- Direct contribution to tax revenues
- Direct contribution to US GDP
- Increase householder & household income

FINDINGS:
- Administration/Regulation loan Program investments
  - Small rural residents benefit from rural electrification

GOAL:
- Maximize benefits
- Reduce infrastructure deficits
- Improve employment and growth
- Reduce loads to more neighbors

FINDINGS:
- Economic development
  - Establish the delivery of electric and telecommunications investments and services
  - Establish the relationship between the availability of electric and telecommunications services and the quality of the economy
  - Establish the relationship between the availability of electric and telecommunications services and the quality of the economy

GOAL:
- Improved social bases of revenue ranging from 17% to 25% revenue
- Improved electric rates of revenue ranging from 11% to 23% revenue
- Reduced electricity and telecommunications problems in sector development
- Reduced the scale of investment and level of risk
- Improved the delivery of electric and telecommunications services
- Improved the delivery of electric and telecommunications services
- Improved the delivery of electric and telecommunications services

NOTA NOTICE OF INQUIRY: The Parker Study (1984)

NOTA NOTICE OF INQUIRY: World Bank Research (1983)
Trends in US Productivity and GDP Growth

Per capita GDP growth closely follows real factor productivity

TTIA NOTICE OF INQUIRY: Conclusions

- Central Conclusions
- Prior Research
- The Research Agenda

TTIA NOTICE OF INQUIRY: DR's Central Conclusions

Telecommunications.

- Increases the productivity of the telecommunications industry
- Substitution of telecommunications for more costly imports
- Incentives to support growth in other industries
- Productivity increases in the telecommunications industry

TTIA NOTICE OF INQUIRY: Conclusions
DOUBLE IN 35 YEARS.
- A 2% rate similar to the historical GDP rate. Real per capita income will double in 35 years.
- At the expected rate of productivity growth, real per capita income will increase by 2% annually.
- At the recent historical U.S. rate of productivity growth, real per capita income will double between 1950 and 1970 and between 1970 and 1990.
- Economic Development

ECONOMIC DEVELOPMENT

Sectors

Productivity Growth Rates in the U.S. Are Behind Other Developed

CONCLUSIONS

NOTICE OF INQUIRY: CONCLUSIONS

NOTICE OF INQUIRY: CONCLUSIONS

NOTICE OF INQUIRY: CONCLUSIONS
ECONOMIC DEVELOPMENT: Telecommunications

Price of Telecommunications Price Relative to Wage Rate and
GNP Price Deflator 1963 = 1.0

- Telecoms and electronic equipment are the largest absolute productivity gains.
- Telecoms industry efficiency increased by an average rate of 7.5% per year, the highest rate of any industry in the U.S. economy.
- The average industry increased its real consumption of telecommunications services (per unit output) by 130%.

ECONOMIC DEVELOPMENT: Telecommunications Productivity

Between 1963 and 1991, the telecommunications industry realized significant productivity gains. Of the twenty major industry groups, telecommunications is the only sector that increased its productivity efficiency at a rate of 7.5% per year. The highest rate of any industry in the U.S. economy.

The average industry increased its real consumption of telecommunications services (per unit output) by 130%.
The 1991 economy saved $103 billion in primary input costs, of which $42.8 billion resulted from increased end-user consumption of telecommunications services.

ECONOMIC DEVELOPMENT: Resource Savings
- State Research
- Economic-Wide Prices
- International Competitiveness
- Telecommunications and Productivity

ECONOMIC DEVELOPMENT: International Competitiveness
- Telecommunications: Held Telecommunications Services

Price Index (1991 = 100)

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<th>Cellular Phone Services</th>
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Future Analysis

- The Results
- Growth in Telecommunications-Intensive Industries
- Historical Analysis

Methodology

Economic Development: State Research

- Telecommunications-Induced Productivity and Economic Growth
- Telecommunications and Productivity
- Causality
- Telecommunications Investment

Economic Development

Economic Development: State Methodology

Discount Rate

Social Rate of Return

1993: 3.1% telecommunications investment yielded a social return of 3.35%
ECONOMIC DEVELOPMENT: State Research

Methodology

Results

Due to the communications-intensive sectors' large and growing
increases in employment, the hourly and personal income in Pennsylvania

ECONOMIC DEVELOPMENT: Service Industries

Pennsylvania's按照服务产业

ECONOMIC DEVELOPMENT: Telecommunications-intensive sectors are large and growing

Pennsylvania's按照服务产业
ECONOMIC DEVELOPMENT: The Risk of Overemphasizing

- Larger, sustained investment in defense, spurring technological advances.
- Demand for defense equipment, including aircraft and other precision mechanisms.
- Demand for planes.
- Growth in aero-engineer.
- Chartered fights for new players in the production of planes.

But these technical advances have not led to productivity gains.

- Direct productivity gains in the production of planes.
- More efficient in econometric model with investment and price elasticity.
- Proven reduction in defense price elasticity.

Result has been a decrease in the production of planes.

Technical advances have affected the production of computers.

ECONOMIC DEVELOPMENT: The S Curve

- The Aggregate by 2010.
- The Moderate scenario by 2015, with broadband deployment by 2010.
- The Conservative scenario by the year 2000.

Increase in expenditure on national defense (or on government or private consumption) causes

ECONOMIC DEVELOPMENT: Results

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Increased in expenditure, increased defense spending, and increased military spending...
SUMMARY

ECONOMIC DEVELOPMENT: The Risk of Overmoderatization

<table>
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<tr>
<th>Economic Growth</th>
<th>Productivity</th>
<th>Communications</th>
<th>Industry</th>
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Since the early 1980s, industries have invested strongly in communications equipment and services, primarily driven by the market for computers relative to communications.
STAKEHOLDER IMPLICATIONS: Individual Shareholders

Total Costs/Benefits of Telecommunications: 1965-91

Break Even Line

Low Income

High Income

Average Net Beneficiaries

Urban

Rural

Eldery

Average

High Income

Low Income

Usage Increases from 1963-91

Total Costs & Benefits of Telecommunications in 1991 due to Telecommunications

STAKEHOLDER IMPLICATIONS: Individual Shareholders
Summary: Where Are We Now?

Section I: Why

Stakeholder Implications: Geographic Trends

- Geographic Trends
- Individual Stakeholders
- Overview

Stakeholder Implications: Summary