

## Chapter 12

### **MGO: Microprocessor Grand Operation**

#### Learning from "Operation Crush"

MGO (Microprocessor Grand Operation) was a consolidated strategy of sales and manufacturing for expanding revenue of Hitachi original microprocessors (H8 and SH).

The dispute over patent issues with Motorola concerning the H8 microprocessor, which was the first product developed in its original product strategy, completely settled in 1990.

As we got ready to compete in the world market with the completion of the development of the new product line of original products, a momentum started to be built up among the engineering, marketing, and sales departments in order to start a big project to promote original microprocessor sales.

On this occasion, in order to do sales promotion in a different way than before, we started the project called MGO - Microprocessor Grand Operation - which I named. In traditional sales promotion activities, they were commonly called "xxx sales expansion project", but this time we dared to use the word "operation" to show our determination that "the sales expansion project this time is different from previous ones!"

As a matter of fact, there was an actual case that gave us a hint to this project. It was an "operation crush", or "crushing strategy" at Intel in the late 1970's. Shortly after I took office as GM of Takasaki Works in 1987, one of my acquaintances in the US sent me a book "High Technology Marketing" by William Davidoff. In this book, it was specifically described how Intel won in the fierce market competition of 16-bit microprocessor between Intel and Motorola in the late 1970's.

At that time, Intel's 8086 was first introduced as a 16-bit microprocessor in the market and it was overwhelmingly leading. However, Motorola, as a late comer, made a major offensive with 68000, which was superior in performance. Intel's sales force was seized with a panic and the morale declined as they felt that there would be no win. "Operation crush" was set up to overcome such a situation, and William Davidoff took over the strategy.

Davidoff clearly distinguished the difference between "device" and "product". The "device" competition is a comparison of the performance of bare products. That is, it is the chip's hardware characteristics such as processing speed, power consumption, and memory capacity.

In this respect, 8086 which came first could not match 68000 which came later. On the other hand, the "product" is a competition of good or bad for the whole product including ease of use by customers. It means comprehensive customer support including, for example, support documentation, reference boards, software, seminars, and availability. Davidoff commanded the whole operation with a strong will to "Win it with the "product" even if you lose on the "device"! The morale of Intel camp recovered gradually, and competition regained its advantage.

And it was the design win to IBM in 1980, that decided this fierce battle. 8088, which was the sister product of 8086, was designed into the IBM PC. This became a groundbreaking product that opened the era of new personal computers, and it played a big role in solidifying Intel's world's top position later on.

Start of MGO

MGO started in February 1991. The biggest aim was to establish direct communication lines among engineering, manufacturing, and sales teams, and also to the final customers.

In the semiconductor business, technology, products, markets and customers change rapidly. Therefore, it is important that a change that has occurred in one part of operation be communicated to other sections as quickly and accurately as possible, and the information must be shared among the whole team. A high technical level is required to accomplish such a task.

Excellent microprocessor engineers, mainly in the design department, were mobilized for this grand operation. The first stage (1991-93) started with 13 members.

The Senior Engineers at the time, Masayoshi Abe (in charge of branch sales offices), Norishige Kawashimo (in charge of domestic sales), Shinkichi Hotta (in charge of overseas sales) served as dedicated members and played leading roles. In addition, as the dedicated members in Engineer level, Seiichi Koshiji, Masahiko Takeshima, Masami Masuda, and Hideki Yamazaki joined. They had solid understanding of the essence of microprocessor technology and applied products. That is, young engineers literally in “prime time” took the lead of this operation

At the start of MGO, I gave the above “High Technology Marketing” to all members and recommended them to read it. Because there was no Japanese version at that time, I ordered the original English books for all the members. In promoting the activities of MGO, this book was a bible, so to speak. I heard from one of the members that there were a lot to learn especially in overseas marketing. He said that we owed a lot to this book in our significantly better accomplishment in overseas market over the domestic competitors.

As an aside, Kawashimo, who became a full-time leader in Phase I, had an opportunity to meet the author of the book William Davidoff later, and asked for his signature on the book. Davidoff gladly accepted it, and Kawashimo still keeps the signed book as his treasure.

Approximately 30 members were assigned in the second phase (1993 - 1995). The full-time leaders were Tsuneo Sato (in charge of domestic and branch office sales) and Masahiko Sugawara (in charge of overseas sales). Senior Engineers, Naoya Saga and Hiroshi Takeda, and Engineers, Tadashi Yamaura and Kunihiko Nakada, also joined.

In the third phase (1995-97), the members were increased to about 80, and design-win activities to global customers were promoted. The full-time leaders were Nobuo Shibasaki (in charge of branch offices), Norishige Kawashimo (in charge of domestic sales), Masahiko Sugawara (in charge of overseas sales). Kiyoshi Ogita, Sumio Urakawa, Hiroyuki Iwashita, Hiroo Ishii, Michio Aso, Takamasa Asano, Takamasa Fujinaga, Asaka Matsuzawa, Takayuki Oura, all as the Senior Engineers, and Kenji Takechi, Hirokazu Tsuchiya, Kinya Tanaka, Katsumi Yamamoto, Kazuya Takamatsu and Naoki Mitsuishi as Engineer class also joined as the members, and it became an extremely powerful organization.

Members of MGO moved their work place to the place of sales division, and Kaiho, Deputy Director of Sales, organized the sales team and the project was organized as a real integration of factory and sales.

Progress of the project was reported from Yasuda, the head of the technology division at the regular managers meetings. PC (Apple’s Mac) was used to prepare the meeting documents, which

was an advanced process at the time, but it still took 30 minutes to make one copy.

Products to be promoted were mainly H8 microprocessors in the first phase. This was the first priority product of Hitachi's original microprocessor. We could now start free hand market promotion after the completion of the patent dispute with Motorola.

Sales expanded to a wide range of markets; consumer product market such as VCRs, televisions and audio, business machine market such as copiers, printers, fax machines and personal computers, and further to other markets including cameras.

In the second phase and after, SH microprocessors were added. In terms of performance, they were the world's highest level products, and especially the "MIPS/W" index, or the energy efficiency, was outstanding and became the biggest sales point.

SH microprocessors were adopted in the world's first digital camera for consumer use (Casio), Sega's game machine, Roland's electronic musical instrument, Yamaha's electronic pianos, car navigation systems by Xanavi and Aishin AW, etc., and SH opened up a new application field called "digital consumer".

In 1993, the F-ZTAT version of the H8 microprocessor (on-chip flash memory version) was introduced to the market, and the design-in activities were widely promoted as the world 's first "field programmable microprocessor".

The strength of F-ZTAT is that it can be applied to any small volume production equipment, making the microprocessor very familiar to system designers. The symbolic case is the MCU Car Rally (MCR) which I described in Chapter 11.

And in the third phase, Windows CE, the new Microsoft Windows OS for consumer field application, was installed in SH microprocessor, and SH microprocessor became one of the world standard products for HPC or Handheld PC. This impact was extremely large, and I would like to describe it in the next chapter.

Well, since this "grand operation" was a project in which I committed myself, whenever I got a request from sales and MGO teams, I supported the activities in the form of top sales by visiting the customers directly as much as possible. Needless to say, in order for the top sales to be effective, it is based on daily good activities of sales force (dealers, sales department, marketing department, MGO members etc.). My role was to clearly communicate to the customers that, "I am deeply committed to the products as the top of Hitachi semiconductor", and to tell them my vision of future direction of products and markets in my own words. This is extremely important. I believe it created confidence and secure feeling on the products at the customer side.

Actually, it is also clearly stated in William Davidoff's "High Technology Marketing" that "commitment of the top is extremely important" in the case of products involving architectures such as microprocessors. I think that this probably refers to Intel founder Robert Noyce. We often heard about rumors as to his talks on his customer visits. It was said that many customers became a sort of "Noyce believers" after hearing his talks. Noyce left with him outstanding technological achievements such as the invention of IC, but he also must have been "the world's top semiconductor salesman".

### Microprocessor to become the main pillar

In 1992 when a little more than a year had passed since the MGO was started, a big milestone came. The production of H8 microprocessor, which was the most important item of sales promotion, exceeded one million pieces per month in June of this year, and sales exceeded 1 billion yen.

It was a great pleasure for all the members involved, giving stronger momentum to the sales promotion activities. Members from laboratories, business departments, factories, and sales departments participated in the commemorative gathering of this achievement, and they all got very lively. The photo 12.1 is the picture at that time.



Photo12.1 Rally event to celebrate the achievement of 1 million pieces of H8 microprocessor (June 1992) From left: Kazuo Kimbara, the author, Toshimasa Kihara

By the way, the sales amount became doubled in September of the next year, 1993, and monthly production of H8 reached over 2 million. We can see the extremely active promotion carried out by MGO from this achievement, too.

Let's see how the sales of microprocessors grew by MGO activities here.

Prior to the start of MGO, the sales of microprocessors in 1991 was 4.5 billion yen per month, most of which being occupied by old Motorola architecture products (68 series and 63 series).

The monthly sales of new products (H8 series etc.) was 500 million yen, only 11% of the total. Through MGO activities, the new product sales grew in 2X per year rate, to 1 billion yen (20% of total) per month in 1992, and to 2 billion yen (36%) in 1993. The sales of total microprocessor were 8.0 billion yen in 1994, and the new product was 4.5 billion yen, occupying 56% of the total. At this point, the new microprocessor products of H8 and SH finally surpassed the old products and got the mainstream position.

The period during which the first to third MGOs were held (1991 - 1997) was the turbulent years of Hitachi semiconductors. Memory made a major leap forward until 1995 and led the total semiconductor business performance, but its momentum was lost after 1996 by the major depression. Microprocessors became the new major pillar, replacing memory.

The organization at the time was "Product Division System", and the business was managed by three divisions; Microprocessor and ASIC Division (M&A Div.), Memory Division, and General Purpose Semiconductor Division (GSP Div.)

Let's see the trends in monthly sales of M&A Div. and Memory Div. around 1995.

2<sup>nd</sup> half of '93; 18.9 billion yen for Memory Div. and 7.8 billion yen for M&A Div. which was less than half of Memory Div.

2<sup>nd</sup> half of '95; Memory Div. grew largely to 38.3 billion yen (yearly growth of 42%), and despite of the M&A Div. growth of 27% to 12.5 billion yen, it was less than 1/3 of Memory Div.

However, immediately after this, the intense semiconductor depression occurred, and in particular, memory was devastatingly hit. Sales of Memory Div. dropped to 10.7 billion yen in the 2<sup>nd</sup> half of '97, but M&A Div. kept the sales of 13.1 billion yen, and the business pillar changed for the first time. Microprocessors literally became the major pillar of Hitachi semiconductor.

It was MGO activity that contributed to this remarkable achievement, and the name of MGO gradually spread among the domestic competing companies.

On one occasion when I was in a dinner gathering with MGO members, I heard that the domestic rival companies were saying, "When it comes to Hitachi semiconductor, SH microprocessor is very formidable, and MGO is more formidable. But Makimoto-san's top sales is even more formidable." Although it probably had flattering to a good extent, I think it must have been true, too, that my clear commitment to H8, SH, and F-ZTAT microprocessors as the top of Hitachi semiconductor gave customers a sense of security.

Needless to say, however, young microprocessor engineers and sales persons who worked passionately and dedicatedly on this activity boosted the name of MGO. The credit is given to them. Bravo!

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The original version of this article was first published, in Japanese, on the Home Page of Seminowa-kai, a circle of Hitachi Semiconductor OBs, from July 4, 2011 to October 30, 2011.