IC KNOWLEDGE.COM
PO Box 20, Georgetown MA 01833
email: info@icknowledge.com
phone: (978) 352-7610, fax: (978) 352-3870

Technology Briefings Vol. 20031120

AMD Announces 300mm Fab

AMD today announced that they have broken ground on a new 300mm fab in Dresden Germany, the fab is expected to cost $2.4 billion dollars and come on-line in 2006. AMD has lined up $1.5 billion dollars in funding including $700 million dollars from a consortium of banks including an 80% residual guarantee by Saxony and Germany, $500 million dollars of expected grants and allowances from Saxony and Germany (currently awaiting European Commission approval) and and up to approximately $320 million in equity funding from Saxony and a group of European investors led by M+W Zander, the German wafer fab builder. The balance of the financing, $880 million, is to be provided by AMD and other potential partners.

Analysis

- 300mm need - AMD's current mainstream processor is the Althon competing with Intel's Pentium 4. The 2.2GHz Athlon die is approximately 12% smaller than the 3.0GHZ Pentium 4 die suggesting a possible cost advantage for AMD, however, the AMD process is more complex than Intel's process and we calculate a virtual dead heat on die cost. Intel currently has Fab 25 (formerly D1C) and Fab 11X running 300mm production and Fab 24 scheduled to come on-line next year. We estimate that 300mm provides Intel with a nearly 40% cost improvement over 200mm. We have therefore believed for some time that AMD urgently needed a 300mm strategy.
- Why not foundry - Fabless semiconductor companies consistently grow faster than the IDMs. Recently IDMs have been going fabless (Agere) or "asset light" (Motorola). In the microprocessor space profitability particularly for AMD as a market follower is highly dependent on manufacturing costs. We do not believe AMD can make money while giving a foundry gross margin on wafer sales.
- Timing - the timing of the fab start-up appears to us to be driven by financing concerns as opposed to manufacturing need. A 300mm fab with ground-broken could be producing wafers by early 2005, and yet AMD has announced a 2006 start-up. We believe this opens a huge window for Intel to undercut AMD on price while maintaining high margins.
- Revenue required to fill the fab - some analysts have suggested that a 300mm Fab requires $6B in revenue to be economical. Our analysis suggests that microprocessors can be economically produced in a 300mm Fab with $3.0 billion dollars in revenue. $3.0 billion dollars represents approximately 11% of the projected 2006 market for microprocessors in-line with AMD's current market share.