Snapshot of the Global Networking and Information Technology (NIT) Ecosystem

PCAST Briefing

September 12, 2006

Bhavya Lal

Science and Technology Policy Institute

IDA

S T P I

Overview of Today's Briefing

- Charge to STPI
- Components and subcomponents of the NIT Ecosystem
- Metrics selected
- Countries selected
- Data sources
- Next steps

Charge

- Develop a snapshot of global NIT competitiveness by:
  - Recommending the *components* of the NIT ecosystem for which data are to be collected
  - Recommending a set of *metrics* for measuring the current state and/or direction of each component
  - Recommending the *nations* for which data are to be collected
  - Identifying appropriate *data sources*
  - *Collecting, summarizing* and *presenting* the data once PCAST/NIT Subcommittee approves components, metrics, and nations
- Snapshot is intended to *provide data* to inform the PCAST study

Components of the NIT Ecosystem

Components to be included in the snapshot

- Workforce
- Research & Development
- NIT Infrastructure
- Legal and Regulatory Environment
- Entrepreneurship
- NIT Industries
- NIT Users and Uses

NIT Ecosystem Components and Sub-Components

Workforce

- Population
- Workforce
- Education and Training

Research and Development

- Investment
- Performers
- Outputs
- Enabling Infrastructure for R&D

NIT Infrastructure

- Basic Infrastructure
- Internet Backbone
- Tech. Penetration
- Government
- Standards

Legal and Regulatory Environment

- Intellectual Property
- Trade Regulations
- Information Exchange Regulations
- Corruption

Entrepreneurship

- Tax Structure
- Capital Markets
- Economic Stability
- Social/Cultural Influences

Metrics (Sample)

- Research and Development
  - Gross domestic expenditure on R&D
    - Gross Domestic Expenditure on R&D (GERD)
    - R&D Intensity (GERD as percentage of GDP)
    - Source of Financing for GERD
    - Sector of Performance for GERD
  - Business Enterprise Expenditure on R&D (BERD)
    - BERD Value Added
    - Source of Financing for BERD
    - Industry of Performance for BERD
  - Higher Ed Expenditure on R&D (HERD)
    - HERD Financed by Industry
  - Government intramural expenditure on R&D (GOVERD)
  - Basic Research Expenditure as Percentage of GDP
  - ICT R&D expenditures
  - Number of Top 50/250 NIT Corporations, with R&D Dollars

Competitor Nations/Economies Selected

- China
- France
- Germany
- Japan
- Netherlands
- South Korea
- United Kingdom
- EU-15
- India
- Ireland
- Singapore

Main Data Sources

- Science and Engineering Indicators 2006 (NSF)
- OECD: Factbook 2006 (OECD)
- Science, Technology, and Industry Scoreboard 2005 (OECD)
- Information Technology Outlook 2004 (OECD)
- World Development Indicators 2005 (World Bank Group)
- The Global Information Technology Report 2005-2006 (World Economic Forum)
- Investment Climate Surveys, latest avail. (World Bank Group)
- European Union (EU)
- The World Factbook 2006 (CIA)
- Global Entrepreneurship Monitor 2005 (GEM)

Additional Data Sources (Current List)

Information Technology Association of America (ITAA)

Institute of Electrical and Electronics Engineers (IEEE)

RAND Corporation

Asian Technology Information Program (ATIP)

EU Community Research and Development Information Service (EU-CORDIS)

Forrester Research

Global Insight

IDC

International Telecommunication Union (ITU)

Price Waterhouse Coopers

The Economist

Transparency International

United Nations Development Program (UNDP)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

US Bureau of Labor Statistics

US Census Bureau

World Trade Organization (WTO)

Next Steps

- Begin focus on NIT industry and consumers – components, subcomponents, and metrics

➢ Mechanism of feedback: through the PCAST/NIT subcommittee

Questions