Appendix table 6-11
Leading indicators of technological competitiveness: 1999
(Index)

Region or country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Total
Argentina	41.3	53.3	27.5	31.0	153.1
Brazil	61.5	49.1	40.4	39.6	190.6
China	65.3	52.4	46.4	41.9	206.0
Czech Republic	68.2	58.9	41.5	44.6	213.2
Hungary	73.7	60.9	43.0	42.2	219.8
India	67.7	48.4	46.8	51.3	214.2
Indonesia	53.9	43.8	19.2	23.7	140.6
Ireland	92.2	75.6	48.0	55.9	271.7
Israel	92.0	74.1	58.2	50.6	274.9
Malaysia	69.5	58.9	31.9	44.1	204.4
Mexico	41.8	40.4	21.8	24.8	128.8
Philippines	60.9	63.7	24.4	42.6	191.6
Poland	69.6	58.4	38.2	44.3	210.5
South Korea	74.9	73.5	44.6	48.8	241.8
Taiwan	90.7	74.2	43.6	53.7	262.2
Thailand	50.7	46.5	20.5	30.6	148.3
Venezuela	39.8	49.4	21.3	24.3	134.8

NOTES: 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 largest value among the 30 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. These actions could take place in business, government, or cultural sector or any combination of the three.
Indicator formulation: $NO = [Q1 + (Q2 + Q3)/2 + Q4 + F1V99]/4$.
Data used: Published data from the PRS Group, Political and Economic Forecast table, Political Risk Letter for 1999 rating each country's investment risk (F1V99); 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: $SE = (Q5 + Q10 + HMHS99)/3$.
Data used: Published data on the percentage of students enrolled in secondary and tertiary education (HMHS99) from Harbison-Myers Human Skills Index for 1999, World Bank, *World Development Indicators* (1999); 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: $TI = [(Q7 + Q8)/2 + Q9 + Q11 + EDP99 + S\&E96]/5$.
Data used: Published data from *Statistical Yearbook 1998*, United Nations Educational, Scientific, and Cultural Organization (1998), on the number of scientists and engineers involved in research in 1996 (S&E 96); national purchases of electronic data-processing equipment (EDP99) from Reed Business Information Ltd., Reed Electronics Research, *Yearbook of World Electronics Data 1999/2000* (1999); 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: $PC = (Q6 + Q12 + Q13 + A2699)/4$.
Data used: Published data on electronics production (A2699) from Reed Business Information Ltd., Reed Electronics Research, *Yearbook of World Electronics Data 1999/2000* (1999); 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).

SOURCE: A.L. Porter, J.D. Roessner, N. Newman, and X.Y. Jin, 1999 *Indicators of Technology-Based Competitiveness of 33 Nations: Summary Report* (2000).

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