Appendix table 6-9
Leading indicators of technological competitiveness: 2005
(Index)

Region or country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Total
Argentina	47.7	53.3	30.1	42.6	173.7
Australia	76.2	78.4	53.5	57.4	265.5
Brazil	59.6	51.3	36.9	49.3	197.1
Canada	76.2	73.1	54.5	52.7	256.6
China	74.3	60.4	64.7	72.4	271.9
Czech Republic	74.4	59.1	43.6	55.0	232.2
France	66.8	67.3	55.1	65.0	254.2
Germany	71.6	75.5	64.5	74.6	286.3
Hungary	61.7	66.2	40.5	51.4	219.7
India	61.6	52.8	43.2	59.9	217.5
Indonesia	44.2	40.8	24.1	41.1	150.2
Ireland	74.1	74.2	41.9	55.7	245.9
Israel	78.4	85.8	54.0	56.6	274.9
Italy	67.0	63.5	46.4	57.3	234.2
Japan	70.3	65.5	71.1	88.9	295.9
Malaysia	75.4	70.4	31.4	51.5	228.7
Mexico	55.1	48.7	30.4	45.8	179.9
Netherlands	69.6	77.2	52.5	57.8	257.1
New Zealand	70.0	75.7	47.0	47.5	240.2
Philippines	53.2	52.9	31.1	52.2	189.4
Poland	61.8	65.6	34.1	54.5	216.0
Russia	42.0	59.2	43.9	45.1	190.2
Singapore	78.5	79.5	50.3	59.2	267.6
South Africa	50.6	52.8	36.5	41.3	181.2
South Korea	74.7	72.7	48.0	63.8	259.3
Spain	56.9	69.0	33.5	45.8	205.1
Sweden	80.1	82.0	54.5	60.8	277.4
Switzerland	64.6	62.8	51.5	58.2	237.1
Taiwan	73.6	77.2	43.7	60.3	254.9
Thailand	58.7	53.2	25.0	42.5	179.5
United Kingdom	77.7	82.9	58.0	60.1	278.7
United States	79.2	84.2	91.9	88.7	344.1
Venezuela	36.5	47.8	27.2	38.5	150.0

NOTES: In past, High Tech Indicators (HTI) was labeled based on most recent full year of statistical data. HTI now named by year of data generation and year in which panel of experts rated countries.

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 highest response category for each question; for statistical data, 100 typically represents value attained by country with the largest value among 33 countries included in study. In 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. 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 + F1V 2005]/4.
Data used: Published data from PRS Group, Political and Economic Forecast table, Political Risk Letter for January 1, 2005, rating each country's investment risk (F1V2005) rescaled from D–=1 to A+=12, http://www.prsgroup.com; 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 social and economic institutions that support and maintain physical, human, organizational, and economic resources essential to functioning of a modern, technology-based industrial nation.
Indicator formulation: SE = (Q5 + Q10 + HMHS/3).
Data used: Published data on percentage of students enrolled in secondary (net percentage; W4) and tertiary (gross percentage; W6) education (HMHS) from Harbison-Myers Human Skills Index (formula for index is W4+4*W6). Percentage based on number of individuals in school versus total number who could be enrolled as defined by United Nations Educational, Scientific, and Cultural Organization (UNESCO) and adjusted for local practice, Institute for Statistics, UNESCO, *Gross and Net Enrollment Ratios* and Gender Parity Index, secondary, for school years 1998/99 to 2004/05 (May 2005); and survey data assessing each country's efforts to attract foreign investment (Q10) and mobility of capital (Q5).

Technological infrastructure (TI) assesses 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 + EDP 2005 + S&E]/5.
Data used: Data on electronic data processing equipment (EDP 2005) from Reed Electronics Research, Full Statistical Database 1985–2005, http://www.rer.co.uk; published data from Institute for Statistics, UNESCO, Science and Technology, Personnel Engaged in R&D by Category of Personnel (available data for 1996–2002) (May 2005), on number of scientists and engineers involved in research in most recent available year (S&E); and survey data assessing linkages of R&D to industry (Q9), output of indigenous academic S&E (Q7 and Q8), and ability to make effective use of technological knowledge (Q11).

Productive capacity (PC) assesses physical and human resources devoted to manufacturing products and efficiency employing those resources.
Indicator formulation: PC = (Q6 + Q12 + Q13 + A26 2005/)4.
Data used: Data for electronics production (A262005) from Reed Electronics Research, Full Statistical Database 1985–2005, http://www.rer.co.uk; and survey data assessing supply and quality of skilled labor (Q6), capability of indigenous management (Q13), and 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 Tech Indicators: Preliminary Report*, report to National Science Foundation, Division of Science Resources Statistics (2005).