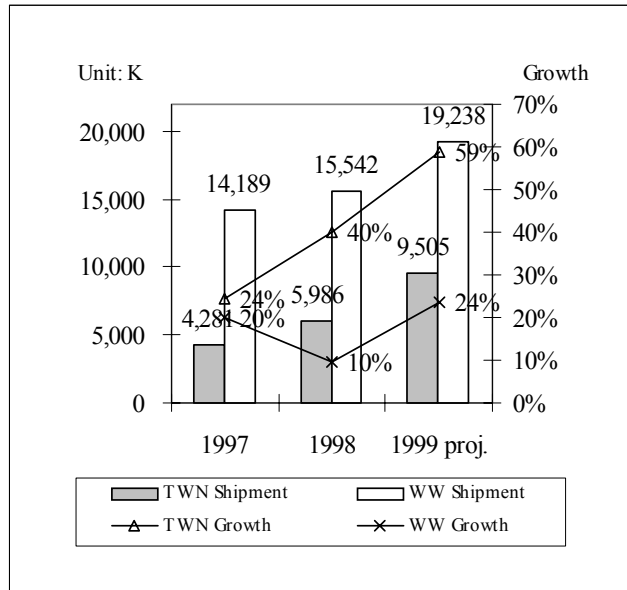


# Top ODM/OEM Notebook Vendors in Taiwan, 1997-1999

***Key Finding: Notebook production is the star of the entire IT industry in Taiwan. In 1998, the total revenue generated by notebook production was over US\$8.4 billion, surpassing monitor revenue of US\$7.5 billion and desktop revenue of US\$6.5 billion. The total number of notebooks manufactured in Taiwan has amounted to 4.3 million, 6 million and over 9.5 million (projected) in 1997, 1998 and 1999, respectively. As such, Taiwan's notebook manufacturing industry has generated a tremendous growth of 49% (97-99 CAGR), which is much higher than worldwide growth of 16.4% during the same period.***

**Figure 1**  
**Taiwan vs. Worldwide Portable PC Production**



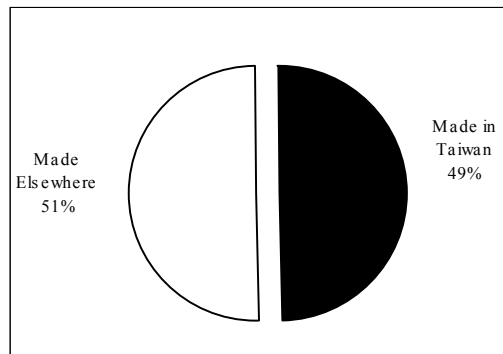
Source: TechInsight Inc., 1999

With more than 9.5 million shipments projected this year, Taiwan is expected to seize a 49.4% share of total worldwide notebook production. Consequently, Taiwan is forecast to represent the largest notebook manufacturer worldwide in 1999, replacing Japan as the No. 1 supply source for notebook production.

After Taiwan's earthquake on September 21, 1999, the notebook industry was affected negatively, especially since the timing was right before the peak season – the fourth quarter. An unstable supply of electricity was the major impact; however, the government promised that the supply of electricity would be back to 100% by the beginning of October. Revenues and profits in both September and October declined and shipping schedules to clients were delayed. In response, the majority of the top notebook vendors decided to operate overtime, with many manufacturers increasing the

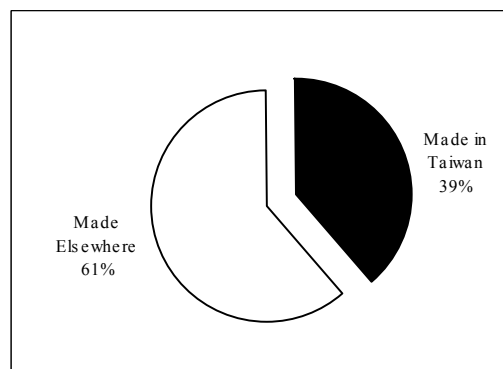
day shift to 24 hours a day and 7 days a week. TechInsight has not lowered its 1999 projection since all major notebook vendors were operating at full speed to reach the target after the quake. However, TechInsight will carefully watch for any factors that may affect planned shipments and will adjust the predicted figures if necessary.

**Figure 2**  
**Taiwan vs. Worldwide Notebook Production (1999 Projected)**



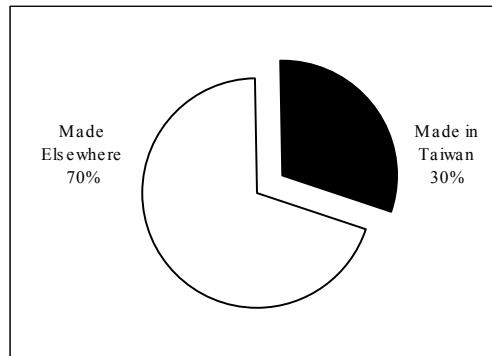
Source: TechInsight Inc., 1999

**Figure 3**  
**Taiwan vs. Worldwide Notebook Production (1998)**



Source: TechInsight Inc., 1999

**Figure 4**  
**Taiwan vs. Worldwide Notebook Production (1997)**



Source: TechInsight Inc., 1999

The top 5 Taiwanese notebook manufacturers, namely Quanta, Acer, Inventec, Compal and Arima, are classified as tier 1 vendors since they presently OEM for at least one of the top 5 multinational notebook vendors and are expected to ship over 1 million units in 1999. All of the tier 1 vendors mainly ODM/OEM for US clients since US vendors have higher outsourcing rates compared to those of Japanese vendors.

FIC, Clevo/Kapok, Twinhead, MTC (MiTAC) and Alpha-Top (GVC) are classified as the tier 2 vendors. The tier 2 vendors manufacture for at least one of the top 6 to 15 multinational notebook vendors. Some of them may also have good connections with regional distributors. FIC's recent order from NEC to manufacture its mainstream model may enable it to become a member of the "1 million shipment club" next year.

Tier 3 includes vendors with annual shipments below 200,000 such as ASUSTeK, Featron, ASE, USI, Tatung and Delta. Most of the clients of tier 3 manufacturers are small notebook vendors or distributors. ASUSTeK is the tier 3 vendor with the most potential since it has opportunities to receive OEM orders from one or two of the top 10



multinational notebook vendors in 2000. ASUSTeK also claims that it will ship up to 1M units in 2000. For this reason, ASUSTeK has been included in the analysis of Taiwan's leading notebook manufacturers.