PENNSYLVANIA'S GLOBAL COMPETITIVENESS INITIATIVE:

AN INVESTOR ORIENTED APPROACH TO ECONOMIC DEVELOPMENT

> ready > set > innovate

OCTOBER 2007

Team Pennsylvania

pennsylvania
STATE OF INNOVATION
PA

I. Executive Summary

This report updates and expands upon the IBM Business Consulting Services/IBM PLI-Global Location Strategies' ("IBM") October 2005 report; "Action Plan for Investing in a New Pennsylvania – Identifying Opportunities for Pennsylvania to Compete in the Global Economy" (available at newPA.com).

As IBM reported in 2005, Pennsylvania has many of the assets required to continue as a strong economic competitor globally. These assets include strong leadership focused on job creation and retention; physical infrastructure to accommodate the demands of a 21st century economy; a well-educated labor force with a proven work ethic which consistently advances productivity growth; some of the nation's leading academic institutions; and the largest international business development network of any state. The data suggests that Pennsylvania has used these assets effectively in the past two years. It also suggests that many state officials have adopted IBM's earlier recommendations to examine the state's capabilities "through the lens of prospective investors" when targeting economic development resources. For example, in 2005, Pennsylvania ranked first among all U.S. states for the number of new cross-border investment projects, and was number one for manufacturing projects in the U.S. In 2006, IBM modified the methodology of its analysis of FDI to focus on job creation which resulted in Pennsylvania being ranked 5th in North America. These projects have helped boost Pennsylvania's Gross State Product 5 percent, to $510 billion in 2006, and its employment figures to record highs.

Pennsylvania can, however, achieve even greater success by increasing the level of collaboration and sense of shared purpose between state officials and regional economic development leaders and by better matching investor needs to the assets that they and the Commonwealth can offer. Indeed, we believe that developing effective partnerships between state government, universities, workforce investment boards, regional economic development organizations and other regional and local stakeholders is absolutely imperative if Pennsylvania is to remain a competitive leader in the global economy.

Given the state's sheer size and great diversity, strengthening statewide collaboration is not necessarily an easy task. But the Commonwealth of Pennsylvania's Department of Community and Economic Development (DCED) is certain it can be achieved if the state's regional economic development partners are willing to act on the recommendations contained in the Global Competitiveness Initiative and if the Commonwealth continues to support those regions that do so. We also believe both state and local officials will be better equipped to engage in successful business attraction efforts if they increase their familiarity with and use of the benchmarking tool IBM developed for the Commonwealth. This tool can be tremendously useful when marketing the state's capabilities and when targeting new business development opportunities.

Additional and updated findings of the Global Competitiveness report are as follows:

Pennsylvania has significant opportunity to enhance its competitive advantages and to attract or retain growing business in integrated bio-pharmaceutical manufacturing, biotech research, integrated medical devices, alternative energy (including solar panels, waste fired coal, biofuel and wind turbine assemblies), agro-food processing, digital media, prefabricated (i.e., manufactured) housing, fine chemicals production and in printing and publishing. Considerable strengths also exist in attracting regional headquarter facilities, financial services and their back-office operations and defense contracting concerns.

Investors continue to be concerned about access to a sufficient number of qualified workers when determining where businesses will establish operations. Pennsylvania should therefore ensure that its workforce initiatives and workforce development organizations continue to focus upon growth sectors of its economy. Access to, and use of, community colleges should be expanded and the Commonwealth should continue its integration of economic development and workforce development to maximize coordination between its academic institutions; its workforce development systems; and its business community.

Also, infrastructure availability and quality remain important factors in determining where businesses will site facilities. Pennsylvania must continue to advance and improve telecommunication and transportation connectivity in all geographical areas and continue to develop business parks and other industrial and commercial production facilities.

II. Introduction

If Pennsylvania, the world's seventeenth largest economy, is to succeed in the global economy, the state's economic development officials must be given the tools they need to continue to attract and expand business activity within the state in the face of ever-increasing and aggressive competition. DCED and the Team PA Foundation commissioned IBM to conduct intensive, pragmatic, data-driven research—known as the Global Competitiveness Initiative—in order to provide state economic development officials with the tools and the information needed to meet this challenge.

This four-year project analyzed the state's economic competitiveness and its ability to attract new business by benchmarking the relative strength of various sectors of Pennsylvania's economy and labor market regions within Pennsylvania against competitor locations in the United States and around the world.

During the first phase of this initiative completed in 2005, IBM evaluated Pennsylvania's ability to compete in 11 key sub-sectors of the economy in four major clusters: Life Sciences; High Technology; Advanced Manufacturing and Materials; and Business Services. Pennsylvania's relative competitiveness in the sub-sectors was analyzed by benchmarking 11 regional labor markets within Pennsylvania against 22 national and international competitor locations. Complete results of this initial evaluation and the methodology employed in IBM's analysis can be viewed at newPA.com.

In 2006 and 2007, IBM expanded this work to:

- Evaluate Pennsylvania's relative strength in 11 additional industry sub-sectors (for a total of twenty-two) within the same 4 clusters against a total of 26 competitor locations;
- Update prior competitive positioning analyses for each of the labor market regions that IBM reviewed during the first phase of this initiative, and evaluate the competitive strengths of four additional labor market regions;
- Identify persistent economic development challenges that exist within certain regions of the state; and
- Provide suggestions on how Pennsylvania can continue to implement the Global Competitiveness Initiative to achieve even greater success in its business attraction efforts.

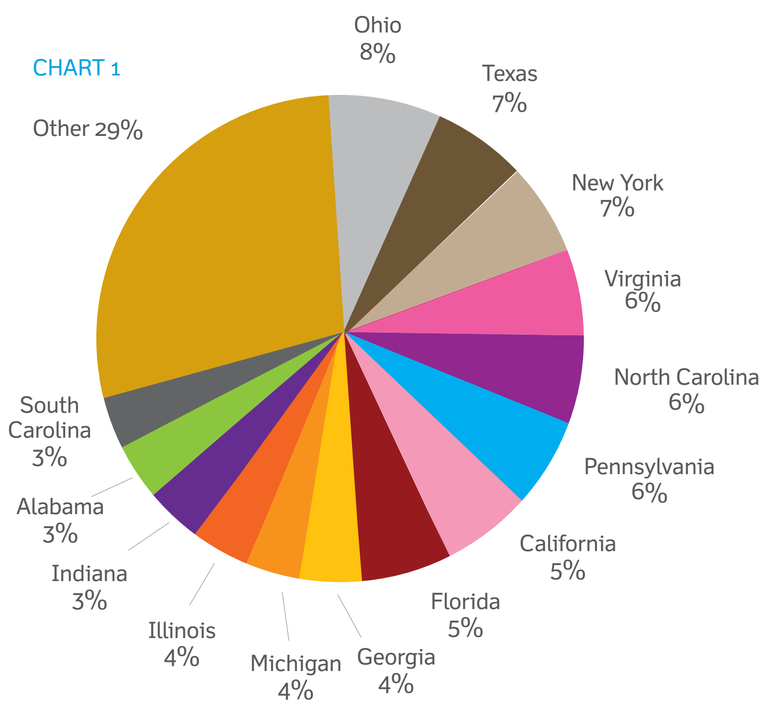
Studies show that although the Asia-Pacific region is still attracting the largest share of the world's cross-border investment, the United States continues to attract the greatest number of new cross-border investments for any country. To continue to successfully grow its economy, Pennsylvania must identify and capitalize on evolving national and international investment trends.

Pennsylvania has consistently been proactive and aggressive in capturing its share of the world's total cross-border investment flows.

Chart 1 shows, in 2006, Pennsylvania successfully captured approximately 6% of all U.S. cross-border investment. While much of this investment originated within the U.S., Pennsylvania's foreign direct investment share is increasing. Clearly, additional opportunities exist to attract even more business investment.

GLOBAL INVESTMENT FLOWS
INCREASED "CROSS-BORDER" COMPETITION

CHART 1



SOURCE: GLOBAL INVESTMENTS LOCATIONS DATABASE, IBM BSC, 2006

Evaluating Pennsylvania's Economic Development Programs, Competitive Position in a Changing Economy

Pennsylvania, and particularly DCED, has incorporated many of IBM's 2005 recommendations to allocate the state's economic development resources in a manner that better positions it for continued economic growth. The state also has been advising stakeholders in all regions and government levels how to collaborate more effectively to increase the state's business investment share.

Yet, despite progress, more must be done if Pennsylvania is to fully coordinate and integrate its investment efforts throughout the state and within its diverse economic development regions. Pennsylvania's state and regional leaders continue to face an important choice: they can wait for potential investors to discover the relative strengths (or weaknesses) of doing business in their respective geographic region (and do so independently of one another), or they can work collectively and proactively for the best interests of their region and the entire state.

Stakeholders and economic development organizations in a number of regions across the state have developed successful marketing and business attraction campaigns and sustained them over time. Such successes have not, however, been evenly distributed throughout the state nor have they always been developed with the entire state in mind. This presents a challenge for the Commonwealth and its economic development partners.

If Pennsylvania is to best position itself for future growth, its economic development regions must foster greater regional cooperation and work with state leaders to unite behind a common economic vision. Conversely, state officials must begin working more closely with regional partners, so that the Commonwealth's economic development resources focus on those investment opportunities that are most likely to result in success, while also positioning the state for sustained, long-term growth and full employment.

Project Approach: Examining Pennsylvania's Competitiveness from the Investor's Perspective

The Global Competitiveness Initiative is based upon the following guiding premise: Pennsylvania's economic development officials must examine the state's capabilities and offerings through the lens of prospective investors (e.g., business decision-makers) who are considering establishing new facilities or expanding existing operations in the state. An important corollary is that once this perspective is achieved, officials should focus their economic development resources to attract and expand investment in sectors of the economy in which Pennsylvania has a competitive advantage - positioning the state for long-term growth. This approach requires development leaders to recognize that businesses and potential investors typically focus on labor markets when determining where to site their facilities, rather than simply examining areas defined by political, geographic or historical terms.

This investor-oriented focus provides an effective method to evaluate the state's ability to attract new investment and expand existing business operations because it is based upon current, real-world project profiles and the data that business planners and site-selection consultants employ when making decisions. This analysis also draws upon up-to-date data derived from actual investment projects that Pennsylvania was unable to attract during the past several years. Pennsylvania remains the only U.S. state to employ this methodology as a means to assess its relative competitiveness.

Project Methodology
IBM evaluated Pennsylvania's relative competitiveness by:

- Analyzing global and U.S. investment trends to identify four major industry clusters and 22 sub-sectors of the Pennsylvania economy that are expected to generate new investment projects and create jobs in the next 3-5 years;
- Benchmarking the relative competitiveness of 15 Pennsylvania locations (regional labor markets/labor draw areas) within these sectors against 26 expected competitors;
- Highlighting areas for improving the state's business retention and attraction efforts;
- Evaluating Pennsylvania's existing investment marketing tools; and finally,
- Making recommendations.

Pennsylvania | State of Innovation

The four industry clusters and 22 industry sub-sectors selected for analysis appear below:

COMPETITIVE CLUSTER	TEST SUB SECTOR
A. Life Sciences	A1. Integrated bio-pharma manufacturing A2. Biotech research A3. Medical equipment & devices A4. Integrated medical diagnostic equipment
B. High Technology	B1. Next generation electronics B2. Wind energy generation assemblies B3. Wind generator components B4. Wind turbine rotors B5. Solar panel manufacturing B6. Waste coal fired power B7. Biofuel manufacturing plant
C. Advanced Manufacturing and Materials	C1. Powdered metals C2. Agro-food processing C3. Prefabricated housing C4. Tooling design and metals manufacturing C5. Fine chemicals productions C6. Printing and publishing
D. Business Services	D1. Creative industries D2. Regional HQ D3. Financial services – Advisory & marketing D4. Financial services – Back-office support D5. Defense contractor

TABLE 1

The Pennsylvania locations that were subjected to IBM's benchmarking analysis and placed in regional references are:

1. Philadelphia, Southeast
2. Lancaster, Southeast
3. Reading, Southeast
4. Allentown-Bethlehem-Easton, Lehigh Valley
5. Harrisburg, Southcentral
6. State College, Central
7. Pittsburgh, Southwest
8. Altoona-Johnstown, Southern Alleghenies
9. Erie, Northwest
10. Northcentral
11. Northern Tier
12. Scranton-Wilkes-Barre, Northeast
13. Williamsport, Central
14. York, Southcentral
15. Johnstown, Southern Alleghenies

The competitor locations against which Pennsylvania was ranked are as follows:

1. Phoenix, AZ
2. Los Angeles, CA
3. San Diego, CA
4. San Jose, CA
5. Orlando, FL
6. Atlanta, GA
7. Chicago, IL
8. Elkhart, IN
9. Des Moines, IA
10. Henderson, KY
11. Baltimore, MD
12. Boston, MA
13. Detroit, MI
14. Middlesex-Somerset-Hunterdon, NJ
15. Rochester, NY
16. Raleigh, NC
17. Columbus, OH
18. Dallas, TX
19. Richmond, VA
20. Washington, DC
21. Huntington, WV
22. Toronto, Canada
23. San Juan, Puerto Rico
24. Monterrey, Mexico
25. Glasgow, UK
26. Shanghai, China

To perform the analysis, IBM developed representative project profiles of the type and scale of real projects that were likely to consider Pennsylvania as an investment option. These profiles were drawn from real site-selection project data developed by IBM, Pennsylvania's Governor's Action Team and industry trends. The profiles contain detailed descriptions of specific investor requirements for particular projects including workforce requirements, capital investment needs, land requirements, energy and telecommunication requirements, operating costs, and other logistical needs.

Table 2 provides an example of what one of these profiles looks like in practice. The table illustrates the major qualitative category weights and key project drivers assigned to a representative sector project profile for the agro-food processing sub-sector.

REPRESENTATIVE PROJECT PROFILE: AGRO-FOOD PROCESSING

General Description of Operations

Activities:
Integrated development and manufacturing of healthy foods or nutraceuticals.

Key Project Drivers
Integrated development and manufacturing of healthy foods or nutraceuticals.

- Proximity to nutrition research resources
- Good interstate highway infrastructure
- Clean air and water in immediate vicinity
- Surrounding cluster of food
- Large number of consumers in 200 mile radius

Assumption in terms of project requirements

LABOR		PROPERTY	
total head count		site	
100		surface	15 acres
position number		building	110,000 sq ft.
food scientist	10	production	80,000 sq ft.
food science technicians	10	warehouse	20,000 sq ft.
cooks	10	laboratory	5,000 sq ft.
general office clerk	10	office	5,000 sq ft.
maintenance & repair works	10	lease/own/build-to-suit	build-to-suit
mixing & blending machine operators	30	opportunity cost	
packaging and filling machine tenders	10	land	5%
		building amortization rate	12.50%
order clerks	10		
		UTILITIES	
INCOME TAXES		power	
cost center model:		monthly consumption	500,000 kwh
profit markup	10%	gas	
		monthly consumption	6,000 MCF
		water	
		daily consumption	30,000 gal

TABLE 2

Once these profiles were developed, IBM analyzed cost, quality and key site-location decision factors to develop a "weighted" scorecard for each industry sector and benchmark location. An example of this type of scorecard appears at Table 3. IBM then applied these scorecards to perform qualitative and quantitative (cost) analyses for each sector and benchmark location, and combined the analyses results into a "Cost-Quality" map for each industry sub-sector illustrating Pennsylvania's ability to produce high-or-low cost goods and services, and the quality of those goods or services relative to competitor locations – as illustrated in Diagram 1.

WEIGHTED SCORECARD FOR SITING REPRESENTATIVE AGRO-FOOD PROCESSING FACILITY

LOCATION CATEGORY	WEIGHTED
1. General business environment	10
2. Local potential to recruit skilled staff	30
3. Presence of industry/cluster	30
4. Flexibility of labor and regulations	5
5. Infrastructure	15
6. Real estate	5
7. Living environment	5
	100

LOCATION FACTORS – QUALITATIVE (V. OPERATING COST)

1. General business environment	
1.1 Economic and financial stability	15
1.2 Political stability	10
1.3 Quality of support from local government & development agencies	20
1.4 Business permitting procedures	20
1.5 Availability of financial support for setting up (including incentives)	15
1.6 Risk of natural disaster	20
	100

2. Local potential to recruit skilled staff	
2.1 Overall size and labor market	10
2.2 Presence of experienced manufacturing workers	35
2.3 Presence of experienced industry-specific employees	30
2.4 Presence of non-experienced staff (student population)	15
2.5 Overall tightness in labor market (unemployment)	10
	100

3. Presence of industry/cluster	
3.1 Market proximity (access to customers)	10
3.2 Proximity to raw materials	30
3.3 Presence of industry base (metal industry, auto cluster)	25
3.4 Importance of university (R&D)	35
3.5 Proximity to finance/regulators	0
	100

TABLE 3

WEIGHTED SCORECARD FOR SITING REPRESENTATIVE AGRO-FOOD PROCESSING FACILITY (Cont.)

4. Flexibility of labor & regulations	
4.1 General business environment	30
4.2 Local potential to recruit skilled staff	30
4.3 Presence of industry/cluster	40
	100

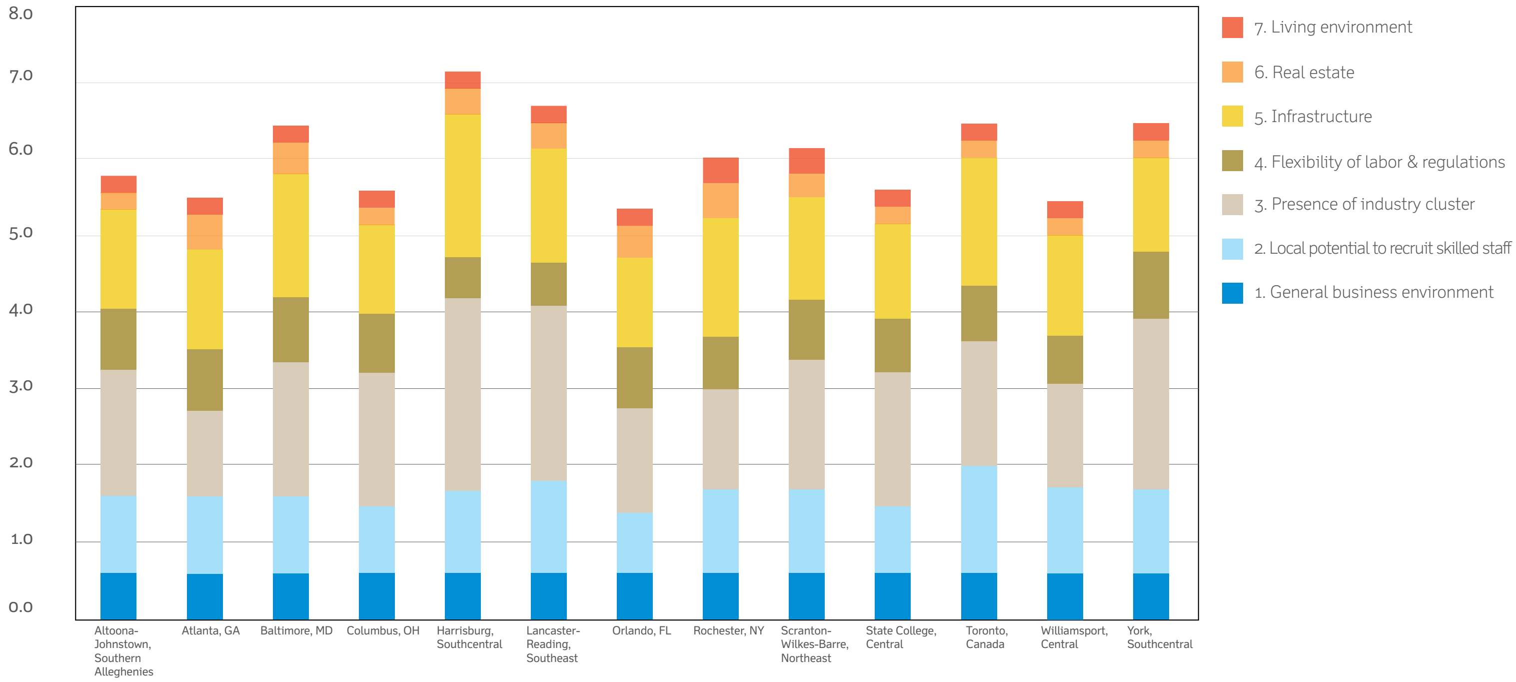
5. Infrastructure	
5.1 Air access	35
5.2 Highway network & congestion	15
5.3 Availability of public transport	15
5.4 Waterways and seaport	10
5.5 Quality & reliability of telecommunications	0
5.6 Reliability of power supply	25
	100

6. Real estate	
6.1 Availability of large industrial sites	0
6.2 Availability of industrial/office/lab space	100
	100

7. Living environment	
7.1 Cost of living	25
7.2 Attractiveness for recruits	25
7.3 Safety	25
7.4 Quality of schools	25
	100

CHART 2

C2. AGRO-FOOD PROCESSING TOTAL WEIGHTED QUALITY SCORES



C2. AGRO-FOOD PROCESSING ANNUAL OPERATING COST (MILLION USD)

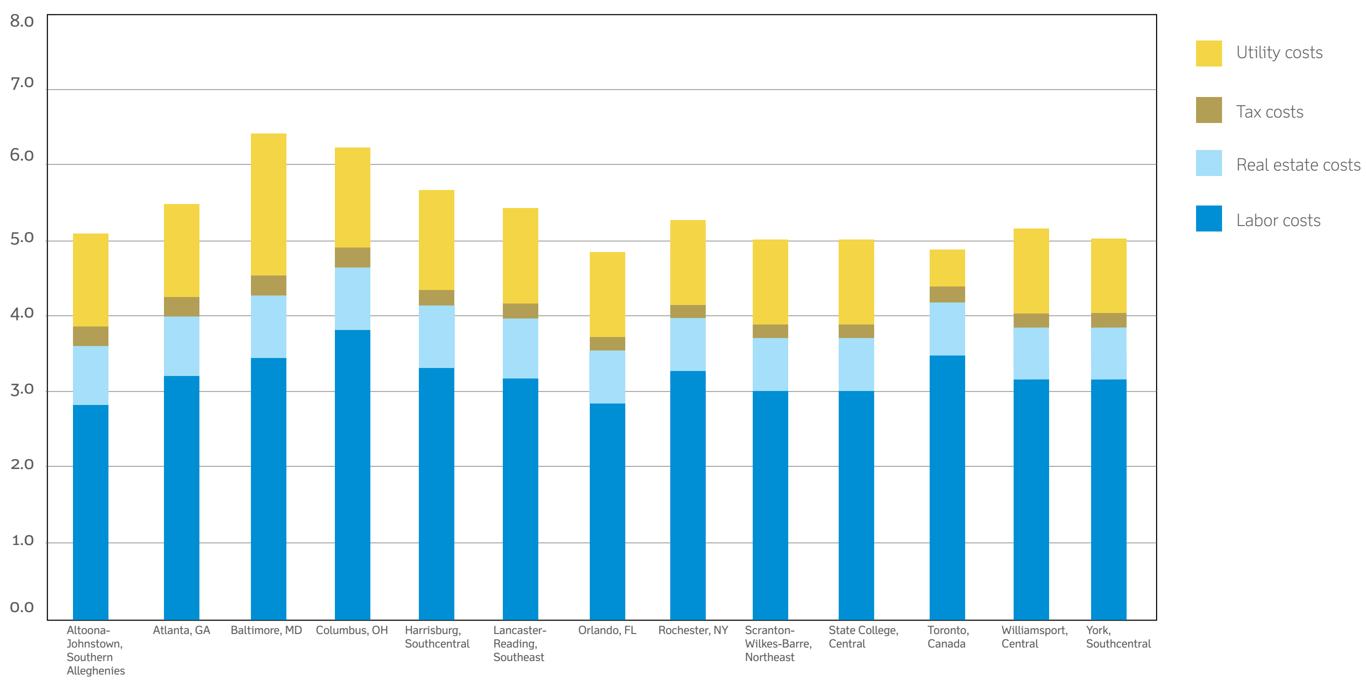


DIAGRAM 1

AGRO-FOOD PROCESSING COST QUALITY MAP

* NO GLOBAL COMPETITIVE ENVIRONMENT SHOWN AS NO COMPETITORS INCLUDED OUTSIDE OF NORTH AMERICA

III. Main Findings

IBM's main findings are presented graphically, and illustrate Pennsylvania's relative competitiveness – on a region-by-region basis – in each of the 22 sub-sectors that were analyzed. These findings, summarized below, approximate the conclusions that a site selector is likely to reach when using similar data to identify prospective investment locations for each of the selected sub-sectors.

PHILADELPHIA (SOUTHEAST)

MAJOR STRENGTHS

> LIFE SCIENCE

A1. Integrated Bio Pharma Mfg
- a strong quality offer
- workforce with appropriate skills

A2. Biotech Research
- good access to science and engineering graduates
- attractive living environment
- workforce with appropriate skills

A4. Integrated Medical Diagnostic Equipment
- best quality proposition

> HIGH TECHNOLOGY

B1. Next Generation Electronics
- a reasonable quality & moderate cost proposition
- good pool of science & engineering graduates
- workforce with appropriate skills

B5. Solar Panel Mfg
- best quality option
- good access to raw materials (pvf, silicon, etc.)

> ADVANCED MFG & MATERIALS

C5. Fine Chemicals Production
- best quality option at a reasonable cost
- strong presence of recent graduates

C6. Printing and Publishing
- excellent quality option
- good availability of manufacturing space
- important transportation routes

> BUSINESS SERVICES

D1. Creative Industries
- good cost/quality option
- large relevant student pool

D2. Regional Headquarters
- best quality option at a reasonable cost level (for a sub-sector primarily driven by qualitative factors); strong proposition
- large pool of relevant student pool
- very good air access and highway network
- attractive location for recruits

D3. Financial Services
- very high qualitative proposition
- excellent pool of qualified staff
- large relevant student pool – college business graduates/ renowned business schools
- attractive location for recruits

D5. Defense Contractor
- good proximity to small business contractors
- large availability of industrial sites
- overall infrastructure, including accessibility to Washington, DC

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- AE Polysilicon Corp: mfg. attraction, 145 jobs, Bucks Co., 2007
- Herr Foods, Inc.: mfg. expansion, 64 new jobs, Chester Co., 2007
- The Boeing Company: mfg. expansion, 350 new jobs, Delaware Co., 2006
- RAF Industries: mfg attraction, 81 jobs, Montgomery Co., 2006
- United Research Laboratory, Inc.: mfg expansion, 64 new jobs, Phila Co., 2005
- Isolagen: regional/national HQ attraction, 140 jobs, Chester Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> LIFE SCIENCES
- overall size of the labor market – use mass transit to increase labor draw area
- reduce/offset state and local income tax

> HIGH TECHNOLOGY
- expand turbine and component manufacturing cluster
- increase pool of industry specific employees by focusing on smaller projects and emphasizing relative numbers

> BUSINESS SERVICES
- build/improve regional marketing organization
- stimulate new office space construction

Philadelphia is already a competitive location in the Creative Industries. To make it an even more attractive location, focus product development on:

- graduate retention programs and inducements
- assist incubators and associations supporting digital media
- work with cable content providers to expand digital media/training clusters
- offset labor costs for new job creation
- leverage/increase support for area university programs

PITTSBURGH (SOUTHWEST)

MAJOR STRENGTHS

> LIFE SCIENCE

A1. Integrated Bio Pharma Mfg
- good cost/quality option

A2. Biotech Research
- average overall quality
- competitive cost structure
- attractive living environment

A3. Medical Equipment and Devices
- one of the best quality options in the state

> HIGH TECHNOLOGY

B1. Next Generation Electronics
- a reasonable quality & moderate cost proposition
- good R&D base for electronics and nanotechnology

B2. Wind Energy Generation Assemblies
- best quality option
- good market for electricity production

B3. Wind Generation Components
- best cost/quality option

B4. Wind Turbine Rotors
- best cost/quality option

B5. Solar Panel Mfg
- good cost/quality option

B6. Waste Coal Fired Power
- good access to raw materials (coal)
- market for electricity
- availability of suitable industrial sites
- road, ports and water connections

> ADVANCED MFG & MATERIALS

C4. Tooling, Design and Metals Mfg
- good overall quality
- air and seaport access

C5. Fine Chemicals Production
- overall strong infrastructure
- good proximity to market and raw materials

C6. Printing and Publishing
- offers important transportation routes

> BUSINESS SERVICES

D1. Creative Industries
- good cost/quality option
- leading program in digital media is at Carnegie Mellon University

D2. Regional Headquarters
- moderate quality option that provides some cost saving potential

D3. Financial Services – Advisory and Marketing
- moderate quality option that provides some cost saving potential

D5. Defense Contractor
- good political support
- large availability of industrial sites
- overall infrastructure, including accessibility to Washington, DC

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Westinghouse Electric Corp.: HQ expansion, 1862 new jobs, Westmoreland Co., 2007
- Pennsylvania Biodiesel, Inc.: mfg attraction, 40 jobs, Beaver Co., 2006
- SYCOR AMERICAS, Inc.: services expansion, 80 new jobs, Allegheny Co., 2007
- Verizon Wireless: regional/national headquarters expansion, 338 new jobs, Butler Co., 2007
- American Textile Company: mfg. expansion, 50 new jobs, Allegheny Co., 2006
- Caracal, Inc.: mfg. attraction, 140 jobs, Armstrong Co., 2005
- Citizens Bank: back office/admin expansion, 475 new jobs, Allegheny Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> LIFE SCIENCES

- increase access to biotech researchers through increased non-NIH federal and other R&D funds
- retain graduates at area universities/colleges to increase the pool of science and engineering graduates
- increase availability of venture capital funding and incentives

> HIGH TECHNOLOGY

- increase pool of industry specific employees by focusing on smaller projects and emphasizing relative numbers
- address the small industry specific cluster through marketing and highlighting capabilities of larger firms
- increase size of telecoms equipment, electronics and electro-medical clusters
- offset labor cost for new job creation
- improve infrastructure/access to ports
- availability of industrial sites – consider spec buildings

> FINANCIAL SERVICES

- stimulate new office space construction
- stimulate HQ retention, expansion and relocation
- promote public safety in urban area
- improve highways and public transit
- improve quality of public schools
- increase pool of industry specific employees by focusing on smaller projects and emphasizing relative numbers
- expand available office space

Pittsburgh is already a competitive location in the Creative Industries. To make it an even more attractive location, focus product development on:

- graduate retention programs and inducements
- assist incubators and associations supporting digital media
- aggressively seek federal/defense simulation research funding
- work with cable content providers to expand digital media/training clusters
- offset labor costs for new job creation
- leverage/increase support for area university programs

LEHIGH VALLEY

MAJOR STRENGTHS

> LIFE SCIENCE

A3. Medical Equipment and Devices
- one of the best quality options

> HIGH TECHNOLOGY

B1. Next Generation Electronics
- a reasonable quality & moderate cost proposition
- good R&D base for electronics and nanotechnology

> BUSINESS SERVICES

D1. Creative Industries
- good cost/quality option

D2. Regional Headquarters
- moderate quality option that provides some cost saving potential

D3. Financial Services – Advisory and Marketing
- moderate quality option that provides some cost saving potential

D4. Financial Services – Back-Office Support
- good proximity to IT and telecom support services
- close proximity to financial centers (Philadelphia and New York)
- excellent quality of universities and business schools
- good availability of office space

Additional data in tool provided for sectors: A1, A2, A4, B5, C5, C6, D1, D2, D3, and D4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- B. Braun Medical: mfg. expansion, 300 new jobs, Lehigh Co., 2007
- Lutron Electronics Co., Inc.: HQ expansion, 500 new jobs, Lehigh Co., 2006
- C&S Wholesale Grocers, Inc.: Distribution warehouse attraction, 400 jobs, Northampton Co., 2006
- Strahman Valves, Inc.: mfg. attraction, 100 jobs, Northampton Co., 2006
- Automatic Data Processing, Inc.: back office/ admin attraction, 220 jobs, Lehigh Co., 2006
- DHL: industrial expansion, 104 new jobs, Lehigh Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> HIGH TECHNOLOGY

- increase pool of industry specific employees by focusing on smaller projects and emphasizing relative numbers
- address the small industry specific cluster through marketing and highlighting capabilities of larger firms
- increase size of telecoms equipment, electronics and electro-medical clusters
- offset labor cost for new job creation

NORTHEAST

MAJOR STRENGTHS

> HIGH TECHNOLOGY

B6. Waste Coal Fired Power
- presence of experienced industry-specific workforce
- road connections
- availability of industrial sites

> ADVANCED MFG & MATERIAL

C2. Agro-Food Processing
- good highway network

C6. Printing and Publishing
- offers a good quality option

> BUSINESS SERVICES

D4. Financial Services – Back-Office Support
- offers good cost/quality option

Additional data in tool provided for sectors: B1, B2, D4, and D5

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Sara Lee Corporation: distribution warehouse attraction, 123 jobs, Schuylkill Co., 2007
- CLC Air: mfg. attraction, 100 jobs, Luzerne Co., 2007
- McLane Company, Inc.: distribution warehouse attraction, 217 jobs, Luzerne Co., 2007
- Gruma Corp.: mfg. attraction, 232 jobs, Luzerne Co., 2005
- Millennium Multimedia, Inc.: mfg. attraction, 300 jobs, Lackawanna Co., 2006
- UPS Supply Chain Solutions General Services, Inc.: services expansion, 68 new jobs, Lackawanna Co., 2006
- TMG Health, Inc.: back office expansion, 730 new jobs, Lackawanna Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> HIGH TECHNOLOGY

- offset labor cost for new job creation
- improve infrastructure/access to ports
- availability of industrial sites – consider spec buildings
- target high tech projects or select sub-regions not in direct competition with high wage employers
- improve leisure and educational opportunities to retain/attract graduates

> BUSINESS SERVICES

- develop suburban business parks

CENTRAL

MAJOR STRENGTHS

> LIFE SCIENCE

A3. Medical Equipment and Devices
- competitive cost proposition

> HIGH TECHNOLOGY

B5. Solar Panel Mfg
- most competitive cost proposition

B6. Waste Coal Fired Power
- good electric power industry

> ADVANCED MFG & MATERIALS

C3. Prefabricated Housing
- offers reasonable quality at lowest cost

Additional data in tool provided for sectors: A2, A4, B1, B7, C1, C2, C4, C6, D1, and D4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Cleveland Brothers Holdings: Mixed Use expansion, 419 new jobs, Centre Co., 2007
- Spectrum Control Inc.: mfg. attraction, 150 jobs, Centre Co., 2006
- Excel Homes: mfg. expansion, 85 new jobs, Clinton Co., 2005
- United States Gypsum Company: mfg. attraction, 150 jobs, Montour Co., 2005
- Chemcut Holding, LLC: mfg. expansion, 20 new jobs, Centre Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> LIFE SCIENCES

- offset labor cost for new job creation
- create industry-focused incentives
- increase pool of industry specific employees by focusing on smaller projects and marketing
- improve programs at community colleges and schools

> HIGH TECHNOLOGY

- increase graduate school programs in alternative energy at area universities/colleges to increase pool of qualified workforce
- offset labor cost for new job creation
- improve infrastructure/access to ports
- availability of industrial sites – consider spec buildings

> ADVANCED MFG & MATERIALS

- increase vocational education, link to automation, and robotics to augment pool of applicable workforce
- target smaller projects and address relatively small labor market size through marketing
- improve local agencies' databases on sites, labor costs and availability

NORTHERN TIER

MAJOR STRENGTHS

> ADVANCED MFG & MATERIALS

C1. Powdered Metals
- a very strong cost competitive advantage when compared to regions within North America; global market is much more competitive with many lower cost alternatives
- above average quality

C5. Fine Chemicals Productions
- offers strong market proximity

Additional data in tool provided for sectors: C3 and C4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Pendu Manufacturing: mfg. expansion, 26 new jobs, Bradford Co., 2004

FOCUS PRODUCT DEVELOPMENT ON:

> ADVANCED MFG & MATERIALS

- emphasize specific skills and offer training programs to expand pool of manufacturing workers
- availability of industrial sites – consider spec buildings
- develop community college in rural areas to expand pool of graduates
- improve infrastructure and industry base

SOUTH CENTRAL

MAJOR STRENGTHS

> HIGH TECHNOLOGY

B7. Biofuel Mfg. Plant
- the overall most competitive option when combining a competitive cost level with a good quality level
- good proximity to market (petroleum products wholesalers, biofuel distributors and distribution infrastructure for truck fleets)
- availability of industrial sites

> ADVANCED MFG. & MATERIALS

C2. Agro-food Processing
- best overall quality proposition
- sizeable food processing cluster
- good access to agricultural products (raw materials)
- large pool of agro-food processing & research workforce

Additional data in tool provided for sectors: A1, A2, A3, A4, B1 C1, C4, D2, D3, and D4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Rite Aid Headquarters Corporation: back office expansion, 300 new jobs, Cumberland Co., 2007
- GEA North America: mfg. expansion, 214 new jobs, York Co., 2007
- Hersha Group: HQ expansion, 50 new jobs, Dauphin Co., 2007
- Advanced Communications Agency, Inc.: Industrial expansion, 118 new jobs, Dauphin Co., 2006
- Manitowoc Crane Group: mfg. expansion, 241 new jobs, Franklin Co., 2006
- JLG Industries, Inc.: mfg. expansion, 835 new jobs, Cumberland Co., 2006

FOCUS PRODUCT DEVELOPMENT ON:

> HIGH TECHNOLOGY

- increase pool of industry specific employees by focusing on smaller projects and emphasizing relative numbers
- address the small industry specific cluster through marketing and highlighting capabilities of larger firms
- increase size of telecoms equipment, electronics and electro-medical clusters
- increase graduate school programs in alternative energy at area universities/colleges to increase the pool of a qualified workforce
- expand turbine and component manufacturing cluster

> ADVANCED MFG. & MATERIALS

- improve infrastructure/access to ports and industry base
- target high tech projects or select sub-regions not in direct competition with wage employees
- improve leisure and educational opportunities to retain/attract recent graduates
- emphasize specific skills and offer training programs in community colleges to expand pool of manufacturing workers

NORTH CENTRAL

MAJOR STRENGTHS

> HIGH TECHNOLOGY

B6. Waste Coal Fired Power
- advantageous cost levels for this industry

> ADVANCED MFG & MATERIALS

C1. Powdered Metals
- above average quality option for this industry

Additional data in tool provided for sectors: B1, and B3

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- BioEnergy International, LLC: mfg. attraction, 110 jobs, Clearfield Co., 2006
- Werzalit of America, Inc.: mfg. attraction, 25 jobs, McKean Co., 2006
- Weyerhaeuser: mfg. expansion, 18 new jobs, Clearfield Co., 2004

FOCUS PRODUCT DEVELOPMENT ON:

> HIGH TECHNOLOGY

- offset labor cost for new job creation
- increase pool of industry specific employees, especially in North Central region, by focusing on smaller projects & emphasizing relative numbers
- improve infrastructure/access to ports
- availability of industrial sites – consider spec buildings

> ADVANCED MFG. & MATERIALS

- emphasize specific skills and offer training programs in community colleges to expand pool of manufacturing workers
- availability of industrial sites – consider spec buildings
- develop community college in rural areas to expand pool of graduates
- increase vocational education, link to automation, and robotics to augment pool of applicable workforce
- target smaller projects and address relatively small labor market size through marketing
- improve local agencies' databases on site, labor costs and availability opportunities to retain/attract recent graduates
- improve leisure and educational opportunities to retain/attract recent graduates
- improve infrastructure and industry base

NORTHWEST

MAJOR STRENGTHS

> LIFE SCIENCE

A3. Medical Equipment and Devices
- competitive cost proposition
- good plastics & medical devices cluster in Erie

Additional data in tool provided for sectors: C3, C4, and D4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- National Steel Products, Inc.: mfg. attraction, 60 jobs, Erie Co., 2007
- GE Infrastructure Rail: mfg. expansion, 205 new jobs, Erie Co., 2007
- Erie Shipbuilding, LLC: mfg. expansion, 205 new jobs, Erie Co., 2007
- Eastern Financial Systems, Inc.: Back Office expansion, 60 new jobs, Mercer Co., 2006
- Penn North Centers for Advanced Wound Care: HQ attraction, 33 jobs, Warren Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> LIFE SCIENCES

- offset labor cost for new job creation
- create industry-focused incentives
- increase pool of industry specific employees by focusing on smaller projects and marketing
- expand plastics & medical devices cluster outside of Erie
- improve programs at community colleges and schools

> HIGH TECHNOLOGY

- increase graduate school programs in alternative energy at area universities/colleges to increase pool of a qualified workforce
- expand turbine and component manufacturing cluster

> ADVANCED MFG & MATERIALS

- emphasize specific skills and offer training programs in community colleges to expand pool of manufacturing workers
- availability of industrial site – consider spec buildings
- develop community colleges in rural areas to expand pool of graduates

SOUTHERN ALLEGHENIES

MAJOR STRENGTHS

> HIGH TECHNOLOGY

B2. Wind Energy Generation Assemblies
- most competitive cost proposition

> ADVANCED MFG & MATERIALS

C2. Agro-food Processing
- Southern Alleghenies (Altoona) offer the lowest cost at a reasonable quality level

> BUSINESS SERVICES

D5. Defense Contractor
- excellent political support in Johnstown

Additional data in tool provided for sectors: A1, A3, B3, B4, B5, B6, B7, C1, and C4

Additional data specific to Johnstown provided for sector: D5

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Morton MetalCraft: mfg. attraction, 300 jobs, Bedford Co., 2006
- KDH: mfg. attraction, 150 jobs, Cambria Co., 2005
- Gamesa Eolica, S.A.: mfg. attraction, 234 jobs, Cambria Co., 2005
- Lampire Biological Laboratories, Inc.: mfg. expansion, Bedford Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> ADVANCED MFG & MATERIALS

- emphasize specific skills and offer training programs in community colleges to expand pool of manufacturing workers
- availability of industrial sites – consider spec buildings
- develop community college in rural areas to expand pool of graduates
- improve infrastructure and industry base

LANCASTER-READING (SOUTHEAST)

MAJOR STRENGTHS

> ADVANCED MFG & MATERIALS

C2. Agro-food Processing
- sizeable food processing cluster
- good access to agricultural products (raw materials)
- large pool of agro-food processing & research workforce

C3. Prefabricated Housing
- very good overall quality in Lancaster-Reading and State College, with average cost in State College
- best quality option
- large pool of relevant workforce

Additional data in tool provided for sectors: A1, A2, B1, B2, and B7

Additional data specific to Reading provided for sectors: A4, B5, B7, C4, C5, C6, D3 and D4

RECENT REGIONAL (& ADJACENT REGION) INDUSTRY WINS

- Auntie Anne's: mfg. expansion, 72 new jobs, Lancaster Co., 2006
- GlaxoSmithKline: mfg. attraction, 270 jobs, Lancaster Co., 2005
- Starcom Paper: mfg. expansion, 46 new jobs, Lancaster Co., 2005

FOCUS PRODUCT DEVELOPMENT ON:

> ADVANCED MFG & MATERIALS

- improve infrastructure/access to ports
- target high tech projects or select sub-regions not in direct competition with high wage employers
- improve leisure and educational opportunities to retain/attract recent graduates

These Tables indicate clearly that Pennsylvania continues to have strong opportunities to attract or retain businesses in the following sectors of the economy:

- Alternative Energy (including solar panel manufacturing and waste coal fired production)
- Agro-food processing
- Creative industries
- Prefabricated (i.e., manufactured) housing
- Printing and publishing
- Next generation electronics
- Financial services
- Financial services back office
- Regional Headquarters

Pennsylvania also has good-to-moderate opportunities to attract investment in the following sectors as well:

- Biofuel manufacturing plants
- Biotech research
- Fine chemicals production
- Integrated bio-pharmaceutical manufacturing
- Integrated medical diagnostic equipment
- Tooling design and metals manufacturing
- Wind energy generation assemblies
- Defense contractor

These conclusions are not, of course, an exhaustive statement about Pennsylvania's ability to compete in the global economy because these findings are limited to the 22 sub-sectors IBM analyzed. They do, however, accurately present both the opportunities and the challenges Pennsylvania faces in attracting new business investment in each of the sectors and labor market regions.

There are other important findings of the study that deserve mention:

- Because workforce development and training programs are a critical ranking factor for prospective investors, these programs should continue to be targeted to identify growth sectors of the economy and continue to be designed to match employer and industry-specific requirements;
- Community college programs should continue to be expanded as their basic education mission has a strong impact on local economic development, technology transfer, and technical training;
- Workforce development providers must collaborate their efforts and extend innovation from university centers into rural areas;
- Business parks should continue to be developed to ensure sufficient site selection locations are readily available in all regions of the state—especially along the state's key transit corridors—and that they are supported by a well-maintained transportation infrastructure;
- Communications and Information Technology infrastructure should continue to be enhanced statewide, but particularly in rural areas, so the lack of communications infrastructure is not an impediment to business growth and investment.

IV. Business Development Benchmarking Tool

A business development benchmarking tool is one key deliverable IBM provided to DCED as part of the Global Competitiveness Initiative. The tool is an electronic, interactive, data-driven business development solution that enables Pennsylvania's economic development officials to better target prospective investment projects.

The tool also enables economic development officials to quickly respond to a business or site selection Request for Proposals, and allows them to graphically demonstrate to prospective businesses the comparative strengths (and weaknesses) associated with locating facilities in various Pennsylvania locations (relative to competitor locations in the U.S. and globally). As such, the tool enables economic development practitioners to provide prospective investors with detailed site-selection analyses - analyses that might otherwise have cost these businesses thousands of dollars to prepare.

The benchmarking tool contains data on all 22 industry sub-sectors from the IBM study. Of particular note is that this data can be refined to account for the variation that often exists from project to project. DCED and its regional economic development partners can input information into the tool to produce reliable and up-to-date results on the cost-quality offerings of each region of the state to retain business and attract new investment. In addition, the tool can provide users with industry summaries, competitor location overviews, and data on successful investment activities. The tool can also be used to develop key marketing messages or to counter arguments that challenge the state's attractiveness as a business investment venue.

The dramatic increase in the number of cross-border investment projects Pennsylvania has successfully attracted during the past several years illustrates in part the value of the Global Competitiveness Initiative, and the utility of DCED's benchmarking tool. It is time for more of the state's economic development practitioners to take advantage of the study's findings and recommendations, and to put the electronic benchmarking tool to work in all regions of the state.

V. Conclusion

Pennsylvania's Global Competitiveness Initiative has helped to provide state officials with an intensive analysis of the state's economic capabilities. It also provides decision makers with additional methods to sustain Pennsylvania's competitiveness in the 21st century global economy. Great progress has been made in the four years since the inception of this initiative. However, numerous opportunities remain for attracting significant new investment to all regions of the state in more than a dozen sectors of the economy.

It is time for all of Pennsylvania's local economic development officials to consider the state's overall competitive advantages (and challenges) – as well as the state's comprehensive economic development strategy – when conducting local or regional economic development planning or engaging in business development activities. Further, state-level officials must continue to take an assertive and proactive role not only in assessing the changing needs of existing and future employers, but also in partnering with regional officials to implement a statewide economic development strategy. This can be accomplished, in part, by encouraging regional efforts that better integrate Pennsylvania's overall economic development framework.

In addition, economic development practitioners across the state should increase their familiarity with and their use of DCED's electronic benchmarking tool, which was developed specifically to better target new business development opportunities.

For Pennsylvania to continue to compete successfully in the global economy it must coordinate and leverage every asset. Pennsylvania's standing in the global economy cannot be sustained solely through independent action by the Commonwealth, the state's numerous economic development organizations, academic institutions, workforce development providers or its corporate partners. Instead, a shared statewide commitment to improve Pennsylvania's global competitiveness must be energized by concerted, coordinated action; focused investments of time and resources; and, most of all, shared responsibility.

Pennsylvania must have a statewide commitment to global competitiveness and it can use the insights, recommendations and tools residing within the Global Competitiveness Initiative to build upon the state's economic strengths and to sustain its economic growth.

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