# TODAY’S AGENDA

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- **Keynote Address**: Joe Cortright
- **Background**: Burke Murphy
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- **Next steps & Cluster Team Registration**: Burke Murphy
- **Feedback**: Jim Hovland
- **Adjourn**
TODAY’S OBJECTIVE

Select 3 of the top 10 regional industry clusters.

The 3 chosen clusters that are critical to the metro area economy will be used in future project steps to create a model for regional economic and employment growth via private – public collaboration.

This model would then be used to develop strategies for additional clusters in subsequent phases.
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THANK YOU!

Regional Competitiveness Team Research Assistants

• Mia Adams, Carlson School of Management, MBA Candidate 2010
• Alisha Cowell, Humphrey Institute of Public Affairs, MPP Candidate 2010

Technical Advisory Group Team

• Jessica Fendos, GIS Applications Developer, Labor Market Information (LMI) Office
• Amanda Rohrer, GIS Developer, LMI
• Kyle Uphoff, Regional Analysis and Outreach Manager
• Thu-Mai Ho-Kim, Analyst, Minnesota Office of Trade
BACKGROUND

Our purpose with this project is to implement a regional economic and workforce development competitiveness strategy for short and long-term economic growth.

This strategy will build a regional model, effectively connecting economic and workforce development efforts of:

• Business leaders
• The Regional Council of Mayors
• Workforce Investment Boards
• MN Department of Employment and Economic Development
• The Minnesota State College and University System
• The University of Minnesota
BACKGROUND: Regional Council of Mayors
### BACKGROUND: Humphrey Institute Studies

<table>
<thead>
<tr>
<th>Twin Cities</th>
<th>SE MN</th>
<th>SW MN</th>
<th>NW MN</th>
<th>NE MN</th>
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</thead>
<tbody>
<tr>
<td>Printing &amp; Publishing</td>
<td>Composites</td>
<td>Computer &amp; Electrical Components Manufacturing</td>
<td>Recreation &amp; Transportation Equipment Manufacturing</td>
<td>Forest Products</td>
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<tr>
<td>Computers &amp; Software</td>
<td>Food Processing</td>
<td>Value-Added Agricultural Cooperatives</td>
<td>Value-Added Agricultural Processing</td>
<td>Information Technology</td>
</tr>
<tr>
<td>Medical Devices</td>
<td>Printing, Publishing &amp; Software</td>
<td>Agricultural Equipment Manufacturing</td>
<td>Wood Products</td>
<td>Health Services</td>
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<tr>
<td>Machinery and Metalworking</td>
<td>Industrial Machinery &amp; Computer Manufacturing</td>
<td>Dairy Processing</td>
<td>Tourism</td>
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<tr>
<td>Financial Services</td>
<td></td>
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</tbody>
</table>

- **Regional Council of Mayors**
- **Urban Land Institute**
- **positively Minnesota**
- **HUBERT H. HUMPHREY INSTITUTE OF PUBLIC AFFAIRS**
- **University of Minnesota**

**Printing, Publishing & Software**

**Industrial Machinery & Computer Manufacturing**

**Value-Added Agricultural Cooperatives**

**Wheat**

**Forest Products**

**Information Technology**

**Health Services**

**Tourism**
BACKGROUND: Microeconomics of Competitiveness Course
BACKGROUND: Metro FIRST Grants

Metro FIRST grants:
- Twin West Precision Mfg
- GMWC Machine Mfg/Prosperity Partnership
- MN IT Workforce Collaborative
- Dakota Future / Incubator for IT WFCollaborative
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DEFINITIONS: Cluster

We define a cluster as a geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types. Clusters are important because of the externalities that connect the constituent industries, such as common technologies, skills, knowledge and purchased inputs. Note that a given industry can be part of more than one cluster based on different patterns of externalities. Example: software is part of IT and medical devices.

*Remember:* (1) **Business, not governments**, choose to cluster and choosing clusters is not picking winners and losers but recognizing core competencies of a region and building on strengths.

(2) **Strengthening multiple** clusters affects regional wages more than strengthening just one. When choosing clusters, the maximum gain will be achieved by selecting three with little in common.

DEFINITIONS: Location Quotient

Location quotient (LQ) is basically a way of quantifying how concentrated a particular cluster is in a region as compared to the nation. It can reveal what makes a particular region “unique” in comparison to the national average.

The LQ is a measure of an industry's level of concentration within a location, with an LQ > 1 indicating higher than average concentration in that location.

Sources: Economicmodeling.com and Harvard Business School Cluster Mapping Project website
DEFINITIONS: Traded Industry

Three types of industries:
- Traded
- Local
- Natural Endowment Dependent

Traded industries sell products and services across economic areas, so they are concentrated in the specific regions where they choose to locate production, due to the competitive advantages afforded by these locations. Employment levels in traded industries thus vary greatly by region, and have no clear link to regional population levels.

Why we focus on traded industries (please also see table in appendix for supporting data):
- **Traded wages drive regional wages**. On average, local wage is 66% of traded wage
- Traded industries have higher levels of patenting, which signals more advanced products and processes, as well as higher productivity that support a higher wage
- The key is to develop the conditions for supporting high wages in traded industries. By driving these up, you will consequently also drive local wages (per the first bullet).

Competitiveness and Composition of MSP Metro Area Linkages Across Traded Clusters, Location Quotients, 2006

Location Quotient = MSP Share/US Share

Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.
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### 10 clusters
- **Alisha Cowell & Mia Adams**

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10 Clusters
NARROWING DOWN TO 10 CLUSTERS

• Started with 41 traded clusters based on Michael Porter’s defined categories
  • Eliminated “lone eagles”
  • Eliminated clusters based on number of employees
  • Eliminated clusters based on limited or negatively increasing location quotients
EVALUATION OF CLUSTERS

Six Key Criteria

• Strength of competitive advantage (existing or emerging)
• Potential gain for industry cluster from private-public collaboration
• Degree of geographic distribution in the region
• Potential to spur innovation
• Potential to spur entrepreneurship
• International strength
How concentrated is a particular cluster is in a region as compared to the nation? What makes a particular region “unique” in comparison to the national average?
STRENGTH OF COMPETITIVE ADVANTAGE

2006 Competitive Advantage

- Medical devices
- Publishing & printing
- Analytical instruments
- Information technology
- Metal manufacturing
- Production technology
- Distribution services
- Financial services

Location Quotient

Chemical products

Business services

Wages

$20,000 $30,000 $40,000 $50,000 $60,000 $70,000 $80,000 $90,000 $100,000 $110,000
POTENTIAL FOR PRIVATE-PUBLIC COLLABORATION

This is a critical element. How ready and organized is each cluster to work together to actualize growth strategies in order to maximize the effect of the project?

Porter identifies "Institutions for Collaboration" (IFC's) as a potential valuable outcome of a cluster activation strategy.

Example: After the first round of Porter training for DEED, one of the participants helped grow the Stone Fabricators Association from 30 to 300 inclusive of three to five states - all due to cluster training.

Developing a measurement for industry collaboration is part of what the cluster teams will do. However, it is important to consider now, as well.
How spread out in the metro area is this cluster? We are looking for clusters that would help build the regional structure of our model.
Distribution Services Industry Cluster
13-County Metropolitan Statistical Area

Employment Density
Per Sq. Mile
- High: 500
- Low: 0
- MSA

NAICS Code: 42

Companies that employ 800 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
Financial Services Industry Cluster
13-County Metropolitan Statistical Area

Employment Density
Per Sq. Mile
High: 500
Low: 0

Companies that employ 1000 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
Information Technology Industry Cluster
13-County Metropolitan Statistical Area

Employment Density
Per Sq. Mile
High: 500
Low: 0
MSA

NAICS Codes:
334111, 334112, 334113, 334119,
334611, 511210, 515110, 518111,
518112, 518210, 541511, 541512,
541513, 541519

Companies that employ 300 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
Medical Devices Industry Cluster
13-County Metropolitan Statistical Area

Employment Density
Per Sq. Mile
High: 500
Low: 0
MSA

NAICS Codes:
333314, 334510,
334516, 334517,
339111, 339112,
339114, 339115, 339116

Companies that employ 500 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
Production Technology Industry Cluster
13-County Metropolitan Statistical Area

NAICS Codes:
332410, 332420,
332439, 332481,
332991, 332997,
333299, 333111,
333120, 333210,
333220, 333291,
333220, 333293,
333294, 333295,
333298, 333319,
333411, 333412,
333414, 333416,
333511, 333512,
333513, 333514,
333515, 333516,
333518, 333512,
333518, 333911,
333912, 333923,
333924, 333991,
333992, 333993,
333994, 333999,
334513, 334514,
334515, 334518,
334519

Companies that employ 400 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
Publishing and Printing Industry Cluster
13-County Metropolitan Statistical Area

Employment Density
Per Sq. Mile
- High: 500
- Low: 0
- MSA

HAICS Codes:
323, 511, 512230, 516110, 516111,
518112, 518210

Companies that employ 500 or more workers are labeled.

Source: 2009 2nd Quarter InfoUSA
POTENTIAL TO SPUR INNOVATION

Innovation drives the ability for clusters to maintain competitive advantage.
STRENGTH OF INNOVATION

Patents Granted to Minnesota Companies by Cluster (11/1/2008 - 10/20/2009)

- Information technology: 454
- Analytical instruments: 369
- Medical devices: 285
- Chemical products: 257
- Production technology: 139
- Metal manufacturing: 42
- Distribution services: 12
- Printing and publishing: 1

Patents Granted Per 10,000 Employees
Entrepreneurship drives growth by increasing competition and innovation.
STRENGTH OF ENTREPRENEURSHIP

Companies with Founded or Changed Ownership 2001-2008

- Business Services: 22,898
- Financial Services: 2,789
- Distribution Services: 2,755
- Information Technology: 973
- Publishing & Printing: 787
- Production Technology: 270
- Medical Devices: 154
- Analytical Instruments: 77
STRENGTH OF INTERNATIONAL EXPORTS

To maintain competitiveness, it is essential that clusters are strong globally.
STRENGTH OF INTERNATIONAL EXPORTS

2008 Minnesota Exports by Industry Cluster

- Information technology: 4,972
- Metal manufacturing: 3,803
- Production technology: 2,029
- Medical devices: 1,959
- Chemical products: 1,121
- Publishing and printing: 709

Exports (millions of dollars)
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CRITERA FOR SELECTION OF CLUSTERS

Six Key Criteria

• Strength of competitive advantage (existing or emerging)
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• Potential to spur innovation
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• International strength
POSSIBLE ACTIONS

### Areas for Potential Action

- Work Force
- Physical Infrastructure
- Natural Resources
- Knowledge & Technology
- Enterprise Development
- Quality of Life
- Fiscal Management

### Potential Actors

- Mayors
  - Zoning, land use
  - Infrastructure, incentives
  - Joint legislative advocacy
- Government Agencies
- Universities
- Federal funding for regional competitiveness initiative
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Break for Cluster Selection
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## NEXT STEPS

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<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Start</th>
<th>Wrap-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Develop Detailed Work Plan &amp; Assemble Project Team</td>
<td>Aug-09</td>
<td>Sep-09</td>
</tr>
<tr>
<td>2.</td>
<td>Conduct Strategic Review and Economic Analysis</td>
<td>Aug-09</td>
<td>Dec-09</td>
</tr>
<tr>
<td>3.</td>
<td>Mayors Review and Select Clusters</td>
<td>Oct-09</td>
<td>Oct-09</td>
</tr>
<tr>
<td>4.</td>
<td>Conduct Industry Interviews and Focus Groups</td>
<td>Oct-09</td>
<td>Jan-10</td>
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<tr>
<td>5.</td>
<td>Conduct MOC Capstone Workshop</td>
<td>Jan-10</td>
<td>May-10</td>
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<tr>
<td>6.</td>
<td>Evaluate Cluster Projects and Action Plans</td>
<td>May-10</td>
<td>Jun-10</td>
</tr>
<tr>
<td>8.</td>
<td>Evaluate Project Results and Recommend Next Steps</td>
<td>Oct-10</td>
<td>May-11</td>
</tr>
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## APPENDIX: Composition of the U.S. Economy by Type of Industry

<table>
<thead>
<tr>
<th></th>
<th>Traded Industries</th>
<th>Local Industries</th>
<th>Natural Endowment Dependent Industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of Employment</td>
<td>32%</td>
<td>67%</td>
<td>1%</td>
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<tr>
<td>Employment growth 1990-2000 (CAGR)</td>
<td>1.7%</td>
<td>2.8%</td>
<td>-1.0%</td>
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<tr>
<td>Average wage</td>
<td>$45,040</td>
<td>$27,169</td>
<td>$32,129</td>
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<tr>
<td>Relative Wage (average = 100)</td>
<td>$137.0</td>
<td>$82.6</td>
<td>$97.7</td>
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<tr>
<td>Wage growth 1990-2000 (CAGR)</td>
<td>5.0%</td>
<td>3.6%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Relative productivity</td>
<td>144.1</td>
<td>79.3</td>
<td>140.1</td>
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<tr>
<td>Patents per 10,000 employees</td>
<td>21.1</td>
<td>1.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Number of SIC Industries</td>
<td>590</td>
<td>241</td>
<td>48</td>
</tr>
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</table>

## APPENDIX

<table>
<thead>
<tr>
<th>Clusters and subclusters</th>
<th>2006 total employment</th>
<th>2006 share of national employment</th>
<th>2006 employment LQ</th>
<th>Change in LQ from 2006</th>
<th>2006 average wages</th>
<th>Rank out of 20 by employment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analytical instruments</strong></td>
<td>15,382</td>
<td>2.8</td>
<td>2.04</td>
<td>Decrease</td>
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<td>Electronic components</td>
<td>3,675</td>
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<td>Laboratory instruments</td>
<td>3,250</td>
<td>3.5</td>
<td>2.51</td>
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<td>Process instruments</td>
<td>4,532</td>
<td>3.4</td>
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<td>$51,586</td>
<td>6</td>
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<td>Search and navigation equipment</td>
<td>3,750</td>
<td>2.7</td>
<td>1.99</td>
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<td><strong>Business services</strong></td>
<td><strong>95,929</strong></td>
<td>1.7</td>
<td>1.26</td>
<td>Increase</td>
<td>$66,440</td>
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<td>Computer programming</td>
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<td>1.31</td>
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<td>Computer services</td>
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<td>1.6</td>
<td>1.15</td>
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<td>$85,552</td>
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<td>Engineering services</td>
<td>17,500</td>
<td>1.9</td>
<td>1.35</td>
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<td>Management consulting</td>
<td>23,692</td>
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<tr>
<td>Marketing related services</td>
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<td>Printing services</td>
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<td>0.66</td>
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<td>Professional organizations and services</td>
<td>20,663</td>
<td>1.1</td>
<td>0.8</td>
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<td>$45,506</td>
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<tr>
<td><strong>Chemical products</strong></td>
<td><strong>5,995</strong></td>
<td>1.6</td>
<td>1.15</td>
<td>Increase</td>
<td>$34,133</td>
<td>12</td>
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<tr>
<td>Ammunition</td>
<td>3,250</td>
<td>17.2</td>
<td>12.4</td>
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<td>$34,133</td>
<td>1</td>
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<tr>
<td>Leather tanning and finishing</td>
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<td>3</td>
<td>2.18</td>
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<tr>
<td>Other processed chemicals</td>
<td>1,525</td>
<td>1.9</td>
<td>1.35</td>
<td></td>
<td>$34,133</td>
<td>14</td>
</tr>
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</thead>
<tbody>
<tr>
<td>Distribution Services</td>
<td>37,836</td>
<td>1.9</td>
<td>1.37</td>
<td>Decrease</td>
<td>$75,268</td>
<td>12</td>
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<tr>
<td>Catalog and mail-order</td>
<td>9,310</td>
<td>3.5</td>
<td>2.55</td>
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<td>5</td>
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<tr>
<td>Food products wholesaling</td>
<td>1,985</td>
<td>1.4</td>
<td>1.04</td>
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<td>17</td>
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<tr>
<td>Merchandise wholesaling</td>
<td>24,605</td>
<td>2</td>
<td>1.42</td>
<td></td>
<td>$75,868</td>
<td>14</td>
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<tr>
<td>Transportation vehicle and equipment distribution</td>
<td>550</td>
<td>1.01</td>
<td>0.73</td>
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<td></td>
<td>18</td>
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<tr>
<td><strong>Financial services</strong></td>
<td><strong>53,699</strong></td>
<td><strong>2.3</strong></td>
<td><strong>1.63</strong></td>
<td><strong>Increase</strong></td>
<td><strong>$103,163</strong></td>
<td><strong>10</strong></td>
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<tr>
<td>Insurance products</td>
<td>22,000</td>
<td>4.5</td>
<td>3.25</td>
<td></td>
<td></td>
<td>3</td>
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<tr>
<td>Passenger car leasing</td>
<td>750</td>
<td>8.5</td>
<td>6.16</td>
<td></td>
<td></td>
<td>4</td>
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<tr>
<td>Securities brokers, dealers and exchanges</td>
<td>19,754</td>
<td>2.1</td>
<td>1.5</td>
<td></td>
<td>$75,868</td>
<td>8</td>
</tr>
<tr>
<td><strong>Information technology</strong></td>
<td><strong>18,490</strong></td>
<td><strong>2.1</strong></td>
<td><strong>1.5</strong></td>
<td><strong>Increase</strong></td>
<td><strong>$44,813</strong></td>
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<tr>
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<td>1.59</td>
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</table>
## APPENDIX

<table>
<thead>
<tr>
<th>Clusters and subclusters</th>
<th>2006 total employment</th>
<th>2006 share of national employment</th>
<th>2006 employment LQ</th>
<th>Change in LQ from 2006</th>
<th>2006 average wages</th>
<th>Rank out of 20 by employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical devices</td>
<td>18,474</td>
<td>4.9</td>
<td>3.51</td>
<td>Increase</td>
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<td>Increase</td>
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<td>1.76</td>
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</tbody>
</table>
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<table>
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<tbody>
<tr>
<td>Production technology</td>
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