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Collaborative Economics

Strategic Advisory to Civic Enterprises
Acknowledgement

The California Economic Strategy Panel acknowledges the vision, leadership and collaboration of

Ted Bradshaw & Jim King

Each of these individuals championed the value of data-driven research to continuously study the ever-changing California economy and link workforce development with economic demands. They shared a goal to empower the public with data and tools to complete their own studies in order to make sound public policy and investment decisions.

The California Economic Strategy Panel also acknowledges

Tim Taormina

who shared in this vision and provided the leadership in the access to key data sources that empower the users of this guide to carry out the economic research.
The California Economic Strategy Panel (Panel) continuously examines changes in the state’s economic base and industry sectors to develop a statewide vision and strategic initiatives to guide public policy decisions for economic growth and competitiveness (visit [www.labor.ca.gov/panel/](http://www.labor.ca.gov/panel/)). The fifteen-member Panel is comprised of eight appointees by the Governor, two appointees each by the President pro Tempore and the Speaker and one each by the Senate and Assembly Minority Floor Leaders. The Secretary of the California Labor & Workforce Development Agency serves as the Chair.

The Panel first identified California’s economy as an economy of regions in 1996. At that time, the Panel also adopted a new way of looking at industry sectors and how they function and grow as industry clusters. These new ways of looking at the economy became the basis for the analytical work completed then, and have provided a foundation for the Panel’s work since that time.

In 2003, the Panel initiated a new project that would produce a series of studies, the [California Regional Economies Project (CREP)](http://www.labor.ca.gov/panel/). The CREP used the concept of regional economies and industry clusters previously established by the Panel to provide an updated look at California’s economy, providing “real time” economic data and information. This was one of four critical investment areas identified by the Panel in its 2002 report, *Creating a Shared California Economic Strategy: A Call to Action*. The Panel’s objective was to institutionalize a research methodology and access to the official employment and wage information reported by employers to conduct on-going studies that would provide a resource for economic and workforce development planning, investment decisions, policy changes and connecting economic and workforce policies and programs at the state and regional levels.

The California Workforce Investment Board (State Board) sponsored the CREP, to help address its own need for timely information about the economy and key labor and workforce issues that would drive investment decisions by the State Board and by the Local Workforce Investment Boards and their service delivery system of One-Stop Career Centers. At a time when the federally-funded system was being called to become more responsive to the changes taking place in the economy, the CREP provides current industry trends and helps to create a bridge for dialogue and collaboration between the economic and workforce development worlds.

California Employment Development Department’s Labor Market Information Division (LMID) provides the current employment and wage information reported by employers converted to the North American Industrial Classification Codes (NAICS) going back to 1990.

In 2005, the Panel recommended that the research methodology and access to non-confidential employment and wage information reported by employers be shared with the public. The Panel’s objective was to provide local and regional organizations with the knowledge and tools needed to complete their own economic research and analyses at the most disaggregated level possible.
In response, the Panel worked with Collaborative Economics, Inc. to produce the *Industry Clusters of Opportunity User Guide (Guide)*. This two-part Guide provides a step-by-step methodology of how to identify industry clusters of opportunity and how to use the information for planning, policy and program investment decision-making.

The LMID produced and made available on-line the *California Regional Economies Employment (CREE) Series*, which is the non-confidential version of the official employment and wage information reported by employers. The CREE series provides annual County data at the four-digit NAICS level, back to 1990 (see link below):

(http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=173)

During 2005 and 2006, the Guide was beta tested with “trainees” representing organizations such as Local Workforce Investment Boards, economic development organizations, Community Colleges, County Education Offices, Councils of Government and LMID Regional Consultants. Using computer workstations at the LMID, teams of four to six trainees representing each of the nine economic regions defined by the Panel produced:

- Spreadsheets summarizing employment data for each region;
- Groupings of industry clusters of opportunity; and,
- Action plans around the clusters of opportunity and uses for planning, program development, resource allocation and other uses.

Collaborative Economics, Inc. provided the step-by-step training and refined the User Guide based on the training sessions and evaluation from trainees.

In 2007, the California Workforce Investment Board, Employment Training Panel, LMID and California Community Colleges Office of the Chancellor partnered with the Panel to conduct an initial six Industry Clusters of Opportunity Training Sessions. The sessions will include representatives from economic development organizations, Community Colleges, Regional Occupational Programs and other local jurisdictions. Beginning in July 2007, sessions will be held in the Orange; Inland Empire; San Joaquin/Stanislaus; Merced/Madera/Fresno; Kings/Kern/Tulare; and, Shasta/Tehama/Butte areas. The *Industry Clusters of Opportunity User Guide, July 2007*, is presented by the Panel as the basis for these training sessions.
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Introduction

The *Industry Clusters of Opportunity User Guide* is a training resource prepared by Collaborative Economics, Inc. as a part of the California Regional Economies Project.

The guide is designed with two important audiences in mind: workforce and economic development professionals. The guide should assist professionals with the key steps to develop an economic data set that can be used to drive decision-making across many different areas including strategic planning, investment decisions and policy changes.

Part I of the *User Guide* shows how to develop a regional clusters of opportunity dataset and provides a step-by-step guide to analyzing and interpreting the data.

Part II of the *User Guide* explains how to put a cluster of opportunity dataset to work, using the data to inform decision-making and to mobilize cluster employers as full partners in workforce and economic development.
PART I: How to Identify Clusters of Opportunity

What are Clusters of Opportunity?

Outward oriented industry clusters are important for regions because they drive the vitality of support and local-serving industries—without competitive, outward-oriented industries, communities cannot enjoy sustained increases in standard of living. Economists from Alfred Marshall (1890) to Michael Porter (1990) point to several benefits to companies from participating in industry clusters:

- Access to a specialized workforce
- Access to specialized suppliers
- Access to business and technology networks

Clusters of opportunity are sectors of the economy identified by growth in one or more areas: value, jobs or wages. A cluster of opportunity elaborates on the concept of an economic cluster – traditionally seen as export-oriented, geographically-concentrated, and interdependent industry sector characterized by competing firms and buyer-supplier relationships, as well as shared labor pools and other specialized infrastructure – by linking it to the challenges of workforce development.

Workforce opportunities provide employment opportunities for regional residents. Thus, the definition of a “cluster of opportunity” focuses not only on export-oriented sectors, but also population-driven sectors—as well as sectors that offer occupations with “career potential.” Clusters of opportunity are a combination of related sectors that share one or more of these attributes (see figure to right).

Many areas of workforce shortage are not in the center of a regions’ economic base. They are in the many population-serving sectors like health care, construction and education. So, a cluster of opportunity also focuses on the size of sectors, not just their potential for rapid growth and looks closely at population-serving activities in addition to each region’s economic base.
Clusters of Opportunity Can Connect Workforce & Economic Development Goals

Successfully promoting regional economic prosperity means that workforce development and economic development organizations must work closely together. Workforce Investment Boards, for example, have mandates to help residents train for and find jobs when they are unemployed, and have moved beyond that role to develop programs focused on career paths and upward mobility. But, they are also playing a growing role in economic development as a skilled workforce is one of the main determinants of economic success. Economic development organizations have become more focused on workforce development for the same reason.

The Twin Challenges of Economic Growth & Workforce Investment

**Economic Growth**
- Identify sectors for innovation and growth, for example, biotech and nanotech
- Identify workforce and other policies to support high growth sectors
- Focus primarily on the region’s economic base

**Workforce Investment**
- Identify sectors where people can find career paths and upward mobility, for example, nursing and construction
- Identify workforce policies that support both individuals and sectors
- Focus significantly on population-serving sectors

Workforce development is naturally most focused on preparing people for jobs that exist today, while economic development is often about nurturing not only the industries of today, but those of tomorrow as well. Thus, the sectors or clusters championed for long-term economic development purposes may be providing few jobs today, and even fewer opportunities with career potential, simply because it is not yet at the necessary size and maturity in a given region. The cluster of opportunity enables regions to bridge this natural gap between these goals by including some sectors and occupations requiring immediate workforce development, and some sectors and occupations that are emerging and may be more important in the future.

Thus, clusters of opportunity help provide the focus for meeting the twin challenges of economic growth and workforce investment. A cluster of opportunity can be export-oriented, population-driven, or represent an opportunity with career potential for local residents – or, it can combine several elements that meet economic growth and workforce investment goals.
How Would You Know a Cluster of Opportunity if You Saw it?

A cluster of opportunity can be identified using economic data available from the California Employment Development Department’s Labor Market Information Division combined with input from regional firms and industry leaders. The quantitative data will need to be analyzed to find growth sectors of the economy and identify growth patterns in value, jobs or wages. The qualitative information complements and enhances the quantitative data, providing key insights about how regional firms are interdependent. The following are key indicators used to assemble and assess clusters of opportunity:

**Job growth:** Job gains or losses are a basic measure of economic health. It is important to track total job growth on an annual basis, and over a 10 to 15-year period of time. A 10 to 15-year perspective helps reduce the affects of job losses to shorter term business and economic cycles which may affect jobs in particular industries more than others.

**Export orientation:** This can be measured by examining employment concentration: employment concentration relative to the nation and change in employment concentration over time. Employment concentration is a calculation that compares the percentage of employment in a region to the percentage of employment in its national counterpart. A ratio greater than one signifies that employment is more concentrated in the region than it is nationally – an indication of outward orientation and a source of comparative advantage.

**Wage growth:** Growth of average annual pay in inflation-adjusted terms is an indicator of job quality. Average pay includes salary and wages, bonuses, and stock options. High average pay reflects in part the wealth-generating impact of outward-oriented industries (industries that sell to customers outside of the region). High average pay also reflects employers’ competition for skilled workers.

It is important to remember that this kind of data should be considered when taken together with other information about industry and firms activities in the region.
A Step by Step Guide to Analyzing & Understanding the Data

Regional economic development and workforce development professionals now have the ability to easily access and analyze publicly available regional economic data. Much of this data is available on the California Economic Development Department (EDD) and Bureau of Labor Statistics (BLS) Web sites. The challenge is to develop a data set that is easy to manipulate, analyze and understand. Professionals can use the data to support their efforts to grow jobs and firms and connect people with workforce opportunities.

This section guides users in the process of data collection, analysis, interpretation and implementation.

Why is it important to develop a regional data set?

- Provides insight on primary economic engines and support clusters
- Helps to identify nascent and emerging economic opportunities
- Improves strategic decision-making and creates a focus for regional collaboration
- Assists in developing new leaders: identifying industry leaders from the clusters helps bring new talent and resources to the community

Step 1: Gain an Initial Understanding of Your Economic Region

First, assemble any cluster studies that have been completed for your region. Gain an initial understanding for what firms and industries are making and selling in your region, and determine what their areas of economic specialization. Look specifically for documentation of the NAICS codes defining the industries. Compile cluster definitions from cluster reports, and group them by industry, including tables listing specific NAICS codes.

To find cluster studies for your region, consider these sources:

- California Regional Economies Project (http://www.labor.ca.gov/panel/espcrepindex.htm)
- Academic researchers: Check with the business schools of your local colleges or universities
- Industry Associations (e.g. software association)

What is a NAICS code?

- The North American Industry Classification System (NAICS) is a project of the US Office of Management & Budget.
- NAICS is a system to classify firms based on the similarity of production processes.
- NAICS divides the economy into 20 sectors. Though the goods/producing distinction is not explicitly reflected in the structure of the NAICS, five sectors are largely goods-producing and 15 sectors are entirely services-producing.
- The NAICS coding system is six digits: the first two digits represent the sector, three-digit level is the subsector, four-digit level is the industry group, five-digit level is industry and the full six-digit level is detailed industry.
Chambers of Commerce
Economic Development Professionals (EDCs)
Regional Small Business Administration offices
Federal Reserve Bank
Regional Foundations (check with community foundations)
Harvard University’s Institute for Strategy & Competitiveness: http://www.isc.hbs.edu/econ-clusters.htm

Next, create a working definition of your economic region – this can be comprised of a single county, several counties grouped together or a Metropolitan Statistical Area. When creating this definition, consider:

1. The area that corresponds to a geographic clustering of economic activity (i.e., an area of interdependent firms and jurisdictions).
2. The area that encompasses most of the labor pool (i.e., the commute shed).
3. Make adjustments as you learn more.

Step 2: Collect the Employment & Wage Data

The primary source of quantitative data is the Quarterly Census of Employment and Wages (QCEW), readily available online at the county, state, and national levels.

First, collect county-level data from the California Regional Economies Employment Series (CREE), available through the California Employment Development Department’s Labor Market Information Division. Data can be downloaded from: http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=173

What is a Metropolitan Statistical Area?

The general concept of a metropolitan or micropolitan statistical area is that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of social and economic integration with that core. Metropolitan and micropolitan statistical areas comprise one or more entire counties.

The Office of Management & Budget defines metropolitan and micropolitan statistical areas for purposes of collecting, tabulating, and publishing Federal data. Metropolitan and micropolitan statistical area definitions result from applying published standards to Census Bureau data.


The Quarterly Census of Employment & Wages

The Quarterly Census of Employment and Wages Program is a cooperative program involving the Bureau of Labor Statistics (BLS) of the US Department of Labor and the State Employment Security Agencies (SESAs). The QCEW program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. Publicly available files include data on the number of establishments, monthly employment, and quarterly wages, by NAICS industry, by county, by ownership sector, for the entire United States. These data are aggregated to annual levels, to higher industry levels (NAICS industry groups, sectors, and supersectors), and to higher geographic levels (national, State, and Metropolitan Statistical Area (MSA)).

The QCEW program serves as a near census of monthly employment and quarterly wage information by 6-digit NAICS industry at the national, State, and county levels.
Second, collect U.S. Bureau of Labor Statistics for comparable national and state level data. BLS data are now available through the California Employment Development Department’s Labor Market Information Division. To download the data, visit: [http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/?PAGEID=94](http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/?PAGEID=94)

From the LaborMarketInfo Data Library (see link above), scroll down and click on the “QCEW Data Search Tool.” Select your area type(s) and your area(s) and then click “continue.” Next, select your years and time periods, and click “continue.” Proceed to select your industry coding system, ownerships, and divisions and click on “continue.” Go on to select your industries and data series and click on “view data” to retrieve your data query. Once your dataset appears on your computer screen, click on the “download” button.

*For instructions on how to select items on a list, download data, and/or open the saved file in Microsoft Excel, please visit: [http://www.labormarketinfo.edd.ca.gov/article.asp?ARTICLEID=315](http://www.labormarketinfo.edd.ca.gov/article.asp?ARTICLEID=315)*

*From these data sources, collect the following data:*

- Regional employment by four-digit NAICS 1990 – present
- Regional payroll by four-digit NAICS, 1990 – present
- CA employment by four-digit NAICS 1990 – present
- CA payroll by four-digit NAICS 1990 – present
- US employment by four-digit NAICS 1990 – present
- US payroll by four-digit NAICS 1990 – present
- Annual Total Employment Non-Farm (TPNF) for each geographic entity, 1990 – present

*Organize the data as follows:*

- Use a database program (i.e. access) or spreadsheet program (i.e. excel) to manipulate and analyze data.
- Keep original data file separate. Create a copy of this file for analysis.

*If you need assistance with the data collection and other data-related questions, contact your local Labor Market Consultant:*

Step 3: Prepare the NAICS Dataset for Analysis

First, prepare the dataset for initial analysis by organizing it by four-digit NAICS code, which corresponds to industry groups. Looking at changes in employment and wages among individual industry groups is the first step in assessing the basic components of a cluster of opportunity. Later, in steps 5 and 6, selected NAICS components will be combined to form initial cluster groupings. The NAICS data set includes key employment and wage statistics. Using any spreadsheet or database program, develop a table with the following columns (where Y0 = start year and Yi = end year):

- NAICS code
- NAICS description
- Employment Y0, Yi (for region and US)
- Average annual growth rate in employment, region (Y0-Yi)
- Location Quotient, Y0 and Yi (concentration to US)
- Change in Location Quotient Y0-Yi
- Average wage in Y0 and Yi, adjust wages for inflation using local BLS CPI (all urban consumers, averaged annually, not seasonally adjusted)

In addition to the NAICS data set, which yields a spreadsheet used in steps 4 and 5, calculate:

- Average annual regional wages and employment for each geographical entity on an annual basis for all years, Y0 – Yi.

The following figure lists the formulas you will need to make the key calculations above:

Figure 3A: Formulas for the NAICS Dataset

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>Sum of employment in industry</td>
</tr>
<tr>
<td><strong>Average Annual Growth Rate</strong></td>
<td>( \frac{(\text{Emp}<em>{Y0}/\text{Emp}</em>{Yi})^{1/N} - 1)}{\text{N} = # \text{ of years}} )</td>
</tr>
<tr>
<td></td>
<td>\text{Emp}<em>{Y0} = \text{Employment in base year} \text{ } \text{Emp}</em>{Yi} = \text{Employment in comparison year}</td>
</tr>
<tr>
<td><strong>Employment Concentration (Location Quotient)</strong></td>
<td>( \frac{(\text{Reg. Employment in Industry}/\text{Regional Total Emp})}{(\text{US Emp In Industry}/\text{US Total Emp})} )</td>
</tr>
<tr>
<td><strong>Average Payroll per Employee</strong></td>
<td>( \frac{(\text{Total Payroll in Industry}}{\text{Total Employment in Industry}}) )</td>
</tr>
</tbody>
</table>
The following figure is an example of how a NAICS dataset is turned into a table for initial analysis:

Figure 3B: Example of a NAICS Table
Step 4: Begin Analysis of the NAICS Dataset

The next step is to use conditional formatting to highlight key data. Conditional formatting is the use of criteria to highlight key patterns in the NAICS table. Automatically highlight data that meets specified cluster of opportunity criteria, such as:

- **Size**: Industries with greater than average employment size
- **Job growth**: Industries with an Average Annual Growth Rate (AAGR) above the region’s mean growth rate
- **Concentration**: Industries with an employment concentration >1, industries with a positive change in employment concentration (where dConc90-03 > 0)
- **Wages**: Industries paying wages above the regional average

Figure 4A: Criteria for Conditional Formatting of NAICS Table

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td><em>Current Economic Impact</em></td>
</tr>
<tr>
<td></td>
<td>Determines if an industry is a substantial component of employment activity in the region</td>
</tr>
<tr>
<td><strong>Average Annual Growth Rate</strong></td>
<td><em>Job Creation</em></td>
</tr>
<tr>
<td></td>
<td>Shows how various industries have weathered market forces and their subsequent employment generation</td>
</tr>
<tr>
<td><strong>Concentration (Location Quotient)</strong></td>
<td><em>Regional Specialization</em></td>
</tr>
<tr>
<td></td>
<td>A concentration of greater than 1 indicates that employment in the region is more specialized in the industry compared with U.S. or California. Specialization generally reflects competitiveness and outward orientation.</td>
</tr>
<tr>
<td><strong>Average Payroll per Employee</strong></td>
<td><em>Job Quality</em></td>
</tr>
<tr>
<td></td>
<td>High average payroll per employee relative to the regional average indicates a sector with relatively high productivity per employee. Additionally, pay is a reflection of job quality and indicates the amount of training and skill required to perform the job.</td>
</tr>
</tbody>
</table>

How to apply conditional formatting to highlight important cells:

1. Select the data you want to apply conditional formatting to. On the Format menu, click Conditional Formatting.
2. Click Cell Value Is, select the comparison phrase, and then type a value in the appropriate box (this should be a cutoff that is appropriate for your region). Enter a constant value or a formula.

3. Click Format. Select the font style, font color, underlining, borders, shading, or patterns to distinguish the cells that meet the criteria.

The following figure shows an example of a NAICS table that has been conditionally formatted:

![Example of Conditionally-Formatted NAICS Table](image)

In the figure above, the data are sorted by NAICS code in descending order. Cells are highlighted when they meet or exceed the criteria set by the user. In column I, for example, cells are highlighted in green when the employment concentration in 2003 is greater than 1.0. In column G, cells are highlighted in purple when the average annual employment growth rate is greater than the regional average of 2.3% during the 1990 – 2003 period.
Step 5: Make Initial Observations about the NAICS Data

With the conditional formatting completed in Step 4, users can now review the NAICS table, and make initial observations about the employment size and growth, employment concentration levels and growth, and wage levels and growth.

**Employment size and growth:** Large employment sectors, even when growing slowly can still produce large absolute numbers of jobs. Job gains or losses are a basic measure of economic health. It is important to track total job growth on an annual basis, and over a 10 to 15 year period of time. A 10 to 15 year perspective helps reduce the affects of job losses to shorter term business and economic cycles which may affect jobs in particular industries more than others.

**Export orientation:** This can be measured by examining employment concentration: employment concentration relative to the nation and change in employment concentration over time. Employment concentration is a calculation that compares the percentage of employment in a region to the percentage of employment in its national counterpart. A ratio greater than one signifies that employment is more concentrated in the region than it is nationally – an indication of outward orientation and a source of comparative advantage.

**Wage level and growth:** Growth of average annual pay in inflation-adjusted terms is an indicator of job quality. Average pay includes salary and wages, bonuses, and stock options. High average pay reflects in part the wealth-generating impact of outward-oriented industries (industries that sell to customers outside of the region). High average pay also reflects employers’ competition for skilled workers.

Use the worksheet on the following page, to make initial observations about your conditionally-formatted NAICS table.
Initial Observations About the NAICS Data

*Employment Growth.* Which industries are growing? Which industries are losing jobs? What is the rate (speed) of job loss/gain over time? What economic relationships might link growing and declining industries (e.g. export-orientation, buyer-supplier relationships, shared labor pools or other specialized infrastructure)?

*Export Orientation.* Which industries have a location quotient much larger than 1.0? Which industries are becoming more concentrated over time? Which industries are becoming less concentrated over time?

*Wage Levels and Growth.* Which industries are experiencing substantial wage growth, and which ones are experiencing falling wages? What is the rate (speed) of wage loss/gain over time? Which industries pay higher than average wages? Which industries pay lower-than average wages?
Step 6: Assemble Industries into Clusters of Opportunity

After an initial examination of the dataset, users can begin to organize and group NAICS codes together based on industries producing similar products and services, industries with likely buyer and supplier relationships, and industries requiring a similar and related set of skills and training.

This step requires judgment, and combines knowledge of the regional economy with use of the NAICS manual and other sources. Working as a team, discuss your initial observations about the initial NAICS data:

- Focus on industry sectors that are highly-concentrated and/or have been growing in employment, concentration, or wages.
- Group them according to similar and related types of industries, products, and services. Use your knowledge about the regional economy and consult the NAICS manual as well as other cluster studies to understand how firms are related.
- Consider the following components as you assemble clusters of opportunity:
  - Export-oriented sectors: sectors that sell products or services primarily outside the region
  - Population-serving sectors: sectors that sell products or services primarily inside the region
  - Support sectors: sectors selling goods and services to the either the export-oriented or population-serving sectors.
- Create a Cluster of Opportunity Table for each cluster by assembling a list of NAICS codes and summarizing employment, wage, and concentration (location quotient) data by individual NAICS code and for the group as a whole (see Figure 6A)
- Create a summary table for multiple clusters (see Figure 6B)
Figure 6A: Example of a Cluster of Opportunity Table

<table>
<thead>
<tr>
<th>4-digit NAICS Code</th>
<th>Description</th>
<th>Regional Emp</th>
<th>Regional Emp 03</th>
<th>Regional Pay 1990</th>
<th>Regional Pay 2003</th>
<th>Conc 90</th>
<th>Conc 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>3254</td>
<td>Pharmaceutical and Medicine Manufacturing</td>
<td>120</td>
<td>30</td>
<td>$27,833</td>
<td>$60,333</td>
<td>0.148</td>
<td>0.023</td>
</tr>
<tr>
<td>3391</td>
<td>Medical Equipment and Supplies Manufacturing</td>
<td>430</td>
<td>630</td>
<td>$25,140</td>
<td>$22,683</td>
<td>0.383</td>
<td>0.468</td>
</tr>
<tr>
<td>4461</td>
<td>Health and Personal Care Stores</td>
<td>2830</td>
<td>4210</td>
<td>$14,926</td>
<td>$21,337</td>
<td>0.916</td>
<td>1.011</td>
</tr>
<tr>
<td>5419</td>
<td>Other Professional, Scientific, and Technical</td>
<td>1320</td>
<td>2290</td>
<td>$18,508</td>
<td>$26,114</td>
<td>1.068</td>
<td>1.053</td>
</tr>
<tr>
<td>6211</td>
<td>Offices of Physicians</td>
<td>6580</td>
<td>6660</td>
<td>$27,959</td>
<td>$37,218</td>
<td>1.320</td>
<td>0.753</td>
</tr>
<tr>
<td>6212</td>
<td>Offices of Dentists</td>
<td>2010</td>
<td>2670</td>
<td>$12,990</td>
<td>$24,300</td>
<td>1.004</td>
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<td>6213</td>
<td>Offices of Other Health Practitioners</td>
<td>1010</td>
<td>1280</td>
<td>$14,673</td>
<td>$19,185</td>
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<tr>
<td>6214</td>
<td>Outpatient Care Centers</td>
<td>610</td>
<td>1370</td>
<td>$32,049</td>
<td>$43,635</td>
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<td>6215</td>
<td>Medical and Diagnostic Laboratories</td>
<td>350</td>
<td>520</td>
<td>$20,771</td>
<td>$28,865</td>
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<tr>
<td>6216</td>
<td>Home Health Care Services</td>
<td>290</td>
<td>9090</td>
<td>$13,966</td>
<td>$35,123</td>
<td>0.258</td>
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<tr>
<td>6219</td>
<td>Other Ambulatory Health Care Services</td>
<td>180</td>
<td>370</td>
<td>$20,556</td>
<td>$40,162</td>
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<td>0.427</td>
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<tr>
<td>6221</td>
<td>General Medical and Surgical Hospitals</td>
<td>13250</td>
<td>19880</td>
<td>$22,343</td>
<td>$34,363</td>
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<tr>
<td>6222</td>
<td>Psychiatric and Substance Abuse Hospitals</td>
<td>300</td>
<td>450</td>
<td>$22,133</td>
<td>$34,067</td>
<td>0.681</td>
<td>1.118</td>
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<tr>
<td>6223</td>
<td>Specialty (except Psychiatric and Substance)</td>
<td>450</td>
<td>680</td>
<td>$22,489</td>
<td>$34,338</td>
<td>1.213</td>
<td>1.039</td>
</tr>
<tr>
<td>6231</td>
<td>Nursing Care Facilities</td>
<td>6080</td>
<td>7760</td>
<td>$20,597</td>
<td>$29,180</td>
<td>1.333</td>
<td>1.110</td>
</tr>
<tr>
<td>6232</td>
<td>Residential Mental Retardation, Mental Health</td>
<td>790</td>
<td>1790</td>
<td>$20,975</td>
<td>$30,682</td>
<td>0.754</td>
<td>0.836</td>
</tr>
<tr>
<td>6233</td>
<td>Community Care Facilities for the Elderly</td>
<td>1230</td>
<td>2160</td>
<td>$20,878</td>
<td>$29,736</td>
<td>0.955</td>
<td>0.886</td>
</tr>
<tr>
<td>6239</td>
<td>Other Residential Care Facilities</td>
<td>210</td>
<td>590</td>
<td>$21,657</td>
<td>$31,644</td>
<td>0.612</td>
<td>0.810</td>
</tr>
<tr>
<td>6241</td>
<td>Individual and Family Services</td>
<td>1440</td>
<td>2270</td>
<td>$14,382</td>
<td>$19,106</td>
<td>0.950</td>
<td>0.637</td>
</tr>
<tr>
<td>6243</td>
<td>Vocational Rehabilitation Services</td>
<td>610</td>
<td>1680</td>
<td>$8,000</td>
<td>$16,464</td>
<td>0.646</td>
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</tr>
</tbody>
</table>

Summary Statistics

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Pay 1990</td>
<td>$29,699</td>
<td></td>
</tr>
<tr>
<td>Pay 2003</td>
<td>$31,170</td>
<td></td>
</tr>
<tr>
<td>Conc 90</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Conc 03</td>
<td>1.02</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6B: Cluster Summary Table

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Services</td>
<td>19610</td>
<td>28620</td>
<td>9010</td>
<td>3.0%</td>
<td>$45,567</td>
<td>$37,470</td>
<td>-8%</td>
<td>0.99</td>
<td>1.07</td>
<td>8%</td>
</tr>
<tr>
<td>Logistics</td>
<td>11840</td>
<td>13060</td>
<td>1220</td>
<td>0.8%</td>
<td>$39,070</td>
<td>$38,590</td>
<td>-1%</td>
<td>0.96</td>
<td>0.80</td>
<td>-17%</td>
</tr>
<tr>
<td>Government</td>
<td>117120</td>
<td>127560</td>
<td>10440</td>
<td>0.7%</td>
<td>$31,800</td>
<td>$34,266</td>
<td>8%</td>
<td>1.63</td>
<td>1.37</td>
<td>-16%</td>
</tr>
<tr>
<td>Personal Services</td>
<td>16350</td>
<td>27090</td>
<td>10710</td>
<td>4.0%</td>
<td>$18,198</td>
<td>$23,905</td>
<td>31%</td>
<td>1.34</td>
<td>1.46</td>
<td>9%</td>
</tr>
<tr>
<td>Advanced Manufacturing</td>
<td>27580</td>
<td>28610</td>
<td>-970</td>
<td>-0.3%</td>
<td>$42,032</td>
<td>$41,317</td>
<td>-2%</td>
<td>1.03</td>
<td>1.05</td>
<td>2%</td>
</tr>
<tr>
<td>Health and Biomedicine</td>
<td>40090</td>
<td>66370</td>
<td>26280</td>
<td>4.0%</td>
<td>$29,699</td>
<td>$31,170</td>
<td>5%</td>
<td>0.98</td>
<td>1.02</td>
<td>4%</td>
</tr>
<tr>
<td>Education and Training</td>
<td>4550</td>
<td>8180</td>
<td>3630</td>
<td>4.6%</td>
<td>$23,660</td>
<td>$29,722</td>
<td>26%</td>
<td>0.69</td>
<td>0.71</td>
<td>2%</td>
</tr>
<tr>
<td>Visitor Services</td>
<td>50820</td>
<td>71470</td>
<td>20650</td>
<td>2.7%</td>
<td>$14,016</td>
<td>$13,870</td>
<td>-1%</td>
<td>1.29</td>
<td>1.29</td>
<td>0%</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>16990</td>
<td>16910</td>
<td>-80</td>
<td>0.0%</td>
<td>$47,998</td>
<td>$48,833</td>
<td>2%</td>
<td>1.59</td>
<td>1.69</td>
<td>6%</td>
</tr>
<tr>
<td>Finance</td>
<td>20840</td>
<td>24660</td>
<td>3820</td>
<td>1.3%</td>
<td>$35,496</td>
<td>$33,568</td>
<td>-5%</td>
<td>1.15</td>
<td>0.94</td>
<td>-18%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>17540</td>
<td>17860</td>
<td>320</td>
<td>0.1%</td>
<td>$42,066</td>
<td>$38,012</td>
<td>-10%</td>
<td>1.31</td>
<td>1.00</td>
<td>-23%</td>
</tr>
</tbody>
</table>

- After creating your tables, it is critical to get feedback from those who are familiar with the region’s economy. Reconfigure, adjust and refine cluster definitions as more information about firm relationships comes to light through interviews and consultations.
Step 7: Develop Clusters of Opportunity Presentation

It is important to organize the cluster information in a format that can be shared and used for regional discussion and decision-making. A cluster presentation can communicate findings, stimulate discussion and be used to obtain feedback. A presentation might include the following elements to introduce the clusters and communicate major findings from a cluster analysis.

- **Employment charts** - Consider developing several charts. One chart could focus on regional employment, either as a line or column chart, communicating overall employment levels in the region and whether jobs are growing or declining overall. Another chart could compare clusters by employment size, use a column chart format. A third chart could show net employment change by cluster over time.

- **Wage charts** - Consider developing several charts. One chart could show regional wages over time, either as a line or column chart, communicating regional wage levels and whether wages are growing or declining. Another chart could focus on current wages by cluster – developed as a column chart to provide a comparative perspective on cluster pay levels.

- **Employment concentration charts** - An employment concentration chart could compare location quotients across clusters or assess net change in employment concentration over time for each cluster.

- **Cluster perspective charts** - Develop a chart that compares the region’s cluster by employment, employment growth, wages, employment concentration or a combination of elements as in a “bubble chart” (Figures 7A and 7B).

Figure 7A: Cluster Bubble Charts Can Show Multiple Elements

A bubble chart provides perspective on three dimensions: the size, growth and employment concentration in a cluster. Cluster bubbles arranged together in a chart (see Figure 7B) help to communicate the overall regional picture or multiple clusters of opportunity. It tells what industries make up the region, their size, growth and relative employment concentration.
To develop a bubble chart, first create a data table with the following information:

- Name of cluster
- Average annual growth rate (over selected time period)
- Concentration relative to California (in most recent year)
- Employment (in most recent year)

Next, using the data from this table, select “Insert Chart” in Main Menu.

- Choose “Bubble” chart under Standard types
- Select the “Series” tab. Manually “Add” each cluster data point, choosing the appropriate cell for:
  - Cluster name
  - X-value (AAGR)
  - Y-value (concentration)
  - Sizes (employment)
  - Repeat for each cluster
- Enter name for Title, and Labels for X and Y axes
- Choose location & name of chart
- Format as needed
Figure 7B: Example of Bubble Chart for Multiple Clusters of Opportunity
Step 8: Conduct Cluster Employer Interviews to Validate, Refine, Enhance & Interpret Your NAICS Information

The clusters of opportunity dataset provides an excellent starting point. It provides a roadmap to industry sectors and employers who create economic opportunity for the region. The next step is to interview cluster employers, share the dataset, and seek their views and interpretation. This step is crucial, and is a prerequisite to moving from cluster analysis to cluster engagement and mobilization (as described in Part II of this User Guide).

Conduct cluster employer interviews with at least 10 to 15 companies in the cluster. The purpose is to develop an overall picture of the evolution of the cluster, understand how the cluster components are related, identify external and internal forces driving the cluster and develop a list of key requirements for success. It is important to interview representatives from the different components of the cluster. Below is a sample Cluster Employer Interview Protocol, which can be used and adapted for use in your region.

Cluster Employer Interview Protocol

Each interview will last 45 to 60 minutes and may be conducted by phone or in-person.

The main objective of the interview is to: 1) identify economic opportunity areas for the region and 2) identify key issues and priorities for these opportunity areas and to improve economic and workforce development strategies leading to the growth of quality jobs for all residents.

I. History/Evolution of the Firm in the Region
   1. What is the origin of this company? Who started it? Why? Why is this company located in the region? What is its current focus: key products and markets?
   2. How would you categorize this company’s stage of development (new, growing, mature)?
   3. Are there other similar or related companies in the region (serving similar markets, making similar or related kinds of products, drawing on a similar skill base)? Buyer-supplier relationships?
   4. Are there local institutions, associations, or organizations that are important to your company or industry? Why are these relationships important?

II. External Factors Driving Regional Industry Change
   1. What are the major forces of change shaping your industry regionally, nationally and globally?

III. How the Industry Could Evolve in the Region?
   1. As you think about the future of your industry in the region, what is a desirable vision of how it might evolve over the next five years?
2. Where are the big opportunities for this industry?

3. What role might this industry play in the local economy, and in the industry nationally or globally?

IV. Key Requirements for Future Success

1. As you think about the future, what are most important requirements for your business/industry to be successful in the region?

V. Workforce/Preparedness

1. What kinds of jobs is this industry creating now? Likely to create in the future? What are the education and training requirements of the jobs?

2. How well prepared is the regional labor force to support this business/industry as it grows and expands?

3. What is your relationship to local education/training providers? What is your reliance on workers that live outside the region? What are areas for improvement?

VI. Infrastructure

1. What kinds of infrastructure are most important to your business (test: workplaces/facilities, transportation, information infrastructure.)? What is positive? What needs change?

VII. Innovation/Entrepreneurship

1. How would you describe the environment or assets for innovation and entrepreneurship in the region? Are there areas for improvement?

2. What is the role for specific local colleges and universities or other training organizations?

VIII. Technology Development & Transfer

1. What is the local infrastructure for developing and researching products?

2. What is the local infrastructure for bringing products to market?

3. What resources are available to support technology transfer activities?

IX. Quality of Life & Amenities

1. What about the quality of life in the region is important to your business? To you as an individual?

X. Regulation/Taxation

1. What regulatory/taxation issues that affect your ability to succeed in the region?

XI. Other

1. Any other requirements for future success?
Step 9: Assessing Clusters of Opportunity

Developing the tools to assess clusters of opportunity is an important step in moving towards cluster engagement. A cluster of opportunity matrix is an assessment tool that compares and ranks the clusters based on size, growth, employment concentration and wages. This tool is a valuable communication device providing a quick overview of the region’s clusters of opportunity. It can be used to assess which clusters of opportunity offer the greatest potential for future development and cluster engagement efforts. It is up to individual regions to determine how to weight each criteria and apply them to planning, program development, and resource allocation and implementation.

To develop a Cluster of Opportunity Decision Matrix, complete the following:

- Rank the Clusters by four criteria (size, concentration, growth, wages)
- List clusters along the horizontal axis by size, largest to smallest
- For size, concentration, growth, use numbers to show relative rankings vs. other clusters
- For wages, use High, Medium, Low categories
- Use color-coding to display data (look for natural breaks in data, with general rule of thumb: Green=Top 1/3, Yellow=Middle 1/3, Red=Bottom 1/3)

Figure 9A: Example of a Clusters of Opportunity Decision Matrix
Step 10: Adding the Occupational Dimension

An occupation consists of activities or tasks that employees perform, regardless of what industry they might work in. For the purposes of regional workforce development, it is helpful to understand how well the occupational structure supports the growth needs of the industry in the region. Specialized data sets called industry staffing patterns can be developed to gain insight into the occupational structure of industry sectors. An analysis of staffing patterns can reveal the occupations that drive comparative advantage within clusters of opportunity as well as the skills needed to support the cluster growth.

An analysis of industry staffing patterns can help to answer the following questions:

- What is the occupational structure of specific industries?
- What is the distribution of talent at the high, medium and low wage-levels?

To add the occupational dimension to the clusters of opportunity dataset, consult the following sources:

- Occupational data is organized by Standard Occupational Codes (SOC). The Standard Occupational Classification Manual (2000) published by the Office of Management and Budget is the reference manual describing the type of work performed in each SOC code.
- The California Employment Development Department’s Labor Market Information Division can provide you with industry-based staffing patterns data so that you can analyze the occupations associated with your clusters of opportunity.
- Users will need to contact their local LMI Consultant to make a special data request for employment by occupational staffing patterns. To find contact information for your local consultant, visit: [http://www.calmis.ca.gov/file/resource/LMIConsultants.pdf](http://www.calmis.ca.gov/file/resource/LMIConsultants.pdf)
- Users will need to provide the following information to their local LMI Consultant: NAICS-based cluster definitions, geographic area, and time series.
- Users may request data in the following format:

  Dear LMI Consultant:
  This email describes the data we are requesting as part of the __________ project. We would like to obtain industry staffing patterns for several clusters in our region. We have attached an excel spreadsheet with the NAICS-based cluster definition of the ____________ cluster – an area of special research focus this project. For the industry (NAICS) groupings (see attached spreadsheet), we would like to request the following data: Employment by occupation (SOC) – staffing patterns specific to the industry cluster at the regional level (county), for the most current year available.
Analyzing the staffing patterns data requires identifying high, medium and low-wage breaks. The data runs establish wage quartiles for the entire cluster. By screening occupations according to their wage level and summarizing the data by high, medium and low-wage categories, users can develop an understanding for the wage distribution of occupations within the cluster. Figure 10A shows a sample analysis using industry staffing patterns for the Health Sciences and Services cluster at the state level.

One dimension of the occupational analysis can include identifying growth needs of industries in a region. Using projections of employment estimates to conduct an occupational outlook can help identify occupations where people can find career paths and upward mobility. To download LMID’s regional projections of employment by industry and occupation, go to:

http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=145

A critical component of workforce development is identifying occupations with career potential. Connecting important skills required by each occupation is vital because each occupation requires a different mix of knowledge, skills, and ability. O*NET, a resource designed by the Department of Labor, offers many tools to analyze occupations associated with clusters of opportunity with industry-based staffing patterns. O*NET can be used to:

- Identify the skills workers must have for success in the workplace.
- Select training and assessment programs that will support business recruitment efforts while giving every job seeker better information about career choices.
- O*NET gives business, job seekers, trainers, and policy-makers a common language with which to communicate about workplace skills.

To learn more about O*NET, you can:

- Visit the O*NET homepage: http://www.onetcenter.org/
- Contact your local LMID consultant: http://www.calmis.ca.gov/file/resource/LMIconсultants.pdf
Health Sciences and Services occupations are fairly evenly spread across high, mid and entry-level occupations. This cluster of opportunity creates jobs at all occupational levels and offers careers with advancement potential through additional on-the-job experience, education, and training.

The following chart shows average wage levels for the occupations in the high, mid- and entry-levels. Levels are based on statewide wage distribution: entry-level occupations are considered to be those that are below the 25\textsuperscript{th} percentile on the state wage distribution; mid-level occupations are between the 25\textsuperscript{th} and 75\textsuperscript{th} percentile; and higher-level occupations are above the 75\textsuperscript{th} percentile.

Source: California Employment Development Department, US Bureau of Labor Statistics
About 31% of Health Science and Services occupations are in the high-level category with average wages greater than $48,900 annually. Examples of high-level occupations in the Health Sciences and Services are Family and General Practitioners with average wages of $135,000 annually, or Medical and Clinical Laboratory Technologists who make about $59,500 per year.

Forty-four percent of all Health Sciences and Services employment is in the mid-level category; this includes Dental Assistants and Medical Secretaries who make about $33,000 on average and Medical Assistants who earn $27,000 annually. The entry-level occupations make up about 25% of those employed in the cluster, with average wages at or below $24,000 per year. In this group are Nursing Aides, Orderlies and Attendants who make $23,000 on average and Home Health Aides who earn slightly more than $20,000 on average. The following table highlights some occupations in the Health Sciences and Services along with their average hourly wages and annual incomes across California in 2003.

<table>
<thead>
<tr>
<th>Examples of Health Occupations With Average Wages</th>
<th>CA Average Hourly Wage</th>
<th>CA Average Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Higher-Level Occupations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family and General Practitioners</td>
<td>$64.91</td>
<td>$135,001</td>
</tr>
<tr>
<td>Medical Scientists, Except Epidemiologists</td>
<td>$34.08</td>
<td>$70,877</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>$30.56</td>
<td>$63,560</td>
</tr>
<tr>
<td>Medical and Clinical Laboratory Technologists</td>
<td>$28.60</td>
<td>$59,493</td>
</tr>
<tr>
<td>Business and Financial Operations Occupations</td>
<td>$25.74</td>
<td>$53,530</td>
</tr>
<tr>
<td><strong>Mid-Level Occupations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental Assistants</td>
<td>$15.78</td>
<td>$32,830</td>
</tr>
<tr>
<td>Medical Secretaries</td>
<td>$15.69</td>
<td>$32,644</td>
</tr>
<tr>
<td>Office and Administrative Support Occupations</td>
<td>$15.12</td>
<td>$31,452</td>
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<td>Medical Assistants</td>
<td>$13.12</td>
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<tr>
<td>Office Clerks, General</td>
<td>$12.38</td>
<td>$25,743</td>
</tr>
<tr>
<td><strong>Entry-Level Occupations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Aides, Orderlies, and Attendants</td>
<td>$10.84</td>
<td>$22,549</td>
</tr>
<tr>
<td>Building and Grounds Cleaning and Maintenance Occupations</td>
<td>$10.50</td>
<td>$21,853</td>
</tr>
<tr>
<td>Personal Care and Service Occupations</td>
<td>$10.44</td>
<td>$21,708</td>
</tr>
<tr>
<td>Food Preparation and Serving-Related Occupations</td>
<td>$10.19</td>
<td>$21,201</td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>$9.66</td>
<td>$20,103</td>
</tr>
</tbody>
</table>

Source: EDD
Step II: Putting It All Together in the Cluster Map

With both qualitative and quantitative data about the region’s clusters of opportunity, users can now summarize the findings about the structure of the cluster using a cluster map. A cluster map displays the key components of a single cluster, and has proven to be an effective way to communicate and discuss clusters of opportunity with multiple audiences. Included in a cluster map are at least the following elements (see figure below):

- **Major industry sectors**: Major export-oriented sectors and population-serving sectors
- **Support sectors**: Related sectors selling products and services to the major export-oriented and/or population-serving sectors.
- **Key occupations**
  - Higher Level: Occupations with high wages that usually require significant work experience and/or higher education
  - Mid Level: Occupations with advancement potential that require some training
  - Entry Level: Occupations at the beginning of the career ladder
- **Infrastructure**: Specialized community infrastructure that supports the cluster, including institutions, assets, and capabilities

<table>
<thead>
<tr>
<th>Industries</th>
<th>Total Jobs: 97,100</th>
<th>Employment Growth 1990 - 2002: 26,700 jobs (32%)</th>
<th>Average Wage:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Biomedical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors’ Offices</td>
<td>Hospitals and Acute Care</td>
<td>Medical Equip &amp; Supplies Mfg</td>
<td>Pharma and Medicine Mfg</td>
</tr>
<tr>
<td>Support Sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical and Diagnostic Labs</td>
<td>Emergency and Relief Services</td>
<td>Home and Residential Care Services</td>
<td>Scientific Research and Development</td>
</tr>
<tr>
<td>Occupations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family and General Practitioners</td>
<td>Natural Sciences Managers</td>
<td>Medical Scientists</td>
<td>Biomedical Engineers</td>
</tr>
<tr>
<td>Mid Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical and Clinical Lab Technicians</td>
<td>Dental Lab Technicians</td>
<td>Psychiatric Technicians</td>
<td>Biological Technicians</td>
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<tr>
<td>Entry Level</td>
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<td></td>
</tr>
<tr>
<td>Pharmacy Aides</td>
<td>Physical Therapist Aides</td>
<td>Personal and Home Care Aides</td>
<td>Nursing Aides, Orderlies and Attendants</td>
</tr>
<tr>
<td>Infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Universities</td>
<td>Specialized Clinics</td>
<td>Biomedical Research</td>
<td>Education and Training</td>
</tr>
</tbody>
</table>
PART II: How to Put Clusters of Opportunity to Work

Overview

Part II of the user guide describes what to do after developing the initial cluster of opportunity dataset. The next step is cluster engagement. At the core, cluster engagement involves working with cluster employers to provide information that can be used to affect decision-making about workforce and economic development. However, cluster engagement can expand well beyond this basic core by mobilizing employers as growing partners in workforce and economic development.

The figure below shows cluster engagement as a growing pie. Each “slice” of the pie represents a cluster of opportunity. Each cluster of opportunity’s impact on workforce and economic development grows as cluster employers are mobilized as growing partners in planning and implementation.

Growing Impact of Cluster Engagement on Workforce & Economic Development

The core of engagement is working with cluster employers to validate, revise, interpret, enhance, and apply your dataset. In this way, clusters of opportunity data can be used to inform decision-making at several levels—from strategic planning to program development to resource allocation and implementation both within and across workforce and economic development organizations.
The next level of engagement is to mobilize cluster employers to become partners in workforce development and economic development—partners in strategic planning, program development, and resource allocation and implementation. At this level, cluster employers provide more than information, but become actively engaged in the processes and outcomes of regional workforce and economic development.

It is important to note that the process of assembling information about clusters of opportunity is a critical catalyst to engaging the employers in these clusters. Information on growing sectors that inevitably have workforce and other needs demonstrates to these employers that you mean business—you are trying to understand their requirements and work with them to develop the best ways to meet those needs. In regions where the cluster of opportunity methodology has been implemented—ranging from Fresno to San Diego to the North Coast—cluster employers have become much more actively involved in collaborative efforts in workforce and economic development.

**Level 1: Incorporating Cluster Information into Decision-Making**

At the most basic level, clusters of opportunity can inform strategic planning—using the information to set a fact-based economic context for determining the overall direction and focus of workforce and economic development agencies and organizations. For example, clusters of opportunity information could be used as the starting point for annual organizational planning processes.

Clusters of opportunity can also inform program development—using insights into industry and occupational trends and needs to shape program design and content. For example, cluster information can be used to design a new community college or training program, or provide the focus for a new economic development marketing initiative.

Clusters of opportunity information can be used as a means to connect and align the planning and program development of workforce and economic development entities—such as community colleges, workforce investment boards, economic development organizations, regional occupational programs, industry associations, and others (see chart below). Specifically, they could be used as the basis for joint discussions and planning among various agencies, and lead to a set of collaborative actions focused on cluster growth and vitality.

Cluster Information Can Provide a Basis for Joint Decision-Making
Clusters of opportunity can also be used to inform day-to-day resource allocation decisions. The Boards and staff of workforce and economic development agencies and organizations are constantly making individual decisions about funding, staff, and other resource allocations. Clusters of opportunity information enable boards and staff to adopt new or additional fact-based criteria for use in these decision-making processes. They can understand and evaluate clusters of opportunity based on size, growth, wages, career potential and other factors—choosing how to best weigh different factors to meet the specific needs and aspirations of their region. The sample decision matrix below illustrates how clusters of opportunity can be evaluated along several dimensions.

**A Decision Matrix to Assess Clusters of Opportunity**

<table>
<thead>
<tr>
<th></th>
<th>Bio&amp;Health</th>
<th>Mgmt</th>
<th>Com</th>
<th>Const</th>
<th>Info</th>
<th>Finance</th>
<th>Visitor</th>
<th>Social</th>
<th>Edu</th>
<th>Indus</th>
<th>Mach</th>
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<tbody>
<tr>
<td><strong>Size</strong></td>
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<td>(Ranked Highest to Lowest)</td>
<td>1</td>
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<td>(Ranked Highest to Lowest)</td>
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<td>4</td>
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<td>3</td>
<td>10</td>
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<td><strong>Growth</strong></td>
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<tr>
<td>(Ranked Highest to Lowest)</td>
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<td>7</td>
<td>8</td>
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<td>9</td>
<td>4</td>
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<td>2</td>
<td>1</td>
<td>10</td>
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<tr>
<td><strong>Wages</strong></td>
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<td>M</td>
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<tr>
<td>High, Medium and Low</td>
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</tbody>
</table>

At this level, cluster employers are engaged to a point—they agree to provide information and other input to decision-making. For example, through interviews, focus groups, surveys, and the like, cluster employers can provide insights into changing industry and occupational trends, offering “early warning” of larger shifts in the economy. They can become more engaged by participating on boards of workforce and economic development organizations and agencies, or as members of ongoing “cluster groups, advising workforce and economic development entities on planning and decision-making.

At this level, cluster employers become **participants**, but not yet **partners** in workforce development or economic development.
Level 2: Cluster Mobilization

At the next level of engagement, cluster employers actually become partners in developing and implementing workforce and economic development strategies and initiatives. The following step-by-step process provides an overall framework with specific implementation guidance to help users mobilize cluster employers. It is based on more than a decade of experience in California and nationwide, developing cluster datasets, implementing cluster engagement processes, and creating collaborative, regional action initiatives in economic and workforce development. Using these steps as a starting point, users are encouraged to customize this cluster mobilization process to meet their specific needs.

Step 1: Create a Leadership Group & Support Team for Cluster Mobilization

To achieve the optimum result, three types of teams need to be established: a leadership group, a staff support team, and the cluster groups (see below).

- The leadership group sponsors the overall process, empowers the cluster co-chairs to conduct cluster groups, receives the results from the cluster groups and ultimately decides how to support implementation.
- The staff support team includes a local project manager, facilitators and administrative support to assist the co-chairs of the leadership and cluster groups in carrying out their roles.
- The cluster groups provide the focal point to set priorities and develop specific plans for implementation.

The leadership group and staff support teams should be established before the cluster groups. The overall goal is to get to the point where cluster groups – appropriately constituted, led and supported – can start their meeting process to share information, incubate ideas, and develop new collaborative initiatives in workforce and economic development.
The most important success factor for a cluster mobilization process is that it be both “top-down” and “bottom-up.” The good ideas and talented people who will surface through the cluster groups must be connected to experienced leaders in the community (especially in workforce and economic development) who can lend their credibility, connections and resources to aid implementation.

### Role of Leadership Group

1. Monitor progress of the project.
2. Help identify and recruit participants:
   a. Co-chairs
   b. Cluster group participants
3. Oversee development and execution of fundraising strategy
4. Review and improve project deliverables:
   a. Briefing paper/research
   b. Refine cluster group action plans
   c. Help link plans to resources
5. Act as ambassador for the project:
   a. Explain project to own sector
   b. Advocate for collaboration with other sectors
   c. Participate in Implementation Launch Event
6. Manage transition from Incubation to Implementation stage.

### Structure of Leadership Group

1. Co-chairs
2. 20-25 total members
3. Business members
4. Government members
   a. Local government (i.e., leader from local jurisdictions)
   b. Other (e.g. university, community college, K-12)
5. Other community leaders (e.g. labor, foundations, environmental)
The support team includes three components:

- **Local Project Manager**: A person who manages the cluster mobilization process on a day-to-day basis
- **Facilitators**: People who facilitate the meetings and coach the co-chairs
- **Administrative Support**: People who handle information flow, database management and meeting logistics

The *Project Manager* manages the collaborative process on a day-to-day basis. His or her job is to make sure that process runs on schedule and that all participants know their role and have the proper support. The project manager is an essential liaison to the Leadership Group, the co-chairs, the facilitators and administrative support.

### Role of Project Manager

- Serve as liaison to Leadership Group and Co-chairs
- Manage facilitators and administrative support
- Handle day-to-day project operations
- Manage internal and external communications

To be effective, action teams need good facilitators to make sure the meetings meet their objectives and that everyone’s ideas are heard. The facilitators should be neutral, with no vested interest in the outcome. Facilitators should work in pairs, with one serving as lead facilitator and one serving as a recorder (writing down key points for all to see).

### Role of Facilitators

- Coach Co-chairs on their role in meetings
- Facilitate the meetings
- Write up meeting results
- Coach cluster groups as required

The organizing group should be responsible for *administrative support*. This group should facilitate the recruitment of leadership group co-chairs and members as well as cluster group co-chairs, develop invitations lists (database) and develop and mail invitations to the cluster groups. The organizing group should also take responsibility for meeting logistics.
### Project Administration Needs

- Create and maintain database of process participants

- Execute periodic mailings and serve as focal point for RSVPs:
  - Leadership group
  - Cluster groups (three meetings each – mailings before and after)
  - Launch event (one large mailing plus answer inquiries)

- Copy project materials
  - Briefing paper/research
  - Meeting agendas, handouts and summaries
  - Cluster action plans
  - Materials for launch event

- Do meeting logistics for clusters and leadership group, and launch event (e.g. location, setup, refreshments)

- Answer and/or refer project inquiries

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**Step 2: Choose Clusters for Mobilization**

After the analytic and initial organizational work has been completed, the next step is to choose potential clusters for mobilization. The fact that a region has clusters of opportunity does not mean that the region must engage all clusters at once. Two sets of criteria can be combined to select clusters for immediate mobilization.

The first set of criteria is based on the numbers. Clusters might be chosen for engagement for their past performance and future potential—as well as their “fit” with the region’s goals in workforce and economic development. As described in Part I, these criteria could include size, growth, concentration, and wages.

A second set of criteria focuses on “ripeness” for action. For example:

- *Industry commitment* – Are industry leaders committed to trying this approach?
- *Potential benefit* – Can the cluster benefit from a collaborative process?
- *Added Value* – Can the process add value to any existing efforts?
Convene the leadership group and decide on the range of criteria to be used in selecting clusters for immediate mobilization. Once the group determines the cluster(s), summarize the quantitative and qualitative information for each cluster (as described in Part I of the User Guide) into a concise “cluster briefing paper.” This paper is an important input to the first round of cluster meetings.

<table>
<thead>
<tr>
<th>Structure of Cluster Briefing Paper (10-15 pages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Regional Clusters of Opportunity (overview of approach, range of clusters identified)</td>
</tr>
<tr>
<td>II. Cluster Components (include Cluster Map)</td>
</tr>
<tr>
<td>III. Cluster Characteristics (i.e., size, growth, wages, concentration)</td>
</tr>
<tr>
<td>IV. Cluster Evolution (including external forces and internal attractors)</td>
</tr>
<tr>
<td>V. Cluster Potential and Requirements (potential future for cluster and what is needed to get there)</td>
</tr>
<tr>
<td>VI. Collaborative Opportunities (potential areas for collaboration between cluster employers and economic and workforce development partners)</td>
</tr>
</tbody>
</table>

Step 3: Recruit Cluster Groups

The next step is to organize groups for the clusters of opportunity chosen for immediate mobilization.

First, identify and recruit co-chairs for each cluster group. Choose a balanced set of co-chairs for each cluster. For example, consider matching a large company leader and a small company leader, leaders who represent different industry sectors within the cluster, and established and emerging industry leaders. Choose two to three co-chairs to ensure continuity of the process and division of work load.
Role of Co-Chairs

- Help organize the cluster group to ensure that the right people participate
- Preside over three cluster group meetings, supported by a facilitator.
- Report progress of the cluster group to the Leadership Group
- Serve as spokesperson for the cluster group.

Lessons: Co-Chair Selection

- Select on personal characteristics.
- Team different perspectives:
  - Small and large company
  - Established and emerging leaders
  - Private and public.

Use existing industry databases and other sources to identify cluster group participants. Work with the co-chairs to flesh out a draft invitation list. The list should include representatives from each of the component industries of the cluster. They should come from a combination of large firms and small businesses, product and service sectors, and business and government/education/community.

Participants should also be selected for how they will help the process succeed – including their stature, entrepreneurial drive, and collaborative style. A total of 30 to 50 invitees should be identified for each cluster (see following figure for sample invitation letter). The target is 15 to 20 participants in the first meeting.

Role of Participants

- Participate in three two-hour meetings over three to five months.
- Participate in shaping action initiatives, as desired.

Lessons: Participant Selection

- Mirror cluster map.
- Seek out new and next-generation leaders.
Sample Invitation Letter

Date
Address
Dear <invitee>:

We invite you, as senior executives in our industry, to participate in a high-level working group to identify collaborative actions that will grow the XXXX industries in the XXXXX region. Now is the time to act together to move our local industry cluster to its next stage.

Our group is one of ### of industry working groups being convened by the XXXXXXX, a collaboration of local business, government, and nonprofit partners. The enclosed Briefing Paper tells the story of the cluster. It examines the driving sectors of the cluster and what might be done to help them to thrive in the future.

The purpose of the working groups is to identify and act on issues important to the region’s most innovative, growing businesses – focusing on local industry “clusters” in A, B, and C. Companies in these clusters are particularly important to our region; they will be the core drivers of our future economy. It is imperative that we understand their needs and work together to meet those needs.

We have agreed to co-chair the XXXX cluster working group because we believe that our region is poised for excellence and that greater collaboration among key executives will benefit us all. We invite you to join the team.

The first meeting will be held on XXXXX at XXXXXXX (map enclosed). Please RSVP by XXXX by faxing the enclosed form. We request your personal participation, because we need the region’s top senior executives working together in order to make a difference.

Sincerely,

Co-Chairs
Cluster XXXXXX Working Group

Co-Chair Name, Title          Co-Chair Name, Title          Co-Chair Name, Title
Organization                  Organization                  Organization

Enclosures: Map, RSVP fax-back form, Briefing Paper
Step 4: Launch the Cluster Mobilization Process (Meeting #1)

The cluster mobilization process described here is designed to involve key leaders personally in identifying significant issues and priorities, developing potential solutions, and committing to specific actions and collaborative initiatives. Although many processes are possible, experience shows that a three-stage process is short enough to keep busy executives engaged, but long enough to generate quality thinking and commitments to action. The figure below illustrates the three-stage process:

The purpose of the first meeting is to give participants an opportunity to describe their vision for the future of the cluster, identify requirements to make that vision a reality, and choose priorities for which requirements should be addressed immediately. The expected outcomes of Meeting #1 are a small number of (i.e., up to three) priority areas. “Action teams” can be created with the responsibility of working on the priority area, incubating possible action steps, and creating a “conceptual plan” for review by the full group during Meeting #2.

Before Meeting #1, make sure co-chairs understand their roles. If possible, convene the co-chairs for a “training session” that lays out the process steps, their individual and collective roles and the expected process outcomes so they know what is coming and how to manage their assignment. At this training session, the co-chairs working with a facilitator should brainstorm names of invitees for the cluster group as well as set the dates for the three meetings in the coming months (spaced at least one month apart). Review the agenda and participants’ specific roles before the meeting.

Make sure a core of leaders attends the meeting. Send out invitations to the first meeting at least one month before the meeting to enable people with busy schedules to attend. Ask participants to RSVP and follow up with phone calls from administrative support team members and co-chairs (if necessary) to ensure that key people attend. Emphasize the importance of the personal participation of senior executives (or, on a case-by-case basis, someone close to the senior executive). It is critical that the cluster groups be populated with individuals who have decision-making authority within their own companies and organizations.
Make sure the meeting logistics are checked and double-checked. Making a good first impression on participants is critical. They will judge whether or not to stay involved on the basis of the first meeting. The meeting must be well organized and efficient from a logistics standpoint. The support team should take responsibility for meeting logistics. A centrally-located facility should be chosen (perhaps at the facility of one of the co-chairs) and the following setup should be implemented (see following figure).

Meeting #1 should be divided into four parts, which typically requires at least two hours (see Sample Agenda that follows).

The first part of the meeting is a brief but important overview, including a welcome, introductions and overview of both the cluster mobilization process and the substance from any analysis that has been done. This process gives participants the right framework and expectations for action at the outset. Cluster co-chairs make a strong case here for their own participation, offering a motivational message to the rest of the group about commitment to collaborative action. The substance from the cluster of opportunity analysis grounds the effort in an economic logic that provides an important underlying rationale for working together.

The second part of the meeting lays out the vision and requirements for growth. Participants should write down their five-year vision for the group, using a phrase that captures the essence of their thinking (as opposed to a long written description). They write their vision on one side of the 5”X7” card. At the same time, they are asked to write on the opposite side of the note card the three top requirements for achieving their five-year vision. Give participants about five minutes to complete the vision and requirements task. Remember, tell them to be brief and to the point.

Call on individual participants to read off their vision and the first requirement on their cards. The facilitators record their comments according to several categories (i.e., workforce, infrastructure, innovation/entrepreneurship, regulation/taxation, quality of life, other). Do not allow comments from other participants, but rather give everyone a chance to present ideas without critique. This technique precludes any dominant personality from overwhelming other participants.

Once all participants have had a chance to give their vision and first requirements, ask if any other requirements need to be captured. The second and third requirements may have already been mentioned by someone else, so this approach keeps the process efficient, yet inclusive. Open up the meeting to full discussion until participants are satisfied that their ideas have been captured.
Sample Agenda
Cluster Group Meeting #1
8 AM – 10 AM

7:30  **Pre-Meeting of Co-Chairs and Facilitators**
*Role of Co-Chairs: Review meeting agenda and outcomes with facilitators*

8:00  **Welcome and Introductions**
*Role of Co-Chairs: Welcome and give short statement about why this process is important – why you got involved; turn meeting over to facilitators who will ask participants for basic introductions.*

8:15  **Project Overview**
*Facilitators give overview of briefing information and cluster engagement process.*

8:30  **Vision and Requirements for Development**
*Participants identify their five-year vision and requirements on 5X7 note card.*
*Role of Co-Chairs: give your views just like other participants.*

9:15  **Choose Priorities for Action**
*Participants vote on priorities and take a break (use four dots per person for voting).*
*Role of Co-Chairs:*
  - Vote on priorities just like other participants
  - Confer with facilitators to interpret/group priorities

9:30  **Discussion of Top Priority Areas**
*Facilitators lead discussion of priorities to flesh them out.*
*Role of Co-Chairs: Participate in discussion*

9:45  **Assign Volunteers to Action Teams**
*Facilitator asks for volunteers by priority area, those willing to take the next step of developing a one-page “conceptual plan.” Based on response, 1-3 priority areas are chosen for conceptual plan development. Next step: recruit “regional partners” to help cluster employers with plans at Meetings #2 and #3.*
*Role of Co-Chairs: Volunteer as champion/ask others to be volunteers*

10:00 **Adjourn**
*Role of Co-Chairs: Thank participants and announce next meeting date*
The third part of the meeting focuses on the setting of priorities. Facilitators should review full list of vision elements and requirements and make any final adjustments suggested by participants. Give people an opportunity to vote on their highest-priority requirements. Give every participant four dots to stick next to those priorities that they deem most important. They should vote one dot per priority (not all dots on one priority, or else it will skew the voting). Give them five minutes to vote, and tell them to take a short break thereafter. Emphasize that they should vote for priorities that they personally want to work on, to turn into action. Remind them that if nobody steps up to champion a priority, no action will be taken on that priority.

After participants have voted and while they are taking a break, facilitators should huddle with the co-chairs and determine the highest vote-getters, possible integration of items into a broader category and identification of participants to recruit as volunteers for the highest-priority areas of action. Ask the co-chairs if they want to help champion any of the areas and if they will ask for co-volunteers from the full group.

The fourth part of the meeting is the discussion of priorities and creation of action teams. After voting, the facilitators should summarize the highest-vote getters (including larger categories that have been created by grouping individual items). The cluster group must be comfortable with the priority groupings before proceeding. Work with the group to adjust the categories until consensus is reached on the one to three major priority areas of action. It is important to look for linkages that will give the group one to three priorities. If the number of priorities grows much higher than three, the focus and energy of the group are likely to become too dispersed for effective action. At this point, the group should discuss each priority area of action, suggesting ideas and implementation steps.

For each priority area for action, ask for volunteers to form an “action team” to create a conceptual plan (see following figure). First, ask for volunteers from the full group. Second, the co-chairs can step up to volunteer or encourage specific individuals to volunteer. Write down the names of volunteers, so the entire group knows who is taking responsibility. If no one volunteers, go on to the next priority.
CONCEPTUAL PLAN

DATE: ________________

LONG-TERM GOAL:

SPECIFIC MEASURABLE OUTCOMES:
(Meet four criteria: Clear, Compelling, Outcome Not Process, Achievable Within One Year)

•
•
•

STEPS TO ACHIEVE MEASURABLE OUTCOMES:

•
•

ACTION TEAM MEMBERS:
The facilitators should then explain to the group the assignment to the action teams. Group members are to fill out the one-page worksheet (the conceptual plan) and discuss it with the full cluster group at its next meeting. Emphasize the focus on getting the long-term goal and near-term measurable outcomes right. Emphasize that quality is preferable over quantity. We are looking for “a few good outcomes,” not a long wish list that no one will take responsibility to implement. These measurable outcomes should meet a four-part test. They should be:

- **Clear.** They have to be a good choice of words that communicate effectively to a wide variety of people, or it will be difficult to rally people to help implement.

- **Compelling.** They have to be worth doing. If they are marginal steps, they will not excite people and keep them engaged. They should make people and organizations “stretch,” or they are not going to make much of a difference if achieved.

- **Outcomes, not process.** One of the biggest pitfalls is to equate process steps with outcomes. Saying that you will hold a meeting is not an acceptable measurable outcome.

- **Achievable within one year.** Although the big picture (i.e., a long-term goal) is important to keep in mind, it is equally important to articulate achievable, short-term outcomes that can help build momentum. If objectives remain only long-term, little is likely to get done. If objectives are solely short-term, a lot might get done that is not focused on the right goal. The best mix is both a long-term goal and measurable outcomes that are achievable within one year.

There are three options at this point. One is to have a longer Meeting #1, and have the action teams work on a first draft conceptual plan before the end of the meeting. A second option is to convene action teams prior to the next full cluster group meeting to do a first draft of their conceptual plans. The third option is to lengthen Meeting #2 and have action teams work on the conceptual plans at the beginning of that meeting.

If second option is chosen, before closing the meeting, ask for volunteers to act as “conveners” of each action team (i.e., host the meeting). Suggest that members of each action team huddle together before leaving to select a meeting date before the next action team meeting in order to develop the conceptual plan. Hand out a copy of the group invitee database, so individual participants can easily contact one another. Encourage participants to add to the list and contact those on the list who may have missed the first meeting.

Under the second option, facilitators help action teams develop their conceptual plans. If the number of facilitators is sufficient, a facilitator could be assigned to help each action team fill out its conceptual plan worksheet acting as a process facilitator or recorder or both. If the number of facilitators is not sufficient, the facilitators of an action
team can, at a minimum, call members of the action team and offer coaching as needed. Each action team should identify someone who will present the conceptual plan back to the full action team. That person (or another member of the team or facilitator) should also be prepared to make a transparency of the one-page conceptual plan and enough hard copies to hand out to the full action team at Meeting #2.

Immediately after the meeting, facilitators should summarize the results (for sample format, see following figure), review them with the co-chairs for accuracy, and send them out to the full cluster group along with an invitation to the second cluster group meeting.

Summary of Meeting #1
Software Development and Support Cluster
Date

Overview

On (meeting date), executives from the software industry cluster met to begin defining actions that will promote the economic vitality of the cluster and the XXXXX region. At the meeting, participants first identified their achievable vision for the region’s software industry five years into the future. They also identified the requirements to achieve a vital software industry in the region. Participants voted on their highest priorities. And, they chose two priorities for action. They identified Champions and formed action Teams around these two priorities: Regional Identity/Marketing and Software Education at the Community College Level.

Five-Year Visions for the XXXXX Region’s Software Industry

- We have three, well-developed tiers of software companies: start-ups, midsize companies, and large firms.
- We are a self-sustaining source of skilled workers; we have a comprehensive educational infrastructure for software.
- We are an attractive place for young people to live and work in software
- We have minimized our dependence on any particular company or discipline; we have balance.
- We have retained our quality of life and controlled growth.
- We have more, growing software development firms.
- We have become a center for “brain industries.”
- We are thriving and recognized, with executives working together.
Summary of Meeting #1
(continued)

Requirements to Achieve a Vital Software Industry in XXXXXX Region

- *Focus community colleges on software education to produce moderate-cost, high-quality workforce.* Need comprehensive curriculum and updates, as well as contract education. Promote business-education collaboration, including software executives educating the educators about what they need. Study/understand demographics of the workforce (including travel patterns, transiency). Retain local high-school graduates (or enable them to return after college), and attract a diverse workforce. (18 votes)

- *Develop a regional identity/name and marketing program.* Create a perception of a region of connected communities. Change internal perception: We are a business community, not just residential. Create a comprehensive response and support network for relocating employees/employers. Convince people that software jobs are here. Build on “anchors.” (12 votes)

- **Other requirements:** Expand arts and culture (3 votes), invest in K-12 education (2 votes), promote business-friendly relations with local governments (2 votes), develop apartments for young people (1 vote), expand child care, improve, and expand affordable housing, expand recreational opportunities (e.g., gyms), diversify communities in terms of skills and income levels.

Action Teams and Champions

- **Software Education at the Community College Level:** Name (convenor), additional names of people signed up for action. Contact (convenor) at (phone number) if you would like to join this Action Team.

- **Regional Identity and Marketing:** Name (convenor), additional names of people signed up for Action Team. Contact (convenor) at (phone number) if you would like to join this Action Team.

Next Cluster Meeting

The next meeting of the full software cluster group will be XXXXXXXX. At this meeting, champions of each Action Team will present their initial conceptual plans for review and critique by the full cluster group. If you have not already done so, you will have an opportunity at this meeting to join the Action Teams to shape their proposals further. Also, if you know of other executives who would like to participate or become champions, provide their names and phone numbers on the attached RSVP form, and we will make sure they are invited to the meeting.
Co-chairs present Meeting #1 results to the Leadership Group. One of the roles of the co-chairs is to act as the voice for their group, summarizing the results of Meeting #1 for the benefit of the Leadership Group. The Leadership Group should give the co-chairs constructive feedback, suggesting issues that should be considered as action teams consider their deliberations. Co-chairs, working with their facilitators, should communicate this feedback to the appropriate action teams.

At this point, regardless of which option has been chosen, the Leadership Group and Support Team can help recruit additional members to the action teams. Depending on the focus on the team, individuals from the specific institutions or sectors of the community (e.g., a community college dean) can be added to work with cluster employers on the conceptual plans.

Step 5: Hold Cluster Group Meeting #2

The expected outcomes of the meeting are feedback from the cluster group to the action teams about their conceptual plans and identification of people and organizations that should be added to the action teams. The action team volunteers (or “champions”) are then charged with transforming their conceptual plans into action plans, which should detail specific implementation requirements and commitments.

Review Meeting #2 roles and agenda with cluster co-chairs (see following figure) before the meeting. The co-chairs will need to ask good, challenging questions about the long-term goals and measurable outcomes of the action team’s conceptual plans. It will be as if they are “civic venture capitalists” trying to help a new start-up get off the ground. They should ask questions that clarify the thinking of the “civic entrepreneurs” driving the action teams. The questioning should proceed in a constructive manner, in the spirit of continuous improvement.

Make sure a volunteer is identified to present the action team’s conceptual plan. Group facilitators should make sure that someone from each action team is confirmed to present to the full group. Set expectation for a 10-15 minute presentation. Facilitators should also make sure that copies of the conceptual plan will be made to hand out to attendees of Meeting #2.

Make sure the meeting logistics are checked and double-checked. The support team should take responsibility for meeting logistics. Try to use the same facility and location as those for Meeting #1. The setup should be the same as that for Meeting #1.

Meeting #2 should be divided into three parts, which typically requires two hours (see following sample agenda). The sample agenda included here assumes that action teams have met between the full cluster group meetings. If the action teams have not met, lengthen Meeting #2 and build in time at the beginning for an action teams to develop their conceptual plans.
Sample Agenda  
Action Team Step #2  
8 AM – 10 AM

7:30  Pre-Meeting of Co-Chairs and Facilitators  
Role of Co-Chairs:  Review meeting agenda and outcomes.

8:00  Welcome and Introductions  
Role of Co-Chairs:  Welcome and short statement about why this process is important – why you got involved; turn meeting over to the facilitators, who will ask participants for basic introductions.

8:15  Overview of Step #1  
Facilitators give overview of process and results from Step #1.

8:30  Action Team Presentations and Discussion  
Volunteers present their one-page conceptual plan to group.  
Participants ask questions, suggest changes/additions.  
Group discusses other potential partners, resource needs, etc.

Role of Co-Chairs:  
• Push for strong, measurable objectives.  
• Suggest partners, implementation commitments.  
• Ask for additional volunteers.

9:50  Wrap-Up  
Facilitators review action items from meeting.  
Facilitators review Action Plan Worksheet.

Role of Co-Chairs:  
• Confirm with group that it recommends that the conceptual plans move forward.  
• Tell group that Co-Chairs will take recommendations to Leadership Group.  
• Tell group that it will be contacted about further meetings of action teams.  
• Thank Action Team volunteers for their efforts

10:00  Adjourn
The first part of the meeting is a brief but important overview, including a welcome, introductions and an overview of both the action team process and substance from any analysis that has been done (e.g., a briefing paper). This process gives new participants the right framework and expectations for action. Group co-chairs reiterate their motivational message to the rest of the group about the need to commit to collaborative action.

The second part of the meeting is a review of the conceptual plans of the action teams. A champion from each action team presents the long-term goal, measurable outcomes and process steps of the conceptual plan. The presenter then asks others from the action team to comment. The facilitators then take over and encourage participants to ask probing but constructive questions that will sharpen the conceptual plans. Emphasize that the plan is a work in progress, and that it is appropriate and necessary at this stage to question assumptions, strategies and tactics in the plan. It is also appropriate to identify important elements thought to be missing from the plan. Facilitators should capture the discussion on flip charts.

The third part of the meeting focuses on the next assignment for action teams. Facilitators should review the feedback given to each action team from the flip charts and ask for any further feedback. Co-chairs should confirm with the group that the action teams and conceptual plans should move forward to the next stage. The group may decide to merge action teams or disband an action team – whatever makes the most sense as a way to move more effectively toward action. Facilitators should then review the next assignment for the action teams, which are to transform their conceptual plans (with feedback from the action team) into action plans. The Action Plan Worksheet should be handed out and reviewed (see figure on following page). Before closing the meeting, suggest that members of each action team huddle together before leaving to select a meeting date before the next action team meeting in order to develop the action plan.
ACTION PLAN WORKSHEET

DATE: ______________

LONG-TERM GOAL: _____________________________________________

SPECIFIC MEASURABLE OUTCOMES
(Meet Four Criteria: Clear, Compelling, Outcome Not Process, Achievable Within One Year)

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STEPS AND TIMELINE TO ACHIEVE MEASURABLE OUTCOMES

1.

2.

3.

IMPLEMENTATION REQUIREMENTS
(Including needed commitments of financial resources, expertise and materials, and proposed organizational structure for implementation)

1.

2.

3.

NAMES AND COMMITMENTS OF IMPLEMENTATION VOLUNTEERS
Step 6: Hold Cluster Group Meeting #3

The purpose of Meeting #3 is to give participants an opportunity to review the action plans of each action team. The expected outcomes of the meeting are feedback from the cluster group to the action teams on their action plans and identification of additional people and organizations that should be added to the action teams. The action team volunteers are then charged with the responsibility of working with the action team co-chairs to finalize their plans and take them to the leadership group for its approval. Those action plans that are approved would be launched at a regional event to begin implementation.

**Review Meeting #3 roles and agenda with co-chairs (see following figure)** before the meeting. Just as they did in Meeting #2, the co-chairs will need to ask good, challenging questions about the long-term goals and measurable outcomes and measurable outcomes of the action team’s plans. They will also need to make sure each of the plans has clear commitments from implementation volunteers. If the plans do not meet this test, they should not go forward. More work will be necessary to find and/or clarify implementation resources and commitments, or the action plan will not be recommended for implementation. Their role should continue to be one of constructive criticism, in the spirit of continuous improvement.

**Make sure a champion is identified to present each action plan.** Cluster facilitators should make sure that someone from each action team is confirmed to present to the full cluster group. Set the expectation for a 10 to 15-minute presentation. Facilitators should also make sure that copies of the action plan will be made to hand out to attendees of Meeting #3.

**Make sure the meeting logistics are checked and double-checked.** The support team should take responsibility for meeting logistics. Try to use the same facility and location as for the first two meetings. The setup should be the same as that for the previous meetings.

Meeting #3 should be divided into three parts, which typically requires two hours (see the following figure). Note that the sample agenda included here assumes that action teams have met between the full cluster group meetings. If the action teams have not met, lengthen Meeting #3 and build in time at the beginning for an action teams to develop their action plans.
Sample Agenda
Action team Step #3
8 AM – 10 AM

7:30 Pre-Meeting of Co-Chairs and Facilitators
Role of Co-Chairs: Review meeting agenda and outcomes.

8:00 Welcome and Introductions
Role of Co-Chairs: Welcome and short statement about by this process is important — why you got involved; turn meeting over to the facilitators, who will ask participants for basic introductions.

8:15 Overview of Meetings #1 and #2
Facilitators give overview of process and results from Meetings #1 and #2.

8:30 Action Team Presentations and Discussion
Volunteers present their action plan to group.
Participants ask questions, suggest changes/additions.
Group discusses other potential partners, resource needs, etc.

Role of Co-Chairs:
• Push for measurable objectives.
• Suggest partners, implementation commitments.
• Ask for any additional volunteers.

9:50 Wrap-Up
Facilitators review action items from meeting.

Role of Co-Chairs:
• Confirm with group that it recommends that action plans move forward.
• Tell group that co-chairs will work with action team volunteers to take action plans to Leadership Group.
• Tell group that it will be contacted about further meetings of action teams and an invitation to an implementation launch event.
• Thank Action Team volunteers for their efforts, and officially close cluster group process.

10:00 Adjourn
The first part of the meeting is a brief but important overview, including a welcome, introductions and an overview of the action team process, the substance from any analysis that has been done (e.g., briefing paper) and the results from Meeting #2 (i.e., the conceptual plans). This process gives new participants the right framework and expectations for action and helps them understand how they can plug into the process at this late stage. Action team co-chairs reiterate their motivational message to the rest of the group about the need to commit to collaborative action and they thank participants in the action teams for their work.

The second part of the meeting is the review of the action plans. A champion from each action team presents the long-term goal, measurable outcomes, process steps, implementation requirements and implementation commitments of their action plan. The presenter then asks others from the action team to comment. The facilitators then take over and encourage participants to ask probing but constructive questions that will sharpen the action plans. Emphasize that it is critical at this stage to evaluate whether or not commitment to implementation is sufficient for the plan to go forward. Facilitators should capture the discussion on flip charts.

The third part of the meeting focuses on the movement to implementation. Facilitators should review the feedback given to each action team from the flip charts and ask for any further feedback. Co-chairs should confirm with the group that the action plans should move forward to the leadership group for approval for implementation. The group may decide to merge action plans at this stage or choose not to go forward with an action plan. Co-chairs should close the meeting by agreeing to work with action plan volunteers to bring the plans to the Leadership Group for approval, thanking participants and inviting participants to an upcoming implementation launch event.

Facilitators summarize Meeting #3 results and send them out to the full working group. Immediately after the meeting, facilitators should summarize the results (the action plans along with a summary of feedback from the group), review them with the co-chairs for accuracy and send them out to the full group along with the invitation to the group to provide any further feedback to the volunteers of the action plans.

Co-chairs and volunteers present action plans to the Leadership Group. The co-chairs join with the volunteers from their group to summarize their action plans for the approval of the Leadership Group. The Leadership Group should give the co-chairs constructive feedback, focusing their comments on the implementation requirements and commitments of the action plans. The Leadership Group should also identify additional people and resources that could help the action teams in implementation. And the Leadership Group should continue to identify commonalities across the action plans – similarities that might suggest a merging of teams or other collaborative arrangement. Finally, the Leadership Group should give each action plan its approval or withhold approval until certain changes are made.

Facilitators help volunteers finalize their action plans, combine them into a “blueprint document” and prepare them for public unveiling at an implementation launch event.
Facilitators should help package the action plans into a concise public document that can be disseminated throughout the region or community. They should prepare the volunteers for presenting their plans at an implementation launch event, which signals the transition to the implementation stage.

Step 7: Plan & Execute a Public Implementation Launch Event

The staff support team takes responsibility for planning and executing a public implementation launch event. The purpose of the event is to announce publicly the action plans, identify additional people from the community who would like to help champion implementation and recognize the “civic entrepreneurs” who are taking collaborative action on behalf of their community/region.

Disseminate a “blueprint document” that packages all the action plans along with a statement from the Leadership Group affirming its support for the plans and reinforcing the message of collaboration and civic entrepreneurship. A launch event can take many forms (e.g., town hall event, a series of forums, a conference). It is important to structure the event to maximize community participation, using it as a point of leverage for involving more people as the implementation process begins.

Step 8: Sustain & Expand Cluster Mobilization

At this stage, the transition must be made to an “implementation and information network.” It is important to establish and reinforce clear accountability for outcomes from the action plans. Ideally, a continuing Leadership Group should play this role. Moreover, a Leadership Group could replicate the mobilization process for other clusters of opportunity in the region.

In addition, with the appropriate support, cluster groups can be transformed into an “early warning” network of employers who agree to provide periodic updates about industry and occupational trends to the Leadership Group. Cluster groups can either meet in-person periodically, or virtually via email, conference calls, and the like. In fact, if enough regions engaged clusters and networked them, California could eventually develop a statewide, regionally-based network of cluster employers providing information that could help shape policy and planning.
Conclusions & Lessons Learned

The cluster mobilization process described here provides a roadmap for those who want to recruit cluster employers as partners in a shared effort to improve the region’s workforce and economic development. The general process should be customized to meet the specific needs of each region. In doing so, however, there are important lessons that have been learned through experience:

**Structured meetings discipline the process and retain cluster employers.** Carefully structured meetings that set priorities and build momentum keep people engaged. Each of the three working group meetings has an explicit outcome, and each meeting clearly builds on the previous meeting. The expectations are high, but achievable. The process respects the busy schedules of participants.

**Volunteers do emerge, sometimes from unlikely places.** If a mix of group leaders are invited and attend the meeting, volunteers will emerge to form action teams and move forward. Expect that volunteers could include individuals beyond those who are usually the most active civic leaders. Don’t assume that the large company leaders are the only ones who can champion an action team. Be opportunistic about finding and connecting new people to the process.

**Look for linkages among action teams and plans.** The objective of the process is not to create a proliferation of new organizations, a new infrastructure of action teams or small teams without implementation resources. Rather, the process is a means to an end; it serves as a means of surfacing priorities and experimenting to find the right structure to carry these priorities forward. Rarely is the first structure chosen the perfect structure for implementation. A common result of collaborative processes is a mix of group-specific initiatives and cross-cutting initiatives that are a combination of ideas and people from several action teams.

**The bottom line is actively engaged cluster employers and good measurable outcomes.** The bottom line in this process is the engagement of cluster employers who can help identify clear, compelling and achievable measurable outcomes and help drive them to create a short-term success and build momentum toward a longer-term goal.

**Cluster mobilization is an ongoing process.** An initial cluster mobilization process can produce a burst of implementation, but can also create a foundation for a new relationship between cluster employers, workforce development, economic development, and other community and regional entities. In fact, it is critical that explicit actions be taken to build on initial steps so that cluster employers are kept engaged as partners, providing a continuous flow of information about shifting trends and needs and a source of business leadership for the region.
Focusing on First Steps: Filling Out the “Action Template”

Use the following template to identify the specific steps that you will take to put clusters of opportunity information to work for your region.

At the first level of cluster engagement, describe how you will incorporate the information into planning, program development, resource allocation, and implementation decisions within your organizations (INDIVIDUAL COMMITMENTS), and among workforce and economic development entities (TEAM ACTIONS).

At the second level of cluster engagement, describe how you will adopt cluster mobilization as an organizational priority (INDIVIDUAL COMMITMENTS), and design and implement a cluster mobilization process with other team members (TEAM ACTIONS).

Below are examples of steps you might take to use clusters of opportunity information at each level.

Level 1: Incorporating Cluster Information into Decision-Making

**Strategic Planning**

- Establish a Regional Clusters of Opportunity Working Group from multiple workforce and economic development entities to develop a comprehensive Clusters of Opportunity dataset for use in strategic planning.
- Contact cluster employers through interviews, focus groups, surveys, etc., to validate and expand on the clusters of opportunity dataset.
- Include clusters of opportunity as part of the package of information used in strategic planning processes.
- Use regional clusters of opportunity dataset as the main context for the development of an annual strategic plan for the organization.
- Use clusters of opportunity as the organizing framework for strategic planning, with specific actions identified for each cluster.
- Build in an annual update to the clusters of opportunity dataset as a way to keep the information up-to-date and institutionalized into the planning process.
- Use the dataset as a common starting point for both workforce development and economic development planning.
Program Development

- Use clusters of opportunity information to impact the choice, design, and content of specific programs in workforce and/or economic development, such as education and training programs or economic development marketing initiatives.

- Structure your organization’s program development according to clusters of opportunity.

- Use clusters of opportunity information as the basis for collaborative decision-making in program development between workforce development and economic development entities.

Resource Allocation/Implementation

- Include clusters of opportunity as part of the package of information used in making individual decisions about implementation, such as funding and staff allocations.

- Use clusters of opportunity as the primary framework for making funding and staff allocation decisions within your organization.

- Use clusters of opportunity information as the basis for collaborative decision-making about resource allocation/implementation between workforce development and economic development entities.

Level 2: Cluster Mobilization

- Adopt “cluster mobilization” as a top organizational priority or goal for the coming year.

- Establish a “design team” and, with the User Guide as a resource, develop a cluster mobilization process

- Launch a cluster mobilization process to create new partnerships in workforce and economic development

- Establish an “early warning” network of cluster employers who periodically provide insights into industry and occupational trends.

- Recruit cluster employers to serve on boards and in other organizational capacities.
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