Backgrounder:
MSC.Software/Universal Analytics/CSAR
(1999 acquisitions; 2001 FTC challenge)

MSC.Software, formerly known as MacNeal-Schwendler Corporation, is a leading provider of computer-aided engineering (CAE) simulation software. The company is best known for its flagship product, MSC.Nastran, based on NASA's public-domain Nastran code, had become the industry standard for finite element analysis (FEA) and structural simulation. MSC solutions are widely utilized in the aerospace, automotive, and manufacturing industries to predict and enhance product performance under real-world conditions. In 1999, MSC held approximately 90% of the market for advanced versions of Nastran, the dominant structural analysis software used in aerospace and automotive engineering.

In 1999, MSC undertook two significant non-HSR reportable acquisitions to strengthen its position in the advanced simulation software market. The first was Universal Analytics, Inc. (UAI), acquired on June 24, 1999, for approximately $8.4 million. UAI was a respected developer and supplier of advanced simulation software, particularly known for its version of Nastran, which was widely adopted in the aerospace and automotive sectors as a strong alternative to MSC.Nastran. Later that year, on November 4, 1999, MSC acquired Computerized Structural Analysis & Research Corp. (CSAR) for about $10 million. CSAR specialized in structural analysis simulation software and had also developed its advanced version of Nastran, serving industries with demanding simulation needs. At the time of the acquisitions, UAI and CSAR each held roughly 5% of the market for advanced Nastran software, competing directly with MSC's dominant 90% share. Following each acquisition, MSC integrated its technologies and customer bases into its own operations and discontinued the acquired software products.

Following their respective closings, the two acquisitions drew the attention of the Federal Trade Commission (FTC), presumably in response to customer complaints. On October 9, 2001, following a postclosing investigation, the FTC filed an administrative complaint alleging that MSC's acquisitions eliminated the only significant competition in the advanced Nastran engineering simulation software market, potentially creating a monopoly and threatening competition, pricing, and innovation. To resolve these concerns, MSC entered into a consent decree with the FTC in 2002, agreeing to divest at least one clone copy of its advanced Nastran software, including source code, through royalty-free, perpetual, non-exclusive licenses to one or two acquirers approved by the FTC.[1] In the sales process, only one qualified divestiture buyer—Unigraphics Solutions, Inc., a wholly owned subsidiary of Electronic Data Systems (EDS)—

[1] The FTC's complaint and press release stated that the agency might require the divestiture of assets sufficient to establish *up to two viable, ongoing businesses* offering advanced versions of Nastran. While the final consent decree did not explicitly limit the number of divestiture buyers to two, this earlier framing makes it likely that the Commission would not have required divestiture to more than two qualified acquirers. *See* Complaint ¶ 30, Notice of Contemplated Relief ¶ 1, *In re* MSC.Software Corp., No. 9299 (F.T.C. Oct. 9, 2001); Press Release, Fed. Trade Comm'n, FTC Challenges MSC.Software's Acquisitions of Its Two Nastran Competitors (Oct. 10, 2001).

came forward. The Commission formally approved this divestiture in June 2003, and the divestiture sale presumably closed within days after approval. Unigraphics Solutions (later known as UGS Corporation) was subsequently acquired by Siemens in 2007, bringing the divested Nastran technology into what is now Siemens Digital Industry Software, where it continues today as Simcenter Nastran.

In 2009, MSC was acquired by private equity firm Symphony Technology Group for approximately $360 million, marking the company's transition to private ownership after being publicly traded since 1983. Under Symphony's ownership for eight years, MSC continued its focus on simulation software development and strategic acquisitions in specialized areas such as acoustics and materials modeling. In 2017, Symphony Technology Group divested MSC to Hexagon AB, a global technology company specializing in information technologies for geospatial and industrial enterprise applications. The acquisition was announced in February 2017 and completed in April of the same year. Hexagon purchased MSC for approximately $834 million on a cash and debt-free basis. As a result of the transaction, MSC became a wholly owned subsidiary of Hexagon and was integrated into Hexagon's Manufacturing Intelligence division. This acquisition strengthened Hexagon's position in the manufacturing and engineering software market, allowing it to offer more comprehensive solutions that connect design, simulation, and production processes for industries such as automotive, aerospace, and electronics.

Today, the Nastran software, which was at the center of the FTC challenge, remains one of the most important engineering simulation tools in the world, with multiple vendors offering different versions to serve various market segments. The two dominant commercial players are MSC Nastran, now owned by Hexagon AB and self-described as "the world's most widely used Finite Element Analysis (FEA) solver," and Simcenter Nastran, which is part of Siemens Digital Industry Software's portfolio and serves as one of the leading solvers within their Simcenter 3D CAE application. A third major option is Autodesk Inventor Nastran, which is based on the former NEi Nastran technology that Autodesk acquired in 2014 and is now integrated directly into Inventor software. Beyond these commercial offerings, the original NASA source code remains accessible through the Open Channel Foundation for an annual license fee, and an open-source variant called MYSTRAN is available, developed by a former member of the original NASA Nastran development team. Additionally, NASTRAN source code is integrated into numerous other software packages distributed by various companies, creating a diverse ecosystem where the technology continues to evolve and serve the needs of different customers across aerospace, automotive, manufacturing, and other industries that require advanced structural analysis capabilities.