

# We Visit Advanced Sound Technology

By Steve Mowry

In the late 1990s, Philips decided to sell its loudspeaker and consumer electronic system development and manufacturing operations within SE Asia. This included Philips Sound System (PSS) Asia Pacific in Sungai Petani, Malaysia. This facility had achieved Philips's Total Quality Management (TQM) Standard, PQA90 in 1994.

PSS was sold to S.L. Hui, and the name was changed to Advanced Sound Products in March 2004 ([www.asp.com.my](http://www.asp.com.my)). Incidentally, S.L. Hui (who is the company chairman) has lived and studied in the US and has an MBA from the University of Michigan. Almost immediately, a new sister factory was opened in Shenzhen, China, to facilitate cost-competitive manufacturing operations. In 2005 Advanced Sound Technology, the R&D segment of the company with offices located in Penang, Malaysia, was granted Multimedia Super Corridor (MSC) status by the Malaysian government ([www.msc.com.my](http://www.msc.com.my)).

The significance of these events may not be obvious at first glance. However, most of the documentation, processes, and procedures were implemented by Philips and to Philips' high standards. Additionally, many of the staff members were trained by Philips and subsequently cross-trained colleagues. Unlike most a/v companies operating in Asia, Advanced Sound started where Philips left off and built on the proven procedures and project management of the huge multinational corporation.

Advanced Sound, which is well organized and managed, includes the following departments: Innovation, Sales & Marketing, Engineering, Manufacturing, Quality, Information Technology, Finance, and Human Resources. These are mapped into their respective cross-functional product development team member representation.

The general manager of Advanced

Sound is T.H. Lim ([TH.Lim@AdvancedSP.com](mailto:TH.Lim@AdvancedSP.com)), a mechanical engineer by training and a former member of the management/development team of Robert Bosch Company, Penang, Malaysia. He heads a competent but young management team that exemplifies the "New Wave" school of management at Advanced Sound, reflecting the "Eight Quality Management Principles" relating to the ISO 9000: 2000 International Standards (*Multi Media Manufacturer*, July/August '06, p. 8).

I asked Mr. Lim a few questions. His answers were quite candid.

**Steve Mowry: Where do you see ASP/AST in five years?**

**Lim Tian How:** Both ASP and AST are facing the same challenges that most of the companies do in Malaysia. The manufacturing costs are increasing each year and we are no longer considered a low-cost manufacturing house for our customers as compared to others in China, India, and Vietnam. We need to attract business that will add value to the company and, of course, to our customers. That means we must equip ourselves with new products and manufacturing technology that would generate business for ASP/AST in the years to come. This would put Advanced Sound in a better position when dealing with markets as compared to those low-cost manufacturers in other Asian countries.

That is why we set up AST last year with MSC status awarded by the Malaysian government for the purpose of developing new technologies for application in the a/v industry. AST would provide a technology platform to ASP, which would manufacture final products.

In the next five years, we predict rapid growth for AST in terms of technology and skill levels of human resources. As for ASP Malaysia, we expect the manufacturing levels to be maintained. However, the manufacturing subsidiary in Shenzhen, China, will double its capacity within that time period.

**SM: What do you consider to be the major challenges that ASP/AST and/or the audio/video industry faces within Asia?**

**LTH:** The major challenges facing ASP/AST now are related to competition for highly skilled human resources. We also have a lot to do in terms of productivity improvement as well as continuing to improve knowledge development among our engineers. Good engineers are typically recruited by the big MNCs (e.g., Intel, Motorola, Bosch, etc.). These companies can



**ASP's General Manager T.H. Lim.**

provide good remuneration packages to engineers as compared to local companies. The challenge, then, for ASP/AST is to find ways to provide an attractive working environment for the engineers so as to prepare our technical workforce to face even greater challenges in the future.

**SM: What do you see as the differentiating characteristics of ASP/AST relative to the competition?**

**LTH:** There are different roles played by both ASP and AST. ASP is the manufacturing house that produces products meeting customer requirements in terms of quality, cost, and delivery. AST is the R & D house that is involved in developing products to meet customer specifications. These products can be produced either in ASP in Malaysia or the ASP subsidiary plant in Shenzhen, China. Both ASP and AST have different business segments. However, both work hand in hand to secure ODM projects from

worldwide customers.

**SM: What does ASP/AST have to offer companies and/or investors from within the US?**

**LTH:** We (ASP/AST) offer a “one-stop solution” for customers from product development to product realization in manufacturing. AST is located in Malaysia and has 30 engineers with experience in all a/v disciplines related to sound products. We have experienced engineers in both hardware (electronics and mechanical) and software, as well as in the acoustics field, and we have retained you (Steve Mowry) to lead our new transducer development and to help mentor our engineers while improving their skills.

As for ASP, there are two manufacturing facilities in place. The headquarters are located in Malaysia with more than 20 years of speaker manufacturing experience. The other manufacturing plant is in Shenzhen, China. The facilities in Malaysia and China offer manufacturing and development options for our customers in the US.

The facilities in Malaysia employ 200 people with six assembly lines for transducers and ten lines for speaker boxes. Total production capacity is 1.2 million transducers and 200K systems per month per normal shift, while the China plant employs 500 people with four assembly lines for transducers and ten lines for speaker boxes. Total production capacity is 800K transducers and 120K systems per month per normal shift.

Although ASP is a quality-conscious manufacturer achieving ISO 14001 and ISO 9001:2000 and can quickly implement new manufacturing processes, the real strength of the company is in its new product development capabilities. These capabilities are not only high quality, but they are also broad based, covering transducer, electronic, software, and system designs. ASP has passed audits from multinational corporations such as Microsoft, Dell, and Philips.

**COMMENTS**

I have completed presenting parts 1

through 4—the motor, the suspension, the cone, and the enclosure—of my training seminar, “How A Speaker Works” to the staff at Advanced Sound. This will be followed by practical FEA and lumped parameter simulation and design seminars on the topics covered in parts 1 to 4, including presentations on the utilization of Vector Fields OPERA, PAFEC-FE, and LspCAD.

Malaysia offers a good alternative to China for a/v companies looking to develop and/or manufacture products within Asia. The educational system in Malaysia is superior to China’s, which is a result of aggressive government educational funding. Furthermore, Malaysia is a “democracy” with good political stability and a strong desire to trade with the US, like its neighbor to the south, Singapore.

However, what I find most important is that English is widely spoken in Malaysia, and the business culture is not so different from the US. Malaya was part of the British Empire until 1950. From Malaya came Singapore and Malaysia. Actually, these countries are quite similar in culture, ethnics, and language. Their populations are multiracial: Malay, Chinese, and Indian. Chinese-speaking people represent a significant part of the population of Malaysia, offering a transitional pathway between the US and ultimately the manufacturing of the product within China.

Advanced Sound is a company committed to “Green” (environmentally friendly) products. The environmental standards from companies such as Philips, Sony, Dell, HP, Pioneer, JVC, Sharp, LG, and TDK are not a compliance problem for Advanced Sound. Heavy metals, chlorinated and brominated organic compounds, asbestos, formaldehyde, cyanides, dioxin, radioactive material, and many solvents are considered banned substances with regard to products.

Logistically speaking, Penang and Shenzhen both have access to deep-

water ports that facilitate shipping to destinations in Japan, Europe, and North America. With manufacturing facilities located in China and Malaysia along with the financial incentives offered to MSC status companies, Advanced Sound has positioned itself to



do “battle” for the Western a/v product development capital.

Advanced Sound is the only company, to my knowledge, that has licensed NXT technology and is conducting R&D into thin/flat loudspeakers for applications in home theater, multimedia, aftermarket automotive, and hi-fi applications in Malaysia. This work was started by Philips in mid-2000 and is ongoing. The flagship NXT-based product is the Wizard 5.1 Home Theater System with five 166mm × 27mm × 420mm flat panels and three exciters each along with an 8” cone type thin subwoofer.

I extend a special thanks to Mr. Lim, Fang, and to the staff at ASP/AST for their kind help and cooperation in gathering information for this article. **M<sup>3</sup>**

**Steve Mowry**, president of SM Audio Engineering, has a BS, Business Administration, from Bryant College, and a BS and MS, Electrical Engineering, from URI with highest distinction. Steve has worked in R&D at BOSE, TC Sounds, EASTTECH, and P.Audio. Steve is currently an independent consultant/lecturer in project management/transducer and system design. His website is [www.s-m-audio.com](http://www.s-m-audio.com).