Appendix table 6-10
Leading indicators of technological competitiveness: 2003
(Index)

Region or country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Total
Argentina	44.9	52.4	31.0	32.5	160.7
Brazil	52.5	50.5	35.4	35.8	174.2
China	63.0	55.0	55.2	49.6	222.7
Czech Republic	64.6	64.4	34.7	44.6	208.3
Germany	75.6	78.2	65.5	65.0	284.3
Hungary	66.7	67.9	40.0	42.2	216.7
India	62.5	49.3	37.0	47.8	196.6
Indonesia	45.1	39.1	20.7	27.7	132.6
Ireland	84.1	80.7	44.2	53.0	262.0
Israel	79.5	85.0	52.3	49.4	266.2
Japan	76.4	67.6	73.8	80.3	298.1
Malaysia	73.0	64.9	28.8	39.1	205.9
Mexico	55.2	49.0	28.7	35.4	168.2
Philippines	59.3	55.0	24.0	45.0	183.3
Poland	63.7	68.3	36.6	42.5	211.1
South Korea	80.4	81.1	45.2	52.3	259.0
Taiwan	83.0	84.4	45.3	59.6	272.2
United States	79.8	86.4	92.7	82.8	341.2
Thailand	47.7	54.2	23.9	30.9	156.7
Venezuela	37.2	46.0	19.5	20.3	123.0

NOTES: In *Science and Engineering Indicators 2004*, latest table was labeled "2002." Table is now labeled "2003" to reflect change in data provider's labeling convention. In past, High Tech Indicators (HTI) was labeled based on most recent full year of statistical data. HTI is now named by year of data generation and year in which panel of experts rated countries. Value of socioeconomic infrastructure for United States has been revised from 85.9 shown in last publication to 86.4 shown here.

For score and indicator calculations, raw data were transformed into scales of 0–100 for each indicator component and then averaged to generate comparable indicators with a 0–100 range. For survey items, 100 represents the highest response category for each question; for statistical data, 100 typically represents the value attained by the country with the largest value among the 33 countries included in the study. In the indicator formulations cited below, each term carries equal weight.

National orientation (NO) provides evidence that a nation is taking directed action to achieve technological competitiveness. These actions could take place in the business, government, or cultural sector or any combination of the three.
Indicator formulation: NO = [Q1 + (Q2 + Q3)/2 + Q4 + F1V2002]/4.
Data used: Published data from the PRS Group, Political and Economic Forecast table, Political Risk Letter for 2002 rating each country's investment risk (F1V2002); and survey data assessing each country's national strategy to promote high-technology development (Q1), social influences favoring technological change (Q2 and Q3), and entrepreneurial spirit (Q4).

Socioeconomic infrastructure (SE) assesses the social and economic institutions that support and maintain the physical, human, organizational, and economic resources essential to functioning of a modern, technology-based industrial nation.
Indicator formulation: SE = (Q5 + Q10 + HMHS2000)/3.
Data used: Published data on the percentage of students enrolled in secondary (net percentage) and tertiary (gross percentage) education (HMHS2000) from the Harbison-Myers Skills Index for 2000, Gross and Net Enrollment Ratio at Secondary Level by Country and by Gender for the School Years 1998/1999 and 1999/2000, Institute for Statistics, United Nations Educational, Scientific, and Cultural Organization (UNESCO), October 2002 and Gross Enrollment Ratio at Tertiary Level by Country and Gender for the Academic Years 1998/1999 and 1999/2000, Institute for Statistics, UNESCO, October 2002; and survey data assessing each country's efforts to attract foreign investment (Q10) and the mobility of capital (Q5).

Technological infrastructure (TI) assesses the institutions and resources that contribute to a nation's capacity to develop, produce, and market new technology.
Indicator formulation: TI = [(Q7 + Q8)/2 + Q9 + Q11 + EDP2002 + S&E2000]/5.
Data used: Published data from Science and Technology, Personnel Engaged in R&D by Category of Personnel (new available data for 1996-2000), Institute for Statistics, UNESCO, November 2002, on the number of scientists and engineers involved in research in 2000 (S&E 2000), national purchases of electronic data-processing equipment (EDP2002) from Reed Electronics Research, *Yearbook of World Electronics Data 2002/2003*, Reed Business Information Ltd. (2002); and survey data assessing linkages of R&D to industry (Q9), output of indigenous academic S&E (Q7 and Q8), and the ability to make effective use of technological knowledge (Q11).

Productive capacity (PC) assesses the physical and human resources devoted to manufacturing products and efficiency employing those resources.
Indicator formulation: PC = (Q6 + Q12 + Q13 + A262002)/4.
Data used: Published data on electronics production (A262002) from Reed Electronics Research, *Yearbook of World Electronics Data 2002/2003*, Reed Business Information Ltd., (2002); and survey data assessing the supply and quality of skilled labor (Q6), capability of the indigenous management (Q13), and the existence of indigenous suppliers of components for technology-intensive products (Q12).

INPUT: Sum is the sum of NO + SE + TI + PC.

SOURCE: Georgia Institute of Technology, Technology Policy and Assessment Center, *High Technology Indicators: Preliminary Report*, report to National Science Foundation, Division of Science Resources Statistics (2005).