only to do a preliminary and tentative consideration of this topic at this stage.

New local learning was observed at FLH in Taiwan and to a lesser extent at AAT in Thailand. Examples in the former include creative management of the two brands in a single facility and innovations in dealer management and production methods. In the latter, an example is the observed production technique to deal with high product variety. In the case of AAT, however, the operations are still quite new. So, it is early to expect robust examples of new learning at this stage. Given the progress observed so far, it can be expected that new local learning will emerge.

Another aspect of the framework that must be visited is the diffusion of new local learning and the emergence of the local operations as differentiated nodes in the MNC networks of the firms.

Finally, we turn to the question of whether the MNCs can apply the capability transfer and pooling model and lessons learned to other locations. The case research that was undertaken by the authors was concentrated on interviews with managers in the local operations. So, there are limits to the degree to which this question can be addressed. Nevertheless, it was clear that the MNCs valued the local operations and were seeking to extend the models to other locations where appropriate and possible. In the case of FLH, active diffusion of local learning was observed. In the case of AAT, however, the relatively few years for which the plant has been in operation, again makes it too early for this to be reasonably expected. The movement of dispatchees to positions in other locations in their respective MNCs is likely to serve as an early source of diffusion of local learning in the MNCs.

Concluding remarks

The paper framework and cases highlight how local environment reality (including path dependence) can affect the pursuit of global strategy, and how the local environment can create new opportunities for capability building. A broad-based positive impact of the capability building seen in these cases will likely be dependant on the efforts made and success achieved by the MNCs in disseminating throughout the organizations the lessons from the cases to replicate their success in other countries.

This research was begun as a theory-building exercise. Findings suggest the proposed framework may be a useful tool for understanding the coordinated overseas transfer and pooling of capabilities by allied MNCs and how this may lead to worldwide competitive advantage for the firms. Insights from the cases have revealed ways in which the global capability building potential of Mazda and Ford is enabled as they work together. Contrasting findings with emerging global strategy experiences of auto firms in other countries (e.g. Australia, South Africa, Europe) may be helpful.

Going forward, case-based investigation of the other patterns of cooperation not examined in this paper is also needed. Pattern 1 is quite complicated in its numerous possible variations. Better model identification and simplification may also be needed. A framework that can better capture the presence of a local partner would also deepen the analysis.

Finally, other future research directions include: investigating the inter-subsidiary relations of the FLH and AAT within the larger Ford and Mazda MNCs; a more systematic examination of inter-partner power relations both locally and at the MNC level and the effects on the local operations; attempting to apply framework to industries other than the auto industry.

APPENDIX 1: THE FORD-MAZDA ALLIANCE

The Ford-Mazda cooperative relationship first began in 1969, when the two firms, together with Nissan, formed a 50/25/25% joint venture in Japan to manufacture automatic transmissions. After Ford and Mazda engaged in some other relatively small-scale cooperative projects, such as parts and OEM vehicle sourcing, the two firms strengthened their inter-firm ties in 1979 when Ford acquired a 25% equity-stake in Mazda. A key motivation for Ford was a desire to facilitate the firm's intent to learn more about the strong productive capabilities of its Japanese rivals, including, but not limited to, Mazda. Ford also sought to use the alliance ties to expand its presence in the growing Japanese market. On the Mazda side, the primary motivation for the tie-up primarily was an ongoing financial crisis at the firm due to strategic missteps which were amplified by the 1st and 2nd oil shocks.

Soon after concluding the tie-up, Ford instituted an "After Japan" effort which involved dispatching a large number of engineers and managers to Japan to learn from Mazda and other Japanese manufacturers. These learning efforts by Ford contributed to the significant capability improvements that occurred at the firm in the 1980s and early 1990s.[19] Overall there appears to have been some limited change in operational capabilities and related values (in quality, work organization, etc.) in Ford towards those more typical of Japanese automakers, including Mazda (i.e., see Carillo and Montiel, 1998). The good relations and mutual respect which developed between Mazda and Ford during this time is reflected in the following late-1980s quote by the then President of Mazda, Kenichi Yamamoto, "...between Ford and Mazda there exists a feeling of trust..." (Kobayashi 1988).[20]

In the 1990s the relations between Ford and Mazda grew closer at an increasing rate, largely motivated by another financial crisis at Mazda brought on by strategic missteps in the late 1980s and early 1990s, e.g., an over-proliferation of products and dealer channels despite a declining sales volume. However, the productive performance at Mazda remained strong and more advanced than at Ford (though the gap had decreased). Alliance ties began to weaken in the late 1980s and early 1990s, as strategy alignment between Ford and Mazda waned. The deteriorating financial position of Mazda in the early 1990s also played a role, as did Ford's emerging uncertainty as to the value of its relationship with Mazda. Ford increasingly not only felt it had less internal need to learn from Mazda, but it also felt that the capability strengths of Mazda itself were also becoming less competitive.

Nevertheless, in 1992, at the request of a financially weakened Mazda, Ford acquired a 50% equity stake and management control of Mazda's assembly plant in Flat Rock, Michigan. In December 1993, Ford and Mazda announced the strengthening of their strategic alliance, with three additional Ford executives dispatched to Mazda to become directors, including one assuming the position of Executive Vice-president. With this increase, Ford's representation on Mazda's Board of Directors also increased. Around this time, again at the request of Mazda and Mazda's main bank, Sumitomo, Ford began a deep investigation to determine if Mazda's operational capabilities were indeed superior.[21]

The result of Ford's investigation indicated that Mazda did posses operational capabilities that were still significantly more advanced than those of Ford, for example, in product development lead time and efficiency and manufacturing areas. As a result, these findings and the deepening financial difficulties at Mazda, which would eventually lead

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[19] See Ingrassia and White (1994), Green (1993), Shook (1990), Pelofsky (1989), and Easterbrook (1986), among others, for information on organizational changes and capability improvements at Ford in the 1980s, and Babson (1998), Carillo and Montiel (1998), Doz and Hamel (1998), Yoshino and Rangan (1995), and Bleek and Ernst (1993), among others, for discussion of the role Ford's relationship with Mazda played in bringing about some of these changes and improvements.

[20] For additional discussion of this point, see Heller (2001).

[21] An important aspect of the Ford-Mazda relationship, that is, the relative bargaining power of the partners and its evolution, is especially apparent during this time period. Naturally, Ford, since it is a much larger firm than Mazda and the largest shareholder of Mazda stock, has a superior bargaining position. However, as long as Mazda possesses, or is perceived to possess, organizational capabilities that are valuable and difficult to transfer, Mazda's bargaining position is improved. However in the early 1990s, this perception by Ford seemed to diminish.

Mazda to invite Ford to dispatch a top senior manager to become president of the firm to help it improve its strategic capabilities, the alliance ties between the firms were in fact solidified in April 1996 when Ford invested an additional $481 million in Mazda to bring Ford's ownership stake of Mazda to 33.4%. Henry Wallace, who had been dispatched to Mazda from Ford in early 1994, was promoted to become the President of Mazda, becoming the first non-Japanese to head an automaker in Japan. Wallace was considered to be an extremely highly skilled manager at Ford, who has since gone on to occupy the post of CFO at Ford after leaving Mazda in 1997.

After the alliance relationship was reaffirmed with the additional capital investment, mutual inter-firm learning, integration, and cooperation increased at an accelerating rate. In particular, Mazda has sought to improve its strategic capabilities with the assistance of Ford. One area in which these efforts have been concentrated has been brand management.

The attempted makeover of the Mazda brand has been quite notable. The logo was completely redone and it was decided that, unlike in the past, all products would carry this same logo. The decision was also made that all dealer channels and vehicles would also carry the same brand name, Mazda, again unlike in the past where, along with the Mazda brand, the firm also sold cars in Japan under the Enfini and Eunos brands. The Mazda brand was also given a consistent "personality" of *stylish, spirited,* and *insightful*. Marketing tools developed by Ford have been used extensively in executing these brand-strengthening efforts.[22]

Since the mid-1990s, capability learning in Mazda can be summarized as follows. In the human resources function, an extensive internal education system for managers was established, based on the Ford Business Leadership Initiative and other internal learning/teaching programs.[23] In the finance function, numerous improvements to the financial planning and control systems were introduced. A marketing function was created and strategic changes to Mazda's worldwide brand positioning and marketing as outlined above were implemented. In product development, a more hard data-orientated system was introduced, as were other changes that allowed the Mazda system to be more easily compared and coordinated with the Ford system. Some of the internal changes that have occurred at Mazda since the mid-1990s are discussed in Nobeoka and Taniguchi (2000), Heller (2000, 2001), and Taniguchi (1998).

The effect of the organizational changes at Mazda mirrors the result of the changes in the Mazda brand, with Mazda now fitting better organizationally into the Ford Group, and

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[22] The goal of all of these changes was to make the Mazda brand fit better into the larger Ford Group's family of brands made up of Ford, Lincoln, Mercury, Aston Martin, Jaguar, Volvo, Land Rover, and Mazda. The changes in the brand perceived by the consumer, however, appear to lag these brand-specific changes that have occurred inside Mazda, at least in Japan. For example, a survey conduct Nikkei Business in the fall of 2001 found that in the past year there had been very little change in consumer affinity toward Mazda (Takahashi, Hosoda, Kodaira, 2001). This finding may be partially explained by the relatively slow product cycle of the auto industry. Since the products themselves are a primary means by which a consumer receives information about a brand, a slow product cycle would likely exert a slowing influence on the realization of the intended brand changes. This would seem to be particularly true for Mazda in Japan where no major new vehicles were released in the FY2001.

[23] For additional information on the Ford programs, see Wetlaufer (1999).

also, though to a lesser degree, Ford fitting better with Mazda. Two-way socialization efforts to foster shared values, as discussed by Nohria and Ghoshal (1997, p. 38), can also be seen occurring across the Ford-Mazda relationship. In its strategic decision-making process, Mazda now shares many of the same strategically-orientated organizational values as Ford, allowing for the coordination of and re-combination of capabilities. This, coupled with the changes described earlier that have occurred in Ford's operational capabilities and values, allows us to say that Ford and Mazda can be described as two firms which have, at least to a degree, exchanged higher-order organizing principles and combined capabilities in their home countries.

APPENDIX 2: AUTO INDUSTRY IN TAIWAN

Overview

The total automobile market in Taiwan has gradually decreased since its peak in 1994 of 577,000 vehicles. The depressed market is due in part to the recent effects of the bursting of the economic bubble in Taiwan, however its roots also lie in high rate of motorization in Taiwan which is second only to Japan in Asia.[24] Supporting this high diffusion of cars is a high percentage of paved roads, reaching 90%, a level quite similar to that of Japan. In 1999, total sales of passenger cars was 359,000 and commercial cars was 116,000.[25] In 2000, total passenger car sales were 357,000, before falling to 287,000 in 2001.

In this contracting and relatively small market, 11 local manufacturers have engaged in severe competition. Their market share has changed frequently in the latter part of the 1990s. In this respect, the Taiwan case is quite rare in that there has been so much market volatility in the absence of any direct governmental policy intervention.

Every local manufacturer receives capital and technical assistance from an overseas manufacturer, with the Japan assemblers generally being the most active players. The top 5 local manufacturers, China Motor (Mitsubishi Motors), Kuozui Motor (Toyota), Yulon Motor (Nissan), Ford Lio Hu, and San Yang (Honda), dominate 80% of total market. The percentage of total vehicles sales occupied by imported vehicles has gradually decreased. At present, export of Taiwan-made automobiles is very low. This may be in part due to the high level of local modifications generally made in localizing vehicle models.

Main characteristic of Taiwan automobile market

First, due to the high level of competition in the auto market and the rapid changes in consumer demand, local manufacturers are forced to do substantial minor changes almost every year. Generally, the loyalty of consumers to a particular brand is low, which also contributes to the frequent and dramatic changes in market share. Annual substantial minor changes are viewed as necessary to attract their customer continuously and survive in the market. All of the major manufacturers, excluding San Yang (Honda), have established R&D centers in Taiwan, in response to the competitive conditions mentioned above. As the demand changes rapidly, it is impossible for timely development to be done overseas, such as in Japan. Moreover, since substantial minor changes are done almost every year, it is possible for the local operation to secure adequate usage of the capabilities of a local R&D center. Investment in local R&D capabilities has also been motivated by government incentives to

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[24] 207 vehicles per 1,000 people (as of 1997)

[25] 290,000 of the passenger cars sold were assembled domestically.

promote local R&D activities.

Second, consumer tastes in Taiwan tend toward a larger number of vehicle options and greater luxury in vehicle interiors and exteriors. Thus, Taiwan vehicles tend to be better equipped than comparable vehicles in other countries. Common features that can be found in various car classes in Taiwan include, fog lamps, a wooden instrument panel, rear window with curtain, leather seats, massage seats, and so on. Even a karaoke set can be found installed in some economy class cars. Additionally, due to lack of parking space, it is often necessary to park on the street. As a result, large bumpers much the same as those found on cars in the U.S. model are needed. The cumulative effect of these conditions is reflected in an approximately 25% higher selling price than a similar model sold in Japan.

APPENDIX 3: AUTO INDUSTRY IN THAILAND

Before Asian Economic Crisis

In accordance with the import-substitution policies of local governments in South-east Asia since the 1960s, Japanese automobile manufacturers, notably Toyota and Mitsubishi Motors, established knock-down assembly plants in almost every ASEAN country. In 1990s, the local markets in these countries began to expand rapidly, so some Japanese manufacturers expanded their local production and/or introduced ASEAN specific vehicle models.

Western automobile manufacturers, on the other hand, engaged in only small volume knock-down production in the region through the late 1990s. Due to the maturity of automobile markets in developed countries and increased competition in the automobile industry worldwide, western auto manufacturers were forced to find new markets, in order to maintain growth. As a result, they became increasingly interested in the ASEAN region where economies had begun to grow rapidly and automobile markets were also expected to increase at a rapid pace. In the mid-1990s, GM, BMW, and Ford (together with Mazda) each announced plans to build an ASEAN production hub in Thailand. Ford and GM planned to build larger plants than those of the existing Japanese knock-down plants, because both Ford and GM intended to concentrate their ASEAN production in Thailand to take advantage of the ongoing trade liberalization within the region.

Why did these Western manufacturers select Thailand as their ASEAN hub? First, in Thailand, the accumulation of supporting industries had advanced the furthest among the ASEAN countries. This was due to almost every Japanese manufacturer having operated relatively large production sites to supply the growing domestic market and they had engaged in efforts to raise the local content ratio of vehicle parts. The second reason behind Thailand's selection was that the government had established numerous policies which were very friendly towards the introduction of foreign capital. Third, the country is considered to be relatively stable politically.

Asian economic crisis and its effect

The Asian economic crisis which started in 1997 brought severe economic difficulties to the Japanese transplants in the ASEAN region. Toyota especially was adversely affected as the firm had greatly expanded its production capacity. In Thailand, some Japanese manufacturers that had expanded their production capacity during the period of high growth found themselves forced to turn to export markets in order to maintain their operations.[26]

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[26] Orihashi (2000) investigates the problems encountered and solutions achieved when the some of the Asian

At the same time, the Western manufacturers were not immune to the effects of the crisis. Investment plans were delayed, reviewed, and scaled back. However, despite the difficult conditions, the joint venture between Ford and Mazda, Auto Alliance Thailand (AAT), began production in 1998. GM also started production at its new Thailand facility in 2000. At first, both companies had planned to supply mainly the ASEAN region from their production sites in Thailand, however due to the crisis-induced dramatic shrinkage of the ASEAN automobile market, they reoriented their plants to export primarily to countries in the Europe and Australia. GM also started to export its Thailand-assembled minivan to Japan in 2001, as OEM supply to Subaru (Fuji Heavy industries). The plants of both Ford and GM are located in "Zone 3" which entitles them to receive several benefits, including tax reduction, from Thai government's Board of Investment.

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subsidiaries of Japanese automakers, which had produced only for a local market, started to export to third countries.

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