Tier-1 Motherboard Makers in Taiwan

Key Finding: ***As the desktop manufacturing industry in Taiwan is complicated and dynamic, each of the Taiwanese manufacturers, whether they delivered desktop, barebone or motherboard only, must demonstrate their competitive advantage and capability of maintaining existing partnerships and seeking new ODM/OEM opportunities.***

There are two kinds of the motherboard makers; system manufacturers and professional motherboard manufacturers. A few differences between system makers and professional motherboard makers are as follows:

- System manufacturers ship the product mostly in full system whereas professional motherboard makers ship the product mostly in pure motherboard to their customers.
- With few exceptions, most system manufacturers are more OEM-oriented whereas professional motherboard makers are more own-brand oriented. Therefore, the system manufacturers target at the MNVs (Multi-National Vendors) outsourcing businesses whereas the professional motherboard makers target the clone market with channel businesses.
- System manufacturers have stronger global logistic supports than professional motherboard makers in order to fulfill the requirements from the MNV customers.

System Manufacturers

By definition, there are four Taiwan's vendors that make the motherboard and the final assembly themselves, namely Acer, FIC, MiTAC and Tatung. They ship the products to

the customers in different formats including pure motherboard, barebone and full system. All the system manufacturers are both with OEM and own-brand businesses. However, they are more OEM-oriented since the OEM business accounted for 50% of their total revenues. These four PC makers are all tier-1 PC makers in Taiwan and produce various PC products including desktop PC, motherboard, notebook PC, PC server or personal workstation.

Professional Motherboard Manufacturers

Professional motherboard makers are the focus of this report and can be categorized into 3 groups:

- Tier-1 makers

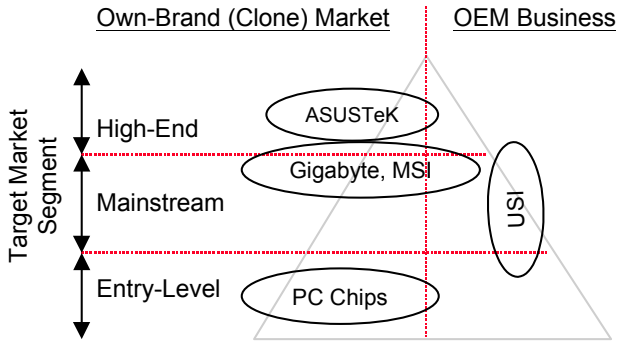
  ASUSTeK, Giga-Byte, MSI, PC Chips and USI can be classified as the tier-1 motherboard makers whose annual production units exceeded 5M in 1999 projection. However, their target market segments are quite different. ASUSTek targets the high-end clone market whereas PC Chips is the leader in the low-end clone market. Both Giga-Byte and MSI target the mainstream and high-end markets. With massive production capacities, tier-1 makers produce the most motherboards by themselves with less than 15% of the total productions are outsourced to subcontractors. Except PC Chips, all other tier-1 motherboard makers are Intel's direct accounts. They purchase Intel's processor and chipset from Intel directly instead of from Intel's authorized local distributors. As Intel's direct accounts, tier-1 makers are able to obtain the most detailed and updated roadmap from Intel earlier than the tier-2 makers, giving the tier-1 makers a competitive advantage.

PC Chips merged ECS (Elitegroup Computer Systems), the leading tier-2 motherboard maker in Taiwan, placing PC Chips ahead of any other motherboard makers in terms of shipment units.

USI just fulfills the basic requirement (5M unit shipments including 4.5M of motherboard and 500k of full system in 1999) of the tier-1 professional motherboard maker. USI is very unique compared to other professional motherboard makers as they only focus on the OEM market. Currently, IBM is the single customer of USI and accounts for more than 99% of the total PC motherboard and system shipments.

Figure 1

Market Segment Targeted by Tier-1 Motherboard Makers



Source: TechInsight Inc., 2000

- Tier-2 makers

There are around 20 tier-2 motherboard makers in Taiwan. The average monthly shipment ranges from 80k to 300k. These 2nd tier motherboard makers include ABIT, Advanced, AOpen, A-Trend, Biostar, Chaintech, DFI, ECS, EpoX, GVC, Iwill, Lucky Star, Mycomp, Orient, Shuttle, Soyo and Tekram. All tier-2 motherboard makers place greater emphasis on the clone market. The percentage of motherboards

made by subcontractors in this category is comparatively higher than the tier-1 makers. Little more detail will be given in this report as the tier-2 maker segment is not the focus.

- Tier-3 makers

  There are many tier-3 motherboard makers in Taiwan, however their contributions to the mainboard industry are much less than the tier-1 and tier-2 makers. Some of them however, are contracting with the tier-1 and tier-2 makers, acting as the production buffer to accommodate demand in peak seasons.

Pros and Cons

Taiwan's motherboard production has played a significant role in the global desktop market. Tier-1, tier-2 and tier-3 motherboard makers target various market segments. Reasons to explain Taiwan's success in motherboard manufacturing are as follows:

- **Supply Chain:** Taiwan's desktop/motherboard supply chain infrastructure is well established. Except for key components such as CPUs, most component suppliers can be found within a close proximity to the major motherboard manufacturers' factories. Taiwan locally supplies the components including passive RC components, chipset (core logic), connector, PCB, power supply and chassis, etc. Taiwan's motherboard makers enjoy an outstanding supply of motherboard/desktop materials with the best cost/quality.

- **R&D Capability:** R&D resources are among the most valuable assets in the motherboard/desktop industry. With experience in motherboard/desktop design and production for more than a decade, Taiwan has developed an expansive pool of well-educated and experienced R&D people. A wealth of R&D people also makes it possible for many motherboard manufacturers to co-exist in the market. The booming stock market in Taiwan has also contributed to the success of the Taiwan

desktop industry. Attractive stock option programs and aggressive compensation packages have enabled Taiwanese desktop vendors to attract and retain the most capable R&D resources. Except PC Chips, all other tier-1 motherboard makers are listed stocks on the Taiwan Stock Exchange. ASUSTeK's stock is the highest among more than 300 stocks traded on the Taiwan Stock Exchange.

- **Cost Competitiveness:** Most inexpensive components (excluding some key components) can be found in the heart of Taiwan's motherboard/desktop manufacturing epicenter. Taiwan has leading IC design houses and wafer fabrication plants, which also makes some key components' prices very competitive.

- **Flexibility:** For those motherboard makers focusing on OEM business, they have proven themselves very cooperative in compliance with customers' instructions. For those motherboard makers targeting the clone market, they always sense the market dynamics and develop the most updated product to the market just in time. Flexibility can also be observed from Taiwan's earthquake, which occurred in Sept. 21 of 1999. Due to the shortage of power after the quake, all motherboard makers adjusted their production shifts everyday in order to follow the schedule of power supply by regions.

- **Aggressiveness and Ambitions:** Taiwanese people are known as hard working and diligent. No motherboard maker began as a big enterprise but a small office and few staff. After years of effort, the motherboard makers have gradually played significant roles in the industry and eventually become leaders in the global market.