

MTM Matrix: A New Mapping Aid for Strategic Alliances

Majid Kasmai¹⁾, Junichi Iijima²⁾

¹⁾ Tokyo Institute of Technology, Graduate School of Decision Science and Technology
(majidkasmai@yahoo.com)

²⁾ Tokyo Institute of Technology, Graduate School of Decision Science and Technology
(ijijima@coral.ocn.ne.jp)

Abstract

Intense global competition is forcing corporations to examine different strategies for developing new capabilities. Strategic alliances allow firms to refresh their competitive strategies in response to globalization. Presently the number of strategic alliances is growing. In this paper, the concept of an MTM matrix as an analytical framework for strategic alliances is introduced. In this matrix, manufacturing ability, technological level and marketing potentiality of each partner have been considered. This matrix helps firms to find appropriate kind of partner for its specific needs. It also may be useful for finding appropriate kind of alliance with a specific partner.

1. Introduction

In response to globalization, there has been a growing number of strategic alliances among corporations throughout the world. Intense global competition has forced firms to look for some effective strategy to cope with it. Firms should innovate in different areas, from technology management to manufacturing process, from plant economics to marketing, and should do it quickly. Strategic alliance is a strategy that allows firms to refresh their competitive strengths in response to globalization.

In recent years, there have been many papers written on strategic alliances. Some of these papers are related to 'how to have effective and successful strategic alliances' [1,2,3,4,5,6,7]. Some of the researchers investigated strategic alliances in different fields like banking [8,9], green marketing [10], small retailing firms [11], and logistics [12,13,14]. Some researchers are investigating the structure and functions of strategic alliance and advantages of applying this strategy [15,16,17,18,19,20,21]. Others are working on how to choose partners [22,23] and using outsourcing as a specific type of strategic alliance [24,25,26].

The concept of "strategic alliance" has the following three necessary and sufficient characteristics[27]:

1. "The two or more firms that unite to pursue a set of agreed upon goals remain independent subsequent to the formation of the alliance.
2. The partner firms share the benefits of the alliance and control over the performance of assigned tasks, perhaps the most distinctive characteristic of alliances and the one that makes them so difficult to manage.
3. The partner firms contribute on a continuing basis in one or more key strategic areas, e.g., technology, products, and so forth."

We have reviewed several categorizations of strategic alliances in the former paper [28], where the concept of an MTM-space has been introduced. MTM stands for Manufacturing ability, Technological level, and Market potentiality. Figure 1 shows an MTM-space that we can map a company's position in any specific product. Which type of alliance a company chooses depends on company's situation on a particular product's manufacturing ability, technological level, and market potentiality. A firm is guided to a better place of this space with an alliance appropriate to its MTM level and the market expected growth and the business scope of the company.

For each high or low level of manufacturing ability, technological level, and market potentiality of a firm and its business scope, there can be different types of alliances to choose among them. In this paper, we introduce an MTM matrix as a tool to develop which kind of alliances for each level of MTM is possible and makes sense. In next section we define and describe the matrix. Then we conduct several analyses on strategic alliances in semiconductor industries.

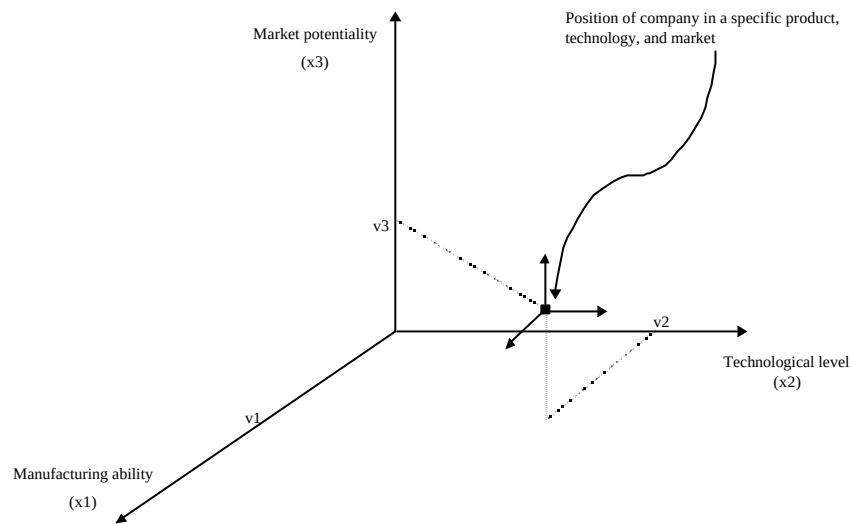


Figure 1 Company position in a specific product, technology, and market

2. Strategic alliance types

The possible type of alliance for a firm is related to its position in the MTM space. In this section, we will suggest what type of alliance is possible for any two firms mapped on the MTM matrix. First, we introduce a simple MTM matrix in Table 1. In this Table, we just consider one of the dimensions. We can derive several types of alliances from this table.

Table 1. Simplified MTM matrix

	Manufacturing ability	Technological level	Market potentiality
H - H		3. Joint R&D 4. Joint product development	
H - L	1. Manufacturing outsourcing	5. Technology licensing	6. Marketing outsourcing
L - L	2. Joint new manufacturing line		7. Shared distribution

Let us describe more on each type.

1. Manufacturing outsourcing

If firm A has a high manufacturing capacity, and firm B has a lower capacity in comparison with its market potentiality, the two firms could have a partnership for manufacturing outsourcing. Even a big corporation may find that it is more economical to use the manufacturing ability of other companies. Cheaper labor cost, low price of using energy, and supportive policies of government may make a company, e.g. a Taiwanese company, a good partner of manufacturing for products of other companies. In this type, a company with a manufacturing capacity below its market potential uses the capacity of a company with higher capacity than its demand.

For example, Toshiba has a strategic alliance with Winbond (a Taiwanese company) for manufacturing of DRAM. Winbond produces the product for Toshiba. By this strategy, Toshiba decreases the cost of production by using the cheaper labor cost, energy and tax. It increases its market share by selling part of that product to local PC makers through using Winbond's local network and relationship. In addition, there is a reduction on production cost and transportation cost for that product in comparison to manufacturing in Japan. This also makes it more marketable in Taiwan and nearby countries. Manufacturing of DRAM requires large investment. By releasing capital from investing for manufacturing facilities, they can use it for other purposes like conducting R&D and developing new products or

technology. They also avoid the effects of the volatility of the semiconductor market. For the Taiwanese company it is an opportunity to utilize its manufacturing skills and capital. In addition, it can use its competitive advantages in manufacturing and local networks.

2. Joint new manufacturing line

If a firm has lower manufacturing capacity than its market potentiality, one strategy is to increase its capacity to meet the demand. However, the investment cost is high. In addition, the scale of economy in semiconductor industry is very important. The more the size of production volume, the less the marginal cost of products. To share the investment cost, and to benefit the scale of economy, one bold strategy is to build a new manufacturing line jointly with a partner that has the same needs. By acquiring this strategy, they share the investment cost. They also benefit the advantages of scale of economy. In addition, they use their market potentiality.

3,4. Joint R&D, Joint product development

These types of alliances are among firms that have high technological levels. These firms want to develop new technologies or products. By sharing the high cost of R&D on new products or technologies, they decrease the financial burden of it. By sharing the human resources, they speed up the process of development. As many rivals may have the plan of development the same product or technology, the risk of late commercializing is high. The high cost of R&D and short life cycle of the final product forces some rivals to combine their skills in an attempt to achieve the results earlier than other rivals and at the same time with its partners. By acquiring this strategy, it reduces the competition from its partners' side. In addition, it may help to put a standard setting when introducing new technology or products.

5. Technology licensing

When a firm has a low technological level in a specific area, sometimes it is very difficult for him to develop the necessary technology in-house. It may not be able to afford the time and money for improving its technology. In other hand, it has a strong manufacturing ability or a strong sales network and desire to utilize them. In such a situation, one proper strategy is to license the technology from a firm with high level of technology. By building such a strategic alliance it will fill its gap in technology and will utilize its other strengths.

6. Marketing outsourcing

Consider a firm has a high quality product but has not enough marketing channels. He may not use of his strengths if he can not find a way to expand its marketing. One solution to this problem is outsourcing the marketing from a company with a strong marketing ability. In such a way, it can concentrate on activities, which is strong on them, and markets its products through other firm.

7. Shared distribution

When two or more firms have a product to sell but have weak marketing channels, they may joint their forces to make a shared distribution. In this way, they make broaden their market accessibility with less cost.

3. MTM matrix

Now we define an advanced MTM matrix that will cover all the combinations of manufacturing ability, technological level, and market potentiality.

In fact we can derive this advanced MTM matrix from the simplified with introducing the following principal: If the firm A has the MTM level of $x_1y_1z_1$ and the firm B has the MTM level of $x_2y_2z_2$, then by finding the corresponding strategic alliance types for each of x_1-x_2 , y_1-y_2 , z_1-z_2 from the simplified matrix, we can list the possible alliances for these firms.

For instance if one firm has the position of LHH and the other one has the position of LHL, then by referring to table 1, we find that the following alliance types are possible:

Joint new manufacturing line, joint R&D, joint product development, and marketing outsourcing. However, in combination of all three factors the alliance types will not necessarily be the same as sum of each factor types. There are some exceptions which we will describe each of them.

Table 2. MTM matrix

	HHH	HHL	HLH	LHH	HLL	LHL	LLH	LLL
HHH	♦ Technology licensing ♦ Joint R&D ♦ Joint Product Development	♦ Technology Licensing ♦ Joint R&D ♦ Marketing Outsourcing ♦ Joint Product Development	♦ Technology Licensing	♦ Manufacturing Outsourcing ♦ Technology Licensing ♦ Joint R&D ♦ Joint Product Development	♦ Technology Licensing ♦ Marketing Outsourcing	♦ Manufacturing Outsourcing ♦ Joint R&D ♦ Marketing Outsourcing ♦ Joint Product Development	♦ Manufacturing Outsourcing ♦ Technology Licensing	♦ Manufacturing Outsourcing ♦ Technology Licensing ♦ Marketing Outsourcing
HHL		♦ Joint R&D ♦ Joint Product Development ♦ Technology Licensing	♦ Technology Licensing ♦ Marketing Outsourcing	♦ Manufacturing Outsourcing ♦ Marketing Outsourcing ♦ Technology licensing ♦ Joint R&D ♦ Joint Product Development	♦ Technology Licensing	♦ Manufacturing Outsourcing ♦ Joint R&D ♦ Joint Product Development	♦ Manufacturing Outsourcing ♦ Technology Licensing ♦ Marketing Outsourcing	♦ Manufacturing Outsourcing ♦ Technology Licensing
HLH			♦ Joint marketing	♦ Manufacturing outsourcing ♦ Technology licensing	♦ Marketing Outsourcing	♦ Manufacturing outsourcing ♦ Technology licensing ♦ Marketing outsourcing	♦ Manufacturing Outsourcing	♦ Manufacturing Outsourcing ♦ Marketing Outsourcing
LHH				♦ Joint New Manufacturing Line ♦ Joint R&D ♦ Joint Product Development	♦ Manufacturing outsourcing ♦ Technology Licensing ♦ Marketing Outsourcing	♦ Joint New Manufacturing Line ♦ Joint R&D ♦ Joint Product Development ♦ Marketing Outsourcing	♦ Joint New manufacturing Line ♦ Technology Licensing	♦ Joint New Manufacturing Line ♦ Technology Licensing ♦ Marketing Outsourcing
HLL						♦ Manufacturing outsourcing ♦ Technology Licensing	♦ Manufacturing Outsourcing ♦ Marketing Outsourcing	♦ Manufacturing Outsourcing
LHL						♦ Joint New Manufacturing Line ♦ Joint R&D ♦ Joint Product Development	♦ Joint New Manufacturing Line ♦ Technology Licensing ♦ Marketing Outsourcing	♦ Joint New Manufacturing Line ♦ Technology Licensing
LLH							♦ Joint New manufacturing Line	♦ Joint New Manufacturing Line ♦ Manufacturing Outsourcing
LLL								♦ Joint New Manufacturing Line

HHH-HHH: If both of two firms have high manufacturing ability, high technological level and high market share and network in a specific product, they can have the following kind of alliances. They may have a joint R&D to develop a new technology. They may engage in a joint product development. They also can have technology licensing of each others technology components. In this cell, the technology licensing type does not come directly from the simplified matrix. This type is possible, because as the technology in semiconductor industry is so advanced and has different components, it may not possible for a high technology level firm to be advanced in all components and areas. Therefore, it is possible for them to make a technology licensing from the other high technology firm in some components of the final product.

HHH-HHL: If one firm is high on all three levels and the other is weak on market share and channels but high on manufacturing ability and technological level may participate in the following kind of partnership. They may join their pool of research staff to have a more advanced research team in a joint R&D or joint product development. With this partnership they reduce the competition from each others site. They increase the speed of R&D. Meanwhile the risk of failure will be both distributed and decreased. The other possibility is technology licensing. In addition, the weaker partner in market share and channels can use the strong partner marketing channels to distribute its products. The exception from the general rule here, is technology licensing. As it said in the previous cell, an advanced technology firm may need technology licensing for some of its components in order to complete its technology and to make the high potential of using its strong manufacturing capability or its market potentiality.

HHH-HLH: If a firm is high on all three dimensions and the other is low in technological level but high in other two levels, they may technology licensing. There is no exception here to the general principal.

HHH-LHH: If one firm has low manufacturing ability, but high technological level and high market potentiality, and the other firm has high level on all three dimensions; they may find the following partnerships an appropriate alliance. One is manufacturing outsourcing. By doing this one firm can utilize its extra capacity. The other firm does not need make a big investment in manufacturing facilities. It also avoids the bad effect of cycling behavior of some markets like semiconductor markets. Due to their strong technological level, they may exercise a joint R&D or a joint product development. In addition, technology licensing is possible for part of their components. The exception from the general rule here, is technology licensing. As it said in the previous cell, an advanced technology firm may need technology licensing for some of its components in order to complete its technology and to make the high potential of using its strong manufacturing capability or its market potentiality.

HHH-HLL: If a firm is high on all three dimensions but the other is just high on manufacturing ability, here are the possible alliances. One is technology licensing. This brings money and profit for one side and gives an opportunity to other side to develop its technological level and utilize its manufacturing ability. Marketing outsourcing is another kind of possible alliance for these two firms. One firm uses the others network to market his product. Other firm can utilize his marketing network. There is no exception here to the general principal.

HHH-LHL: If a firm with high levels on all three dimensions wants to make alliance with a firm which is strong just in technology, the possibilities are as following. Manufacturing outsourcing is one of these possibilities. Joint marketing is the other possible alliance. They also may have a joint R&D or joint product development. They may joint in a product development project. There is no exception here to the general principal.

HHH-LLH: When one firm has a high market channel for distributing a product, but has low technological level and manufacturing ability, it may find some kind of proper alliances with a firm, which is high on all three dimensions. It can outsource its manufacturing needs. It may have a technology licensing to increase its technological base. There is no exception here to the general principal.

HHH-LLL: If one firm is weak on all three dimensions, what kind of alliances it can have with a firm that is strong on all dimensions? It can acquire technology by technology licensing. It can make alliance with another firm with such characteristics for manufacturing outsourcing. In addition, it can find same or another firm for its marketing outsourcing. There is no exception here to the general principal.

HHL-HHL: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the second firm has low market share but high technological level and manufacturing ability,

the possible alliances are as follows. They may participate in a joint R&D or a joint product development. The exceptions here are as following. They may have technology licensing for some part of their technology in order to utilize their strong manufacturing capability or market potentiality. When both firms have low market channels, they may build a joint marketing or shared distribution. However, in semiconductor industry it is not the case. When a company has a weak marketing channel, it may outsource its marketing through a company with strong marketing capability.

HHL-HLH: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the second firm has high levels in all dimensions except technological level, they may have a technology licensing with the first firm. In addition, the first firm can use the potential of the second firm by marketing outsourcing. In this way, the both firms will have benefit of the partnership. There is no exception here to the general principal.

HHL-LHH: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the other firm has low manufacturing ability, but has high technological level and high marketing channels, the following alliances are possible. One partner can use the other's manufacturing facilities by outsourcing. Also there is a possibility of marketing outsourcing. They may participate in a joint R&D or a joint product development. In addition, licensing of some part of technology is a possibility.

HHL-HLL: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the second firm has just high manufacturing ability, they may build a licensing agreement. Here we omit the shared distribution option. When both firms have low market channels, they may build a joint marketing or shared distribution. However, in semiconductor industry it is not the case. When a company has a weak marketing channel, it may outsource its marketing through a company with strong marketing capability.

HHL-LHL: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the other firm has a high technological level, they may participate in a joint R&D. Joint products development is another possibility for their alliance. Manufacturing outsourcing is another type of alliance, which is appropriate for this situation. The reason for omitting the shared distribution option is the same we described for the HHL-HLL cell.

HHL-LLH: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the other firm has a low manufacturing ability, low technological level but high marketing potentiality, their match may bring the following alliances. This firm may use technology licensing to acquire the technology. It may use outsourcing from the same type of firms but not necessarily the same firm for its manufacturing needs. Marketing outsourcing is the other type of alliance possible for this situation. There is no exception here to the general principal.

HHL-LLL: If a firm has high manufacturing ability and high technological level but has low market share or marketing channels, and the other firm is low on all three dimensions, it may need a technology licensing to acquire the technology. It can have a manufacturing outsourcing. The reason for omitting the shared distribution option is the same we described for the HHL-HLL cell.

HLH-HLH: If a firm with high manufacturing ability, low technological level and strong marketing channels wants to make a partnership with the same type of firm, they can have a joint marketing for their products. There is no exception here to the general principal.

HLH-LHH: If one firm is high on manufacturing ability and marketing potentiality and the other firm is high on technological level and marketing potentiality; they may participate in a technology licensing. Manufacturing outsourcing is the other possibility. The two firms can be complementary for this purpose. There is no exception here to the general principal.

HLH-HLL: If one firm is high on manufacturing ability and marketing potentiality and the other firm is high on just manufacturing ability, then marketing outsourcing is a possible type of alliance for them. There is no exception here to the general principal.

HLH-LHL: When one firm has a high manufacturing ability and a high marketing potentiality and the other firm has a high technological level, the possible alliances are as follows. Manufacturing outsourcing can benefit both firms alike. Technology licensing is a way to acquire the technology and is possible in this case. In addition, marketing outsourcing is the other type of alliances, which fits to this situation. There is no exception here to the general principal.

HLH-LLH: If one firm is high on manufacturing ability and marketing potentiality and the other firm is high on just marketing channels; they may have a joint marketing. Also manufacturing outsourcing is another possibility for their partnership. There is no exception here to the general principal.

HLH-LLL: When one firm has a high manufacturing ability and a high marketing potentiality and the other firm has not any strength in those three dimensions, they may make following type of alliances. Manufacturing outsourcing may benefit both through utilizing of extra capacity for one partner and through preventing the high manufacturing investing for the other partner. Marketing outsourcing is the other possibility. There is no exception here to the general principal.

LHH-LHH: If a firm has a low manufacturing ability, high technological level, and high market potentiality and the other firm has the same characteristics the possible alliances are as following. They may have a joint project for a new manufacturing line to increase their capacity but decrease the investing cost by using scale of economy and sharing the investment. They may have a joint R&D or joint product development for advancing the current technology or developing a new one. . There is no exception here to the general principal.

LHH-HLL: When a firm has a low manufacturing ability, high technological level, and high market potentiality and the other firm has high manufacturing ability, manufacturing outsourcing is one of possible alliances between them. In addition, the second firm can acquire the technology by licensing. Marketing outsourcing is the other possible alliance between them. There is no exception here to the general principal.

LHH-LHL: If a firm has a low manufacturing ability, high technological level, and high market potentiality and the other firm has high technological level, they may enter into a joint R&D or joint product development. They also cooperate on building a joint new manufacturing line. Marketing outsourcing is the other possibility. . There is no exception here to the general principal.

LHH-LLH: When a firm has a low manufacturing ability, high technological level, and high market potentiality and the other firm has high marketing channel, they may enter develop a joint manufacturing facility. In addition, the second firm can acquire technology by licensing. . There is no exception here to the general principal.

As there is no exception for the other cells, we omit their description. We describe some of the cases in the semiconductor industry in the next section.

4. Cases

Here we investigate several cases to validate MTM matrix.

Case 1. HHH-HLL

This is a case of alliance between Toshiba and Winbond for manufacturing 16-megabit DRAM. Toshiba has a high manufacturing ability, high technological level and high market potentiality in this product. Taiwanese company - Winbond - has Low cost, high quality, and big capital. It doesn't have the state of the art technology and marketing capability. In other word it has high manufacturing ability, low technological level and low marketing capability.

Taiwan is called Silicon Island because of many manufacturing facilities. They are specialized at wafer manufacturing, assembling, and testing. For instance, Winbond has talented engineers and operators and aggressive style of management.

Toshiba Corporation and Winbond Electronics Corporation Entered Partnership in Production and Development of semiconductor Memory Devices on 1995.

They signed an agreement to enter into an alliance for the manufacture and cooperative development of semiconductor memory products. This was the first strategic alliance for Toshiba with a Taiwanese company in the area of semiconductors.

In the first initiative under the agreement, Toshiba provided Winbond with production technologies for state-of-the-art 16-megabit DRAMs and next-generation 1-megabit high-speed SRAMs, semiconductor devices widely used in computers and other information equipment. This step was technology licensing. Winbond produced these devices in new 8-inch wafer fabrication plant, which started operation in late 1996.

This alliance was based on mutual benefits it would bring to both companies in supporting their long-term growth in the semiconductor business. The project allowed Winbond to expand its product line to include DRAMs and to enhance its position in high-speed SRAMs, the largest segments of the semiconductor market. Toshiba was able to share the qualified engineering and production resources of Winbond, and increased its supply capability of main products.

Toshiba procured the output of the fabs from Winbond, and sold them under Toshiba brand name mainly in the Asian market.

Case 2. HHH-LHL

This case is alliance between Toshiba and vertex. They made an alliance in ASIC. Toshiba had a HHH position on all dimensions: manufacturing ability, technological level and market potentiality.

Vertex had no sales channel. It was fabless. It means it had no manufacturing facility itself. The strength of this Silicon Valley Venture Company was its closeness to consumers and understanding of market. In other word Vertex had low manufacturing ability, high technological level and low marketing channels. It had 120 people, which mostly were engineers. The trend of their alliance was as following:

1. Foundry arrangement.
2. Technology license in exchange for wafer.
3. Joint development of product (joint design)
4. Equity participation (minor investment 10-20%)

Later Vertex became a subsidiary of Toshiba by an acquisition. And finally Vertex became one division of Toshiba by a merger.

These alliances are in accordance of our proposed alliances for this combination, i.e. HHH with LHL. It started with a manufacturing outsourcing, and continued by technology licensing and joint product development.

Case 3. HHH-HHH

This is a kind of alliance among giants in the world of semiconductor industries for joint R&D, for instance among Toshiba, IBM and Zimense. Toshiba, IBM and Zimenes all have HHH position in MTM space for DRAM. They decided to develop new DRAMs jointly. They started with 16 Mega-bit DRAM, and then continued for 64 Mega-bit DRAM. In this way, competition is among groups rather than individual companies. They share the cost and risk. By sharing the high cost of R&D on new product, they decrease the financial burden of it. By sharing the human resources, they speed up the process of development. As many rivals may have the plan of development of same product or technology, the risk of late commercializing is high. The high cost of R&D and short life cycle of final product forces some rivals to combine their skills in an attempt to achieve the results earlier than other rivals and at the same time with its partners. By acquiring this strategy, it reduces the competition from its partners' side. In addition, it may help to put a standard setting when introducing a new technology or a new product.

Case 4. HHH-HHL

This is a case between Hitachi and United Microelectronics. The alliance is a joint venture company to manufacture 300mm wafers with leading-edge process technologies of 0.18-micron. Hitachi has a HHH level on this product and United Microelectronics has a HHL level on this product. The new company will be based in Japan. The site is expected to become a strategic manufacturing facility for both Hitachi and UMC, combining Hitachi's advanced process and manufacturing technology with UMC's advanced technology and world-class silicon foundry expertise.

Half of the capacity of the joint venture will be reserved for Hitachi's products, with the other half reserved for products supplied to UMC's foundry customers. The joint venture will be established by the end of February 2000 and start manufacturing operations from 2001. It is expected that the joint investment maximize returns on investment for the new product. This joint venture will result in one of the world's first 300mm wafer plants in mass production. Hitachi will contribute its 0.18-micron and beyond process technology, as well as its experience in the development of 300mm manufacturing systems. UMC will also contribute its 0.18-micron and beyond technology to the company, as well as provide its know-how in silicon foundry operations. The initial investment is approximately 700 million-Dollar for 7,000-wafer capacity.

Case 5. HHH-HHH

This is a case between NEC Corporation and Hitachi, Ltd. They are to consider establishing a joint-venture company in the year 2000. The Joint-venture Company is responsible for DRAM developments and design, and unification of DRAM products under a single brand manufactured using the production resources at both companies. The both companies have an advanced technology and a high market share. However, in the semiconductor industry economy of scale has a high degree of importance. It is the main factor for the cost competitiveness. The increasing expenses for development of leading-edge technologies and products present a series of issues for every single company. To share these expenses with other company is another advantage of alliance. In addition, the combination of their technologies and other resources in the DRAM field will result in a world-class technological capability. And they will have a strengthened presence in global markets backed by enhanced cost competitiveness.

5. Conclusions

In this paper, an MTM matrix for strategic alliances was introduced. In this matrix, manufacturing ability, technological level and marketing potentiality of each partner have been considered. This matrix help firms to find appropriate kind of partner for its specific needs. For any specific product, a firm selects his position on the MTM level. Based on its business scope the firm defines appropriate type of alliance. Then this matrix shows the MTM level of an appropriate partner.

It also may be useful for finding appropriate kind of alliance with a specific partner. For many reasons, some times a firm decides to have an alliance with a specific partner. The firm can map its level of MTM on this matrix. And also by mapping its partner level on this matrix, the matrix shows different type of alliances which can be build based on the firm business scope.

Based on this matrix, a company can choose suitable partner or alliance to achieve to its goal. In continuing of this research, we also conducted analysis of several strategic alliance cases in the semiconductor industry.

References

- [1] Ellis, C. (1996), 'Making Strategic Alliances Succeed', Harvard Business Review, Vol. 74, No. 4, pp.8-9.
- [2] Yuan, B., and Wang, M. (1995), 'The Influential Factors for the Effectiveness of International strategic Alliances of High-tech Industry in Taiwan', International Journal of Technology management, Vol. 10, No. 7-8, pp.777-787.
- [3] Pekar, P., and Allio, R. (1994), 'Making Alliances Work: Guidelines for Success', Long Range Planning, Vol. 27, No. 4, pp.54-65.
- [4] Stiles, J. (1994), 'Strategic Alliances: Making Them Work', Long Range Planning, Vol. 27, No. 4, pp.133-137.
- [5] Bronder, C., and Pritzel, R. (1993), 'developing Strategic Alliances: A Conceptual Framework for Successful Co-operation', European Management Journal, Vol. 10, No. 4, pp.412-421.
- [6] Lorange, P., Roos, J., and Bronn, P. S. (1992), 'Building Successful Strategic Alliances', Long Range Planning, Vol. 25, No. 6, pp.10-17.
- [7] Devlin, G., and Bleackley, M. (1988), 'Strategic Alliances: Guidelines for Success', Long Range Planning, Vol. 21, No. 5, pp.18-23.
- [8] Sijbrands, S., and Eppink, D. J. (1994), 'The Internationalization of Dutch Banks: A New Beginning?', Long Range Planning, Vol. 27, No. 4, pp.35-47.
- [9] Takac, P. F., and Singh, C. P. (1992), 'Strategic Alliances in Banking', Management Decision, Vol. 30, No. 1, pp.32-43.
- [10] Mendleson, N., and Polonsky, M. j. (1995), 'Using Strategic Alliances to Develop Credible Green marketing', Journal of Consumer Marketing, Vol. 12, No. 2, pp.4-18.

- [11] Reijnders, W. J. M., and Verhallen, T. M. M. (1996), 'Strategic Alliances among Small Retailing Firms: Empirical Evidence for the Netherlands', Journal of Small Business Management, Vol. 34, No. 1, pp.36-45.
- [12] Gentry, J. J., and Vallenga, D. B. (1996), 'using Logistics Alliances to gain a strategic Advantage in the Marketplace', Journal of Marketing Theory & Practice, Vol. 4, No. 2, pp.37-43.
- [13] Turner, G., Lemay, S. A., and Mitchell, M. A. (1994), 'Solving the Reverse Logistics Problem: Applying the Symbiotic Logistics Concept', Journal of Marketing theory and Practice, Vol. 2, No. 2, pp.15-2.
- [14] Bowersox, D. J., and Droge, C. (1989), 'Similarities in the Organization and Practice of Logistics Management among Manufactures, Wholesalers and Retailers', Journal of Business logistics, Vol. 10, No. 2, pp.61-72.
- [15] Bleeke, J., and Ernest, D. (1995), 'Is Your Strategic Alliance Really a Sale?', Harvard Business Review, Vol. 73, No. 1, pp.97-105.
- [16] Cellini, G. L. (1993), 'strategic Alliance in the 90's', Management Accounting, Vol. 74, No. 12, pp.56-59.
- [17] Murray, E. A., and Mahon, J. F. (1993), 'Strategic Alliance: Gateway to the New Europe?', Long Range Planning, Vol. 26, No. 4, pp.102-111.
- [18] Parkhe, A., (1993) 'Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Interfirm Cooperation', Academy of Management Journal, Vol. 36, No. 4, pp.794-829.
- [19] Bleeke, J., and Ernest, D. (1991), 'The Way to Win in Cross-Border Alliances', Harvard Business Review, Vol. 69, No. 6, pp.127-135.
- [20] Bertodo, R. G. (1990), 'The Strategic Alliance: Automotive Paradigm for the 1990s', International Journal of Technology management, Vol.5, No. 4, pp.375-388.
- [21] Magee, J. F. (1989), '1992: Moves Americans must Make', Harvard Business Review, Vol. 67, No. 3, pp.78-84.
- [22] Brouthers, K. D., Brouthers, L. E., and Wilkinson, T. J. (1995), 'Strategic Alliances: Choose Your Partners', Long Range Planning, Vol.28, No. 3, pp.18-25.
- [23] Holohan, P. M. (1998), 'Business alliances: how to find a good partner', Int. J. Business performance Management, Vol. 1, No. 1, pp.79-89.
- [24] McFarlan, F. W., and Nolan, R. L. (1995), 'How to Manage an IT Outsourcing Alliance', Sloan Management Review, Vol. 36, No. 2, pp.9-23.
- [25] Willcocks, L., and Choi, C. J. (1995), 'Co-operative Partnership and Total IT Outsourcing: From Contractual obligation to Strategic Alliance?', European Management Journal, Vol. 13, No. 1, pp.67-78.
- [26] Hellebust, K. A. (1988), 'Creating a strategic Alliance with Information technology Suppliers', Journal of Information Systems management, Vol. 5, No. 1, pp.32-37.
- [27] Yoshino, M.Y., and Rangan, U.S. (1995), Strategic Alliances: An Entrepreneurial Approach to Globalization, Harvard business school press, Boston, USA.
- [28] Kasmal, M., and Iijima, J. (1999), 'Strategic Alliances: A new perspective on Coordination Viewpoint and new Mapping Aid', Int. J. Business Performance Management, Vol. 1, No. 4, pp.417-432.