

**UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION**

COMMISSIONERS: **Timothy J. Muris, Chairman**
 Mozelle W. Thompson
 Orson Swindle
 Thomas B. Leary
 Pamela Jones Harbour

_____)
) **In the Matter of**)
)) **Docket No. 9310**
ASPEN TECHNOLOGY, INC.)
_____)

COMPLAINT

The Federal Trade Commission (“Commission”), having reason to believe that Aspen Technology, Inc. (“AspenTech”), a corporation subject to the jurisdiction of the Commission, acquired Hyprotech Ltd., (“Hyprotech”), in violation of Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 45 and Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18; and that a proceeding by the Commission in respect thereof would be in the public interest, hereby issues its complaint, stating its charges as follows:

I. Respondent AspenTech

1. Respondent AspenTech is a for-profit corporation organized, existing and doing business under and by virtue of the laws of the State of Delaware, with its principal place of business located at Ten Canal Park, Cambridge, Massachusetts 02141.
2. AspenTech is a developer and worldwide supplier of manufacturing, engineering, and supply chain simulation computer software, including non-linear process engineering simulation software used by the refining, oil & gas, petrochemical, specialty chemical, air separation, pharmaceutical, fine chemical and other process manufacturing industries and by engineering and construction companies to support those industries. AspenTech has long offered steady state and dynamic process engineering simulation software under the Aspen Plus trade name and a suite of complementary products within its Aspen Engineering Suite. In fiscal year 2002, AspenTech reported an \$83.5 million loss on revenues of over \$320 million.
3. Respondent AspenTech is, and at all times relevant herein has been, engaged in

commerce as defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. § 12, and is a corporation whose business is in or affects commerce as defined in Section 4 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 44.

II. The Acquisition of Hyprotech

4. Prior to the acquisition by Respondent, Hyprotech was a wholly-owned operating division of AEA Technology plc., a corporation organized, existing and doing business under and by virtue of the laws of the United Kingdom. Hyprotech was headquartered in Calgary, Canada, with offices in the United States and other parts of the world.
5. Since its founding in 1976, Hyprotech had been a developer and worldwide supplier of manufacturing, engineering and supply chain simulation computer software, including nonlinear process engineering simulation software used by the refining, oil & gas, petrochemical, specialty chemical, air separation, pharmaceutical, fine chemical and other process manufacturing industries and by engineering and construction companies to support those industries. Hyprotech offered steady state and dynamic process engineering simulation software under the HYSYS trade name and a suite of complementary products within its HYSYS engineering suite of products. In fiscal year 2002, Hyprotech had revenues of approximately \$68.5 million.
6. On or about May 31, 2002, Respondent acquired Hyprotech for approximately \$106 million (“the Acquisition”). The transaction was not reportable under the Hart-Scott-Rodino Act.

III. Trade and Commerce

7. Process industries are those in which a chemical continuous or batch process is used to produce intermediate or finished consumer products. Continuous process industries include hydrocarbon, chemical and air separation industries. Batch process industries include the pharmaceutical and fine chemical industries.
8. Flowsheet simulation software, using non-linear variables, mathematically models a process, creating a virtual plant on a personal computer. Flowsheet programs are the backbone of process simulation and optimization software. The flowsheet, using established chemical engineering properties or “1st Principles,” accurately predicts what happens in a process unit or system. Through a graphical interface, the flowsheet allows its user to take into account the process units in a plant, the dynamics between units and the chemistry of the processed materials. Such computer simulations improve engineering design, reduce capital investment, lower the cost of inputs and optimize production levels and potentially shorten the time to market for new products.
9. There are two fundamental types of flowsheets: steady-state and dynamic. Steady-state

flowsheets model a process at one point in time; they are snapshots of a plant operating at its intended optimum. Aspen Plus (AspenTech), HYSYS.Process (Hyprotech) and Pro/II (Simulation Sciences (SimSci)) are the most widely used steady-state flowsheets to model continuous process industries. In dynamic simulation, the flowsheet models the same variables as the steady state simulation, adding the ability to measure the effect of changes over time. A flowsheet with dynamic capabilities can model start-ups, shutdowns, upsets and changes that occur in a continuous process over time. Aspen Plus with Aspen Dynamics and HYSYS with the dynamic option are the two leading dynamic simulators for continuous process industries. Both Aspen Dynamics and the HYSYS dynamic option require customers to purchase the steady-state flowsheet to access the dynamic.

10. Flowsheets are designed to rigorously represent the processes that they simulate. The mathematic rigor necessary to model reactions and interactions in the process industries makes these programs very slow to solve any given question. For this reason, they have limited utility in solving plant-wide optimization exercises. Prior to the Acquisition, next-generation flowsheet solutions – non-linear simulators that can solve whole plant optimization questions in an economically reasonable time-frame – were in commercial release and on-going development by Hyprotech and AspenTech.
11. Batch process simulation is the modeling of processes that entail a single production run with a finite beginning and end. With a batch process, a manufacturer combines a set of ingredients in a single piece of equipment that performs multiple tasks to arrive at a finished substance. Batch process differs from continuous process in that continuous process experiences an ongoing flow of inputs and outputs. Batch flowsheet simulation software is essentially continuous flowsheet simulation tailored expressly for batch processes. Batch process software is particularly suited to pharmaceutical and fine chemical production. Prior to the Acquisition, BatchPlus from AspenTech was the leading batch simulator ahead of the BaSYS suite from Hyprotech.
12. Many customers of flowsheet simulation software have operations in multiple process industries and therefore license software for more than one industry. For example, many engineering and construction companies design both hydrocarbon process plants and chemical plants. Those companies license flowsheet software for both industries. Other engineering and construction companies may be engaged in only one discrete industry and thus license flowsheet software for only that industry. For example, some engineering and construction companies are involved solely in air separation and license flowsheet software for only that industry. However, there are large, vertically integrated companies that license software that is used in all parts of hydrocarbon and chemical processes. Whether they license software for application to many process industries or one specialized industry, there are still only three companies that license the necessary software: AspenTech, Hyprotech and SimSci.
13. Integrated engineering software gathers information generated from process engineering

software and allows users to store, update and retrieve data depending on their needs. The software allows for the more efficient use of process engineering tools. Prior to the Acquisition, AspenTech's Zyqad was the leading application for these uses and Hyprotech's integrated engineering product, AXSYS, was in development and ready for release to committed buyers.

14. Prior to the Acquisition, competition between AspenTech and Hyprotech to develop, license and support continuous and batch process engineering simulation flowsheet software and integrated engineering software was direct and vigorous and helped to hold down prices and to promote product innovation.

IV. Relevant Product Markets

15. Relevant product markets in which to assess the likely effects of the Acquisition are:
 - a. continuous process engineering simulation flowsheet software for process industries;
 - b. continuous process engineering simulation flowsheet software for upstream oil and gas process industries;
 - c. continuous process engineering simulation flowsheet software for downstream refining process industries;
 - d. continuous process engineering simulation flowsheet software for chemical process industries;
 - e. continuous process engineering simulation flowsheet software for air separation process industries;
 - f. batch process engineering simulation flowsheet software for process industries; and
 - g. Integrated engineering software for process industries.

V. Relevant Geographic Market

16. The relevant geographic market in which to assess the likely effects of the Acquisition in each of the relevant product markets is the world.

VI. Concentration

17. Each of the relevant product markets is highly concentrated.
18. Prior to the Acquisition, AspenTech and Hyprotech were direct and actual competitors in the development, license and support of continuous and batch process engineering simulation flowsheet software in each of the relevant product markets. AspenTech and Hyprotech competed with each other on price and service, and competed through innovation to provide software that would enhance the efficiency and performance of customers' process plants.
19. The Acquisition combined the two most significant and closest competitors providing continuous process engineering simulation flowsheet software. AspenTech documents admit a share post-acquisition between 67% and 80% of the continuous process flowsheet market. The Acquisition may create a worldwide dominant firm in continuous process engineering simulation flowsheet software.
20. The Acquisition combined the two most significant and closest competitors providing continuous process engineering simulation flowsheet software to upstream oil and gas process industries. The Acquisition may create a worldwide dominant firm in continuous process engineering simulation flowsheet software for upstream oil and gas process industries.
21. The Acquisition combined the two most significant and closest competitors providing continuous process engineering simulation flowsheet software to downstream refining process industries. The Acquisition may create a worldwide dominant firm in continuous process engineering simulation flowsheet software for downstream refining process industries.
22. The Acquisition combined the two most significant and closest competitors providing continuous process engineering simulation flowsheet software to chemical process industries. The Acquisition may create a worldwide dominant firm in continuous process engineering simulation flowsheet software for chemical process industries.
23. The Acquisition combined the two most significant and closest competitors providing continuous process engineering simulation flowsheet software to air separation process industries. The Acquisition may create a worldwide dominant firm in continuous process engineering simulation flowsheet software for air separation process industries.

24. The Acquisition combined the two largest and closest competitors providing batch process engineering simulation flowsheet software. The Acquisition may create a worldwide dominant firm in batch process engineering simulation flowsheet software.
25. Prior to the Acquisition, AspenTech and Hyprotech were direct and actual competitors in the development, license and support of integrated engineering software for process industries. AspenTech and Hyprotech competed with each other on price and service, and competed through innovation to provide software that would enhance the efficiency and performance of customers' process plants.
26. The Acquisition combined the two firms providing integrated engineering software for process industries. The Acquisition may create a worldwide dominant firm in integrated engineering software for process industries.
27. At the time of the Acquisition, Respondent, Hyprotech and SimSci were the only providers of a substantial, if not complete, set of features and capabilities in process engineering simulation software. SimSci had been losing market share to Hyprotech and AspenTech since the mid-1990s.

VII. Conditions of Entry

28. Entry into the licensing, sale, development and enhancement of the relevant product markets would not be timely, likely or sufficient in its magnitude, character and scope to deter or counteract anticompetitive effects of the Acquisition. Customers consider supplier reputation key to purchase decisions in each of the relevant markets. Customers are reluctant to engage the services of a new entrant because of the potential economic loss associated with simulation software bugs and potential loss of legacy data. Entry is difficult because of the substantial cost and time needed to develop, validate and establish a reputation for reliability.

VIII. Anticompetitive Effects of the Acquisition

29. The Acquisition may substantially lessen competition in the following ways, among others:
 - a. it eliminates actual, direct and substantial competition between AspenTech and Hyprotech, which both had the ability and incentive to compete, and before the acquisitions did compete, on price and product development and enhancements;
 - b. it increases the level of concentration in the relevant markets;
 - c. it eliminates price competition between AspenTech and Hyprotech and may lead to reduced price competition, leading to increased prices;

- d. it eliminates innovation competition between AspenTech and Hyprotech and may lead to reduced innovation competition, withholding or delaying product development and enhancements;
- e. it enhances AspenTech's power to raise prices above a competitive level;
- f. it may give AspenTech market power in the relevant markets;
- g. it may allow AspenTech unilaterally to exercise market power in the relevant markets, through the combination of AspenTech and Hyprotech, the two closest competitors on price and innovation;
- h. it prevents other suppliers of process engineering or supply chain software from acquiring Hyprotech and increasing competition; and
- i. it creates a single entity that could undermine the ability of open standard setting organizations to decrease barriers to entry, thereby limiting innovation and third-party entry to provide niche applications except with AspenTech approval.

IX. Violation Charged

- 30. The allegations contained in paragraphs 1 through 29 are repeated and realleged as though fully set forth here.
- 31. The effect of the Acquisition may be substantially to lessen competition or tend to create a monopoly in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.
- 32. Respondent's acquisition of Hyprotech will continue to cause, absent the relief described in the attached Notice of Contemplated Relief, the anticompetitive effects identified above.

NOTICE

Proceedings on the charges asserted against you in this complaint will be held before an Administrative Law Judge ("ALJ") of the Federal Trade Commission, under Part 3 of the Commission's Rules of Practice, 16 C.F.R. § 3.1 *et seq.* A copy of Part 3 of the Rules is enclosed with this complaint.

You may file an answer to this complaint. Any such answer must be filed within 20 days after service of the complaint on you. If you contest the complaint's allegations of fact, your answer must concisely state the facts constituting each ground of defense, and must specifically admit, deny, explain, or disclaim knowledge of each fact alleged in the complaint. You will be deemed to have admitted any allegations of the complaint that you do not so answer.

If you elect not to contest the allegations of fact set forth in the complaint, your answer shall state that you admit all of the material allegations to be true. Such an answer shall constitute a waiver of hearings as to the facts alleged in the complaint and, together with the complaint, will provide a record basis on which the ALJ will file an initial decision containing appropriate findings and conclusions and an appropriate order disposing of the proceeding. Such an answer may, however, reserve the right to submit proposed findings and conclusions and the right to appeal the initial decision to the Commission under Section 3.52 of the Commission's Rules of Practice.

If you do not answer within the specified time, you waive your right to appear and contest the allegations of the complaint. The ALJ is then authorized, without further notice to you, to find that the facts are as alleged in the complaint and to enter an initial decision and a cease and desist order.

The ALJ will schedule an initial prehearing scheduling conference to be held not later than 14 days after the last answer is filed by any party named as a respondent in the complaint. Unless otherwise directed by the ALJ, the scheduling conference and further proceedings will take place at the Federal Trade Commission, 600 Pennsylvania Avenue, N.W., Washington, D.C. 20580. Rule 3.21(a) requires a meeting of the parties' counsel as early as practicable before the prehearing scheduling conference, and Rule 3.31(b) obligates counsel for each party, within 5 days of receiving a respondent's answer, to make certain initial disclosures without awaiting a formal discovery request.

A hearing on the complaint will begin on November 6, 2003, in Room 532, or such other date as determined by the ALJ. At the hearing, you will have the right to contest the allegations of the complaint and to show cause why a cease and desist order should not be entered against you.

NOTICE OF CONTEMPLATED RELIEF

Should the Commission conclude from the record developed in any adjudicative proceedings in this matter that the acquisition challenged in this proceeding violates Section 7 of the Clayton Act, as amended, or Section 5 of the Federal Trade Commission Act, as amended, the Commission may order such relief against respondent as is supported by the record and is necessary and appropriate. Such relief may include, but is not limited to, an order to:

1. Cease and desist from any action to effect the acquisition or continued holding by AspenTech of any assets or businesses of Hyprotech.
2. Rescind the acquisition.
3. Reestablish two distinct and separate, viable and competing businesses, one of which shall be divested by AspenTech to a buyer acceptable to the Commission, engaged in the design, license and continued development and support of all of the lines of commerce

alleged in the complaint, including but not limited to:

- a. divesting all Hyprotech software, intellectual property, contract rights, and other assets for the operation of such business, including but not limited to all Hyprotech applications, features, enhancements, and library functions for all operating systems and computer platforms, source code, object libraries, executable programs, model development, test problems, test results, development support software, trade secrets, trademarks, patents, know-how, interfaces with complementary software, APIs, manuals, guides, reports, and other documentation;
 - b. divesting, replacing and reconstituting all research and development, improvements to existing products and new products developed by AspenTech or Hyprotech, and such other businesses as necessary to ensure each of their viability and competitiveness in the lines of commerce alleged in the complaint and each possessed;
 - c. reconstituting and divesting customer contracts; and
 - d. facilitating the acquirers' recruitment of Respondent's employees, including but not limited to providing employee lists, personnel files, opportunities to interview and negotiate with the acquirers, eliminating any restriction on or disincentives to accepting employment with the acquirers, and providing incentives for such employees to accept employment with the acquirers.
4. Destroy any copies of Hyprotech intellectual property, including source code and executable code.
 5. Prohibit the use of any Hyprotech competitive or technological information gained since the Acquisition.
 6. Cease and desist from any horizontal agreements with competitors to prevent or deter standard setting organizations from adopting standards to benefit consumers of products covered under the appropriate standards; provided that no relief shall require the competing companies to participate in any standard setting activity.
 7. For a defined period, not restrict, preclude or influence a supplier of complementary software or services from dealing with the acquirers or the acquirers' products.
 8. Provide such other or additional relief as is necessary to ensure the creation of one or more viable, competitive independent entities to compete against AspenTech in the manufacture and sale of relevant products with features and capabilities at least equal to those offered by Hyprotech prior to the Acquisition.

9. Require AspenTech to provide the Commission with notice in advance of the acquisition of the assets or securities of, or any other combination with, any person engaged in the manufacture or sale of any relevant product.

WHEREFORE, THE PREMISES CONSIDERED, the Federal Trade Commission on this sixth day of August, 2003, issues its complaint against said Respondent.

By the Commission, Commissioner Harbour not participating.

Donald S. Clark
Secretary