

The Foundry Model is Coming to Molecular Diagnostics, Courtesy of the Semiconductor Industry.

By Wayne Woodard

Executive Synopsis

In 1981, in a lab on the campus of the University of Southern California, researcher Danny Cohen likely had no idea that the formation of his group called MOSIS (Metal Oxide Semiconductor Services) would launch a service that would revolutionize the semi-conductor industry. Indeed, that same idea is now poised to fundamentally transform the biotechnology sector.

By the mid 1980's, MOSIS had evolved into what is today considered the semiconductor "foundry model." The foundry model leverages the commonality of manufacturing techniques in a process-oriented industry across several clients' innovations to produce incredible technology as a variable cost versus a fixed cost on each company independently. By consolidating multiple customer projects onto shared wafers, chip production costs were slashed.¹ In 1987 Taiwan Semiconductor Manufacturing Corporation (TSMC) was formed. A MOSIS competitor, TSMC is dedicated to assisting the world's innovators with excellent client services, incredible quality, and access to the state of the art in semi-conductor manufacturing technology and capabilities. Today, TSMC along with 4 of their closest rivals represent over \$43 billion in annual revenues by assisting all types of innovators from the largest fabless semiconductor companies to the best and brightest 10-person Silicon Valley start-ups.

Fast-forwarding to today, in my opinion, the underlying industry conditions that spawned MOSIS and TSMC to drive the foundry model are arguably the same as those facing molecular diagnostics today: PACE, LEVERAGE and COST.

¹ <https://www.isi.edu/about/history/timeline/>