Competitiveness and the Role of Regions

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Institute for Strategy and Competitiveness
Harvard Business School

The Center For Houston’s Future
Houston, Texas
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Sources of Regional Competitiveness

• A region’s competitiveness and standard of living (wealth) is determined by the **productivity** with which it uses its human, capital, and natural resources. The appropriate definition of competitiveness is productivity.
  – Productivity depends both on the **value** of products and services (e.g. uniqueness, quality) as well as the **efficiency** with which they are produced.
  – It is not **what** industries a region competes in that matters for prosperity, but **how** firms compete in those industries
  – Productivity in a region is a reflection of what both domestic and foreign firms **choose to do in that location.** The location of ownership is secondary for regional prosperity.
  – The productivity of “**local**” industries is of fundamental importance to competitiveness, not just that of traded industries

• Regions compete in offering the **most productive environment** for business
• The public and private sectors play **different but interrelated roles** in creating a productive economy
Innovation and Competitiveness

- Innovation is more than just scientific discovery
- There are no low-tech industries, only low-tech firms
Productivity and the Business Environment

Context for Firm Strategy and Rivalry

- A local context and rules that encourage investment and sustained upgrading
  - e.g., Intellectual property protection
- Open and vigorous competition among locally based rivals

Factor (Input) Conditions

- Presence of high quality, specialized inputs available to firms
  - Human resources
  - Capital resources
  - Physical infrastructure
  - Administrative infrastructure
  - Information infrastructure
  - Scientific and technological infrastructure
  - Natural resources

Demand Conditions

- A core of sophisticated and demanding local customer(s)
- Local customer needs that anticipate those elsewhere
- Unusual local demand in specialized segments that can be served nationally and globally

Related and Supporting Industries

- Access to capable, locally based suppliers and firms in related fields
- Presence of clusters instead of isolated industries
Role of Specialized Research Centers
Good vs. Poor Innovation Environments

Specialized Research Centers Are Readily Available
Specialized Research Centers Frequently Transfer Knowledge

Percent of Respondents in Agreement

Source: Clusters of Innovation Initiative Regional Survey
Role of Specialized Talent and Training
Good vs. Poor Innovation Environments

Source: Clusters of Innovation Initiative Regional Survey

Your Region Has an Ample Supply of High Quality...

Your Region Has a Low Cost of Doing Business...

Percent of Respondents in Agreement

Advanced Educational Programs
Qualified Scientists and Engineers
Skilled Labor
Cost of Business (e.g., real estate, wages, utilities)

Source: Clusters of Innovation Initiative Regional Survey

Poor Innovation Environment    Good Innovation Environment
Clusters and Competitiveness
The California Wine Cluster

Sources: California Wine Institute, Internet search, California State Legislature. Based on research by MBA 1997 students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda.
# Institutions for Collaboration

## Selected Institutions for Collaboration, San Diego

<table>
<thead>
<tr>
<th>General</th>
<th>Cluster-Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>• San Diego Chamber of Commerce</td>
<td>• Linkabit Alumni</td>
</tr>
<tr>
<td>• San Diego MIT Enterprise Forum</td>
<td>• Hybritech Alumni</td>
</tr>
<tr>
<td>• Corporate Director’s Forum</td>
<td>• Scripps Research Institute Alumni</td>
</tr>
<tr>
<td>• San Diego Dialogue</td>
<td>• BIOCOMM</td>
</tr>
<tr>
<td>• Service Corps of Retired Executives, San Diego</td>
<td>• UCSD Connect</td>
</tr>
<tr>
<td>• San Diego Regional Economic Development Corporation</td>
<td></td>
</tr>
<tr>
<td>• Center for Applied Competitive Technologies</td>
<td></td>
</tr>
<tr>
<td>• San Diego World Trade Center</td>
<td></td>
</tr>
<tr>
<td>• UCSD Alumni</td>
<td></td>
</tr>
<tr>
<td>• San Diego Regional Technology Alliance</td>
<td></td>
</tr>
<tr>
<td>• San Diego Science and Technology Council</td>
<td></td>
</tr>
<tr>
<td>• Office of Trade and Business Development</td>
<td></td>
</tr>
</tbody>
</table>

Source: Clusters of Innovation project (www.compete.org)
Influences on Competitiveness

Groups of Neighboring Nations

Nations

Regions

Clusters
Specialization of Regional Economies
Select U.S. Metropolitan Areas

- **Boston**
  - Analytical Instruments
  - Education and Knowledge Creation
  - Communications Equipment

- **Chicago**
  - Communications Equipment
  - Processed Food
  - Heavy Machinery

- **Denver, CO**
  - Leather and Sporting Goods
  - Oil and Gas Products and Services
  - Aerospace Vehicles and Defense

- **Los Angeles Area**
  - Apparel
  - Building Fixtures, Equipment and Services
  - Entertainment

- **San Francisco-Oakland-San Jose Bay Area**
  - Communications Equipment
  - Agricultural Products
  - Information Technology

- **San Diego**
  - Leather and Sporting Goods
  - Power Generation
  - Education and Knowledge Creation

- **Seattle-Bellevue-Everett, WA**
  - Aerospace Vehicles and Defense
  - Fishing and Fishing Products
  - Analytical Instruments

- **Wichita, KS**
  - Aerospace Vehicles and Defense
  - Heavy Machinery
  - Oil and Gas Products and Services

- **Pittsburgh, PA**
  - Construction Materials
  - Metal Manufacturing
  - Education and Knowledge Creation

- **Atlanta, GA**
  - Construction Materials
  - Transportation and Logistics Business Services

- **Raleigh-Durham, NC**
  - Communications Equipment
  - Information Technology
  - Education and Knowledge Creation

- **Los Angeles Area**
  - Apparel
  - Building Fixtures, Equipment and Services

- **San Diego**
  - Leather and Sporting Goods
  - Power Generation
  - Education and Knowledge Creation

- **Houston**
  - Heavy Construction Services
  - Oil and Gas Products and Services
  - Aerospace Vehicles and Defense

Note: Clusters listed are the three highest ranking clusters in terms of share of national employment.

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
The Process of Cluster Development
History of the San Diego Biotech / Pharma Cluster

1955
- Salk Institute Founded

1960
- Scripps Research Institute founded

1976
- Burnham Institute founded

1978
- Hybritech founded

1985
- UCSD Connect founded

1986
- Hybritech sold to Eli Lilly

1991
- Biomedical Industry Council founded

1991
- Biocom founded

1992
- Nanogen founded

1998
- Novartis Agricultural Discovery Institute founded

Source: Clusters of Innovation Project
The Military, Climate, and Research in San Diego

Climate and Geography

U.S. Military

Hospitality and Tourism

Transportation and Logistics

Power Generation

Aerospace Vehicles and Defense

Communications Equipment

Analytical Instruments

Information Technology

Education and Knowledge Creation

Medical Devices

Biotech / Pharmaceuticals

Biologics Research Centers

Regional Economic and Innovation Performance  
Houston Metro Area

**Economic Performance**

- **Employment**
  - Total 2000 employment in Houston, TX was 1,830,625, which was 1.6% of national employment.

- **Employment Growth**
  - Employment growth per year from 1990-2000 in Houston, TX was 2.59% vs. 2.01% for the US.

- **Average Wages**
  - Houston, TX average wages in 2000 were $38,730 vs. $34,011 for the US, or 12.18% above the national average.

- **Average Wage Growth**
  - Average wage growth per year in Houston, TX was 4.08% from 1990-2000 vs. 4.21% for the US.

**Innovation Output**

- **Patents**
  - There were 8.75 patents per 10,000 employees in Houston, TX vs. 7.53 for the US in 2000.

- **Patenting Growth**
  - Patenting growth per year from 1990-2000 in Houston, TX was 2.14% vs. 4.07% for the US.

- **Establishment Growth**
  - The number of establishments in traded industries in Houston, TX grew 2.07% per year from 1990-2000 vs. 1.36% per year in the US.

Economic Performance of Top 25 Metropolitan Areas

Wage Level and Wage Growth

Note: Top 25 Metropolitan Areas by Employment
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
# Patents by Organization

## Houston Metropolitan Area

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1996 to 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. COMPAQ COMPUTER CORPORATION, INC.</td>
<td>817</td>
</tr>
<tr>
<td>2. SHELL OIL COMPANY</td>
<td>350</td>
</tr>
<tr>
<td>3. TEXAS INSTRUMENTS, INCORPORATED</td>
<td>305</td>
</tr>
<tr>
<td>4. BAKER HUGHES INCORPORATED</td>
<td>252</td>
</tr>
<tr>
<td>5. EXXON CHEMICALS PATENTS INC.</td>
<td>185</td>
</tr>
<tr>
<td>6. WESTERN ATLAS INTERNATIONAL, INC.</td>
<td>179</td>
</tr>
<tr>
<td>7. SCHLUMBERGER TECHNOLOGY CORPORATION</td>
<td>142</td>
</tr>
<tr>
<td>8. UNIVERSITY OF TEXAS</td>
<td>85</td>
</tr>
<tr>
<td>9. BAYLOR COLLEGE OF MEDICINE</td>
<td>81</td>
</tr>
<tr>
<td>10. TEXACO INC.</td>
<td>70</td>
</tr>
<tr>
<td>11. EXXON PRODUCTION RESEARCH COMPANY</td>
<td>60</td>
</tr>
<tr>
<td>12. SMITH INTERNATIONAL INC.</td>
<td>59</td>
</tr>
<tr>
<td>13. FMC CORPORATION</td>
<td>58</td>
</tr>
<tr>
<td>14. BETZDEARBORN INC.</td>
<td>51</td>
</tr>
<tr>
<td>15. CAMCO INTERNATIONAL INC.</td>
<td>50</td>
</tr>
<tr>
<td>16. DOW CHEMICAL COMPANY</td>
<td>48</td>
</tr>
<tr>
<td>16. FINA TECHNOLOGY, INC.</td>
<td>48</td>
</tr>
<tr>
<td>18. NALCO/EXXON ENERGY CHEMICALS, L.P</td>
<td>40</td>
</tr>
<tr>
<td>19. NASA</td>
<td>39</td>
</tr>
<tr>
<td>20. WEATHERFORD/LAMB, INC.</td>
<td>34</td>
</tr>
<tr>
<td>21. ABB VETCOGRAY INC.</td>
<td>33</td>
</tr>
<tr>
<td>21. HALLIBURTON ENERGY SERVICES</td>
<td>33</td>
</tr>
<tr>
<td>23. DRESSER INDUSTRIES, INC.</td>
<td>31</td>
</tr>
<tr>
<td>23. HALLIBURTON CO.</td>
<td>31</td>
</tr>
<tr>
<td>25. BJ SERVICES CO</td>
<td>28</td>
</tr>
</tbody>
</table>

Note: Includes only patents assigned from innovators in the Houston MA to the organization; in total, the MA reports 5,411 patents assigned to organizations

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
# Patents by Organization

## Boston Metropolitan Area

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1996 to 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MASSACHUSETTS INSTITUTE OF TECHNOLOGY</td>
<td>515</td>
</tr>
<tr>
<td>2. DIGITAL EQUIPMENT CORPORATION</td>
<td>445</td>
</tr>
<tr>
<td>3. GENERAL HOSPITAL CORPORATION</td>
<td>260</td>
</tr>
<tr>
<td>4. POLAROID CORPORATION</td>
<td>253</td>
</tr>
<tr>
<td>5. EMC CORPORATION</td>
<td>208</td>
</tr>
<tr>
<td>6. ANALOG DEVICES, INC.</td>
<td>181</td>
</tr>
<tr>
<td>7. HARVARD COLLEGE</td>
<td>150</td>
</tr>
<tr>
<td>8. BOSTON SCIENTIFIC CORPORATION</td>
<td>129</td>
</tr>
<tr>
<td>9. GENETICS INSTITUTE, INC.</td>
<td>118</td>
</tr>
<tr>
<td>10. HEWLETT-PACKARD COMPANY</td>
<td>116</td>
</tr>
<tr>
<td>11. SUN MICROSYSTEMS, INC.</td>
<td>116</td>
</tr>
<tr>
<td>12. CABLETRON SYSTEMS, INC.</td>
<td>97</td>
</tr>
<tr>
<td>13. HEIDELBERGER DRUCKMASCHINEN AG</td>
<td>95</td>
</tr>
<tr>
<td>14. MILLENNIUM PHARMACEUTICALS, INC.</td>
<td>95</td>
</tr>
<tr>
<td>15. QUANTUM CORP. (CA)</td>
<td>94</td>
</tr>
<tr>
<td>16. GILLETTE COMPANY</td>
<td>93</td>
</tr>
<tr>
<td>17. BRIGHAM AND WOMEN’S HOSPITAL</td>
<td>92</td>
</tr>
<tr>
<td>18. OSRAM SYLVANIA INC.</td>
<td>91</td>
</tr>
<tr>
<td>19. ACUSHNET COMPANY</td>
<td>89</td>
</tr>
<tr>
<td>19. JOHNSON &amp; JOHNSON PROFESSIONAL INC.</td>
<td>89</td>
</tr>
<tr>
<td>21. DANA-FARBER CANCER INSTITUTE, INC.</td>
<td>86</td>
</tr>
<tr>
<td>22. CHILDREN’S MEDICAL CENTER CORPORATION</td>
<td>84</td>
</tr>
<tr>
<td>23. BOSTON UNIVERSITY</td>
<td>83</td>
</tr>
<tr>
<td>24. GENERAL ELECTRIC COMPANY</td>
<td>82</td>
</tr>
<tr>
<td>25. MOTOROLA, INC.</td>
<td>80</td>
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</tbody>
</table>

Note: Includes only patents assigned from innovators in the Boston-Worcester-Lawrence-Lowell-Brockton MA to the organization; in total, the MA reports 14,439 patents assigned to organizations.

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
## Patents by Organization

### Dallas Metropolitan Area

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1996 to 2000</th>
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</thead>
<tbody>
<tr>
<td>1. TEXAS INSTRUMENTS, INCORPORATED</td>
<td>1996</td>
</tr>
<tr>
<td>2. LUCENT TECHNOLOGIES INC.</td>
<td>213</td>
</tr>
<tr>
<td>3. SGS-THOMSON MICROELECTRONICS, INC.</td>
<td>174</td>
</tr>
<tr>
<td>4. MCI COMMUNICATIONS CORP.</td>
<td>168</td>
</tr>
<tr>
<td>5. ERICSSON, INC.</td>
<td>151</td>
</tr>
<tr>
<td>6. STMICROELECTRONICS, INC.</td>
<td>148</td>
</tr>
<tr>
<td>7. DALLAS SEMICONDUCTOR CORPORATION</td>
<td>144</td>
</tr>
<tr>
<td>8. UNIVERSITY OF TEXAS</td>
<td><strong>110</strong></td>
</tr>
<tr>
<td>9. NORTHERN TELECOM LIMITED</td>
<td>108</td>
</tr>
<tr>
<td>10. ATLANTIC RICHFIELD COMPANY</td>
<td>100</td>
</tr>
<tr>
<td>11. ALCATEL USA SOURCING, L.P.</td>
<td>87</td>
</tr>
<tr>
<td>12. INTERNATIONAL BUSINESS MACHINES CORP.</td>
<td>77</td>
</tr>
<tr>
<td>13. HALLIBURTON ENERGY SERVICES</td>
<td>74</td>
</tr>
<tr>
<td>13. NORTEL NETWORKS CORPORATION</td>
<td>74</td>
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<tr>
<td>15. CIRRUS LOGIC, INC.</td>
<td>72</td>
</tr>
<tr>
<td>16. HALLIBURTON ENERGY SERVICES, INC.</td>
<td>67</td>
</tr>
<tr>
<td>17. RAYTHEON COMPANY</td>
<td>63</td>
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<tr>
<td>18. ELECTRONIC DATA SYSTEMS CORPORATION</td>
<td>58</td>
</tr>
<tr>
<td>19. MOBIL OIL CORP.</td>
<td>48</td>
</tr>
<tr>
<td>20. CYRIX CORPORATION</td>
<td>46</td>
</tr>
<tr>
<td>21. HEWLETT-PACKARD COMPANY</td>
<td>40</td>
</tr>
<tr>
<td>22. MOTOROLA, INC.</td>
<td>37</td>
</tr>
<tr>
<td>23. E-SYSTEMS, INC.</td>
<td>35</td>
</tr>
<tr>
<td>24. DSC COMMUNICATIONS CORPORATION</td>
<td>34</td>
</tr>
<tr>
<td>24. INTERVOICE LIMITED PARTNERSHIP</td>
<td>34</td>
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*Note: Includes only patents assigned from innovators in the Dallas MA to the organization; in total, the MA reports 6,177 patents assigned to organizations*

*Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School*
# Patents by Organization
## Austin Metropolitan Area

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1996 to 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  INTERNATIONAL BUSINESS MACHINES CORP</td>
<td>1576</td>
</tr>
<tr>
<td>2  ADVANCED MICRO DEVICES, INC.</td>
<td>1510</td>
</tr>
<tr>
<td>3  MOTOROLA, INC.</td>
<td>864</td>
</tr>
<tr>
<td>4  DELL USA, L.P.</td>
<td>454</td>
</tr>
<tr>
<td>5  NATIONAL INSTRUMENTS CORPORATION</td>
<td>103</td>
</tr>
<tr>
<td>6  MINNESOTA MINING AND MANUFACTURING CO.</td>
<td>97</td>
</tr>
<tr>
<td>7  CIRRUS LOGIC, INC.</td>
<td>83</td>
</tr>
<tr>
<td>8  UNIVERSITY OF TEXAS</td>
<td>73</td>
</tr>
<tr>
<td>9  CRYSTAL SEMICONDUCTOR CORPORATION</td>
<td>47</td>
</tr>
<tr>
<td>10 HUNTSMAN PETROCHEMICAL CORPORATION</td>
<td>41</td>
</tr>
<tr>
<td>11 TEXAS INSTRUMENTS, INCORPORATED</td>
<td>39</td>
</tr>
<tr>
<td>12 3M INNOVATIVE PROPERTIES COMPANY</td>
<td>37</td>
</tr>
<tr>
<td>13 STAKTEK CORPORATION</td>
<td>35</td>
</tr>
<tr>
<td>14 CYPRESS SEMICONDUCTOR CORP.</td>
<td>30</td>
</tr>
<tr>
<td>15 TANDEM COMPUTERS INCORPORATED</td>
<td>29</td>
</tr>
<tr>
<td>16 INTEGRATED DEVICE TECHNOLOGY, INC.</td>
<td>26</td>
</tr>
<tr>
<td>17 FISHER-ROSEMOUNT SYSTEMS, INC.</td>
<td>23</td>
</tr>
<tr>
<td>18 SULZER ORTHOPEDICS INC.</td>
<td>22</td>
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<tr>
<td>18 COMPAQ COMPUTER CORPORATION, INC.</td>
<td>22</td>
</tr>
<tr>
<td>20 MICROELECTRONICS &amp; COMPUTER TECH. CORP.</td>
<td>19</td>
</tr>
<tr>
<td>21 APPLIED MATERIALS, INC.</td>
<td>18</td>
</tr>
<tr>
<td>21 SULZER CARBOMEDICS INC.</td>
<td>18</td>
</tr>
<tr>
<td>23 TAMARACK STORAGE DEVICES, INC.</td>
<td>17</td>
</tr>
<tr>
<td>24 DRESSER INDUSTRIES, INC.</td>
<td>16</td>
</tr>
<tr>
<td>24 PAVILION TECHNOLOGIES, INC.</td>
<td>16</td>
</tr>
</tbody>
</table>

Note: Includes only patents assigned from innovators in the Austin-San Marcos MA to the organization; in total, the MA reports 6,163 patents assigned to organizations
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Houston
Specialization By Traded Cluster

Note: Graph utilizes narrow cluster definitions to eliminate overlapping employment across clusters.
Data points too large to fit on the graph are placed on the borders and the values are given as: (y-axis, x-axis).
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Job Creation By Traded Cluster

Houston, 1990-2000

Net Job Creation from 1990-2000: +117,087
Shifting Responsibilities for Economic Development

Old Model

- **Government** drives economic development through policy decisions and incentives

New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration
Perspectives on Firm Success

- Competitive advantage resides inside a company
- Competitive success depends primarily on company choices
- Competitive advantage (or disadvantage) resides partly in the locations at which a company’s business units are based
- Cluster participation is an important contributor to competitiveness
New Role of the Private Sector in Economic Development

- A company’s competitive advantage is partly the result of the **local environment**
- Company membership in a cluster offers **collective benefits**
- Private investment in “**public goods**” is justified

- Take an **active role** in upgrading the local infrastructure
- Nurture **local suppliers** and attract new supplier investments
- Work closely with local **educational and research institutions**
- Provide government with **information** and substantive input on regulatory issues and constraints to cluster development

- An important role for **trade associations**
  - Influence and cost sharing
Public / Private Cooperation in Cluster Upgrading
Minnesota’s Medical Device Cluster

Factor (Input) Conditions

• Joint development of vocational-technical college curricula with the medical device industry
• Minnesota Project Outreach exposes businesses to resources available at university and state government agencies
• Active medical technology licensing through University of Minnesota
• State-formed Greater Minnesota Corp. to finance applied research, invest in new products, and assist in technology transfer

Demand Conditions

• Aggressive trade associations (Medical Alley Association, High Tech Council)
• Effective global marketing of the cluster and of Minnesota as the “The Great State of Health”
• Full-time “Health Care Industry Specialist” in the department of Trade and Economic Development

Context for Firm Strategy and Rivalry

• State sanctioned reimbursement policies to enable easier adoption and reimbursement for innovative products

Related and Supporting Industries
# Connecticut’s Cluster Development Initiative

## Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>- State Department of Economic and Community Development (DECD) reorganized to include Industry Cluster and International Division</td>
</tr>
</tbody>
</table>
| 1997 | - Industry Cluster Initiative  
- **Call to Action — 120 Connecticut business leaders are engaged by the Governor**  
- **5 Industry Cluster Advisory boards** created:  
  - Manufacturing  
  - Financial Services  
  - Telecommunications & Information  
  - Health Care Services  
  - High Technology  
- Cluster advisory boards finalize and prioritize recommendations for the legislative session  
- Recommendations and presentation to Governor and legislative leadership |
| 1998 | - “Partnership for Growth” legislation submitted to Governor and legislature  
- Governor and legislature unanimously approve first Cluster Bill:  
  - $7 million for cluster activation and projects  
  - 6% R&D tax credit now available for smaller firms  
  - Lengthen R&D tax credit carry forward from 5 to 15 years  
- Implementation of cluster initiatives begin  
- Establishment and first meeting of Governor’s Council on Economic Competitiveness and Technology  
- Bioscience cluster activated |
### Connecticut’s Cluster Development Initiative

#### Timeline

<table>
<thead>
<tr>
<th>1999</th>
<th>2000</th>
<th>2001</th>
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</thead>
<tbody>
<tr>
<td>• The quasi-public <strong>Connecticut Economic Resource Center (CERC)</strong> becomes the implementation arm for the cluster initiatives outside of government</td>
<td>• <strong>Software / IT cluster</strong> activated</td>
<td>• <strong>Maritime cluster</strong> activated</td>
</tr>
<tr>
<td></td>
<td>• <strong>Metals Manufacturing cluster</strong> activated</td>
<td></td>
</tr>
<tr>
<td>• <strong>Second Cluster Bill submitted and unanimously approved</strong> by Governor and legislature:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Net operating loss (NOL) carry forward -- from 5 to 20 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Tax credit exchange established to help smaller firms capitalize tax credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– $4.5 million for cluster initiative over the next 2 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Aerospace Component Manufacturers cluster</strong> activated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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2001

- The quasi-public Connecticut Economic Resource Center (CERC) becomes the implementation arm for the cluster initiatives outside of government.
- **Second Cluster Bill submitted and unanimously approved** by Governor and legislature:
  - Net operating loss (NOL) carry forward -- from 5 to 20 years
  - Tax credit exchange established to help smaller firms capitalize tax credits
  - $4.5 million for cluster initiative over the next 2 years
- **Aerospace Component Manufacturers cluster** activated
Houston’s Inner City

Source: ArcView, ICIC Analysis
Houston Inner City and Metropolitan Area Performance Indicators

Unemployment Rate 2000

- Houston Inner City: 11.2%
- Remainder of Houston City: 5.6%
- Remainder of Houston MSA: 5.0%

Poverty Rate 2000

- Houston Inner City: 28.1%
- Remainder of Houston City: 12.8%
- Remainder of Houston MSA: 10.2%

Source: 1990, 2000 Census; City of Houston; ICIC Analysis
Economic Development in Inner Cities
Premises of the New Model

• Inner-city distress is as much an economic as a social problem

• A healthy business and jobs base must be created in or near inner-city communities, rather than depending on jobs in the suburbs

• Economic development in inner cities must be approached from a competitiveness perspective, and be based on business opportunities in the inner city that are genuinely profitable

• There are existing and potential competitive advantages of inner cities that can support viable businesses and jobs
Economic Development in Inner Cities
Premises of the New Model (2)

- The **disadvantages** of inner cities as business locations must be **addressed directly**, not offset by subsidies

- The inner city can only prosper if it is **integrated into the regional and national economy**

- The **private sector** must play the leading role in business development motivated by **self interest** instead of charity

- The paradigm must shift from:
  - reducing poverty to **creating income, jobs, and wealth**
  - community deficiencies to **market opportunities**
The Competitive Advantages of Inner Cities

**Illusory**

- Low-Cost Real Estate
- Low-Cost Labor

**Existing and Potential**

- Strategic Location
- Available Human Resources
- Integration with Citywide and Regional Business Clusters
- Local Market Demand
## Competitive Assessment of the Houston Inner City

### Advantages

- **Two major airports located within or proximate to the inner city**
  - Bush Intercontinental Airport
  - William P. Hobby Airport
- **Houston Channel connecting Houston and the Gulf through the inner city**
  - Port of Houston
    - 2nd largest in country in terms of total tonnage
    - 6th largest in world
- **Proximity to freeways**
- **Texas Medical Center (partially in the inner city)**
  - Largest in the world
  - 42 member institutions including 13 hospitals

### Disadvantages

- **Air Quality**
  - Houston is included in an 8-county non-attainment designated area that has until 2007 to meet Clean Air Act requirements or risk losing federal aid
- **Education**
  - More than 40% of inner city residents over the age of 25 have less than a high school education
- **Crime and perception of crime**
- **Irrigation problem leads to flooding and contamination of vacant sites**
- **Brownfields**

*Data Source: ICIC research*
The Role of the Inner City in Regional Prosperity

- **Equity** of opportunity

- Inner-City vitality **frees up resources** now required to address social and economic disadvantage

- Enhances the **return to public investment in transportation infrastructure**, expands the **housing stock**, and **mitigates urban sprawl**

- More **efficient spatial organization** of regional industry

- Ease constraints to **regional** economic growth through utilizing the inner-city’s labor force, land, and infrastructure more fully

- **Substantial growth and profit opportunities** in the inner city itself