Intel Foundry: How They Got Here and Scenarios for Improvement

Intel Announced earnings in January. Then David Zinsner presented updates on business this week. David is open when talking and always shares 2-3 things he probably should not share. Often he shares things some of us know, but we cannot present because it is not public. Then he makes it public, Thank you David! Our Model for What is Happening

Intel Shortage

Intel is unable to meet demand for processors in Q1 and Q2 2026. Their manufacturing is the constraint. The shortage is not TSMC as Intel specifically mentioned moving wafer starts from CCG to DCAI (TSMC is not used for most DC CPUs). The shortage is not 18A. 18A is not running at full capacity in Fab 52, 18A is not in highest demand (Panther lake is a good CPU but it is expensive). Intel 3 is not what is short. It is still ramping and demand has not increased like expected. What is short is Intel 7/10. Raptor lake/Refresh and older on Client. Sapphire/Emerald Rapids on DC.

These are short despite declining sales and despite Intel losing market share in both Client and Datacenter. Less volume than before and yet somehow it is short.

How did this happen?

Intel had a plan. Develop Intel 3 and Intel 18A. Put products on those nodes and ramp them as fast as possible. Products on both were delayed some but there are two main issues that caused the blowback to older nodes. One: the new products are more expensive and there are limits to the number of customers who want to pay that higher price. Granite Rapids and Sierra Forrest are examples and Panther lake is a new example. Good products but customers like sticking with reorders of older products OR are looking at AMD products instead. Two: Both technologies have cost/yield/capex expenses that made it so that it is not financially great to ramp them until they are more mature. Yields, output per tool, wafer cost have slowed the ramp below what was expected in 2024.

The plan a couple years ago was to remove Intel 7 capacity (the node is five years old) and add Intel 3 and 18A. Apparently, they did remove Intel 7 capacity assuming people would jump to new products. Historically, this has always been a problem and Intel was able to deal with it. Tell customers they have to move, Tell them the price of the old product is going up, Tell them they can only have the new product. But Intel is not a monopoly now. People are already leaving Intel for AMD and ARM. Intel cannot force people. Intel customers want Sapphire rapids and Raptor lake. Less expensive, mature and they do what we need. If Intel wont sell it to us, we can look elsewhere. Since Intel is already losing share, this is not good and Intel is not pushing

Result: Intel sales are down, Market share is down, people want the older nodes, Intel cannot force them to new nodes. Intel 7 ships way more wafers than Intel 3 and 18A combined. But Intel doesn't have enough Intel 7 capacity.

Zinsner alluded to some of these items. The Key points are 18A margins are currently negative, Intel 3 needs to get mature, 18A needs to get mature, and they need people to move to new nodes when they can be ramped cost effectively. Until then they need to add capacity to Intel 7.

Scenarios for Future.

Due to DRAM shortages and high prices, The future is murky. We expect 10% less PC sales in 2026. We expect PC OEMS to prioritize lower DRAM PCs. Lunar Lake has no discrete DRAM, many people expect it to sell well. Server CPU units will increase but AMD will take some of that share. The key is to get newer products cost effective, then ramp those fabs, then push customers to those parts using pricing.

Intel is/was planning new CPUs in 2026. Arrow lake refresh. Clearwater forest. Diamond rapids. But the most important part in our opinion is Wildcat Lake. This is a cost reduced Panther lake and our cost model shows it can be a solid replacement for Raptor lake at a competitive price and still make money (Panther lake is in a different market with limited volume). But the key is to get Intel 3 and 18A cost effective so they can push customers to the newest products at a competitive price.

When does all this get better? We expect 18A/Panther lake to get more mature by Jan 2027. It will not be cost effective til then…. And yields are not the only problem. It will then get close to filling Fab 52. We know 90%+ of Nova lake CPUs are on TSMC N2 so that needs to play out as well. Intel 3 will continue to ramp but datacenter products are very slow to ramp so it is not clear when this gets fixed.

In 2028, Intel should have its newest fabs ramped and mature and hopefully CPUs have been pushed to these new nodes. We are not expecting IFS to break even in 2027 without a huge one time writeoff, although Zinsner said it was possible, the numbers don't seem to add up. After Jan 2028, the goal is to continue to ramp 18A and eventually 14A, convert all product to those nodes and start manufacturing external customer volume. If this happens, IFS could break even by 2030. We can go through the gory details on why this will or wont happen and how to update the projections.

Based on all of this, Intel is revisiting its roadmap. Do they really want a new CPU on Client and Datacenter every year? Should they ramp TSMC parts more? We shall see

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