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Application Opportunities and Cost Reduction Issues in MEMS

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As most are aware, MEMS market projections for the past several years have been very optimistic. An explosion in MEMS sales and MEMS applications appears to be right around the corner. However, actual market size has not always lived up to expectations. Part of the reason for this is the notion that cost effective applications are limited to mega-volume devices such as automotive crash sensors and ink-jet print heads. However, cost effective medium volume applications can be commercialized, and these applications are required to realize the MEMS boom.

Applications for MEMS can be divided into two categories: high volume and low to medium volume. The few high volume applications, as we have seen, offer huge revenue possibilities. On the other hand, each medium volume application offers only modest revenue possibilities. However, the combined potential of many medium volume applications is comparable to that of the big hitters.

The differences between high and medium volume applications are related to the number of units produced. However, no magic number of devices can define a high volume application. Long development times, heavy competition, and high fab utilization rates best define large volume applications, while short time-to-market, few competitors, and low fab usage define medium volume applications. Because the requirements for medium volume success differ from those of high volume, medium volume development requires standard design tools, collaborative device design, and shared fab facilities. These requirements can best be met through a partnership with a MEMS designer and foundry.

Partnering with a MEMS designer and foundry like IntelliSense, manufacturers concentrate on their core competencies, and MEMS experts focus on the MEMS component of the product. Through a collaborative development and foundry partnership with IntelliSense manufactures will:

- Leverage an existing technology portfolio,
- Access multi-disciplinary expertise,
- Incorporate standard processes,
- Eliminate capital investment,
- Distribute variable costs,
- Assure quality products, and
- Reduce technical risk.

Through partnerships with IntelliSense, manufacturers of medical devices, aerospace components, test equipment, and other items have successfully introduced and delivered new products. IntelliSense often starts with a customer concept then develops and manufactures the desired MEMS devices. IntelliSense also utilizes its foundry services to manufacture existing designs. IntelliSense is the solution for successful medium volume applications.