Environmental Scanning - A Learning Project

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University of Northern Iowa
The Environmental Scan Study @ Arizona State University West

- External conditions
  - Demographic
  - Economic
  - Educational
  - Environmental
  - Political
  - Social
  - Technological
The Environmental Scan Study @ Arizona State University West

- External
  - Demographic
    - Global
    - The U. S.
    - Arizona
    - Metropolitan Phoenix
    - The university community
The Environmental Scan Study @ Arizona State University West

- Internal conditions
  - Planning
  - Enrollment
  - Budget
  - Faculty and staff
  - Faculty scholarship
Ray’s Learning Project

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- Introduction to UNI and environmental scanning
- Demographics
- Economic performance indicators
- State support of higher education
- Political landscape
- UNI and its peer institutions
Environmental Scanning

- Definition: “A kind of radar to scan the world systematically and signal the new, the unexpected, the major and the minor” (Brown & Weiner, 1985, p. ix)
- Purpose: To enable decision makers to understand the external environment and the interconnections of its various sectors and to translate this understanding into the institution's planning and decision making processes (Aguilar, 1967)
Environmental Scanning

- Objectives for environmental scanning (Coates, 1985):
  - Detecting scientific, technical, economic, social, and political trends and events important to the institution
  - Defining the potential threats, opportunities, or changes for the institution implied by those trends and events
  - Promoting a future orientation in the thinking of management and staff
  - Alerting management and staff to trends that are converging, diverging, speeding up, slowing down, or interacting
Demographic

- Historical data about population, age groups, gender, and ethnicity as well as population projections and estimates at the national level
- Population composition and projections for Iowa and its neighboring states
- Iowa’s county rankings in terms of current total population and population increase
Sex Composition 2005

Male: 50.7%
Female: 49.3%

Source: U.S. Census Bureau, 2005 American Community Survey
Ethnic Composition 2005

- Hispanic: 86%
- Non-Hispanic: 14%

Source: U.S. Census Bureau, 2005 American Community Survey
Selected Age Cohorts 2005

18%  Persons 65 and Over
12%  Persons Under 5
 7%   Persons 6-18
63%  Persons 19-64

Source: U.S. Census Bureau, 2005 American Community Survey
### Iowa's Top 22 Counties by Population 2006

<table>
<thead>
<tr>
<th>County</th>
<th>Number</th>
<th>County</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polk</td>
<td>408,888</td>
<td>Cerro Gordo</td>
<td>44,384</td>
</tr>
<tr>
<td>Linn</td>
<td>201,853</td>
<td>Warren</td>
<td>43,926</td>
</tr>
<tr>
<td>Scott</td>
<td>162,621</td>
<td>Muscatine</td>
<td>42,883</td>
</tr>
<tr>
<td>Black Hawk</td>
<td>126,106</td>
<td>Des Moines</td>
<td>40,885</td>
</tr>
<tr>
<td>Johnson</td>
<td>118,038</td>
<td>Marshall</td>
<td>39,555</td>
</tr>
<tr>
<td>Woodbury</td>
<td>102,972</td>
<td>Webster</td>
<td>38,960</td>
</tr>
<tr>
<td>Dubuque</td>
<td>92,384</td>
<td>Jasper</td>
<td>37,409</td>
</tr>
<tr>
<td>Pottawattamie</td>
<td>90,218</td>
<td>Lee</td>
<td>36,338</td>
</tr>
<tr>
<td>Story</td>
<td>80,145</td>
<td>Wapello</td>
<td>36,010</td>
</tr>
<tr>
<td>Dallas</td>
<td>54,525</td>
<td>Marion</td>
<td>32,987</td>
</tr>
<tr>
<td>Clinton</td>
<td>49,782</td>
<td>Sioux</td>
<td>32,525</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Population Estimate Programs
# Population – Counties of Iowa

**Iowa's Top 18 Counties by % Population Increase 2006**

<table>
<thead>
<tr>
<th>County</th>
<th>%</th>
<th>County</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas</td>
<td>33.80</td>
<td>Dubuque</td>
<td>3.63</td>
</tr>
<tr>
<td>Madison</td>
<td>10.90</td>
<td>Dickinson</td>
<td>3.04</td>
</tr>
<tr>
<td>Polk</td>
<td>9.15</td>
<td>Iowa</td>
<td>2.99</td>
</tr>
<tr>
<td>Warren</td>
<td>8.00</td>
<td>Sioux</td>
<td>2.96</td>
</tr>
<tr>
<td>Mills</td>
<td>7.20</td>
<td>Marion</td>
<td>2.92</td>
</tr>
<tr>
<td>Benton</td>
<td>6.53</td>
<td>Pottawattamie</td>
<td>2.87</td>
</tr>
<tr>
<td>Johnson</td>
<td>6.33</td>
<td>Muscatine</td>
<td>2.78</td>
</tr>
<tr>
<td>Linn</td>
<td>5.30</td>
<td>Scott</td>
<td>2.49</td>
</tr>
<tr>
<td>Washington</td>
<td>4.16</td>
<td>Bremer</td>
<td>2.19</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Population Estimate Programs
Economic Performance Indicators

- Real GDP growth in current dollars, Iowa and neighboring states’ ranking in terms of real GDP growth
- Personal income growth rate for the United States, Iowa, and its neighboring states
- Top ranking Iowa counties in terms of personal income growth
- Consumer price index variations
- Dow Jones industrial index fluctuations
- Job prospects for the nation, Iowa, and its neighboring states
GDP – Iowa and Its Neighboring States

Real GDP Growth Rate 1997 - 2004, 2005

Source: U.S. Bureau of Economic Analysis
Iowa ranks the lowest among its neighboring states in real GDP growth in 2005.

Source: U.S. Bureau of Economic Analysis
Personal Income Growth – Iowa and Its Neighboring States

Personal Income Growth: Iowa and Its Neighboring States

Source: U.S. Bureau of Economic Analysis
Personal Income Growth – Iowa and Its Neighboring States


*Rankings among the 50 states, where the higher the ranking number, the lower the personal income growth rate is. Therefore, South Dakota and Iowa have very low personal income growth rate.*

Source: U.S. Bureau of Economic Analysis
Top 10 Counties in Iowa by Per Capita Personal Income Growth: 2005

*Polk County has the fastest personal income growth

Source: Bureau of Economic Analysis
Selected Consumer Price Index All Urban Consumers US City Average All items 1982 - 1984 = 100

Source: Bureau of Labor Statistics
Percent Changes in CPI for Urban Consumers 3-Mos Ended and 12-Mos Ended Special Indices, May 2007

Source: Bureau of Labor Statistics
Stock Market – Dow Jones Industrial Index

Dow Jones Industrial Index
2000-2006

Source: Dow Jones Averages Statistics
10 Occupations with the Fastest Growth Rate: 2004 - 2014

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Health Aides</td>
<td>60%</td>
</tr>
<tr>
<td>Network Systems and Data</td>
<td>60%</td>
</tr>
<tr>
<td>Medical Assistants</td>
<td>55%</td>
</tr>
<tr>
<td>Physician Assistants</td>
<td>55%</td>
</tr>
<tr>
<td>Computer Software Engineers, System...</td>
<td>50%</td>
</tr>
<tr>
<td>Physical Therapist Assistants</td>
<td>46%</td>
</tr>
<tr>
<td>Dental Hygienists</td>
<td>44%</td>
</tr>
<tr>
<td>Computer Software Engineers, System...</td>
<td>44%</td>
</tr>
<tr>
<td>Dental Assistants</td>
<td>41%</td>
</tr>
<tr>
<td>Personal and Home Care Aides</td>
<td>41%</td>
</tr>
</tbody>
</table>

Source: Bureau of Labor Statistics
10 Occupations Projected to Have the Largest Numerical Increases in Employment, 2004 - 2014

Pharmacists
Physicians and surgeons
Chiropractors
Optometrists
Veterinarians
Medical scientists, except epidemiologists
Postsecondary teachers
Computer and information scientists, research
Biochemists and biophysicists
Clinical, counseling, and school psychologists

Source: Bureau of Labor Statistics
10 Fastest Growing Occupations Requiring Bachelor's Degree or Higher 2004 - 2014

Network systems & data communications
Physician assistants (B)
Computer software engineers, applications (B)
Computer software engineers, systems software (B)
Network and computer systems administrators (B)
Database administrators (B)
Physical therapists (M)
Medical scientists, except epidemiologists (D)
Occupational therapists (M)
Postsecondary teachers (D)

Source: Bureau of Labor Statistics
10 Largest Occupations Requiring Bachelor’s Degree or Higher
2004 - 2014

- Postsecondary teachers (D)
- General and operations managers (B)
- Elementary school teachers, except special ed (B)
- Accountants and auditors (B)
- Secondary school teachers, except special & voc.
- Computer software engineers, applications (B)
- Middle school teachers, except special & voc. ed (B)
- Physicians and surgeons (FP)
- Computer systems analysts (B)
- Lawyers (FP)

Source: Bureau of Labor Statistics
5 Occupations Projected to Have the Largest Numerical Increases in Employment for Bachelor's Degree Holders, 2004 - 2014

Elementary school teachers, except special education

Accountants and auditors

Computer software engineers, applications

Computer systems analysts

Secondary school teachers, except special and vocational education

Source: Bureau of Labor Statistics
5 Occupations Projected to Have the Largest Numerical Increases in Employment for Master's Degree Holders, 2004 - 2014

Physical therapists
Clergy
Educational, vocational, and school counselors
Instructional coordinators
Rehabilitation counselors

Source: Bureau of Labor Statistics
5 Occupations Projected to Have the Largest Increases in Employment for First Professional Degree Holders, 2004 - 2014

Physicians and surgeons
Lawyers
Pharmacists
Dentists
Chiropractors

Source: Bureau of Labor Statistics
5 Occupations Projected to Have the Largest Numerical Increases in Employment for Doctoral Degree Holders, 2004 - 2014

Postsecondary teachers
Clinical, counseling, and school psychologists
Medical scientists, except epidemiologists
Computer and information scientists, research
Biochemists and biophysicists

Source: Bureau of Labor Statistics
5 Occupations Projected to Have the Largest Numerical Increases in Employment for Bachelor’s or Higher Degree Holders, Plus Work Experience, 2004 - 2014

General and operations managers
Management analysts
Financial managers
Computer and information systems managers
Sales managers

Source: Bureau of Labor Statistics
10 Occupations Projected to Have the Largest Job Decline by Percent: 2004 - 2014

Source: Bureau of Labor Statistics
Iowa's 10 Fastest Growing Occupations Requiring Bachelor's Degree or Higher 2004 - 2014

- Computer software engineers, applications
- Computer software engineers, systems software
- Network systems and data communications analysts
- Biomedical engineers
- Physician assistants
- Network and computer systems administrators
- Database administrators
- Computer systems analysts
- Industrial engineers
- Vocational education teachers, middle school

Source: http://www.acinet.org
Iowa's 10 Largest Occupations Requiring Bachelor's Degree or Higher
2004 - 2014

- Elementary school teachers, except special education
- Secondary school teachers, except special and vocational education
- General and operations managers
- Postsecondary teachers
- Accountants and auditors
- Middle school teachers, except special and vocational education
- Computer systems analysts
- Financial managers
- Insurance sales agents
- Medical and health services managers

Employment 2004

Job Openings

Source: http://www.acinet.org
Iowa's 10 Occupations with the Largest Number of Employment: 2004

- Farmers and Ranchers
- Retail Salespersons
- Truck Drivers, Heavy and Tractor-
- Cashiers, except Gaming
- Office clerks, General
- Registered Nurses
- Team Assemblers
- Janitors and Cleaners, except Maids.
- Waiters and Waitresses
- Laborers and Freight, Stock, and...

Source: The careeronestop website
Iowa's 10 Fastest Growing Occupations: 2004 - 2014

Source: The careeronestop website
### Iowa's 10 Fastest Growing Nonfarm Employment: May 06 - May 07

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture and Related Product Manufacturing</td>
<td>8.1%</td>
</tr>
<tr>
<td>Insurance Carriers and Related Activities</td>
<td>7.9%</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>6.3%</td>
</tr>
<tr>
<td>Computer and Electronic Product</td>
<td>6.0%</td>
</tr>
<tr>
<td>Fabricated Metal Product Manufacturing</td>
<td>5.9%</td>
</tr>
<tr>
<td>Merchant Wholesalers, Nondurable Goods</td>
<td>5.8%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>4.8%</td>
</tr>
<tr>
<td>Transportation and Utilities</td>
<td>4.6%</td>
</tr>
<tr>
<td>Construction</td>
<td>3.2%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

Source: Iowa Workforce Development
State Support of Higher Education

- State appropriations to higher education over different time periods in Iowa and neighboring states
- State appropriations as percentages of revenue in Iowa and neighboring states
- State appropriations for operating expenses of higher education in Iowa and neighboring states
State Appropriations – Iowa and Its Neighboring States

Iowa & Neighboring States' 10-Year % Change in State Appropriations for Higher Education 1997 - 2007

Source: State Higher Education Executive Officers website
State Appropriations – Iowa and Its Neighboring States

Iowa & Neighboring States' % Change in State Appropriations for Higher Ed between 2000 & 2006

Source: State Higher Education Executive Officers website
State Appropriations – Iowa and Its Neighboring States

Iowa & Neighboring States' State, Local, and Net Tuition Revenue for Higher Education FY 2006

Source: Population and tax revenues data from U.S. Census Bureau
Political Landscape

- Data on political representation in the Iowa legislature: Democrat seats vs. Republican seats in the state house and senate
Political Landscape – Iowa House of Representatives

Iowa State House of Representatives by Party 1995 - 2008

Source: The Iowa Legislature General Assembly website
UNI and Peer Institutions

- Carnegie classification (levels of program, size and setting)
- Enrollment
- High school graduates
- Graduation rates
- Scholarship (revenue and financial aid)
- Faculty and staff
## UNI and Its Peer Institutions – Carnegie Classifications (Undergrad. Programs)

<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Carnegie Classification 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Northern Iowa (UNI)</td>
<td>13</td>
</tr>
<tr>
<td>Northern Arizona University (NAU)</td>
<td>13</td>
</tr>
<tr>
<td>California State University-Fresno (Cal State Fresno)</td>
<td>11</td>
</tr>
<tr>
<td>Illinois State University (Ill State)</td>
<td>14</td>
</tr>
<tr>
<td>Indiana State University (Ind. State)</td>
<td>13</td>
</tr>
<tr>
<td>Central Michigan University (Central Mich)</td>
<td>13</td>
</tr>
<tr>
<td>University of Minnesota-Duluth (U of Minn Duluth)</td>
<td>10</td>
</tr>
<tr>
<td>University of North Carolina at Greensboro (UNC Greensboro)</td>
<td>11</td>
</tr>
<tr>
<td>Ohio University-Main Campus (Ohio U Main)</td>
<td>14</td>
</tr>
<tr>
<td>University of North Texas (U of N Texas)</td>
<td>11</td>
</tr>
<tr>
<td>University of Wisconsin-Eau Claire (UW Eau Claire)</td>
<td>10</td>
</tr>
</tbody>
</table>

10 Balanced Arts & Sciences/Professions, Some Graduate Existence
11 Balance Arts & Sciences/Professions, High Graduate Existence
12 Professions Plus Arts & Sciences, No Graduate Existence
13 Professions Plus Arts & Sciences, Some Graduate Existence
14 Professions Plus Arts & Sciences, High Graduate Existence

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
## UNI and Its Peer Institutions – Carnegie Classifications (Grad. Programs)

<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Carnegie Classification 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Northern Iowa (UNI)</td>
<td>18</td>
</tr>
<tr>
<td>Illinois State University (Ill State)</td>
<td>18</td>
</tr>
<tr>
<td>Indiana State University (Ind State)</td>
<td>18</td>
</tr>
<tr>
<td>Central Michigan University (Central Mich)</td>
<td>18</td>
</tr>
<tr>
<td>Northern Arizona University (NAU)</td>
<td>15</td>
</tr>
<tr>
<td>University of North Carolina at Greensboro (UNC Greensboro)</td>
<td>15</td>
</tr>
<tr>
<td>University of North Texas (U of N Texas)</td>
<td>15</td>
</tr>
<tr>
<td>Ohio University-Main Campus (Ohio U Main)</td>
<td>14</td>
</tr>
<tr>
<td>California State University-Fresno (Cal State Fresno)</td>
<td>12</td>
</tr>
<tr>
<td>University of Minnesota-Duluth (U of Minn Duluth)</td>
<td>8</td>
</tr>
<tr>
<td>University of Wisconsin-Eau Claire (UW Eau Claire)</td>
<td>4</td>
</tr>
</tbody>
</table>

### Carnegie Classifications:

- **18**  Postbaccalaureate with Some Arts & Sciences, Other Dominant Fields
- **14**  Comprehensive Doctoral with Medical/Veterinary
- **15**  Comprehensive Doctoral (No Medical/Veterinary)
- **18**  Doctoral, Professional Dominant

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Carnegie Classification 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Northern Iowa (UNI)</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>16</td>
</tr>
<tr>
<td>Central Michigan University (Central Mich)</td>
<td>16</td>
</tr>
<tr>
<td>University of North Carolina at Greensboro (UNC Greensboro)</td>
<td>16</td>
</tr>
<tr>
<td>Ohio University-Main Campus (Ohio U Main)</td>
<td>16</td>
</tr>
<tr>
<td>California State University-Fresno (Cal State Fresno)</td>
<td>15</td>
</tr>
<tr>
<td>University of North Texas (U of N Texas)</td>
<td>15</td>
</tr>
<tr>
<td>Indiana State University (Ind State)</td>
<td>13</td>
</tr>
<tr>
<td>University of Minnesota-Duluth (U of Minn Duluth)</td>
<td>13</td>
</tr>
<tr>
<td>University of Wisconsin-Eau Claire (UW Eau Claire)</td>
<td>13</td>
</tr>
</tbody>
</table>

13 Medium Four-Year, Primarily Residential
16 Large Four-Year, Primarily Residential

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions - Enrollment

UNI & Peer Institutions' Student Enrollment 2005

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions - UNI’s Sources of Enrollment in Iowa

UNI's Top 10 Sources of Enrollment in Iowa 2002-2006
Iowa & Neighboring States' High School Graduates Projection

Source: U.S. Department of Education, National Center for Education Statistics
UNI and Its Peer Institutions - Graduation Rates

UNI & Peer Institutions' Total and White Graduation Rates 2004

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions – Faculty and Staff

UNI & Peer Institutions' Tenured Faculty 2005

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions – Faculty and Staff

UNI & Peer Institutions' Instructional and Executive Staff 2005

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System.
Top 10 UNI Faculty's Bachelors Degree Alma Mater Institutions 2007-2008
UNI & Peer Institutions’ Tuition and Fees after Deduction, State Appropriations, and Total Other Revenues and Additions 2003 - 2004

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions – Financial Aid

UNI & Peer Institutions' Average Amount of Institutional Grant Aid Students Received 2003 - 2004

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
UNI and Its Peer Institutions – Financial Aid

UNI & Peer Institutions’ % of Students Receiving Institutional Grant Aid 2003 - 2004

Percentage of Students Receiving Institutional Grant Aid

Source: National Center for Educational Statistics, The Integrated Postsecondary Education Data System
Implications

- Generic, not tied to any specific initiative
Questions?