DOCUMENT RESUME

ED 466 257 JC 020 460

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|---|---|
| TITLE | An Evaluation of California's Community College Based Economic Development Programs (ED>Net). |
| INSTITUTION | Bowman (James) Associates, San Francisco, CA. |
| SPONS AGENCY | California Community Colleges, Sacramento. Economic Development Coordination Network (EDNet). |
| PUB DATE | 2000-03-01 |
| NOTE | 118p.; Research conducted by Thomas/Lane & Associates (TLA). |
| PUB TYPE | Numerical/Quantitative Data (110) -- Reports - Evaluative (142) |
| EDRS PRICE | MF01/PC05 Plus Postage. |
| DESCRIPTORS | *Community Colleges; Cooperative Programs; *Economic Development; Economic Impact; Institutional Cooperation; *Job Training; *Labor Force Development; School Business Relationship; Two Year Colleges |
| IDENTIFIERS | *California Community Colleges |

ABSTRACT

This study describes economic outcomes of California's ED>Net (California Community College Economic Network) program, an alliance between community colleges and California businesses. ED>Net's purpose is to advance the state's economic growth by providing job-related education and services to businesses and organizations. This report develops summative performance indicators (the program's impact in the economy) and formative indicators (the program's operating efficiency). Part 1 of the report describes ED>Net's Service Delivery Programs: (1) Regional Workforce Preparation and Economic Development; (2) Workplace Learning Centers; (3) Small Business Development Centers; (4) Centers for Applied Competitive Technology; (5) Centers for International Trade Development; (6) Advanced Transportation Technologies; (7) Industry Driven Regional Education and Training Collaboratives; and (8) Job Development Incentive Training Fund. Other programs described in Part 1 are Capacity Building Programs, Service Delivery and Capacity Building Programs, and Administration and Coordination Programs. Part 2 details the impact of ED>Net programs. From 1996 to 1997, the growth of median profitability per company receiving ED>Net services was 18%, while the growth rate of those not receiving services was 17.7%. A sampling of ED>Net participant companies showed that total employment increased by 6% from 1997 to 1998, while the increase in non-ED>Net companies was 0.9%. (NB)

AN EVALUATION OF

# California's Community College Based Economic Development Programs (ED>Net)

MARCH 1, 2000



THOMAS / LANE & ASSOCIATES
*IN ASSOCIATION WITH*
JAMES BOWMAN ASSOCIATES

## CONTENTS

## CONTENTS (CON'T)

# Acknowledgements

Numerous persons contributed to this report, and we are appreciative of the assistance they provided. We are particularly appreciative of Dave Jones, Ken Locke, and Mary Rippey of the Labor Market Information Division (LMID), Employment Development Department (EDD), for their assistance in generating the employment and wage and salary sample data for ED>Net companies and comparison companies. Laurence Gilbert and George Ramsey of the Franchise Tax Board (FTB) provided the same valuable assistance for the company gross profit data. Finally, Mike Wood of SmarTech Corporation provided invaluable help in getting access to the underlying structure of the Community College Chancellor's Office administrative database. Our thanks to them all.

The consultant team of Thomas/Lane & Associates (TLA) in association with James Bowman Associates (JBA) conducted this study. Study team principles were:

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# EXECUTIVE SUMMARY

## INTRODUCTION

THIS REPORT WAS PRODUCED FOR THE CALIFORNIA COMMUNITY COLLEGE ECONOMIC DEVELOPMENT NETWORK (ED>NET). IT CONTAINS INDICATORS OF THE PERFORMANCE AND IMPACT OF ED>NET PROGRAMS ON THE CALIFORNIA ECONOMY.

## PART 1: DESCRIPTION & PERFORMANCE OF ED>NET PROGRAMS

### SERVICE DELIVERY PROGRAMS

*Description*

ED>NET'S EIGHT SERVICE DELIVERY PROGRAMS OPERATED AT FIFTY FOUR COMMUNITY COLLEGE LOCATIONS DURING AY 1998-99 AND PROVIDED TRAINING AND TECHNICAL ASSISTANCE SERVICES TO 26,612 BUSINESSES/EMPLOYERS. TWENTY FOUR PERCENT WERE MINORITY OWNED. TWO-THIRDS HAD FEWER THAN 20 EMPLOYEES.

MOST OF THE BUSINESSES/EMPLOYERS SERVED WERE IN THE MANUFACTURING AND SERVICE SECTORS. THE THIRD MOST IMPORTANT SECTOR WAS WHOLESALE AND RETAIL TRADE, COMBINED.

THE PROGRAMS SERVED 19,386 STUDENTS AND 46,981 INCUMBENT WORKERS DURING AY 1998-99. AMONG THE STUDENTS FORTY FOUR PERCENT WERE FEMALE AND SIXTY FOUR PERCENT WERE MINORITIES. AMONG INCUMBENT WORKERS, THIRTY SIX PERCENT WERE FEMALE AND FIFTY SEVEN PERCENT WERE MINORITIES.

THE EIGHT SERVICE DELIVERY PROGRAMS FORMED 1,921 STRATEGIC PARTNERSHIPS DURING AY 1998-99. FORTY SEVEN PERCENT WERE IN THE PUBLIC SECTOR AND FIFTY THREE PERCENT WERE IN THE PRIVATE SECTOR.

*Performance*

During AY 1998-99, each of Ed Net's service delivery centers served an average of 814 participants and delivered 8,996 hours of technical assistance and training. In total, the direct service centers delivered 1,412,330 hours of training and technical assistance.

## CAPACITY BUILDING PROGRAMS

*Description*

ED>NET'S THREE CAPACITY BUILDING PROGRAMS PROVIDED IN-SERVICE TRAINING AND TECHNICAL ASSISTANCE SERVICES TO 2,485 COMMUNITY COLLEGE FACULTY DURING AY 1998-99. FIFTY FOUR PERCENT WERE FEMALE AND THIRTY SEVEN PERCENT WERE MINORITIES. THE CAPACITY BUILDING PROGRAMS ALSO PROVIDED SERVICE TO 2,375 CBO CLIENTS, OF WHICH FORTY PERCENT WERE FEMALE.

THE PROGRAMS FORMED 261 STRATEGIC PARTNERSHIPS DURING AY 1998-99. FORTY ONE PERCENT WERE IN THE PUBLIC SECTOR AND FIFTY NINE PERCENT IN THE PRIVATE SECTOR.

NINETY PERCENT OF THE SERVICES PROVIDED TO COMMUNITY COLLEGES BY ED>NET'S CAPACITY BUILDING PROGRAMS WERE IN THE FORM OF TECHNICAL ASSISTANCE.

*Performance*

DURING AY 1998-99, EACH OF ED NET'S TWENTY-THREE CAPACITY BUILDING CENTERS SERVED AN AVERAGE OF 1,000 CLIENTS AND DELIVERED 3,217 HOURS OF TECHNICAL ASSISTANCE AND TRAINING. IN TOTAL, THE CAPACITY BUILDING CENTERS DELIVERED 73,989 HOURS OF TRAINING AND TECHNICAL ASSISTANCE TO 22,997 EMPLOYERS, EMPLOYEES, STUDENTS AND FACULTY.

## SERVICE DELIVERY & CAPACITY BUILDING PROGRAMS

*Description*

ED>NET'S HAD TWO PROGRAMS DELIVERING BOTH SERVICE DELIVERY AND CAPACITY BUILDING SERVICES. THEY PROVIDED TRAINING AND TECHNICAL ASSISTANCE TO 6,990 BUSINESSES/EMPLOYERS AND COMMUNITY COLLEGES DURING AY 1998-99.

THE PROGRAMS SERVED 11,245 EMPLOYEES DURING AY 1998-99. FIFTY TWO PERCENT WERE MALE AND FORTY EIGHT PERCENT FEMALE.

THE PROGRAMS SERVED 579 COMMUNITY COLLEGE FACULTY AND 11,245 STUDENTS DURING AY 1998-99. ORGANIZATION AND STUDENT ASSESSMENTS WERE THE PRIMARY TYPE OF SERVICE PROVIDED.

THE SERVICE DELIVERY AND CAPACITY BUILDING PROGRAMS FORMED 179 STRATEGIC PARTNERSHIPS DURING AY 1998-99. THIRTY EIGHT PERCENT WERE IN THE PUBLIC SECTOR AND SIXTY TWO PERCENT IN THE PRIVATE SECTOR.

*Performance*

DURING AY 1998-99, EACH OF ED NET'S 15 CAPACITY BUILDING AND SERVICE DELIVERY CENTERS SERVED AN AVERAGE OF 1,692 PARTICIPANTS AND DELIVERED 5,701 HOURS OF TECHNICAL ASSISTANCE AND TRAINING. IN TOTAL, THEY DELIVERED 85,515 HOURS OF TRAINING AND TECHNICAL ASSISTANCE.

ADMINISTRATION & COORDINATION PROGRAMS

*Description*

ED>NET'S FIVE ADMINISTRATION AND COORDINATION PROGRAMS PROVIDED PROGRAM IMPROVEMENT, REGIONAL COORDINATION, REGIONAL ASSISTANCE, INFORMATION DISSEMINATION, AND COMMITTEE SUPPORT SERVICES TO COMMUNITY COLLEGES ENGAGED IN WORKPLACE LEARNING BASED ECONOMIC DEVELOPMENT DURING AY 1998-99. THE PROGRAMS PROVIDED IN-SERVICE TECHNICAL ASSISTANCE AND/OR TRAINING FOR 236 COMMUNITY COLLEGE FACULTY. SIXTY FIVE PERCENT WERE FEMALE AND TWENTY FOUR PERCENT WERE MINORITIES.

THE ADMINISTRATION AND COORDINATION PROGRAMS FORMED 176 STRATEGIC PARTNERSHIPS DURING AY 1998-99. FIFTY ONE PERCENT WERE IN THE PUBLIC SECTOR AND FORTY NINE PERCENT IN THE PRIVATE SECTOR.

*Performance*

DURING AY 1998-99, EACH OF ED NET'S TWENTY FIVE ADMINISTRATION AND COORDINATION CENTERS SERVED AN AVERAGE OF 982 CLIENTS AND DELIVERED 5,146 HOURS OF TECHNICAL ASSISTANCE AND TRAINING. IN TOTAL, THE CENTERS DELIVERED 128,650 HOURS OF TRAINING AND TECHNICAL ASSISTANCE.

## PART 2: THE IMPACT OF ED>NET PROGRAMS

COMPARATIVE GROWTH RATES FOR COMPANIES THAT DID AND DID NOT RECEIVE ED>NET SERVICES WERE CALCULATED FROM SAMPLES DRAWN FROM THE EMPLOYMENT DEVELOPMENT DEPARTMENT'S (EDD'S) UNEMPLOYMENT INSURANCE DATABASE AND THE FRANCHISE TAX BOARD'S (FTB'S) CORPORATE AND PERSONAL INCOME TAX DATABASE.

### EMPLOYMENT IMPACTS

TOTAL EMPLOYMENT AT COMPANIES RECEIVING COMMUNITY COLLEGE BASED ECONOMIC DEVELOPMENT SERVICES THROUGH THE ED>NET SYSTEM GREW AT AN AVERAGE ANNUAL RATE OF 7.4 PERCENT. COMPANIES NOT RECEIVING SERVICES THROUGH THE ED>NET SYSTEM GREW AT AN AVERAGE ANNUAL RATE OF 3.2 PERCENT. THE DIFFERENTIAL IN THE TWO GROUPS' AVERAGE ANNUAL EMPLOYMENT GROWTH RATES WAS 4.2 PERCENT. DURING AY 1998-99, THERE WAS A CUMULATIVE DIFFERENTIAL OF 4,465 DIRECT JOBS ASSOCIATED WITH COMPANIES RECEIVING ED>NET SERVICES. INCLUDING INDIRECT IMPACTS, THERE WAS A CUMULATIVE DIFFERENTIAL OF 8,448 JOBS ASSOCIATED WITH COMPANIES THAT RECEIVED ED>NET SERVICES.

### WAGE IMPACTS

WAGES PER WORKER AT COMPANIES RECEIVING COMMUNITY COLLEGE BASED ECONOMIC DEVELOPMENT SERVICES THROUGH THE ED>NET SYSTEM GREW AT AN AVERAGE ANNUAL RATE OF 7.3 PERCENT. WAGES AT COMPANIES NOT RECEIVING SERVICES GREW AT AN AVERAGE ANNUAL RATE OF 4.6 PERCENT. THE DIFFERENTIAL BETWEEN THE TWO GROUPS' AVERAGE ANNUAL WAGE GROWTH RATE WAS 2.7 PERCENTAGE POINTS.

THE AVERAGE ANNUAL WAGE OF WORKERS AT COMPANIES RECEIVING ED>NET SERVICES WAS $1,972 HIGHER THAN AT COMPANIES NOT RECEIVING ED>NET SERVICES. MULTIPLIED BY THE 58,226 WORKERS WHO RECEIVED ED>NET SERVICES, THERE WAS AN INCREASE IN DIRECT WAGES PAID OF $114.8 MILLION ANNUALLY ASSOCIATED WITH COMPANIES THAT RECEIVED ED>NET SERVICES. INCLUDING INDIRECT IMPACTS, THERE WAS A CUMULATIVE DIFFERENCE OF $195.9 MILLION IN ADDITIONAL WAGES ASSOCIATED WITH COMPANIES THAT RECEIVED ED>NET SERVICES.

GROSS PROFIT IMPACTS

WITH RESPECT TO GROSS PROFITS, THERE WERE SMALL DIFFERENCES IN THE MEDIANS AND CONFUSING TRENDS IN THE MEANS OF COMPANIES THAT DID AND DID NOT RECEIVE SERVICES THROUGH THE ED>NET SYSTEM. CONSEQUENTLY, THERE WAS NO SOUND BASIS FOR ASSERTING ANY SIGNIFICANT DIFFERENCE IN THE GROWTH RATE OF GROSS PROFIT BETWEEN COMPANIES THAT DO AND DO NOT RECEIVE ED>NET SERVICES.

BENEFIT/COST RATIO & FISCAL ROI

THE DOLLAR BENEFIT, FROM ALL SOURCES, ASSOCIATED WITH COMPANIES RECEIVING ED>NET SERVICES RANGED FROM A MINIMUM OF $262.2 MILLION TO A MAXIMUM OF $497.8 MILLION. THE MINIMUM ESTIMATE INCLUDES ONLY DIRECT BENEFITS. THE MAXIMUM ESTIMATE INCLUDES BOTH DIRECT AND INDIRECT BENEFITS.

THE BUDGET FOR ALL ED>NET COMMUNITY COLLEGE BASED ECONOMIC DEVELOPMENT PROGRAMS DURING AY 1998-99 WAS $33.1 MILLION.

ED>NET'S BENEFIT-COST RATIO CAN BE CALCULATED USING VARIOUS COMBINATIONS OF BENEFIT AND COST DEFINITIONS. THE MOST REASONABLE METHOD (SEE APPENDIX 1, METHODOLOGY) USES ED>NET'S MINIMUM BENEFIT ESTIMATE OF $262.2 MILLION AND ITS MINIMUM COST ESTIMATE OF $27.2 MILLION. THIS PRODUCES A BENEFIT COST RATIO OF 9.6.

BASED ON PERSONAL INCOME TAX RATES AND AVERAGE WORKER EARNINGS IN CALIFORNIA, THE ESTIMATED ANNUAL FISCAL RETURN ON INVESTMENT (ROI) ON ED>NET'S $33.1 MILLION BUDGET WAS BETWEEN NINETEEN PERCENT AND THIRTY FIVE PERCENT

FINALLY, THE METHODOLOGY OF THIS REPORT IS SUCH THAT THE ABOVE IMPACTS ARE ASSOCIATED WITH RECEIVING OR NOT RECEIVING ED>NET'S COMMUNITY COLLEGE BASED ECONOMIC DEVELOPMENT SERVICES, BUT THEY ARE NOT NECESSARILY CAUSED BY THOSE SERVICES. FOR EXAMPLE, SUCCESSFUL COMPANIES MAY MORE AGGRESSIVELY SEEK OUT SERVICES THAT CAN HELP THEM GROW, OR GROWING COMPANIES MAY NEED TO TRAIN THEIR EXPANDING WORKFORCES AND CONSEQUENTLY GO TO ED>NET FOR TRAINING AND TECHNICAL ASSISTANCE. IN BOTH THESE CASES, ED>NET'S SERVICES ARE RESPONDING TO, RATHER THAN CAUSING, DIFFERENTIAL GROWTH IMPACTS. WHETHER ED>NET SERVICES RESPOND TO OR

CAUSE THE DIFFERENTIAL GROWTH HOWEVER, THEY ARE STATISTICALLY ASSOCIATED WITH IT. *THE IMPACT OF ED>NET SERVICES IS CONSEQUENTLY DEFINED AS THE DIFFERENTIAL IN AN ECONOMIC VARIABLE (E.G., EMPLOYMENT GROWTH) ASSOCIATED WITH COMPANIES THAT RECEIVE COMMUNITY COLLEGE BASED ECONOMIC DEVELOPMENT SERVICES.*

# Introduction

This report was produced for the California Community College Economic Development Network (ED>Net). It develops indicators of the performance and impact of ED>Net programs on the California economy. ED>Net's purpose is to advance the state's economic growth by providing job-related education and services to businesses and organizations. By so doing, it contributes to the accumulation of human capital (knowledge, skills) by California's labor market participants. This human capital, in turn, helps make state employers globally competitive by increasing productivity, reducing costs and allowing the efficient production of knowledge intensive products/services.

Performance indicators provide information about both (a) a program's impact on the economy and (b) it's operating efficiency. Indicators that address the first type of information (impacts) are called summative performance indicators. Indicators that address the second type of information (operating efficiency) are called formative indicators.

Useful indicators report information directly relevant to what is being assessed. Summative indicators provide information about the macro-outcomes produced by a policy. This type of information is normally most valuable to legislatures, executives, or others primarily concerned with policy formulation. Formative indicators provide information about the micro-operating efficiencies and effectiveness of programs through which policy is implemented. This type of information is normally most valuable to program managers and administrators.

Both types of indicators are needed to get a complete picture. Summative indicators tell whether or not a policy is producing the types of impacts for which it was designed. Formative indicators tell whether or not the programs implementing the policy are well managed. The two types of information are related. A policy that is not producing intended outcomes could imply policy failure (i.e., there is no association between the actions taken and results desired), or it could imply poor management (i.e., the programs used to implement the policy used resources wastefully). This report consequently begins with a description of each ED>Net program and a presentation of its performance indicators.

An additional methodological issue relates to the structure and organization of the programs that constitute the ED>Net system. A program will have different output based on its maturity and stage of development. When a new initiative is established, it will initially go through a stage of developing curriculum and training faculty and staff. During this period the initiative's output is the building of capacity within the community college system.

Next will come a stage during which some community colleges begin offering the services of the new initiative to California companies while, at the same time, capacity building is continuing at

other community colleges. During this period the initiative's output is both the building of capacity within the community college system and the delivery of service to companies.

The initiative's final stage occurs when there are no further changes in its mission or purpose, training of faculty and staff at all community colleges interested in participating is completed, and the total effort of the initiative is directed toward service delivery. During this period, the initiative's total output is the delivery of service to California companies.

Stages of maturation also influence the definition and selection of appropriate formative performance measures. During a program's capacity building stage, the formative assessment indicators should reflect the *effectiveness* of capacity building. This involves the time and costs required to develop curricula and/or train staff, identify the community colleges wanting to participate in the program, identify industry's specification of its service delivery requirements, and other similar actions.

During its service delivery stage, the formative assessment indicators should reflect the program's service delivery *efficiency*. Measurement should embody some concept of optimum resource utilization.

During the stage when a program is operating in both the capacity building and service delivery stages, appropriate formative indicators have to capture both concepts - effectiveness and efficiency.

Finally, some ED>Net programs engage in neither capacity building nor service delivery. Rather, they manage, administer and coordinate the community college based economic development network. These activities are overhead to the entire system.

This report is organized as follows. Part I contains four chapters that present descriptive statistics and the formative indicators for each ED>Net Program. Chapter 1 presents this information for programs primarily involved in service delivery, Chapter 2 for capacity building programs, Chapter 3 for programs engaged in both service delivery and capacity building, and Chapter 4 for programs that manage, administer and coordinate community college based economic development.

Part II contains six chapters that present the estimated impact of ED>Net programs on the California economy. Chapter 5 presents the estimated direct and total (direct plus indirect) employment impacts associated with ED>Net programs. Chapter 6 presents the estimated direct and total wage and salary impacts. Chapter 7 presents the estimated direct and gross profit impacts. Chapter 8 uses these impact estimates to calculate ED>Nets benefits and costs, and Chapter 9 calculates ED>Net's fiscal return on investment (ROI)..

The six Appendices that follow the body of this report present information on the report's methodology, statistical data, sampling procedures, data organization and sources.

# Part I

## DESCRIPTION & FORMATIVE PERFORMANCE OF ED>NET PROGRAMS

## CHAPTER 1 Service Delivery Programs

### 1.1 Regional Workforce Preparation & Economic Development

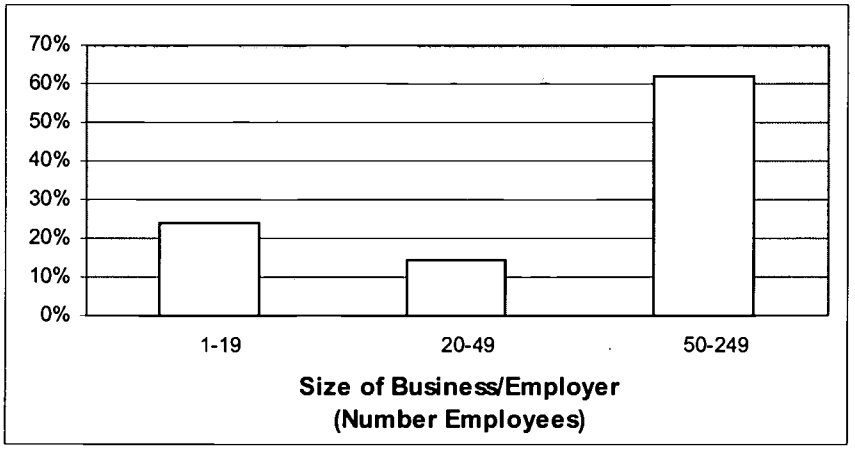
*Program Description*

Regional Workforce Preparation & Economic Development Act (Chancellor's Office Program Number 043) is a new program authorized for the first time during the second half of academic year (AY) 1997-98. Initiated by the federal government, RWPED is designed to provide workforce development services to California's workers and employers through cooperative planning among the Community Colleges, the Department of Education, the Health and Human Services Agency and the Trade and Commerce Agency.

The program operated at six community college locations during AY 1998-99 and delivered service to sixteen employers. The majority of these employers employed between 50 and 249 workers. Most (sixty one percent) of the employers were government agencies or organizations, with the balance distributed among manufacturing (fifteen percent), services (fourteen percent) and wholesale trade (ten percent).

FIGURE 1-1

Size Distribution of Employers Served by the Regional Workforce Preparation & Economic Development

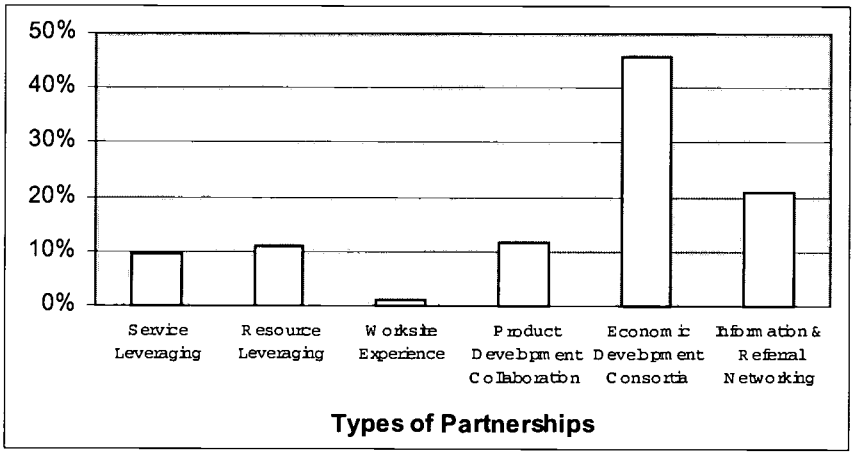



Program

*(Source: Chancellor's Office Administrative Database)*

The program formed 112 strategic partnerships during AY 1998-99, seventy nine percent in the public sector and twenty one percent in the private sector. Most of the partnerships were in the form of economic development consortia.

FIGURE 1-2
Distribution of Strategic Partnerships Formed by the Regional Workforce Preparation Program




*(Source: Chancellor's Office Administrative Database)*

The program served 134 employees, forty percent of whom were male and sixty percent female. The ethnic/racial composition of the employees served was sixty percent white, nineteen percent black, and ten percent Hispanic and Asian.

*Performance Indicators*

The average Regional Workforce and Economic Development Act Center gave 291 hours of service to 37 participants during AY 1998-99. The Centers provided each participant with an average of 7.8 hours of service either through training programs or workshops.

TABLE 1-1
PERFORMANCE INDICATORS: REGIONAL WORFORCE PREPARATION ECONOMIC DEVELOPMENT ACT

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Training** | | |
| **Workshops** | 35 | 266 |
| **Training Program** | 3 | 25 |
| Indicator | | |
| Total Activity per Center | 37 | 291 |

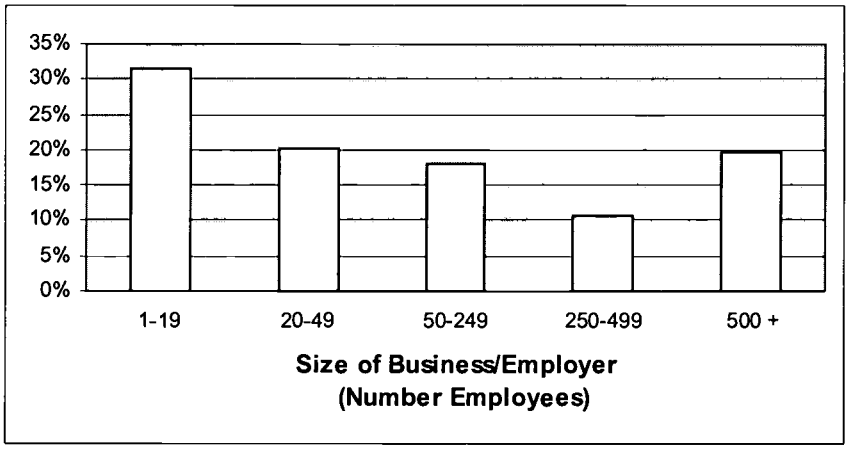
*(Source: Chancellor's Office Administrative Database)*

### 1.2 Workplace Learning Resource Centers

*Program Description*
Workplace Learning Resource Centers (Chancellor's Office Program Number 135) conduct workplace assessments and provide workforce skills and basic education services to small and medium size companies in California. The program operated at twelve community college sites.

The program served a total of 941 businesses/employers during AY 1998-99. Eight percent were women owned, eight percent minority owned, and nine percent were community-based organizations. Fifty-one percent employed fewer than fifty workers, and twenty percent employed over 500 workers.

FIGURE 1-3
Size Distribution of Employers Served by the Workplace Learning Resource Centers




*(Source: Chancellor's Office Administrative Database)*

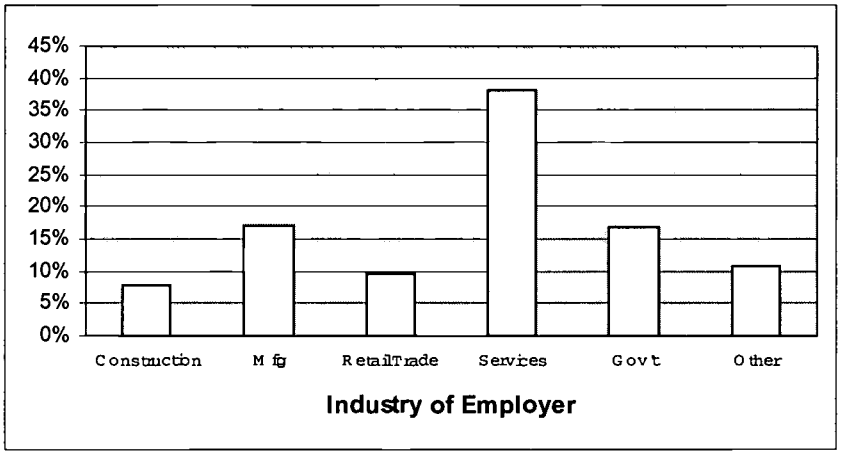
Most of the businesses/employers served were in service sector (thirty eight percent), manufacturing sector (seventeen percent) or government sector (seventeen percent).

The Workplace Learning Centers served a total of 3,446 students during AY 1998-99. Thirty eight percent were male and sixty two percent were female. Thirty seven percent of the students were white, twenty nine percent Hispanic, sixteen percent Asian, six percent black and thirteen percent other/unknown.

The Centers provided service to 7,521 employees. Fifty nine percent were male and forty one percent female. Forty one percent of the employees were white, thirty percent Hispanic, eight percent Asian, ten percent black and eleven percent other/unknown.

FIGURE 1-4

Industry Distribution of Employers Served by the Workplace Learning Resource Centers

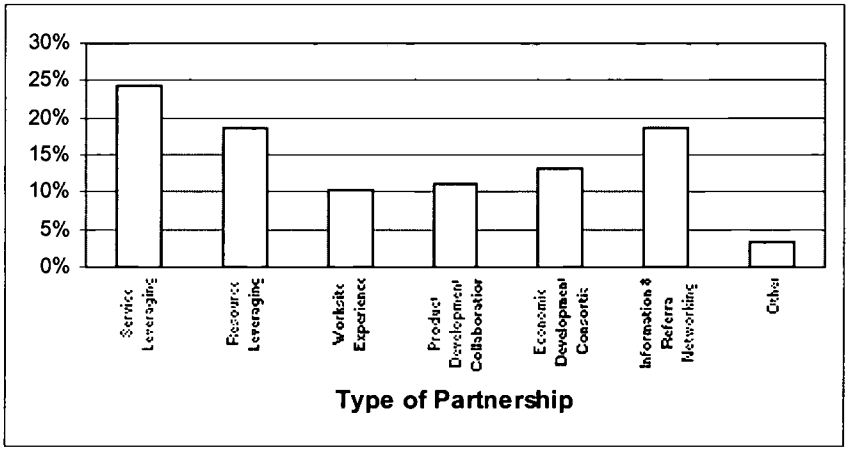



*(Source: Chancellor's Office Administrative Database)*

The Workplace Learning Centers entered into 230 strategic partnerships during AY 1998-99. Forty eight percent were in the public sector and fifty two percent in the private sector.

FIGURE 1-5

Distribution of Strategic Partnerships Formed by Workplace Learning Resource Centers




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Workforce Learning Center gave 56,754 hours of technical assistance and training to 1,607 participants during AY 1998-99. An average participant received of 35.3 hours of service.

A total of 725 hours of technical assistance were delivered - fourteen percent of all service hours - with tasks divided between organizational assessments (fifty five percent) and learning laboratories (forty five percent). A total of 56,030 hours of training were provided, primarily given at the workplace through a training program (fifty nine percent) and secondarily through specialized workshops (twenty eight percent).

TABLE 1-2
PERFORMANCE INDICATORS: WORKFORCE LEARNING RESOURCE CENTERS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Organization Assessments** | **250** | **399** |
| **Learning Laboratories** | **42** | **326** |
| **Training** | | |
| **Workshops** | **320** | **15,821** |
| **Alternative Courses** | **274** | **2,054** |
| **Regular Courses** | **198** | **5,086** |
| **Training Program** | **523** | **33,069** |
| Indicators | | |
| Total Activity per Center | 1,607 | 56,754 |

*(Source: Chancellor's Office Administrative Database)*

### 1.3 Small Business Development Centers

*Program Description*

The Small Business Development Centers (Chancellor's Office Program Number 143) provide free one-on-one counseling, workshops, seminars, and training programs for small and medium size businesses in California. The SBDCs also provide information and referral services and technical assistance tailored to the specific needs of small business.

During AY 1998-99, thirty-three SBDCs operated in California, of which eighteen were funded (in part) by ED>Net and operated at community college locations.[1] The eighteen ED>Net supported SBDCs served a total of 12,109 employers/businesses, of which 4,043 (thirty three percent) were start-up companies. Almost all (ninety seven percent)of the businesses/employers

1 All of the SBDCs received funding support from the Small Business Administration, U.S. Department of Commerce. Eighteen of them received funding from both ED>Net and SBA.

served had fewer than twenty workers. Only one percent had fifty workers or more. About half (forty eight percent) were CBOs, and forty two percent were minority owned.

Over half (fifty three percent) of the employers/businesses served by ED>Net-supported CBDCs during AY 1998-99 were in the service sector. Nineteen percent were in retail trade and eighteen percent were in manufacturing.

FIGURE 1-6

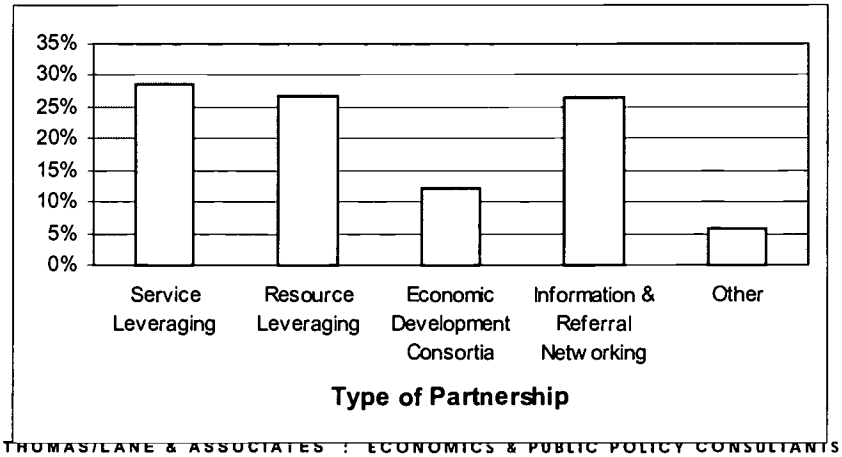
Industry Distribution of Employers Served by Small Business Development Centers


*(Source: Chancellor's Office Administrative Database)*

The eighteen ED>Net supported SBDCs served a total of 9,966 employees during AY 1998-99. Half were male (fifty percent) and half female. Fifty nine percent of the employees served were white, sixteen percent Hispanic, eight percent Asian, fourteen percent black and two percent other/unknown.

FIGURE 1-5

Distribution of Strategic Partnerships Formed by Small Business Development Centers



(Source: Chancellor's Office Administrative Database)

The ED>Net supported SBDCs engaged in 148 strategic partnerships during AY 1998-99. Sixty-three percent were public and thirty-seven percent private.

*Performance Indicators*

The average Small Business Development Center gave 5,840 hours of technical assistance and training to 1,589 participants. Each participant received an average of 3.7 hours of service. One-on-one technical assistance was given to 659 participants, of whom sixty percent were new. A total of 2,872 hours of training were given. Most training (ninety three percent) was given in workshops for small businesses and non-profit organizations, with each participant receiving about 4 hours of training.

TABLE 1-3
PERFORMANCE INDICATORS: SMALL BUSINESS DEVELOPMENT CENTERS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **One on One / New** | **395** | **1,034** |
| **One on One /Ongoing** | **264** | **1,934** |
| **Training** | | |
| **Workshops** | **889** | **2,667** |
| **Training Program** | **33** | **166** |
| **Train the Trainer** | **9** | **39** |
| Indicators | | |
| Total | 1,589 | 5,840 |

(Source: Chancellor's Office Administrative Database)

### 1.4 Centers for Applied Competitive Technologies

*Program Description*

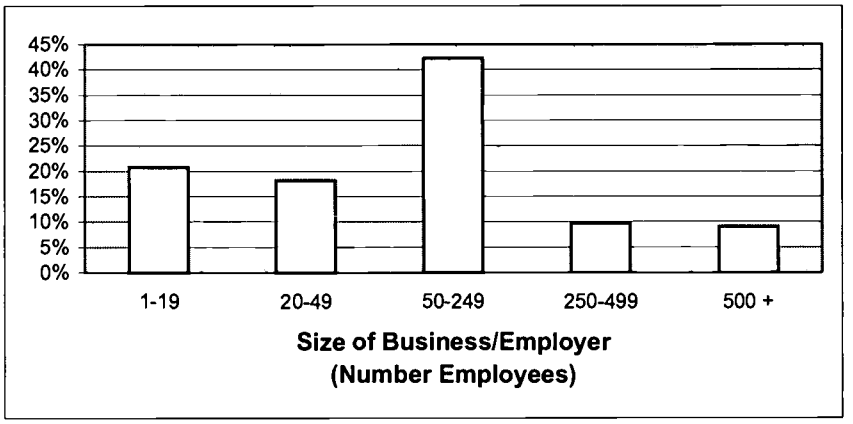
Centers for Applied Competitive Technologies (Chancellor's Office Program Number 144) provide training and technical assistance related to computer-integrated manufacturing and process technology to small and medium size companies in California.

The program operated at fourteen community college locations during AY 1998-99 and provided training and technical assistance to 4,125 businesses/employers. Over eighty percent of these employers had fewer than 250 employees.

Eighty three percent of the businesses/employers served were in manufacturing, with most (sixty-eight of the eighty three percent) engaged in durable goods manufacturing. Services was the only other sector accounting for ten percent or more of businesses/employers served.

FIGURE 1-6

Size Distribution of Employers Served by Centers for Applied Competitive Technologies

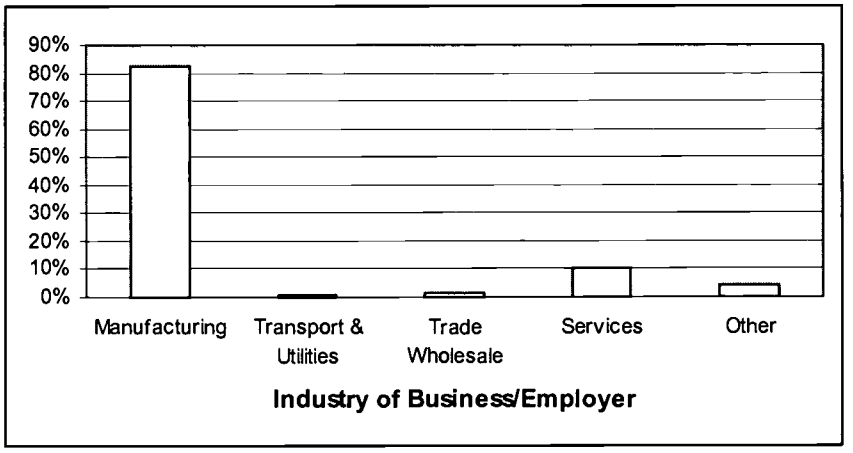



*(Source: Chancellor's Office Administrative Database)*

The Centers for Applied Technologies formed 122 strategic partnerships during AY 1998-99. Thirty six percent were in the public sector and sixty four percent in the private sector. About half (forty seven percent) of the partnerships leveraged either services or resources.

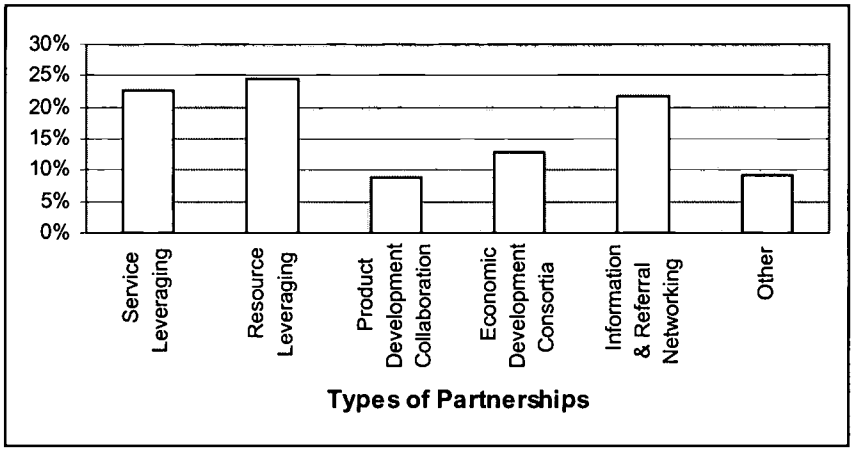
FIGURE 1-7

Industry Distribution of Employers Served by Centers for Applied Competitive Technologies




*(Source: Chancellor's Office Administrative Database)*

FIGURE 1-8




Distribution of Strategic Partnerships Formed by Centers for Applied Competitive Technologies

*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Center for Competitive Technology gave 21,047 hours of technical assistance and training to 1,916 participants during AY 1998-99. The average participant received eleven hours of service.

A total of 6,816 hours of technical assistance were provided, with most services hours divided between information services (fifty nine percent) and technical assistance (thirty percent). A total of 13,474 hours of training were provided, with most of it concentrated in contract training.

TABLE 1-4
PERFORMANCE INDICATORS: CENTERS FOR APPLIED COMPETITIVE TECHNOLOGIES

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Demonstrations** | **110** | **161** |
| **Technical Assistance** | **162** | **2,077** |
| **Information Services** | **778** | **4,021** |
| **Assessments** | **154** | **557** |
| **Training** | | |
| **Workshops** | **302** | **1,953** |
| **Train the Trainer** | **20** | **344** |
| **Contract Training** | **390** | **11,177** |
| Indicators | | |
| Total Activity per Center | 1,916 | 20,290 |

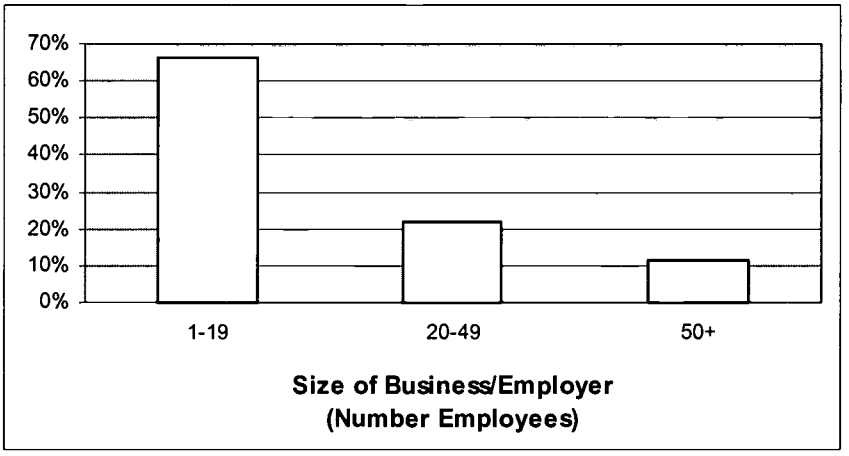
*(Source: Chancellor's Office Administrative Database)*

### 1.5 Centers for International Trade Development

*Program Description*
Centers for International Trade Development (Chancellor's Office Program Number 145) provide training and technical assistance to small and medium size companies in California that are currently engaged in international trade or are considering entering into international trade.

The program operated at fourteen community college locations during AY 1998-99 and provided training and technical assistance to 2,797 businesses/employers. About two-thirds (sixty six percent) of these employers had fewer than 20 employees. Almost a third (thirty one percent) were minority owned.

FIGURE 1-9
Size Distribution of Employers Served by Centers for International Trade Development

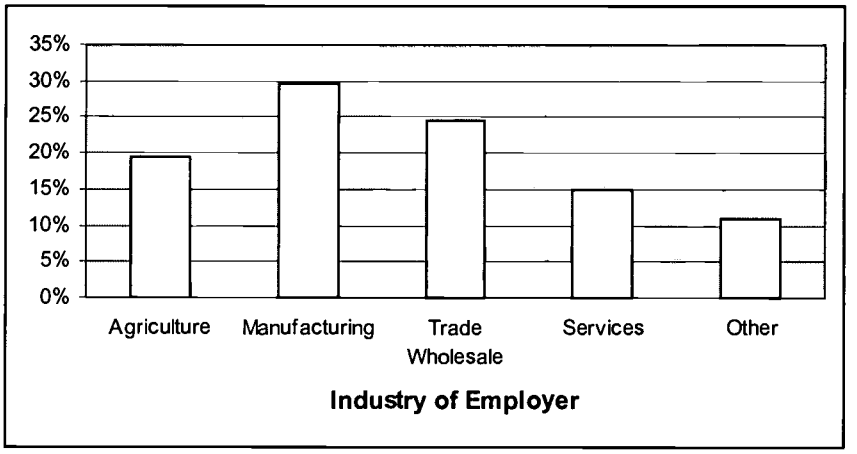



*(Source: Chancellor's Office Administrative Database)*

Businesses/employers served by International Trade Development Centers during AY 1998-99 were concentrated in manufacturing (thirty percent), wholesale trade (twenty five percent), agriculture (nineteen percent) and services (fifteen percent).

FIGURE 1-10

Industry Distribution of Employers Served by Centers for International Trade Development

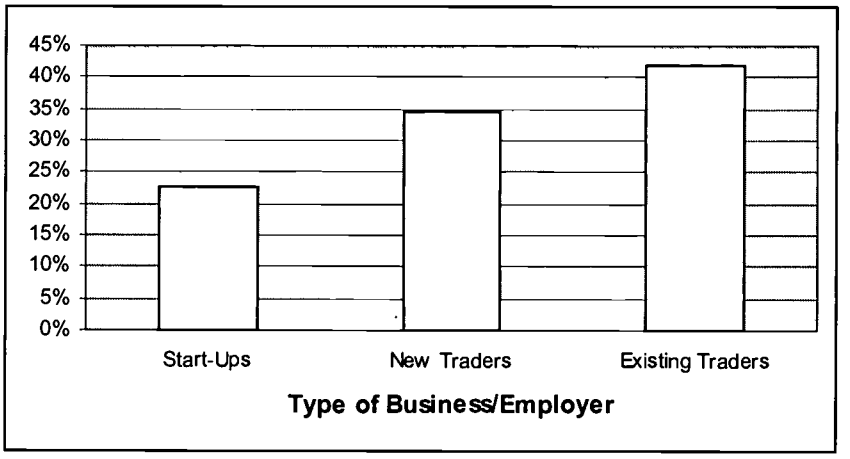



*(Source: Chancellor's Office Administrative Database)*

The International Trade Development centers provided service to both start-up companies targeting international markets, and existing California companies trying to either enter international trade or expand their international markets.

FIGURE 1-11

Types of Employers Served by Centers for International Trade Development



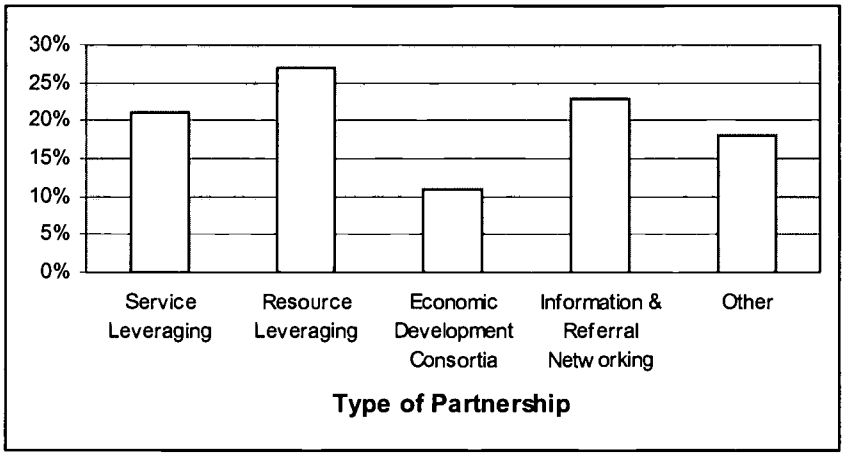

*(Source: Chancellor's Office Administrative Database)*

Among start-up businesses served, forty three percent were female owned and fifty one percent were minority owned. Among businesses new to international trade, thirty three percent were

female owned and forty five percent were minority owned. Among existing international trading businesses, thirty two percent were female owned and forty three percent were minority owned.

The International Trade Development Centers formed 230 strategic partnerships during AY 1998-99. Fifty five percent were in the public sector and forty five percent were in the private sector.

FIGURE 1-11
Types of Employers Served by Centers for International Trade Development




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Center for International Trade gave 2,065 hours of technical assistance and training to 1,812 participants during AY 1998-99. The average participant received 1.15 hours of service. A total of 659 hours of technical assistance - thirty two percent of all service hours - was given on a one-on-one basis to participants. New participants accounted for forty percent of total technical assistance hours provided. A total of 1,395 hours of training workshops were provided.

TABLE 1-5
CENTERS FOR INTERNATIONAL TRADE

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **One on One / New Clients** | **134** | **262** |
| **One on One /Ongoing Clients** | **90** | **397** |
| **Information Services** | **1,300** | |
| **Training** | | |
| **Workshops** | **252** | **869** |
| **Training Program** | **32** | **525** |
| **Train the Trainer** | **3** | **13** |
| Indicators | | |
| Total Activity per Center | 3,112 | 2,065 |

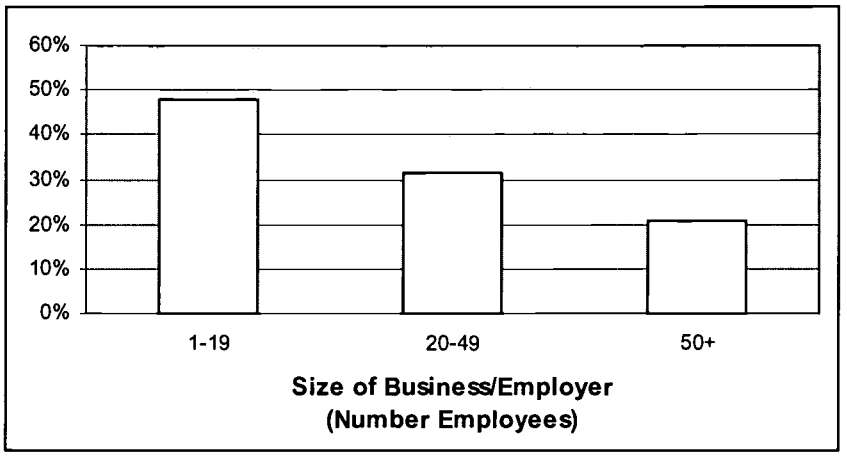
*(Source: Chancellor's Office Administrative Database)*

## 1.6 Advanced Transportation Technologies

*Program Description*
The Advanced Transportation Technologies program (Chancellor's Office Program Number 198) provides training in workplace skills required to service, convert, repair and maintain low emission vehicles.

The program operated at fourteen community college locations during AY 1998-99 and provided training and technical assistance to 910 businesses/employers. Almost half (forty eight percent) of these employers had fewer than 20 employees.

FIGURE 1-12
Size Distribution of Employers Served by Advanced Transportation Technologies Program

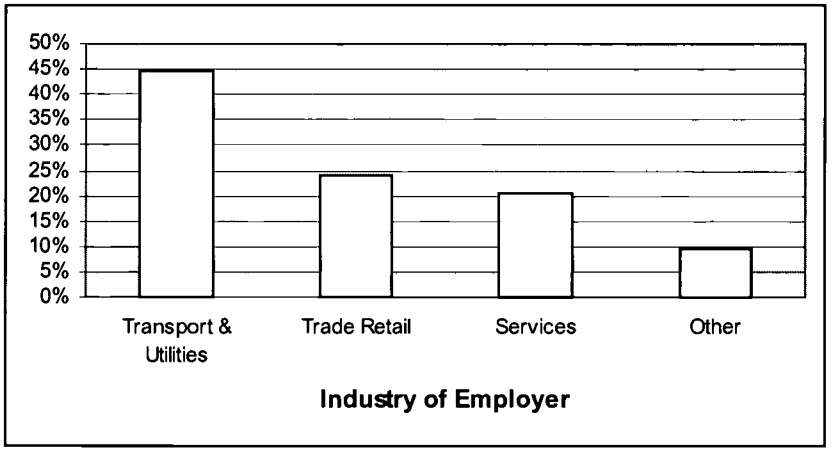



*(Source: Chancellor's Office Administrative Database)*

Almost half (forty five percent) of the businesses/employers served by the Advanced Automotive Technologies program during AY 1998-99 were in the transportation and utilities industry. Retail trade employers/businesses made up almost a quarter (twenty four percent) of those served, and service businesses/employers just over a fifth (twenty one percent).

FIGURE 1-13

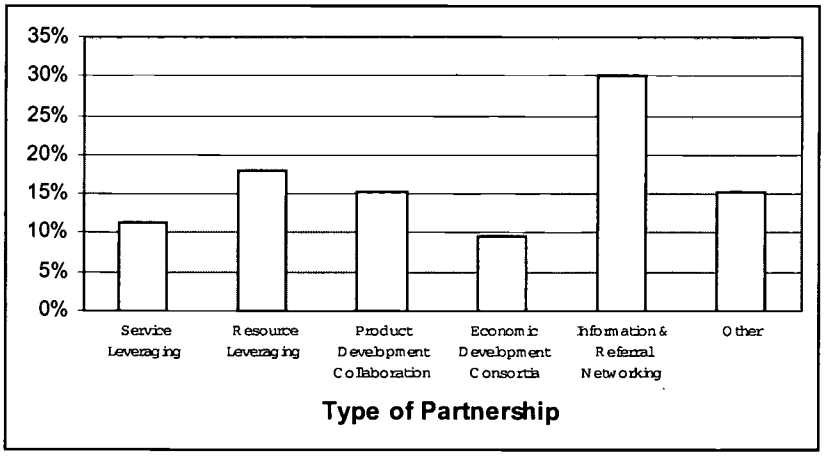
Industry Distribution of Employers Served by Advanced Transportation Technologies Program




*(Source: Chancellor's Office Administrative Database)*

FIGURE 1-14

Distribution of Strategic Partnerships Formed by Advanced Transportation Technologies Program




*(Source: Chancellor's Office Administrative Database)*

The program served 236 students during AY 1998-99, ninety six percent of whom were male and fifty six percent minority. It provided service to 4,313 employees, ninety four percent of whom were male and eighty eight percent minority.

The Advanced Automotive technologies program formed 131 strategic partnerships during AY 1998-99. Forty seven percent were with public sector organizations and fifty three percent private sector.

*Performance Indicators*

The average Center for Advanced Transportation Technology gave 4,862 hours of technical assistance and training to 809 participants during AY 1998-99. An average participant received six hours of service.

A total of 2,872 hours of technical assistance were provided - fifty nine percent of all service hours. Technical assistance was delivered primarily through demonstrations. A total of 1,991 hours of training were given - primarily given through regular courses.

TABLE 1-6
PERFORMANCE INDICATORS: CENTERS FOR ADVANCED TRANSPORTATION TECHNOLOGY

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Demonstrations** | **557** | **2,640** |
| **Technical Assistance** | **64** | **232** |
| **Training** | | |
| **Workshops** | **98** | **666** |
| **Train the Trainer** | **9** | **36** |
| **Regular Courses** | **36** | **735** |
| **Training Program** | **27** | **465** |
| **Contract Training** | **10** | **85** |
| Indicators | | |
| Total Activity per Center | 809 | 4,862 |

*(Source: Chancellor's Office Administrative Database)*

### 1.7 Industry Driven Regional Education & Training Collaboratives

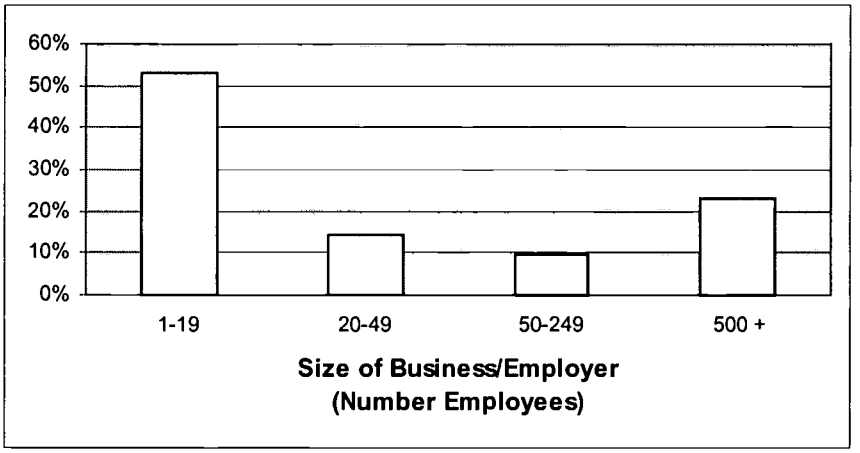
*Program Description*

The Industry Driven Regional Education & Training Collaborative program (Chancellor's Office Program Number 228) provides training and educational services to a single industrial cluster of small and medium size businesses concentrated in a single geographic region.

The program operated at fifty-four community college locations during AY 1998-99 and provided training and technical assistance to 4,521 businesses/employers. Over half (fifty three percent) of the employers had fewer than 20 employees.

FIGURE 1-15

Size Distribution of Businesses/Employers Served by Industry Driven Regional Education & Training Collaboratives




*(Source: Chancellor's Office Administrative Database)*

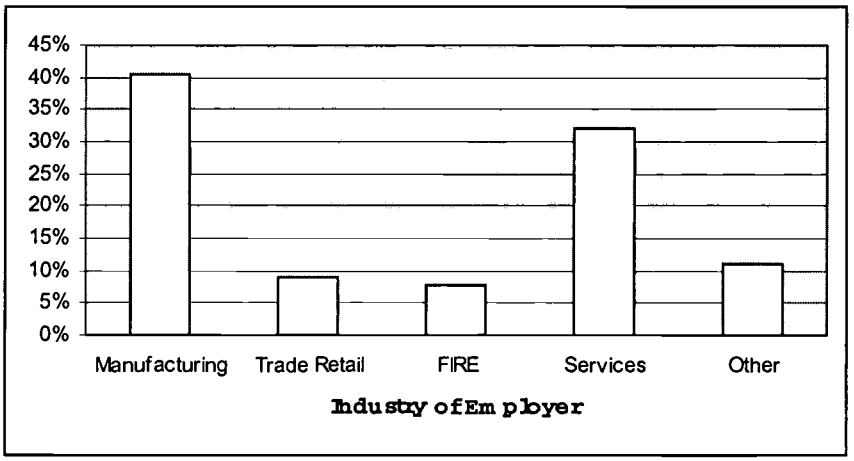
Forty percent of the businesses/employers served during AY 1998-99 by the Industry Driven Regional Education & Training Collaboratives were in the manufacturing sector, primarily in non-durable goods manufacturing. The next largest concentration (thirty two percent) was in the service sector.

The Industry Driven Regional Education & Training Collaboratives provided training services to 11,818 students and 7,384 incumbent employees during AY 1998-99. Among the students, fifty nine percent were male and forty one percent female. Fifty seven percent of the students were minorities. Among the incumbent workers, sixty two percent were male and thirty eight percent female. Forty nine percent were minorities.

The Collaboratives formed 576 strategic partnerships in AY 1998-99.

FIGURE 1-16

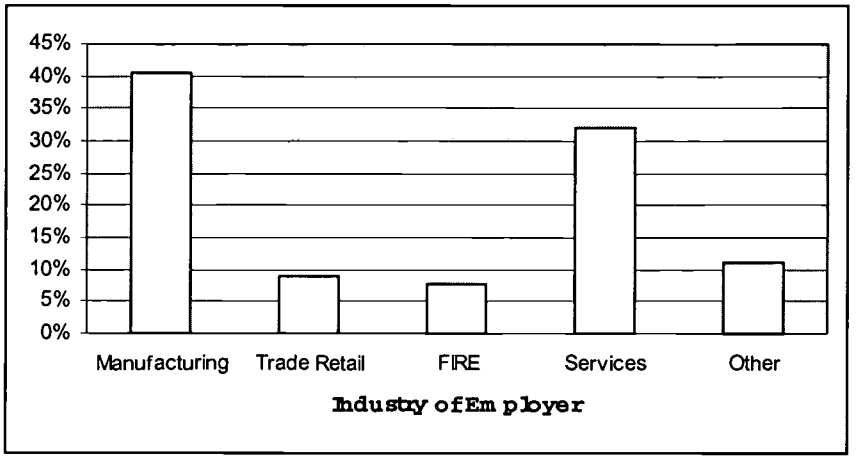
Industry Distribution of Businesses/Employers Served by Industry Driven Regional Education & Training Collaboratives




*(Source: Chancellor's Office Administrative Database)*

Figure 1-17

Strategic Partnerships Formed by Industry Driven Regional Education & Training Collaboratives




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Industry Driven Regional Collaborative gave 4,169 hours of training to 270 participants during AY 1998-99. The average participant received 15 hours of service. The majority of the training (eighty six percent) was given in regular college courses.

TABLE 1-7
PERFORMANCE INDICATORS: INDUSTRY DRIVEN REGIONAL EDUCATION & TRAINING COLLABORATIVES

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Training** | | |
| **Workshops** | **53** | **117** |
| **Alternative Courses** | | **597** |
| **Regular Courses** | **108** | **3,574** |
| **Training Program** | **102** | **359** |
| **Train the Trainer** | **9** | **120** |
| Indicators | | |
| Total Activity per Center | 271 | 4,169 |

*(Source: Chancellor's Office Administrative Database)*

### 1.8 Job Development Incentive Training Fund

*Program Description*

The Job Development Incentive Training Fund program (Chancellor's Office Program Number 230) provides workforce training to incumbent workers of small and medium size businesses as an incentive for them to create entry-level positions for welfare recipients.

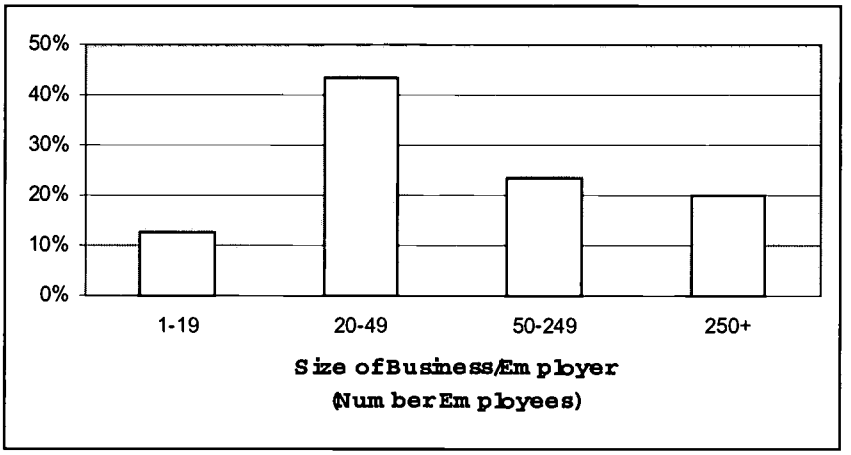
The program operated at twenty-nine community college locations during AY 1998-99 and provided training services to 1,193 businesses/employers. Over half (fifty six percent) of the employers had fewer than 50 employees.

Forty seven percent of the businesses/employers served by the Job Development Training Fund program during 1998-99 were in manufacturing; mostly in durable goods manufacturing. The service sector accounted for twenty seven percent of all businesses/employers served.

The Job Development Training Fund Program provided training services to 3,871 students and 4,593 incumbent workers during AY 1998-99. Fifty nine percent of the students were male and forty one percent female. Eighty five percent were minorities. Among the incumbent employees, fifty eight percent were male and forty two percent female. Forty two percent were minorities.

FIGURE 1-18

Size Distribution of Businesses/Employers Served by the Job Development Training Fund Program

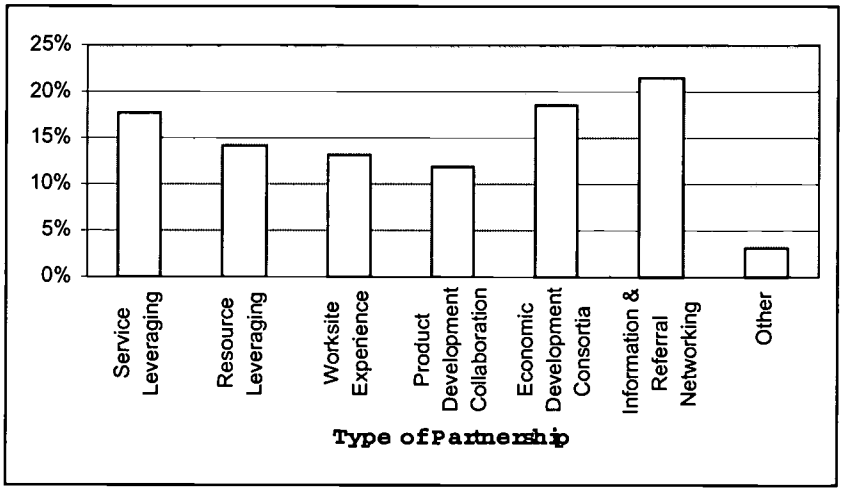



(SOURCE: CHANCELLOR'S OFFICE ADMINISTRATIVE DATABASE)FIGURE 1-18

The Job Development Incentive Training Fund program formed 372 strategic partnerships during AY 1998-99. Forty percent were with public organizations and sixty percent were with private organizations.

FIGURE 1-20

Types of Strategic Partnerships Formed by the Job Development Training Fund Program




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Job Development Training Fund Program gave 1,304 hours of training to 191 participants during AY 1998-99. Participants received an average of 6.8 hours of training. The majority of the training (eighty percent) was given in specialized training programs.

TABLE 1-7
PERFORMANCE INDICATORS: JOB DEVELOPMENT TRAINING FUND

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Training** | | |
| **Workshops** | **99** | **159** |
| **Alternative Courses** | | **22** |
| **Regular Courses** | **12** | **46** |
| **Training Program** | **74** | **1,051** |
| **Train the Trainer** | **7** | **25** |
| Indicators | | |
| Total Activity per Center | 191 | 1,304 |

*(Source: Chancellor's Office Administrative Database)*

### 1.9 Summary: ED>Net's Service Delivery Programs

*Program Description*

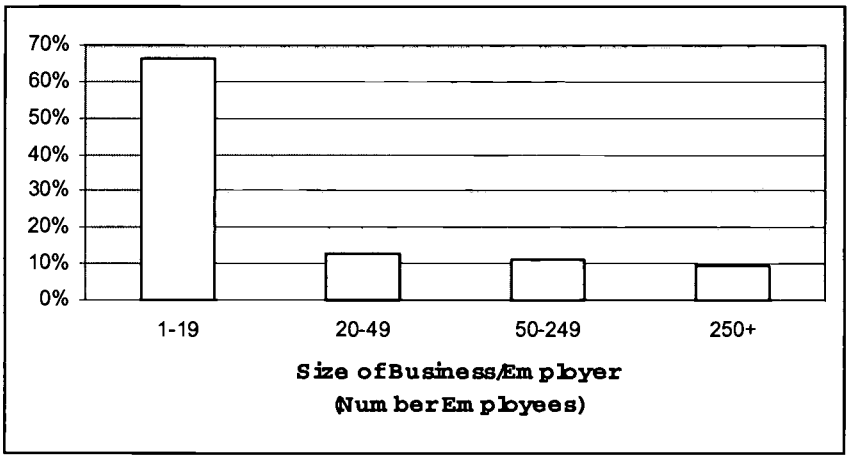
ED>Net's eight service delivery programs operated at fifty four community college locations during AY 1998-99 and provided training and technical assistance services to 26,612 businesses/employers. Twenty four percent were minority owned. Two-thirds had fewer than 20 employees.

Among the businesses/employers served, 4,658 (eighteen percent) were start-up companies. Of these, forty eight percent were women owned and fifty five percent were minority owned. There were 2,138 businesses/employers (nine percent) engaged in international trade. A third (thirty two percent) of the international trading businesses/employers were women owned. Forty six percent were minority owned.

Most of the businesses/employers served by ED>Net's service delivery programs were in either the manufacturing (thirty four percent) or service (thirty six percent) sectors. Wholesale and retail trade, combined, accounted for an additional eighteen percent. All other industries together accounted for the remaining twelve percent.

FIGURE 1-21

Size Distribution of Businesses/Employers Served By ED>Net's Service Delivery Programs

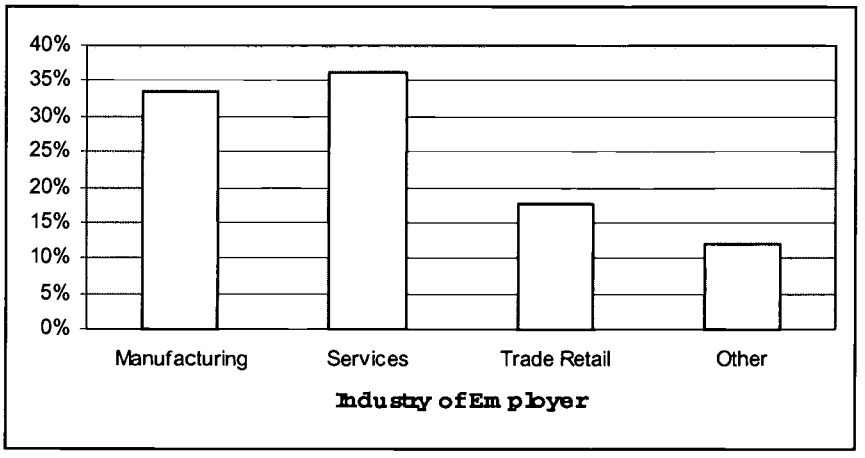



*(Source: Chancellor's Office Administrative Database)*

The eight service delivery programs served 19,386 students and 46,981 incumbent employees during AY 1998-99. Among the students, forty four percent were female and sixty four percent were minorities. Among incumbent employees, thirty six percent were female and fifty seven percent were minorities.

FIGURE 1-22

Industry Distribution of Businesses/Employers Served By ED>Net's Service Delivery Programs

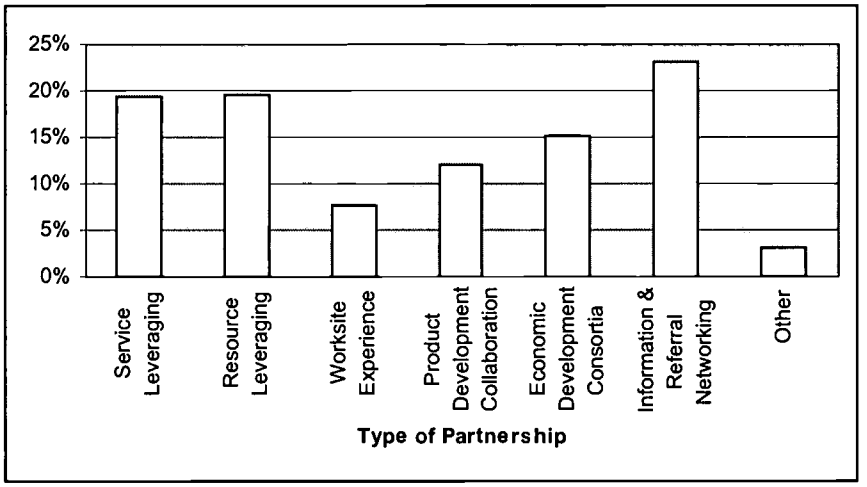



*(Source: Chancellor's Office Administrative Database)*

ED>Net's eight service delivery programs formed 1,921 strategic partnerships during AY 1998-99. Forty seven percent were in the public sector and fifty three percent were in the private sector. The most prevalent forms of partnerships were information and referral networking (twenty three percent), resource leveraging (twenty percent) and service leveraging (nineteen percent).

FIGURE 1-23

Types of Strategic Partnerships Formed by ED>Net's Service Delivery Programs




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

In AY 1998-99 each of Ed Net's service delivery centers served an average of 814 participants and delivered 8,996 hours of technical assistance and training. In total, the direct service centers delivered 1,412,330 hours of training and technical assistance to employers, employees, students and faculty.

# CHAPTER 2 Capacity Building Programs

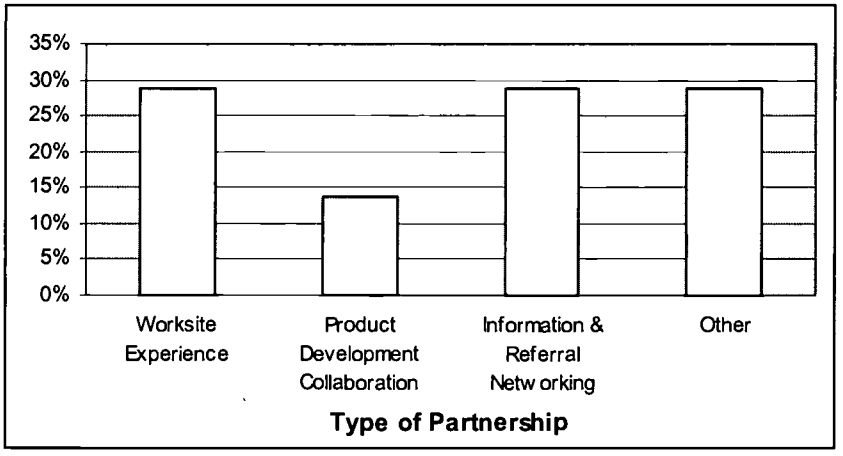
## 2.1 Centers for Applied Biological Technologies

*Program Description*
The Centers for Applied Biological Technologies program (Chancellor's Office Program Number 192) provides the groundwork for comprehensive educational programs to prepare the biotechnology workforce for new jobs.

The program operated at six community college locations during AY 1998-99 and provided in-service training services to 1,154 faculty. Fifty six percent of the faculty served was female and forty four percent were minorities.

The Centers for Applied Biological Technologies program formed sixty-six strategic partnerships during AY 1998-99. Thirty nine percent were in the private sector and sixty one percent in the public sector.

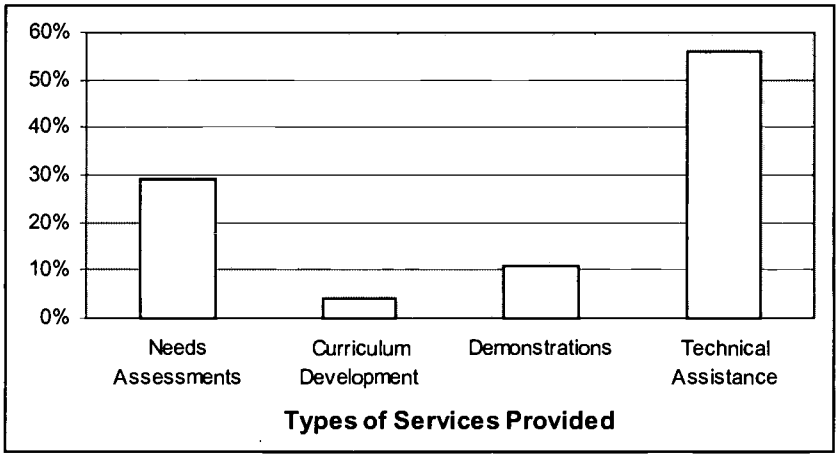
FIGURE 2-1
Types of Strategic Partnerships Formed by Centers for Applied Biological Technologies




*(Source: Chancellor's Office Administrative Database)*

The services provided to Community Colleges by the Centers for Applied Biological Technologies program during AY 1998-99 included needs assessments, curriculum development, demonstrations and technical assistance.

FIGURE 2-2
Types of Services Provided at Community Colleges Locations by Centers for Applied Biological




Technologies
*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Center for Applied Biological Technologies gave 3,827 hours of technical assistance and training to 830 participants during AY 1998-99. Participants received an average of 4.6 hours of service each.

Three hundred and seventy one participants received a total of 1,022 hours of technical assistance - twenty seven percent of all service hours - with tasks divided between information services and specialized technical assistance. A total of 2,805 hours of training was provided, primarily through workshops (forty four percent) and regular college courses (forty one percent).

TABLE 2-1
PERFORMANCE INDICATORS: CENTERS FOR APPLIED BIOLOGICAL TECHNOLOGIES

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Information Services** | **196** | **116** |
| **Specialized Assistance** | **175** | **906** |
| **Training** | | |
| **Workshops** | **108** | **1, 224** |
| **Alternative Courses** | | **85** |
| **Regular Courses** | **26** | **1,146** |
| **Training Program** | **323** | **339** |
| **Train the Trainer** | **3** | **11** |
| Indicators | | |
| Total Activity per Center | 830 | 3,827 |

*(Source: Chancellor's Office Administrative Database)*

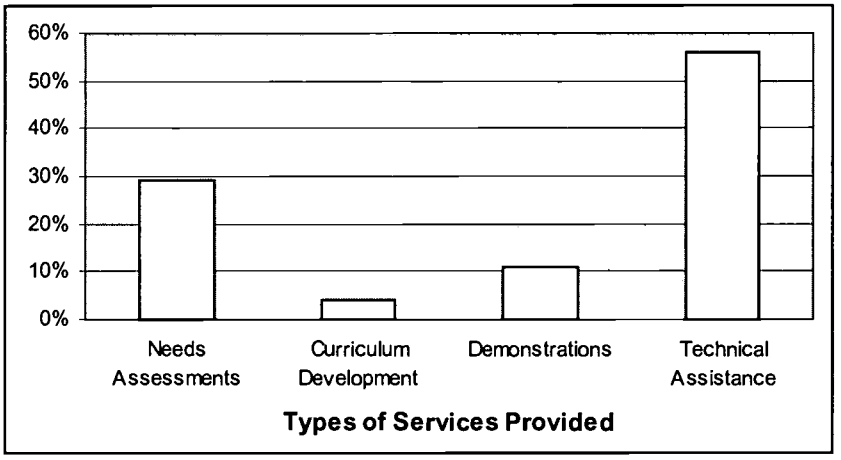
## 2.2 New Media/Multimedia Entertainment Centers

*Program Description*
The New Media/Multimedia Entertainment Centers program (Chancellor's Office Program Number 204) provides assistance for the development of technologically cutting-edge training programs at Community Colleges.

The program operated at eight community college locations during AY 1998-99 and provided training services to 1,315 in-service faculty. Fifty one percent of the in-service faculty served were female and forty percent were minorities.

The New Media/Multimedia Entertainment Centers program formed ninety-three strategic partnerships during AY 1998-99. Twenty six percent were in the private sector and seventy four percent were in the public sector.

FIGURE 2-3

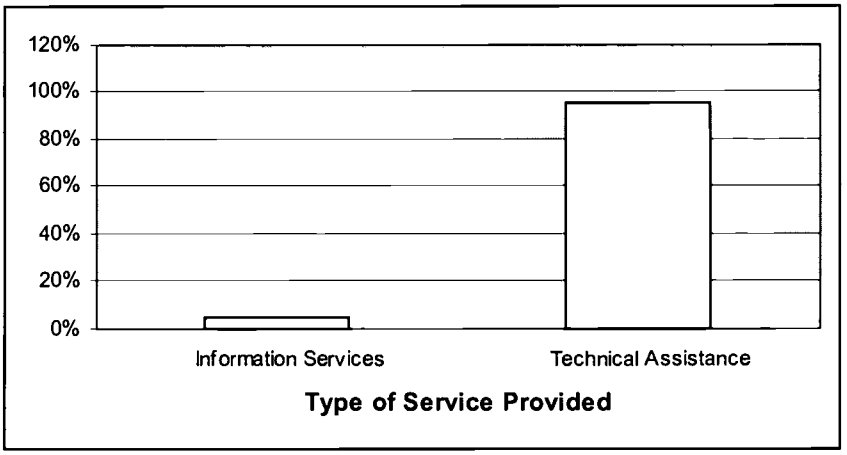



Types of Strategic Partnerships Formed by New Media/Multimedia Entertainment Centers
*(Source: Chancellor's Office Administrative Database)*

The types of services provided by the New Media/Multimedia Entertainment Centers program to the Community Colleges during AY 1998-99 were almost completely (ninety five percent) in the form of technical assistance.

FIGURE 2-4

Types of Services Provided at Community College Locations by New Media/Multimedia Entertainment Centers




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average New Media/Multimedia Entertainment Center gave 4,532 hours of technical assistance and training to 1,160 participants during AY 1998-99. An average participant received 3.9 hours of service.

TABLE 2-2
PERFORMANCE INDICATORS:
NEW MULTI-MEDIA ENTERTAINMENT CENTERS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Demonstrations** | **251** | **104** |
| **Learning Labs** | **161** | **2,560** |
| **Assessments** | **116** | **23** |
| **Curriculum Development** | **18** | **82** |
| **Training** | | |
| **Workshops** | **441** | **384** |
| **Alternative Courses** | **80** | **1,115** |
| **Training Program** | **89** | **237** |
| **Train the Trainer** | **5** | **28** |
| Indicators | | |
| Total Activity per Center | 1,160 | 4,532 |

*(Source: Chancellor's Office Administrative Database)*

Five hundred and forty six participants received a total of 2,769 hours of technical assistance - sixty one percent of all service hours - primarily provided through learning labs. A total of 1,763 hours of training was provided - primarily through alternative courses (sixty three percent) and workshops (twenty two percent).

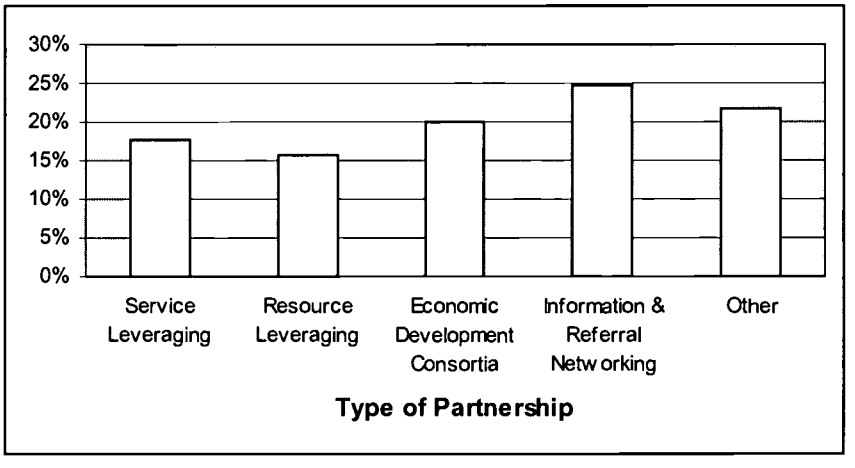
### 2.3 Business & Workforce Improvement / Centers for Excellence

*Program Description*
The Business and Workforce Improvement/Centers for Excellence program (Chancellor's Office Program Number 225) builds the capacity of the Community Colleges to both conduct workplace assessments leading to training and non-training solutions and to deliver contract education.

The program operated at nine community college locations during AY 1998-99 and provided in-service training services to 16 faculty and 949 community based organization (CBO) clients. Among faculty, fifty six percent were females and thirty nine percent were minorities. Among CBO clients, thirty nine percent were females and fifty three percent were minorities.

The Business and Workforce Improvement/Centers for Excellence program entered into 102 strategic partnerships during AY 1998-99. Fifty six percent were in the public sector and forty four in the private sector.

FIGURE 2-5
Types of Strategic Partnerships formed by Business and Workforce Improvement/Centers for Excellence

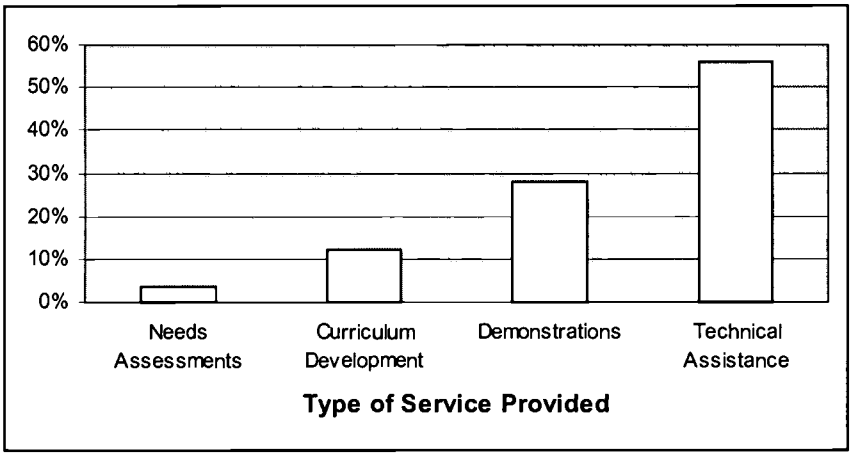



*(Source: Chancellor's Office Administrative Database)*

The services provided to the Community Colleges by the Business and Workforce Improvement /Centers for Excellence program during AY 1998-99 were concentrated in technical assistance (fifty six percent) and demonstrations (twenty eight percent).

FIGURE 2-6

Types of Services Delivered at Community College Locations by Business and Workforce Improvement/Centers for Excellence




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Business and Workforce Improvement/Center for Excellence gave 1,641 hours of technical assistance and training to 971 participants during AY 1998-99. An average participant received 1.7 hours of service.

A total of 822 hours of technical assistance were delivered - fifty percent of all service hours - primarily through assessments (fifty four percent) and specialized technical assistance (nineteen percent). A total of 818 hours of training was provided, primarily through the training program.

TABLE 1-2
PERFORMANCE INDICATORS:
BUSINESS AND WORKFORCE IMPROVEMENT/CENTERS FOR EXCELLENCE

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Demonstrations** | **102** | **117** |
| **Specialized Technical Assistance** | **45** | **159** |
| **Assessments** | **610** | **441** |
| **Curriculum Development** | **160** | **105** |
| **Training** | | |
| **Workshops** | **35** | **150** |
| **Training Program** | **19** | **658** |
| Indicators | | |
| Total Activity per Center | **971** | **1,641** |

*(Source: Chancellor's Office Administrative Database)*

## 2.4 Summary: ED>Net's Capacity Building Programs

*Program Description*

ED>Net's three capacity building programs provided training and technical assistance services to 2,485 Community College in-service faculty during AY 1998-99. Fifty four percent of these in-service faculty members were female and thirty seven percent were minority. In addition, the capacity building programs together provided service to 2,375 CBO clients, of which forty percent were female and eighty one percent were minority or unknown.

ED>Net's three capacity building programs formed 261 strategic partnerships during AY 1998-99. Forty one percent were in the public sector and fifty nine percent in the private sector.

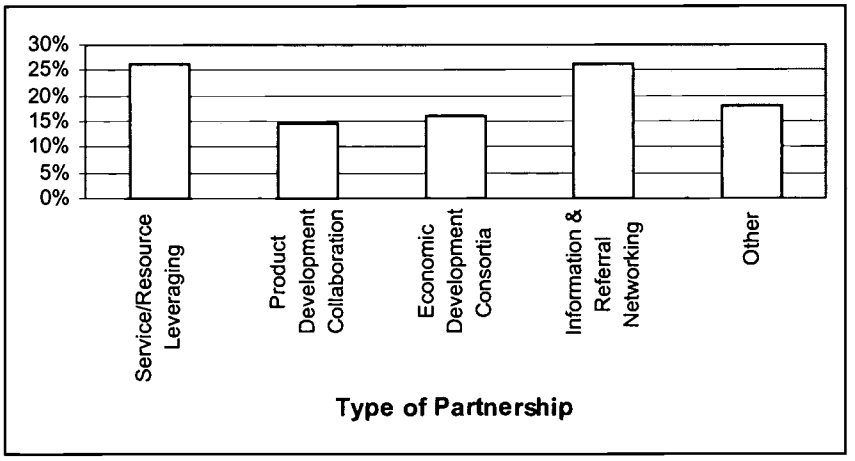
The vast majority (ninety percent) of the services provided to Community Colleges of ED>Net's capacity building programs were in the form of technical assistance.

*Performance Indicators*

In AY 1998-99, each of Ed Net's twenty-three capacity building centers served an average of 1,000 clients and delivered 3,217 hours of technical assistance and training. In total, the capacity building centers delivered 73,989 hours of training and technical assistance to employers, employees, students and faculty.

FIGURE 2-7

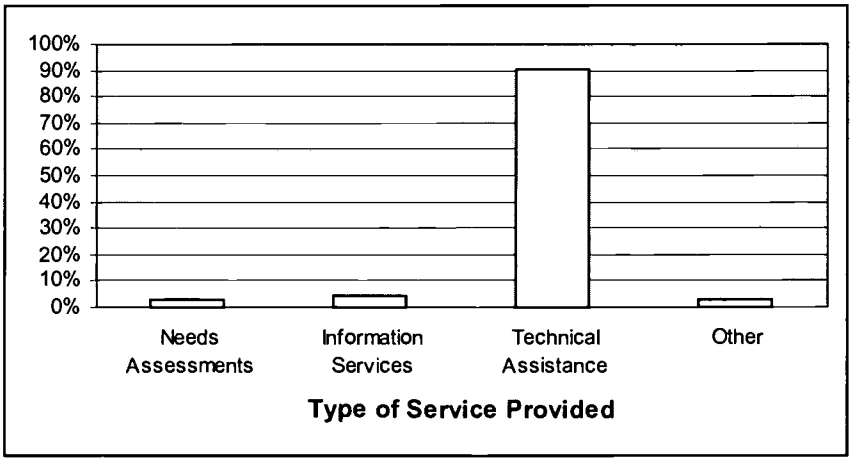
Types of Strategic Partnerships Formed by ED>Net's Capacity Building Programs




*(Source: Chancellor's Office Administrative Database)*

FIGURE 2-8

Types of Services Provided at Community College Locations by ED>Net's Capacity Building Programs




*(Source: Chancellor's Office Administrative Database)*

# CHAPTER 3 Service Delivery & Capacity Building Programs

## 3.1 Regional Environmental Business Resource Assistance Centers

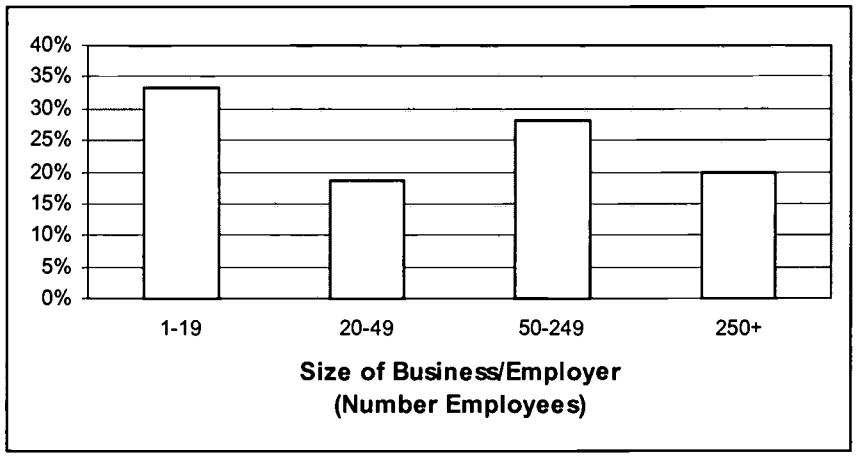
*Program Description*

The Regional Environmental Business Resource Assistance Center program (Chancellor's Office Program Number 148) provides workforce training to students and incumbent workers, conducts workplace environmental audits, offers technical assistance to small and medium size businesses, supports the development of environmental curriculum and related teaching materials.

The program operated at six community college locations during AY 1998-99 and provided training services to 1,777 businesses/employers. Fifty one percent of the businesses/employers had fewer than fifty workers.

FIGURE 3-1

Size Distribution of Businesses/Employers Served by the Regional Environmental Business Resource Assistance Center Program

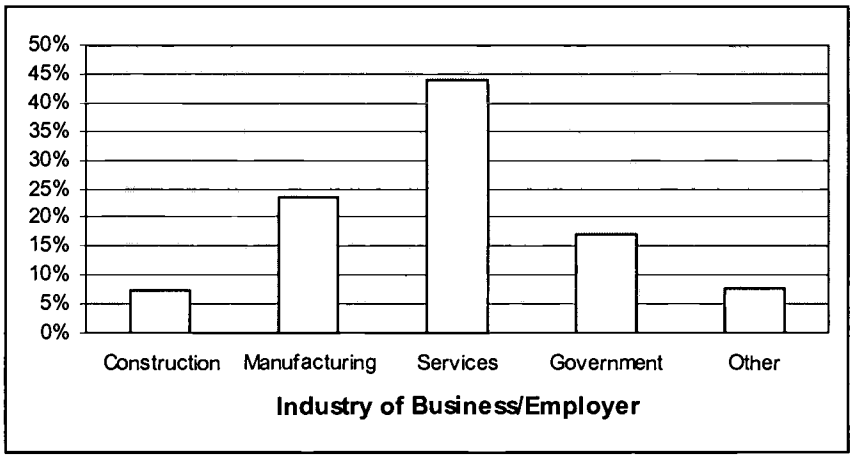



*(Source: Chancellor's Office Administrative Database)*

The businesses served were primarily concentrated in the service (forty four percent) and manufacturing (twenty four percent) sectors. The services provided were regulatory compliance audits (seventy four percent of the time) and environmental audits (twenty six percent of the time). The total number of employees served by the program during AY 1998-99 was 6,260. Seventy two percent were male and twenty eight percent female. Seventy five percent of the employees were minorities.

FIGURE 3-2

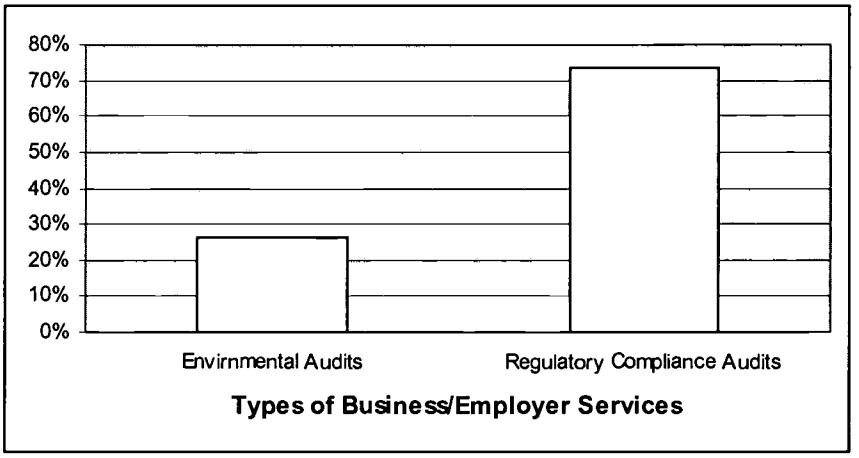
Industry Distribution of Businesses/Employers Served by the Regional Environmental Business Resource Assistance Center Program




*(Source: Chancellor's Office Administrative Database)*

FIGURE 3-3

Distribution of Services Provided to Businesses/Employers by the Regional Environmental Business Resource



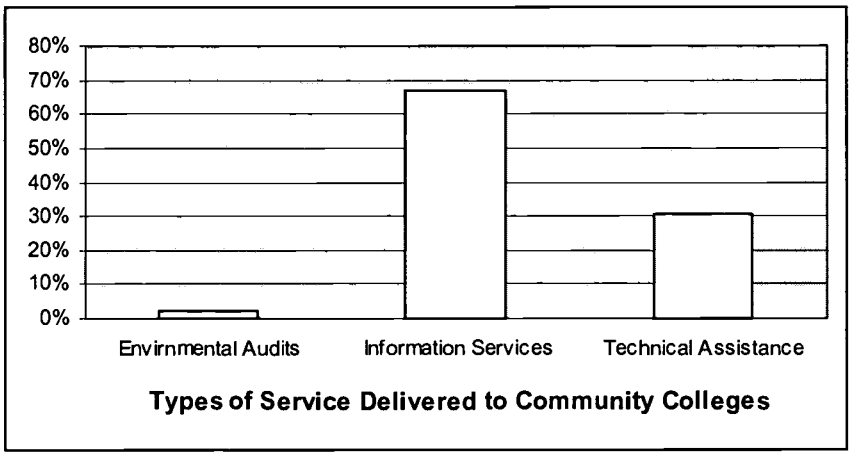

Assistance Center Program

*(Source: Chancellor's Office Administrative Database)*

The services provided by the Regional Environmental Business Resource Assistance Center program to the Community Colleges during AY 1998-99 were information services (sixty seven percent), technical assistance (thirty percent) and environmental audits (three percent).

FIGURE 3-4

Distribution of Services Provided to Community Colleges by the Regional Environmental Business Resource Assistance Center Program



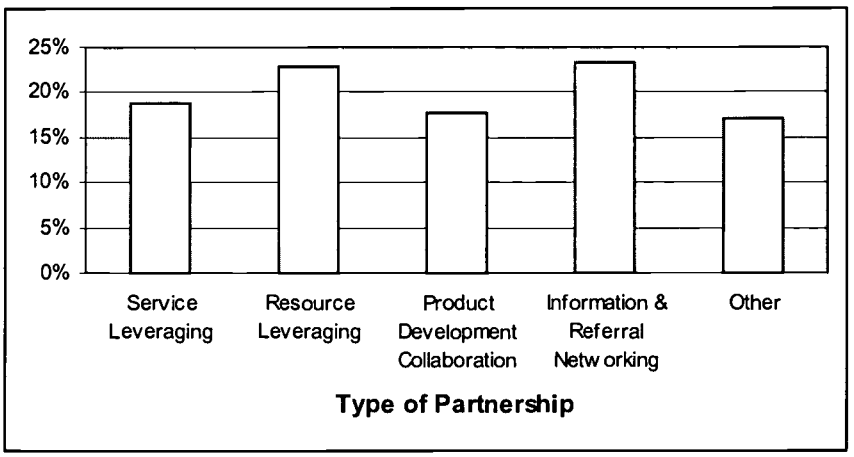

*(Source: Chancellor's Office Administrative Database)*

The program served a total of 192 in-service faculty. Seventy six percent were male and twenty four percent were female. Seventy five percent of the in-service faculty receiving service were minorities.

The program formed 143 strategic partnerships during AY 1998-99. Thirty three percent were in the private sector and sixty seven percent were in the public sector.

FIGURE 3-5

Types of Strategic Partnerships Formed by the Regional Environmental Business Resource Assistance Center Program




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Regional Environmental Business Resource Assistance Center gave 6,997 hours of technical assistance and training to 1,632 participants during AY 1998-99. An average participant received 4.3 hours of service.

A total of 1,028 hours of technical assistance were provided – fifteen percent of all service hours – in the form of information services, environmental audits, tech-default and regulatory compliance. A total of 5,969 hours of training was given, primarily through training programs (sixty percent) and alternative courses (twenty five percent).

TABLE 3-1
PERFORMANCE INDICATORS:
REGIONAL ENVIRONMENTAL BUSINESS RESOURCE ASSISTANCE CENTERS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Information Services** | **1,041** | **274** |
| **Specialized Assistance** | **89** | **212** |
| **Environmental Audits** | **14** | **214** |
| **Tech-Default** | **34** | **115** |
| **Regulatory Compliance** | **21** | **213** |
| **Training** | | |
| **Workshops** | **88** | **425** |
| **Alternative Courses** | | **1,508** |
| **Training Program** | **331** | **3,932** |
| **Train the Trainer** | 15 | 105 |
| Indicators | | |
| Total Activity per Center | 1,632 | 6,997 |

*(Source: Chancellor's Office Administrative Database)*

### 3.2 Regional Health Occupations Resource Centers

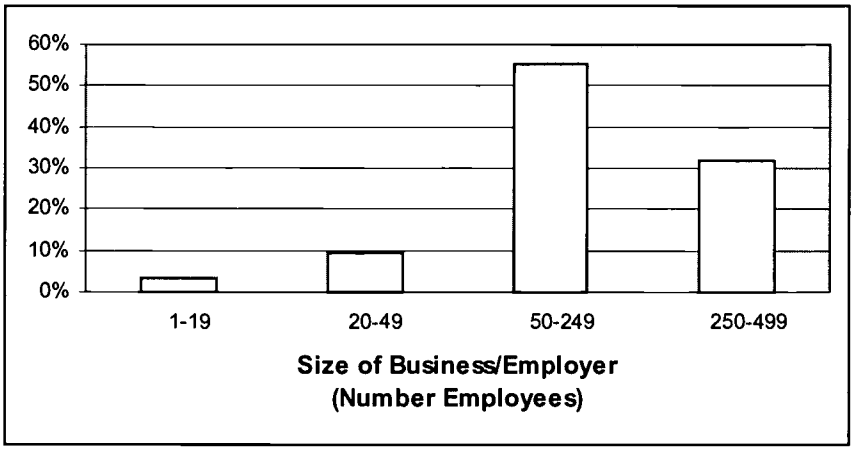
*Program Description*

The Regional Health Occupations Resource Centers program (Chancellor's Office Program Number 226) provides workforce training to health industry employees, performs workplace assessments of health facilities, and does certification testing of health industry employees.

The program operated at nine community college locations during AY 1998-99 and provided training services to 5,213 businesses/employers. Fifty five percent of the businesses/employers had between fifty and 249 workers.

FIGURE 3-6

Size Distribution of Businesses/Employers Served by the Regional Health Occupations Resource Centers




Program

*(Source: Chancellor's Office Administrative Database)*

Ninety eight percent of all employers served were in the health services industry, with the remaining two percent in other service activities.

There were 4,985 employees served by the Regional Health Occupations Resource Centers during AY 1998-99. Twenty eight percent were male and seventy two percent were female. Seventy three percent were minorities.

The Regional Health Occupations Resource Centers program during AY 1998-99 served a total of 387 in-service faculty. Twenty seven percent were male and seventy three percent were female. Forty percent were minorities.

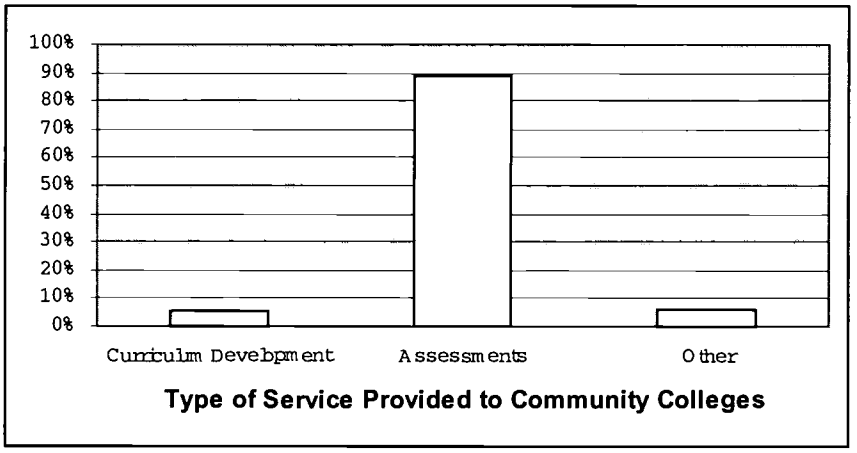
The program also served 6,398 students. Nineteen percent were male and eighty one percent were female. Sixty nine percent were minorities.

The primary service produced at Community Colleges was assessments of students' meeting health occupation's certification requirements. There were 6,398 students served during AY 1998-99, of which nineteen percent were male and eighty one percent female. Sixty nine percent were minorities.

The Regional Health Occupations Resource Centers program formed thirty-six strategic partnerships during AY 1998-99. Fifty eight percent were in the public sector and forty two percent in the private sector.

FIGURE 3-7

Types of Service Provided to Community Colleges by the Regional Health Occupations Resource Centers

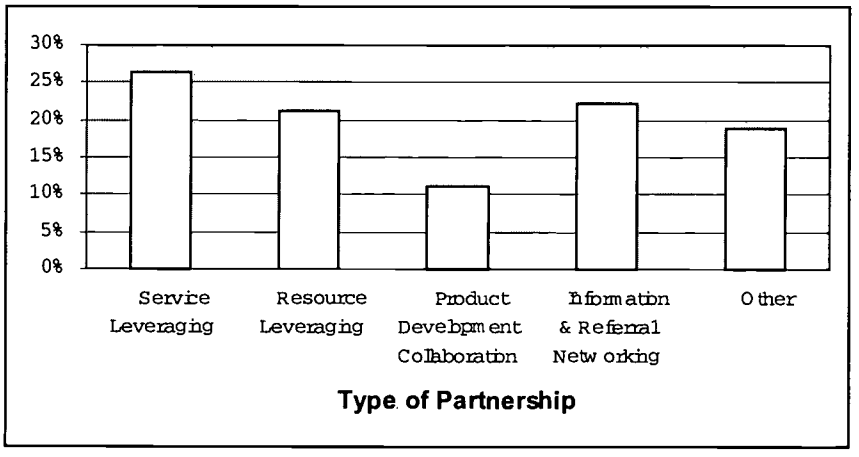



Program

*(Source: Chancellor's Office Administrative Database)*

FIGURE 3-7

Types of Partnerships Formed by the Regional Health Occupations Resource Centers Program




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Regional Health Occupations Resource Center gave 4,837 hours of technical assistance and training to 1,732 participants during AY 1998-99. An average participant received 1.07 hours of service.

A total of 984 hours of technical assistance was provided – twenty percent of all service hours – through demonstrations, assessments, curriculum development and learning labs. A total of 3,853 hours of training were given, primarily through regular courses (fifty eight percent) and alternative courses (seventeen percent).

TABLE 3-2
PERFORMANCE INDICATORS:
REGIONAL HEALTH OCCUPATIONS RESOURCE CENTERS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **Demonstrations** | **422** | **187** |
| **Assessments** | **312** | **154** |
| **Curriculum Development** | **27** | **454** |
| **Learning Labs** | **159** | **189** |
| **Training** | | |
| **Workshops** | **559** | **412** |
| **Alternative Courses** | **116** | **658** |
| **Regular Courses** | **55** | **2,229** |
| **Training Program** | **68** | **524** |
| **Train the Trainer** | 14 | 28 |
| Indicators | | |
| Total Activity per Center | 1,732 | 4,837 |

*(Source: Chancellor's Office Administrative Database)*

### 3.3 Summary: ED>Net's Service Delivery Plus Capacity Building Programs

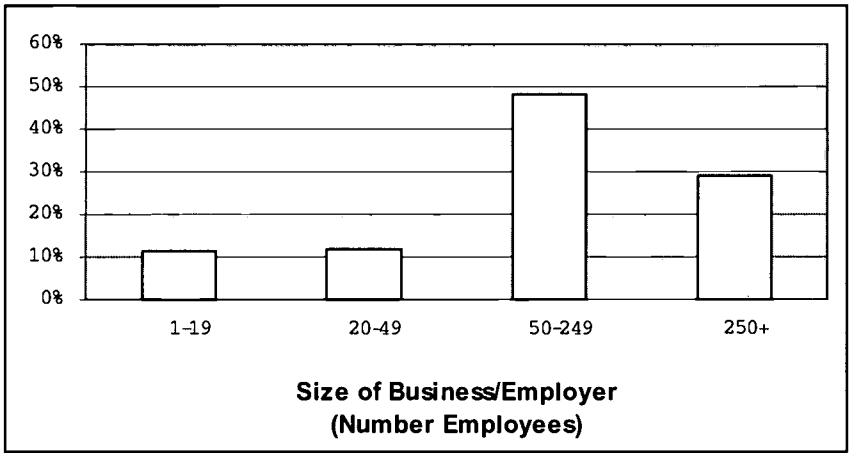
*Program Description*

ED>Net's two service delivery plus capacity building programs provided training and technical assistance services to 6,990 businesses/employers and Community Colleges during AY 1998-99. The businesses/employers were concentrated in the services sector.

ED>Net's service delivery and capacity building programs served 11,245 employees during AY 1998-99. Fifty two percent were male and forty eight percent female. Sixty three percent were minorities. However there was no race or ethnicity data for half of the employees.

FIGURE 3-8

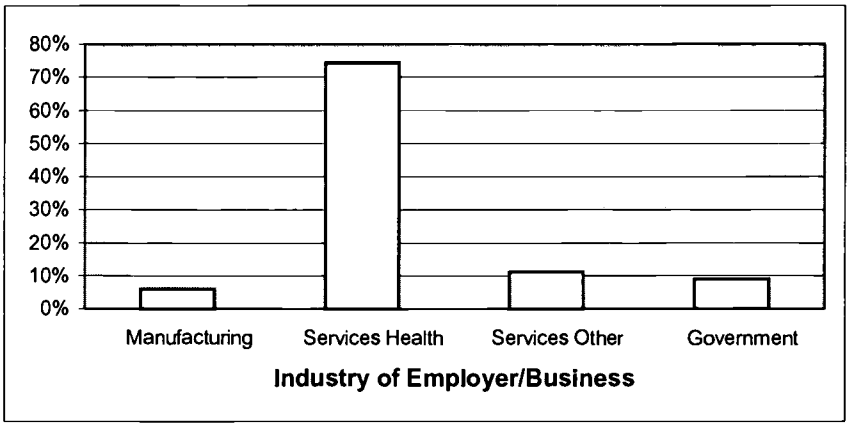
Size Distribution of Businesses/Employers Served BY ED>Net's Service Delivery and Capacity Building Programs




*(Source: Chancellor's Office Administrative Database)*

FIGURE 3-9

Industry Distribution of Businesses/Employers Served by ED>Net's Service Delivery and Capacity Building



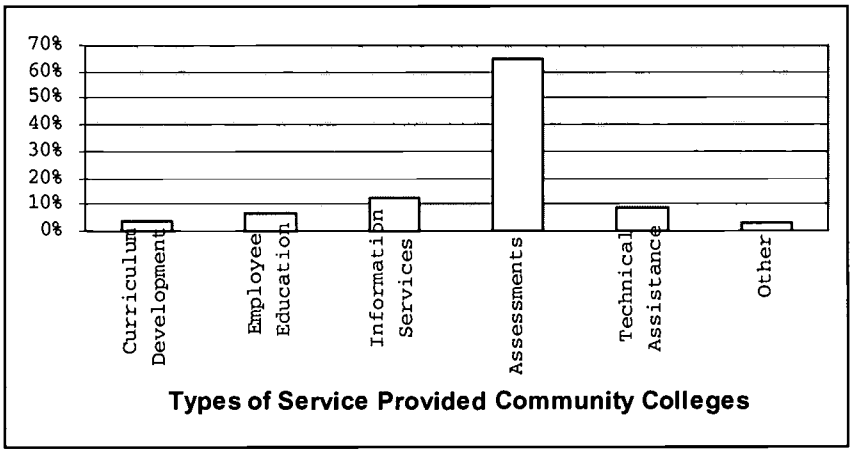

Programs

*(Source: Chancellor's Office Administrative Database)*

The programs served 579 Community College in-service faculty and 11,245 students during AY 1998-99. Organization and student assessments were the primary type of service provided.

FIGURE 3-10

Industry Distribution of Businesses/Employers Served by ED>Net's Service Delivery and Capacity Building Programs

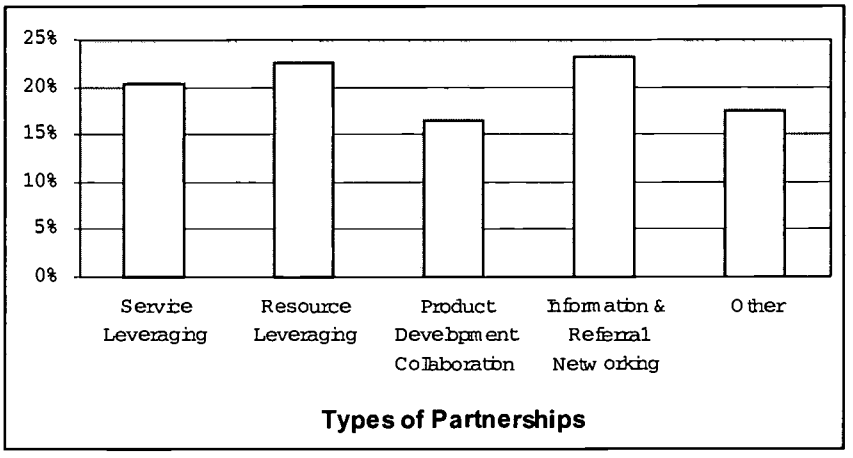



*(Source: Chancellor's Office Administrative Database)*

ED>Net's two capacity building programs formed 179 strategic partnerships during AY 1998-99. Thirty eight percent were in the public sector and sixty two percent in the private sector.

FIGURE 3-11

Types of Strategic Partnerships Formed by ED>Net's Service Delivery and Capacity Building Programs




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

In AY 1998-99 each of Ed Net's 15 capacity building and service delivery centers served an average of 1,692 participants and delivered 5,701 hours of technical assistance and training. In total, the capacity building and service delivery centers delivered 85,515 hours of training and technical assistance to employers, employees, students and faculty.

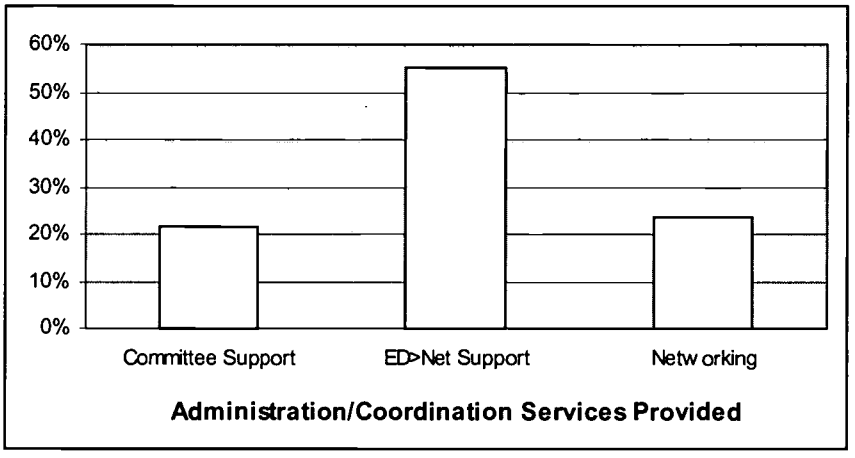
# CHAPTER 4 Administration and Coordination Programs

## 4.1 Locally Based Statewide Economic Development Network (ED>Net)

*Program Description*
The Locally Based Statewide Economic Development Network (ED>Net) program (Chancellor's Office Program Number 20) provides logistical, technical and marketing support for Community College based economic development programs and activities. It acts as the secretariat staffing and supporting the ED>Net executive committee, the economic development initiative directors, and similar community college based economic development organizations. The program was located at one Community College location in AY 1998-99 (the offices of the Los Rios Community College District).

The core activities ED>Net engaged in during AY 1998-99 were ED>Net support (fifty five percent), networking (twenty four percent) and committee support (twenty one percent).

FIGURE 4-1
Types of Administration & Coordination Services Provided by the ED>Net Program




*(Source: Chancellor's Office Administrative Database)*

The ED>Net program formed eight strategic partnerships during AY 1998-99. Four were resource leveraging partnerships and four were service leveraging partnerships. All were in the public sector.

*Performance Indicators*
The ED>Net program has centers at 104 of the State of California's Community Colleges - eighty seven percent of all Community Colleges. Seventy-seven colleges applied for new centers during AY

1998-99 or sixty four percent of all State Community Colleges. The total number of applications for new centers (some colleges apply for more than one center) was 101.

TABLE 4-1
PERFORMANCE INDICATORS: ED NET PROGRAM

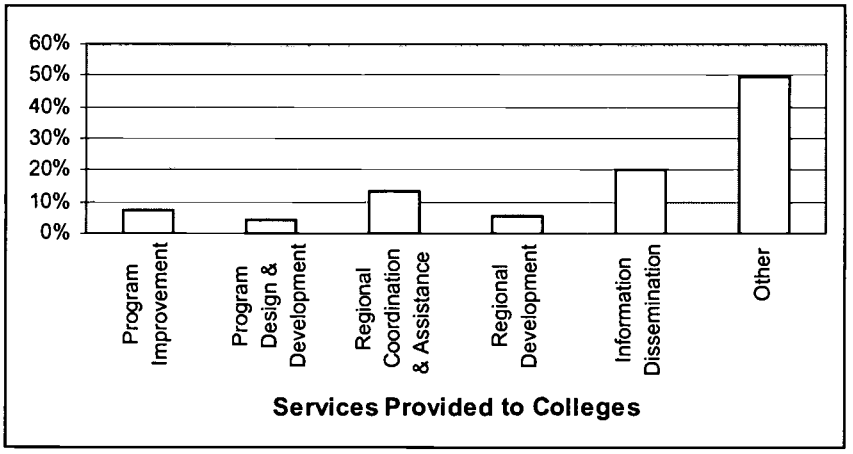
| Indicators | |
|---|---|
| **Number of Colleges with ED>Net Centers** | **104** |
| **Percent of Colleges with ED>Net Programs** | **87%** |
| **Number of Colleges Applying for New Centers** | **77** |
| **Percent of Colleges Applying for New Centers** | **64%** |
| **Number of Applications Received for New Centers** | **101** |

*(Source: Chancellor's Office)*

### 4.2 Strategic Priority Leadership, Coordination & Technical Assistance (LEAD)

*Program Description*
The Strategic Priority Leadership, Coordination & Technical Assistance (LEAD) program (Chancellor's Office Program Number 146) builds economic development system capacity within the Community Colleges and coordinates Community College economic development resources to most effectively deliver economic development services. LEAD operated at nine Community College locations during AY 1998-99. It provided core services to both the colleges and employers utilizing Community College based economic development services.

FIGURE 4-2




Types of Services Provided to Community Colleges by the LEAD Program

*(Source: Chancellor's Office Administrative Database)*

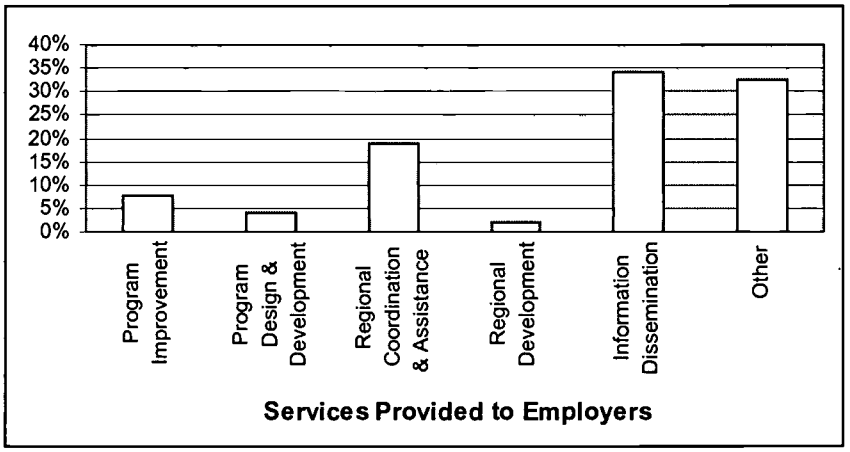
Among core services provided to Community Colleges during AY 1998-99, twenty percent involved the dissemination of economic development information and fifty percent were

classified as "other." The most important of these "other" services were committee support, ED>Net support and regional support, which combined accounted for eighty one percent of the "other" services category.

The concentration of services provided to employers was in information dissemination (thirty four percent) and "other" services (thirty three percent). Services accounting for eighty percent of the "other" category were external visits, networking, committee and regional support.

FIGURE 4-3

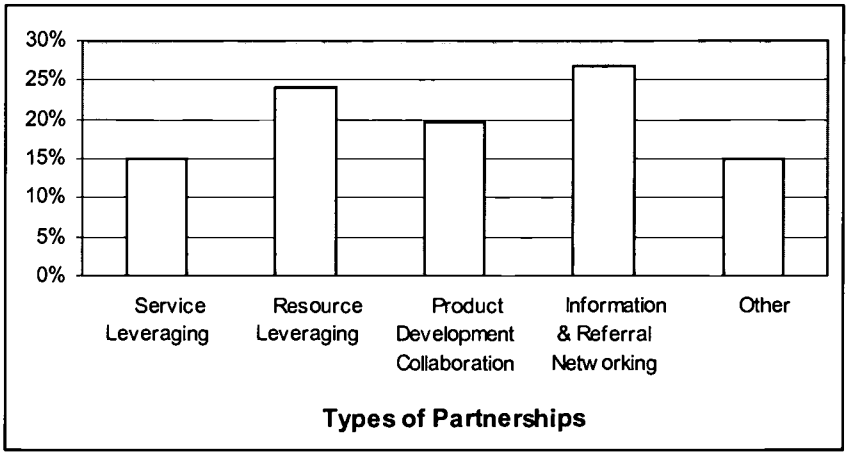
Types of Services Provided to Employers by the LEAD Program




*(Source: Chancellor's Office Administrative Database)*

FIGURE 4-4

Types Strategic Partnerships Formed by the LEAD Program




*(Source: Chancellor's Office Administrative Database)*

The LEAD program formed 130 strategic partnerships during AY 1998-99. Fifty two percent were in the public sector and forty eight percent were in the private sector.

*Performance Indicators*

The average Center gave 3,527 hours of technical assistance and training to 1,214 participants during AY 1998-99. An average participant received 2.9 hours of service.

A total of 3,064 hours of technical assistance were delivered - eighty seven percent of all service hours -primarily in the form of Ed>Net project development and support (twenty four percent), regional coordination and support (twenty one percent) and committee support (nineteen percent). A total of 463 hours of training were provided.

TABLE 4-2
PERFORMANCE INDICATORS:STRATEGIC PRIORITY LEADERSHIP, COORDINATION & TECHNICAL ASSISTANCE (LEAD)

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **College Assessments & Program Improvement** | **106** | **327** |
| **Project Design** | **138** | **556** |
| **Regional Coordination & Support** | **353** | **637** |
| **Resource Development** | **104** | **237** |
| **ED Net Project Development** | **229** | **721** |
| **Committee Support** | **177** | **587** |
| **Training** | | |
| **Workshops** | **64** | **377** |
| **Train the Trainer/Faculty** | **43** | **86** |
| Indicators | | |
| Total Activity per Center | 1,214 | 3,527 |

*(Source: Chancellor's Office Administrative Database)*

### 4.3 Business & Workforce Improvement / Professional Development Institutes

*Program Description*

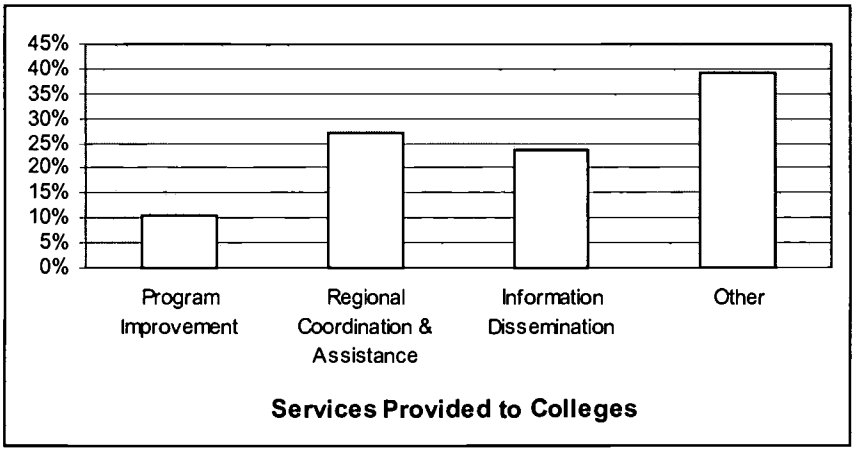
The Business & Workforce Improvement / Professional Development Institutes program (Chancellor's Office Program Number s 147, 231 and 232) coordinates resources in the Community College system to most effectively deliver training and non-training solutions to workplace problems. The program also coordinates Community College resources to most effectively deliver contract education. The Business & Workforce Improvement / Professional Development Institutes program operated at four Community College locations during AY

1998-99. It provided core services to both colleges and employers who utilize Community College based economic development services.

The primary services provided by the Business & Workforce Improvement / Professional Development Institutes program to colleges during AY 1998-99 were regional coordination and assistance (twenty seven percent of activity), information dissemination (twenty four percent) and the "other" core services. Within the "other" services category, ED>Net support, committee support, and regional support activities accounted for seventy eight percent of total activity.

FIGURE 4-5

Types of Services Provided to Community Colleges by the Workforce Improvement / Professional Development Institutes Program



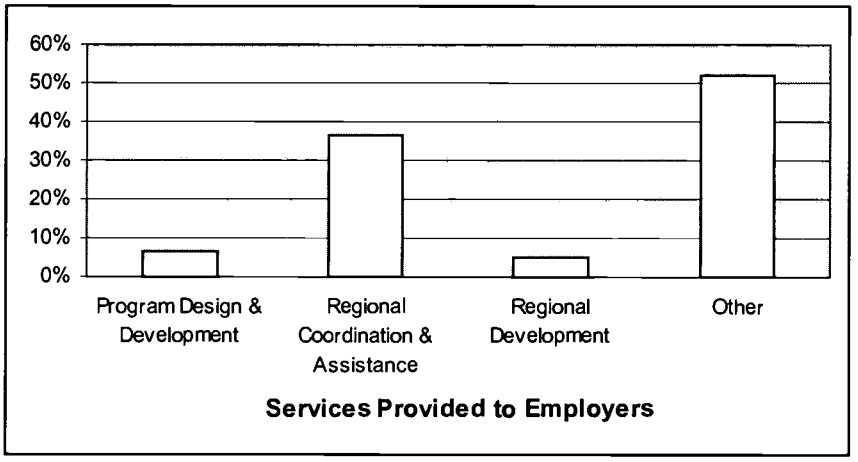

*(Source: Chancellor's Office Administrative Database)*

Service provided to employers during AY 1998-99 was concentrated in regional coordination and assistance (thirty seven percent) and in "other" services. Eighty nine percent of the "other" services category was in regional support and external networking.

The Business & Workforce Improvement / Professional Development Institutes program formed twenty-four strategic partnerships during AY 1998-99. Half were in the public sector and half in the private sector.

FIGURE 4-6

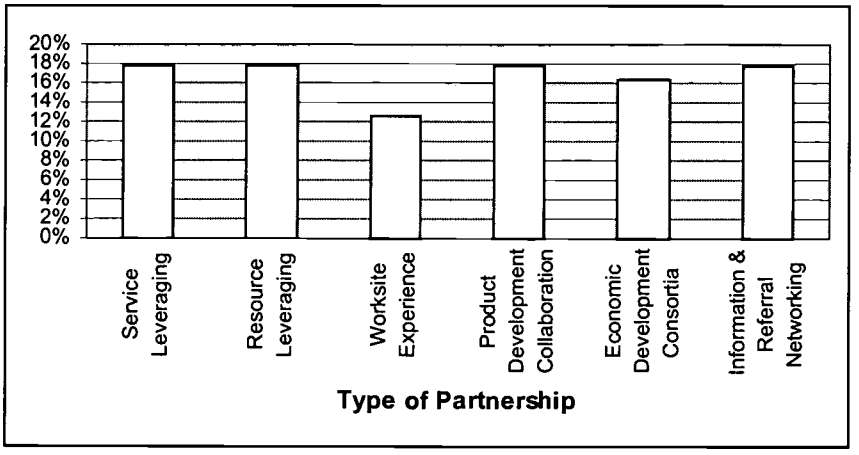
Types of Services Provided to Employers by the Workforce Improvement/Professional Development Institutes Program




*(Source: Chancellor's Office Administrative Database)*

FIGURE 4-7

Types of Partnerships Formed by the Workforce Improvement/Professional Development




Institutes Program

*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*

The average Workforce Improvement / Professional Development Institutes Program gave 3,064 hours of technical assistance to participants during AY 1998-99. A participant received an average of 2.77 hours of service.

Technical assistance hours were primarily provided for ED>Net project development (twenty four percent), regional coordination and support (twenty one percent), and committee support (nineteen percent).

TABLE 4-3
PERFORMANCE INDICATORS: WORKFORCE IMPROVEMENT/PROFESSIONAL DEVELOPMENT INSTITUTES PROGRAM

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **College Assessments & Program Improvement** | **106** | **327** |
| **Project Design** | **138** | **556** |
| **Regional Coordination & Support** | **353** | **637** |
| **Resource Development** | **104** | **237** |
| **ED Net Project Development** | **229** | **721** |
| **Committee Support** | **177** | **587** |
| Indicators | | |
| Total Activity per Center | 1,107 | 3,064 |

*(Source: Chancellor's Office Administrative Database)*

### 4.4 Regional Resource Business Assistance & Innovation Networks

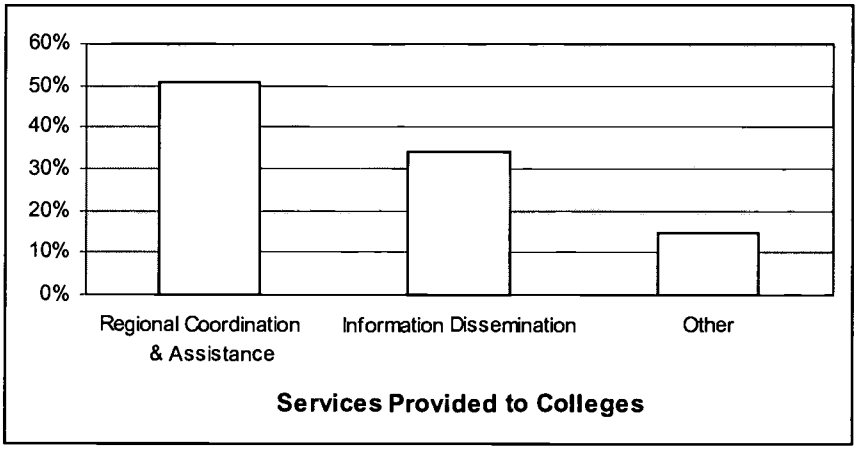
*Program Description*

The Regional Resource Business Assistance & Innovation Networks program (Chancellor's Office Program Number 159) creates regional economic development plans that integrate academic and vocational curriculum at the Community Colleges. It also supports workplace-based instructional services. The program operated at seven Community College locations during AY 1998-99. It provided services to both colleges and employers.

Just over half (fifty one percent) of the service provided by the Regional Resource Business Assistance & Innovation Networks program during AY 1998-99 was in the regional coordination and assistance category, with the balance being in the information dissemination (thirty four percent) and "other" (fifteen percent) categories. Ninety five percent of the service provided under the "other" category was in committee support and regional support.

FIGURE 4-8

Types of Service Provided to Community Colleges by the Regional Resource Business Assistance & Innovation Networks Program

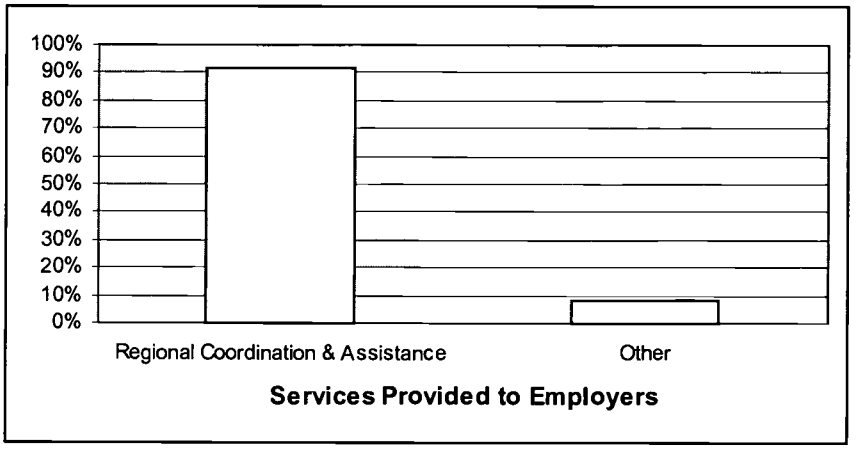



*(Source: Chancellor's Office Administrative Database)*

Regional coordination and assistance services accounted for ninety two percent of all services provided to employers by the Regional Resource Business Assistance & Innovation Networks program during AY 1998-9

FIGURE 4-9

Types of Service Provided to Employers by the Regional Resource Business Assistance & Innovation Networks Program




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*
The average Center gave 12,879 hours of technical assistance and training to 532 participants during AY 1998-99. An average participant received 24 hours of service.

A total of 12,638 hours of technical assistance were provided – ninety eight of all service hours – provided primarily through regional coordination and support (fifty percent) and committee support (twenty five percent) and Ed>Net project development and support (twenty three percent). A total of 241 hours were delivered.

TABLE 4-4
PERFORMANCE INDICATORS: REGIONAL BUSINESS RESOURCE ASSISTANCE & INNOVATION NETWORKS

| | PARTICIPANTS PER CENTER | HOURS PER CENTER |
|---|---|---|
| **Technical Assistance** | | |
| **College Assessment/Program Improvement** | **18** | **120** |
| **Project Design** | **29** | **143** |
| **Regional Coordination & Support** | **242** | **6,375** |
| **ED Net Project Development** | **78** | **2,855** |
| **Committee Support** | **88** | **3,145** |
| **Training** | | |
| **Workshops** | **65** | **231** |
| **Train the Trainer/Faculty** | 2 | **10** |
| Indicators | | |
| Total Activity per Center | 523 | 12,879 |

*(Source: Chancellor's Office Administrative Database)*

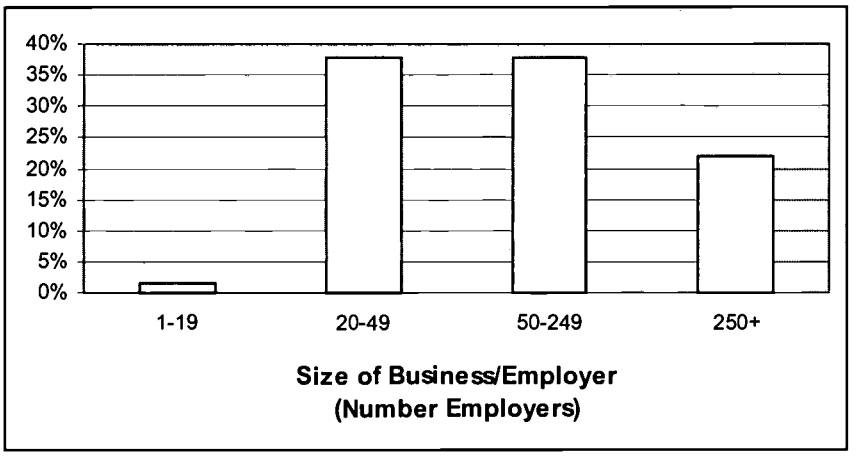
## 4.5 New Program Development & Marketing

*Program Description*
The New Program Development and Marketing program (Chancellor's Office Program Number 229) disseminates workforce based economic development materials and otherwise markets Community College-based economic development programs to businesses. The program operated at eight Community College locations during AY 1998-99.

The program provided services to 139 companies during AY 1998-99. Seventy six percent of the companies employed between twenty and 249 employees and eighty three percent of them were concentrated in the non-health service sector.

FIGURE 4-10

Size Distribution of Businesses/Employers Provided Service by New Program Development and Marketing

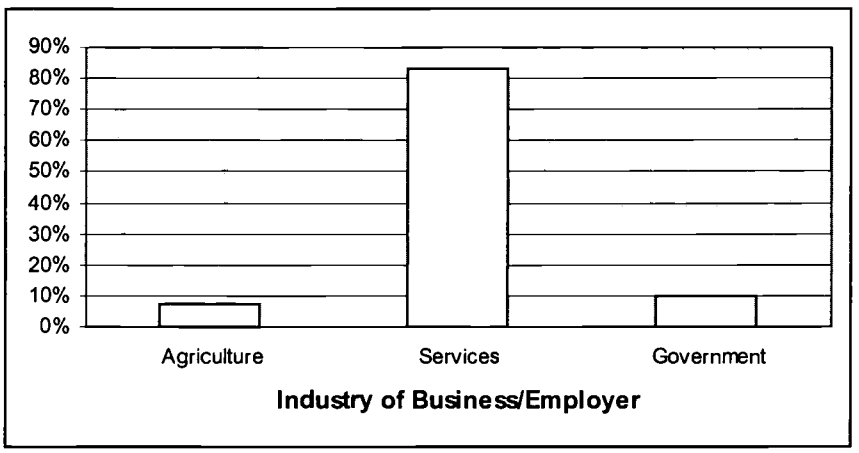



Program

*(Source: Chancellor's Office Administrative Database)*

FIGURE 4-11

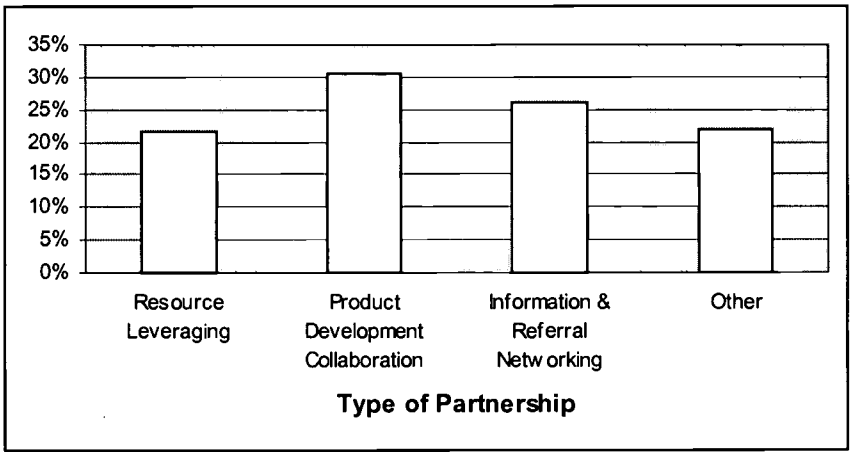
Industry Distribution of Businesses/Employers Provided Service by New Program Development and Marketing Program




*(Source: Chancellor's Office Administrative Database)*

The New Program Development and Marketing program provided services to 235 Community College in-service faculty during AY 1998-99, and it formed fourteen strategic partnerships.

FIGURE 4-12
Types of Partnerships Formed by New Program Development and Marketing Program




*(Source: Chancellor's Office Administrative Database)*

*Performance Indicators*
New Program Development and Marketing Program does not provide technical assistance or training. Indicators have not yet been developed yet for this program.

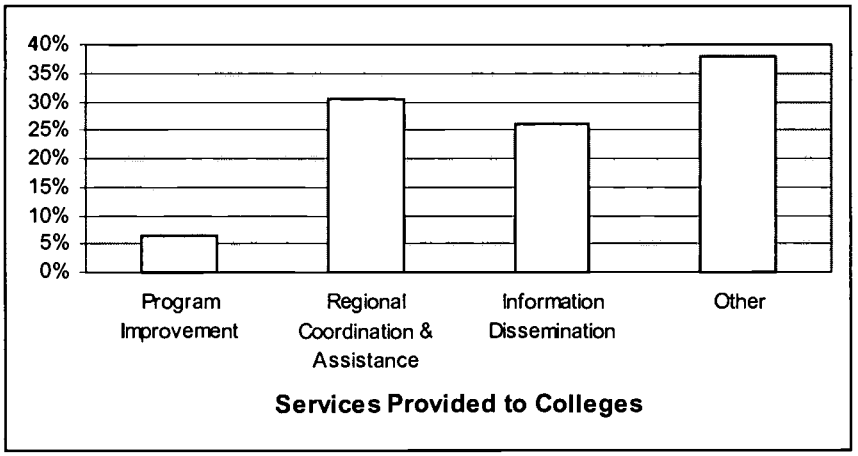
### 4.6 Summary: ED>Net's Administration & Coordination Programs

*Program Description*
ED>Net's five administration and coordination programs provided program improvement (six percent), regional coordination and assistance (thirty percent), information dissemination (twenty six percent) and other services (thirty eight percent) to Community Colleges engaged in workplace learning based economic development during AY 1998-99. The primary "other" services provided were committee support, ED>Net support and regional support.

The Administration and Coordination programs provided technical assistance and/or training for 236 Community College in-service faculty. Thirty five percent were male and sixty five percent were female. Twenty four percent were minorities.

FIGURE 4-13

Types of Services Provided to Community Colleges by ED>Net's Administration and Coordination Programs

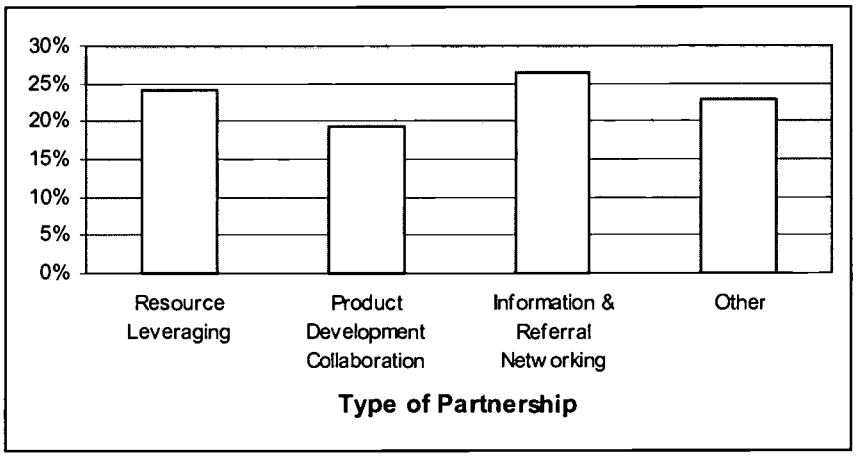



*(Source: Chancellor's Office Administrative Database)*

They Administration and Coordination programs formed 176 strategic partnerships during AY 1998-99. Fifty one percent were in the public sector and forty nine percent in the private sector.

FIGURE 4-14

Types of Partnerships Formed by ED>Net's Administration and Coordination Programs




*(Source: Chancellor's Office Administrative Database)*

The Administration and Coordination programs worked with 139 businesses/employers during AY 1998-99, providing them with regional coordination and assistance, information dissemination, networking and committee support services. The employers were concentrated (eighty three percent) in the service sector.

*Performance Indicators*

In AY 1998-99, each of Ed Net's twenty five Administration and Coordination Centers served an average of 982 clients and delivered 5,146 hours of technical assistance and training. In total, the Administration and Coordination Centers delivered 128,650 hours of training and technical assistance to employers, employees, students and faculty.

# Part II

## SUMMATIVE IMPACT OF ED>NET PROGRAMS[2]

## CHAPTER 5 Employment Impacts

### 5.1 Changes in ED>Net Companies' Employment

Based on a sample of ED>Net companies drawn from the Employment Development Department's (EDD's) unemployment insurance data base, total employment at the companies that received ED>Net's Community College based economic development services during the period 1996 through 1998 increased at an average annual rate of 7.4 percent. Average employment per company during the same period increased at an average annual rate of 7.3 percent.

Table 5-1
Employment of Sample Companies Receiving ED>Net Services

| | TOTAL EMPLOYMENT | EMPLOYMENT PER COMPANY | PERCENT CHANGE IN TOTAL EMPLOYMENT | PERCENT CHANGE IN EMPLOYMENT PER COMPANY |
|---|---|---|---|---|
| 1996 | 16,329 | 73 | | |
| 1997 | 17,672 | 79 | 8.2% | 8.2% |
| 1998 | 18,825 | 84 | 6.5% | 6.3% |

(Source: EDD)

### 5.2 Changes in Comparison Companies' Employment

Based on a sample of companies that did not receive ED>Net services (also drawn from EDD's unemployment insurance database) total employment at the companies that did not receive ED>Net services during the period 1996 through 1998 increased at an average annual rate of 3.2 percent. Employment per company during the same period increased at an average annual rate of 4.7 percent.

2 For discussion of the sources of data used for the impact (summative) analysis, and the manner in which the data were both obtained and organized, see Appendix 4: Data Organization: EDD & FTB Data

Table 5-2
Employment of Sample Companies Not Receiving ED>Net Services

| | TOTAL EMPLOYMENT | EMPLOYMENT PER COMPANY | PERCENT CHANGE IN TOTAL EMPLOYMENT | PERCENT CHANGE IN EMPLOYMENT PER COMPANY |
|---|---|---|---|---|
| 1996 | 32,158 | 21 | | |
| 1997 | 33,919 | 23 | 5.5% | 9.5% |
| 1998 | 34,211 | 23 | 0.9% | 0.0% |

(Source: EDD)

### 5.3 Direct Employment Impacts Associated with ED>Net Programs

Over the period 1996 through 1998, total employment at companies receiving Community College based economic development services through the ED>Net system grew at an average annual rate of 7.4 percent. Companies not receiving services through the ED>Net system grew at an average annual rate of 3.2 percent. The differential in the two groups' average annual employment growth rates was 4.2 percentage points.

This differential is associated with receiving or not receiving ED>Net's Community College based economic development services, but it is not necessarily caused by those services. For example, successful companies may more aggressively seek out services that can help them grow, or growing companies may need to train their expanding workforces and consequently go to ED>Net for training and technical assistance. In both these cases, ED>Net's services would be responding to, rather than causing, the differential growth rate. Whether ED>Net services respond to or cause the differential however, they are associated with it. *The direct impact of ED>Net services is consequently defined as the differential in an economic variable (e.g., employment growth) associated with companies that receive Community College based economic development services.*

During AY 1998-99, ED>Net's eight service delivery programs and two service delivery plus capacity building programs delivered training and technical assistance services to 58,226 wage and salary workers employed at companies that received Community College based economic development services. Applying the 7.4 percent average annual employment growth rate of ED>Net companies, this labor pool would have been 50,479 workers two years earlier.[3] Applying the 3.2 percent average annual employment growth rate of the comparison companies to the base of 50,479 produces a current employment level of 53,761 workers. These relationships are shown in Table 5-3

3 The impact estimate would be larger if the total employment of ED>Net companies had been used instead of the only the employees who received ED>Net services.

Table 5-3
Imputed Changes in Employment Associated with Receiving ED>Net Services

| | IMPUTED ED>NET COMPANY EMPLOYMENT | IMPUTED COMPARISON COMPANY EMPLOYMENT | DIFFERENCE |
|---|---|---|---|
| t [current year] | 58,226 | 53,761 | 4,465 |
| t-1 | 54,214 | 52,094 | 2,120 |
| t-2 | 50,479 | 50,479 | 0 |

(Source: TLA)

Over the three-year period, mid-1997 through mid-1999, there was a differential of 4,465 direct jobs associated with companies receiving Ed Net ED>Net services.

### 5.4 Indirect and Total Employment Impacts Associated with ED>Net Programs

To go from direct to indirect jobs associated with companies receiving ED>Net service requires the use of "employment multipliers". Employment multipliers show the total change in the number of jobs in all industries that result from a change of one job in a particular industry.

The economic reasoning underlying multipliers is two-fold. First, the person holding the additional job will spend some fraction of his/her income on products produced in the California economy. Second, some fraction of the materials and supplies used on the job will be produced in the California economy. Both these increases in demand will result in additional jobs being created in the state's economy. For example, the Bureau of Economic Analysis (BEA), U.S. Department of Commerce, estimates that each new job in the printing and publishing industry creates approximately one additional job somewhere in the California economy; while one new job in the communications industry create approximately one and a half new jobs.

Essentially, the economic reasoning underlying multiplier analysis divides an economy into two sectors: an initiating (or "basic") sector and a responding (or "non-basic") sector. Multiplier induced job creation only occurs when a new job is created in the initiating (basic) sector of the economy. In calculating multiplier induced indirect jobs associated with ED>Net's Community College based economic development services, the following industries, and their associated multiplier values, were included in California's initiating (or basic) sector:

Table 5-4
California Basic Industry Employment Multipliers

| | EMPLOYMENT MULTIPLIER VALUES | |
|---|---|---|
| | TOTAL | MARGINAL |
| **Agriculture, Forestry, & Fishing** | 2.3498 | 1.3498 |
| **Mining** | 2.9001 | 1.9001 |
| **Construction** | 2.0090 | 1.0090 |
| **Manufacturing – Non-Durable Goods** | 3.0489 | 2.0489 |
| **Manufacturing – Durable Goods** | 2.8268 | 1.8268 |
| **Transportation & Communications** | 3.1687 | 2.1687 |
| **Wholesale Trade** | 2.2244 | 1.2244 |
| **Business Services** | 1.9844 | 0.9844 |

(Source: BEA)

Applying the industry distributions presented in Part I, Chapters 1 and 3, to the 4,465 total direct jobs associated with companies that received ED>Net services generates the following estimate of the additional indirect and total jobs associated with ED>Net companies.

Table 5-5
ED>Net Differential Employment Growth

| | ED>NET ASSOCIATED JOBS | | |
|---|---|---|---|
| | DIRECT | INDIRECT | TOTAL |
| **Basic Employment** | | | |
| **Agriculture, Forestry, & Fishing** | 119 | 161 | 280 |
| **Mining** | 2 | 4 | 7 |
| **Construction** | 107 | 108 | 215 |
| **Manufacturing Durable** | 1,041 | 2,133 | 3,175 |
| **Manufacturing Non-Durable** | 457 | 835 | 1,292 |
| **Transportation & Communications** | 104 | 226 | 330 |
| **Wholesale Trade** | 248 | 304 | 552 |
| **Business Services** | 215 | 212 | 427 |
| **Sub-Total** | 2,294 | 3,983 | 6,278 |
| **Non-Basic Employment** | 2,171 | | 2,171 |
| **Total** | 4,465 | 3,983 | 8,448 |

(Source: TLA)

Including both indirect and direct impacts, there was a differential of 8,448 additional jobs associated with companies that received ED>Net services during AY 1998-99.

In order to monetize the value of these additional jobs, the employment associated with ED>Net services was multiplied by the most recent average annual wage by industry reported by the California EDD.[4] The results are shown in Table 5-6.

Table 5-6
ED>Net Benefits Associated with Differential Employment Impacts

| | DIRECT | TOTAL |
|---|---|---|
| **Construction** | $ 2,766,982 | $ 7,010,505 |
| **Manufacturing** | $ 47,827,511 | $ 177,916,508 |
| **Transportation & Utilities** | $ 3,190,155 | $ 11,685,195 |
| **Trade Wholesale** | $ 7,813,915 | $ 21,888,456 |
| **Trade Retail** | $ 7,434,791 | $ 7,434,791 |
| **FIRE** | $ 3,248,121 | $ 3,248,121 |
| **Services** | $ 58,395,816 | $ 58,395,816 |
| **Other** | $ 9,876,240 | $ 9,876,240 |
| **TOTAL** | $ 147,400,902 | $ 301,969,197 |

(Source: TLA based on EDD data)

4 Derived from the ES-202 Covered Employment and Wages program report (EDD, 1999).

# CHAPTER 6 Wage & Salary Impacts

## 6.1 Changes in ED>Net Companies' Wages and Salaries

Based on the EDD sample of ED>Net companies, the average wage per worker at companies that received ED>Net's Community College based economic development services during the period 1996 through 1998 increased at an average annual rate of 7.3 percent. The total wages and salaries paid per company during the same period increased at an average annual rate of 15.3 percent.

Table 6-1
Wages & Salaries of Sample Companies Receiving ED>Net Services

| | WAGES & SALARIES PER WORKER | WAGES & SALARIES PER COMPANY | PERCENT CHANGE IN WAGES & SALARIES PER WORKER | PERCENT CHANGE IN WAGES & SALARIES PER COMPANY |
|---|---|---|---|---|
| 1996 | $34,148 | $2,489,327 | | |
| 1997 | $36,115 | $2,849,225 | 5.8% | 14.5% |
| 1998 | $39,348 | $3,306,785 | 9.0% | 16.1% |

(Source: EDD)

## 6.2 Changes in Comparison Companies' Wages and Salaries

Based on the EDD sample of companies that did not receive ED>Net services, the average wage per worker at companies that did not receive ED>Net services increased at an average annual rate of 4.6 percent. The total wages and salaries paid per company during the same period increased at an average annual rate of 7.9 percent.

Table 6-2
Wages & Salaries of Sample Companies Not Receiving ED>Net Services

| | WAGES & SALARIES PER WORKER | WAGES & SALARIES PER COMPANY | PERCENT CHANGE IN WAGES & SALARIES PER WORKER | PERCENT CHANGE IN WAGES & SALARIES PER COMPANY |
|---|---|---|---|---|
| 1996 | $30,633 | $656,722 | | |
| 1997 | $32,010 | $723,829 | 4.5% | 10.2% |
| 1998 | $33,532 | $764,768 | 4.8% | 5.7% |

(Source: EDD)

### 6.3 Direct Differential Earnings Impacts Associated with ED>Net Programs

Over the period 1996 through 1998, wages and salaries per worker at companies receiving Community College based economic development services through the ED>Net system grew at an average annual rate of 7.3 percent. Companies not receiving services through the ED>Net system grew at an average annual rate of 4.6 percent. The differential in the two groups' average annual wage and salary growth rate was 2.7 percentage points.

As discussed above, this differential is associated with receiving or not receiving ED>Net's Community College based economic development services, but it may or may not be caused by these services.

During AY 1998-99, the ED>Net sample companies paid an average annual wage to their employees of $39,348.. With an average annual wage growth rate of 7.3 percent, they would have paid $34,148 two years earlier. Applying the 4.6 percent average annual wage growth of companies not receiving ED>Net services to the t-2 base level produces a current annual wage of $37,376.. These relationships are shown in Table 6-3

Table 6-3
Imputed Changes in Wages & Salaries Associated with Receiving ED>Net Services

| | ED>NET COMPANY WAGES & SALARIES PER WORKER | IMPUTED WAGES & SALARIES AT COMPARISON COMPANY RATE | DIFFERENCE |
|---|---|---|---|
| t [current year] | $39,348 | $37,376 | $1,972 |
| t-1 | $36,115 | $35,726 | $ 389 |
| t-2 | $34,148 | $34,148 | 0 |

(Source: TLA)

Over the three-year period, mid-1997 through mid-1999, the average annual wage of a worker at a company receiving ED>Net services grew by $1,972 more than it would have if the company had not received ED>Net services. Multiplied by the 58,226 workers who received ED>Net services, there was an increase in direct wages and salaries paid of $114.8 million annually associated with companies that received ED>Net's Community College based economic development services.

### 6.4 Indirect and Total Differential Earnings Impacts Associated with ED>Net Programs

Using multipliers to calculate indirect wage impacts involves the same economic reasoning discussed above for employment multipliers. They are separately estimated because the forward and backward linkages between economic sectors are different for employment and earnings.

The same initiating (basic) industries used in the employment analysis were also used to calculate indirect wage impacts. The results are shown in Table 6-4.

Table 6-4
California Basic Industry Earnings Multipliers

| | EARNINGS MULTIPLIER VALUES | |
|---|---|---|
| | TOTAL | MARGINAL |
| Agriculture, Forestry, & Fishing | 2.3062 | 1.3062 |
| Mining | 2.0769 | 1.0769 |
| Construction | 2.1337 | 1.1337 |
| Manufacturing – Non-Durable Goods | 2.6512 | 1.6512 |
| Manufacturing – Durable Goods | 2.3277 | 1.3277 |
| Transportation & Communications | 2.3857 | 1.3857 |
| Wholesale Trade | 1.9010 | 0.9010 |
| Business Services | 1.8320 | 0.8320 |

(Source: BEA)

Applying the same industry distributions used above to the $114.8 million increase in direct wages associated with companies that received ED>Net services generates the following estimate of the additional indirect and total wages associated with ED>Net companies.

Table 6-5
ED>Net Associated Differential Earnings Growth

| | ED>NET ASSOCIATED WAGE AND SALARY INCOME (millions of dollars) | | |
|---|---|---|---|
| | DIRECT | INDIRECT | TOTAL |
| Basic Wages & Salaries | | | |
| Agriculture, Forestry, & Fishing | $ 3.1 | $ 4.0 | $ 7.1 |
| Mining | $ 0.1 | $ 0.1 | $ 0.1 |
| Construction | $ 2.8 | $ 3.1 | $ 5.9 |
| Manufacturing Durable | $ 26.8 | $ 44.2 | $ 71.0 |
| Manufacturing Non-Durable | $ 11.8 | $ 15.6 | $ 27.4 |
| Transpiration & Communications | $ 2.7 | $ 3.7 | $ 6.4 |
| Wholesale Trade | $ 6.4 | $ 5.8 | $ 12.1 |
| Business Services | $ 5.5 | $ 4.6 | $ 10.1 |
| Sub-Total | $ 59.0 | $ 81.1 | $ 140.1 |
| Non-Basic Wages & Salaries | $ 55.8 | | $ 55.8 |
| Total | $ 114.8 | $ 81.1 | $ 195.9 |

(Source: TLA)

Including both indirect and direct impacts, a total of $195.9 million in additional wages was associated with companies that received ED>Net services during AY 1998-99.

# CHAPTER 7 Company Profitability Impacts

## 7.1 Changes in ED>Net Companies' Gross Profit

During the period 1996 through 1997[5], median profitability of companies that received ED>Net's Community College based economic development services increased from $338,528 to $399,489. The mean profitability of companies during the same period decreased from $3,120,007 to $2,166,966. The extreme volatility of the mean profitability data and the significant difference between mean and median profitability reflect the high degree of skewness in the distribution of company gross profits.

Table 7-1
Gross Profit of Companies Receiving ED>Net Services

| | MEDIAN PROFITABILITY PER COMPANY | PERCENT CHANGE IN PROFITABILITY PER COMPANY |
|---|---|---|
| 1996 | $338,528 | |
| 1997 | $399,489 | 18.0% |

(Source: FTB)

## 7.2 Changes in Comparison Companies' Gross Profit

During the period 1996 through 1997, median gross profits of companies that did not receive ED>Net's Community College based economic development services increased from $410,855 to $483,509. The mean profitability of companies during the same period increased from $1,466,362 to $1,984,584. These data again reflect the high degree of skewness in the distribution of company gross profits.

Table 7-2
Gross Profit of Companies Not Receiving ED>Net Services

| | MEDIAN PROFITABILITY PER COMPANY | PERCENT CHANGE IN PROFITABILITY PER COMPANY |
|---|---|---|
| 1996 | $410,855 | |
| 1997 | $483,509 | 17.7% |

(Source: FTB)

## 7.3 Direct Impacts Associated with ED>Net Programs

There was a very small difference (0.3 percentage points) in the annual rate of change of median gross profit among companies that did and did not receive ED>Net services. On average,

ED>Net companies had higher mean gross profits and lower median gross profits. With such small differences in the medians and confusing trends in the means, there was no basis for asserting any significant difference in the direct (or indirect) rate of change in gross profit between companies that did and did not receive ED>Net services.

5 The FTB was only able to provide tax data for the years 1996 and 1997.

# CHAPTER 8 Benefits & Costs of ED>Net Programs

## 8.1 ED>Net Benefits

The dollar value of benefits from ED>Net's Community College based economic development programs equals:

- the wages and salaries (earnings) of workers whose jobs are associated with the differential employment growth of ED>Net companies,
- the incremental or marginal wages and salaries of workers at ED>Net companies that is associated with the differential earnings growth of ED>Net companies, and
- the incremental or marginal gross profit of Ed>Net companies associated with these companies differential profitability growth.

The monetized benefits of differential employment growth were presented in Chapter 5, Table 5-6.. The value of direct employment growth was $147.4 million, and the value of total employment growth was $302.0 million.

Incremental wage and salary benefits were calculated by multiplying the differential wage associated with ED>Net's Community College based economic development programs from Chapter 6, times the number of workers who received training or technical assistance services from ED>Net's service delivery programs. These results were shown in Table 6.5, and represent direct benefits of $114.8 million and total benefits of $195.9 million.

As discusses in Chapter 7, the difference between the rate of change of gross profit between ED>Net companies and companies that did not receive ED>Net services was not statistically significant. Consequently, no benefits from business profitability were calculated.

The dollar benefits from all sources associated with companies receiving ED>Net services ranged from a minimum of $262.2 million to a maximum of $497.8 million. The minimum estimate includes only direct benefits associated with ED>Net programs. The maximum estimate includes both direct and indirect benefits.

## 8.2 ED>Net Costs

The budget for all ED>Net Community College based economic development programs during AY 1998-99 was $33.1 million. The budget was allocated among program categories as follows.

Table 8-2
ED>Net Costs During AY 1998-99 (millions of dollars)

| | DOLLARS | PERCENT |
|---|---|---|
| **Service Delivery Programs** | $ 24.5 | 74% |
| **Capacity Building Programs** | $ 5.0 | 15% |
| **Administration & Coordination Programs** | $ 3.6 | 11% |

(Source: TLA based on Chancellor's Office 1998-99 budget)

### 8.3 Comparison of ED>Net's Benefits and Costs

ED>Net's benefit-cost ratio can be calculated using various combinations of benefit and cost definitions.

The most conservative method uses ED>Net's minimum benefit estimate of $262.2 million and maximum cost estimate of $33.1 million. This produces a benefit cost ratio of 7.9.

The most liberal method uses ED>Net's maximum benefit estimate of $497.8 million and minimum cost estimate of $27.2 million[6]. This produces a benefit-cost ratio of 18.3.

The most reasonable method (as discussed in Appendix A, Methodology) uses ED>Net's minimum benefit estimate of $262.2 million and its minimum cost estimate of $27.2 million. This produces a benefit cost ratio of 9.6.

6 ED>Net's service delivery costs plus a pro rated share of the administration and coordination costs.

# CHAPTER 9 Fiscal Returns & ROI of ED>Net Programs

### 9.1 ED>Net Associated Increases in Tax Revenues

The dollar value of increases in tax revenue associated with ED>Net's Community College based economic development programs equals:[7]

- state personal income taxes paid by workers whose jobs are associated with the differential employment growth of ED>Net companies,
- state personal income taxes paid on the incremental (or marginal) earnings of workers at ED>Net companies that is associated with the differential earnings growth of ED>Net companies, and
- state income taxes paid on the incremental or marginal gross profit of Ed>Net companies associated with these companies differential profitability growth.

Personal income tax rates in California range from 1.0 percent to 9.3 percent. For a head of household, the tax rates vary according to the following schedule:

| TAXABLE INCOME | | PAY | PLUS | OF AMOUNT OVER |
|---|---|---|---|---|
| OVER | BUT NOT OVER | | | |
| $ 0 | $10,032 | $ 0.00 | 1.0 % | $ 0 |
| $10,032 | $23,776 | $ 100.32 | 2.0 % | $10,032 |
| $23,776 | $37,522 | $ 375.20 | 4.0 % | $23,776 |
| $37,522 | $52,090 | $ 925.04 | 6.0 % | $37,522 |
| $52,090 | $65,832 | $1,799.12 | 8.0 % | $52,090 |
| $65,832 | and over | $2,898.48 | 9.3 % | $65,832 |

(Source: FTB, California Tax Rate Schedules, 1997)

The EDD's most recent labor market data estimate the average wage and salary earnings of workers in California at $31,778. With normal exemptions and deductions it is assumed that taxable income averages three-quarters total earnings. The average taxable wage and salary income of a worker in California is therefore $23,834. Using the above tax rate schedule, the average worker would pay California State income taxes of $377.52. The average rate on total earnings is 1.2 percent; the average rate on taxable earnings is 1.8 percent, and the marginal rate is 4.0 percent.

7 California also has sales and use taxes that generate revenue when incomes rise. These revenue sources are not included in the analysis.

The increased tax revenues generated from the additional employment associated with companies receiving ED>Net services equals:

(ED>Net benefits associated with differential employment) x (average tax rate)

The value of direct and total (direct plus indirect) ED>Net benefits associated with differential employment equaled $147,400,902 and $301,969,197, respectively. The average tax rate on total earnings was 1.2 percent. Applying the 1.2-percent average tax rate to total differential employment-based earnings yield the following:

| | INCOME | TAX RATE | TAX REVENUES |
|---|---|---|---|
| **Differential Direct Earnings** | **$147,400,902** | **1.2%** | **$1,768,811** |
| **Differential Total Earnings** | **$301,969,197** | **1.2%** | **$3,623,630** |

The increased tax revenues generated from differential earnings growth associated with companies receiving ED>Net services equals:

(ED>Net benefits associated with differential earnings growth) x (marginal tax rate)

The value of direct and total (direct plus indirect) ED>Net benefits associated with differential earnings growth equaled $114.8 million and $195.9 million, respectively. The marginal tax rate was four percent. Applying the 4.0-percent average tax rate to total differential employment-based earnings yield the following:

| | INCOME | TAX RATE | TAX REVENUES |
|---|---|---|---|
| **Differential Growth of Direct Earnings** | **$114,820,000** | **4.0%** | **$4,592,800** |
| **Differential Growth of Total Earnings** | **$195,892,940** | **4.0%** | **$7,835,718** |

There was no significant difference between gross profit growth among companies that did and did not receive ED>Net's Community College based economic development services. No differential gross profits tax revenues collected from corporations, partnerships or sole proprietorships were associated with ED>Net services.

The maximum additional state tax revenues associated with ED>Net's Community College based economic development services is therefore $11.5 million. The minimum is $6.4 million. Therefore, the annual return on investment (ROI) on ED>Net's $33.1 million budget is between nineteen percent and thirty five percent.

# APPENDIX 1 Methodology

# Methodology

The following discussion presents the underlying conceptualization upon which California's community college based economic development initiative was assessed.

The conceptualization begins by categorizing community college based economic development programs within the broad range of activities directed toward increasing the human capital embodied within California's workforce. In the real world, no categorization scheme is ever perfect or exact. Programs have elements that fall mostly within one category but also to a lesser extent into other categories. Putting aside such difficulties and concentrating on the primary focus of programs produces four three types of programs.

First are programs addressing the requirements of persons entering the labor market with educational, physical, mental, psychological, or other deficits that significantly disadvantage them in getting or holding jobs. Such programs normally fall under the purview of one or more of the U.S. Department of Labor's employment and training programs. Their focus is "jobs now;" that is, getting persons with labor market deficits into private sector jobs as quickly as possible and having them hold jobs for sustained periods of time.[8]

The second broad program category is occupational and vocational education as delivered under the community college mandate to "advance California's economic growth and global competitiveness through quality education and services focusing on continuous workforce improvement, technology deployment, and business development" [15379.21, California Education Code]. These programs are directed toward California residents seeking training and education to increase their stock of job-related human capital. They focus on giving California residents the skills needed for successful lifetime experiences in the labor market.

The third broad program category is community college based economic development. Like the community college's regular education and training programs, economic development also seeks to advance California's economic growth and global competitiveness through quality education and continuous workforce improvement, technology deployment, and business development. But in addition, economic development programs seek "to maximize the resources of the California Community Colleges to fulfill its role as the primary provider in fulfilling the vocational education and training needs of California business and industry" [15379.24 California Education Code]. Economic development programs do this by working "with businesses and employers to identify, on a region-by-region basis, [their] work force education and training needs" [15379.24 California Education Code]. These programs are directed toward small and

8 Examples of such programs/projects are the Private Industry Councils (PICs) and parts of the California Employment & Training Panel (ETP)

medium sized California companies facing technological change, international competition, or other competitive challenges. They focus on giving California companies the workforce and related management resources needed to be successful in today's economy.

When conducting summative assessments of policy outcomes, disadvantaged employment and training programs are usually assessed on how well they place disadvantaged workers into private sector unsubsidized jobs held for extended periods of time (as measured by increases in average annual earnings). Summative assessments of regular community college programs are usually based on the ability of community college graduates to obtain well paying jobs that offer upward career mobility. The summative assessment of community college based economic development programs however is based on the profitability and growth of companies receiving service. This makes community college based economic development programs unique. They create human capital but are assessed on the performance of the companies that use the human capital ↑ not on the returns to the workers in which the human capital is embedded.

For ED>Net, this means that summative assessment indicators measure changes in aggregate business and economic activity reasonably associated with the services provided by ED>Net's programs. The indicators were measured using the following data sources.

- Earnings and employment data collected by the Employment Development Department (EDD), and
- Business gross profits data collected by the Franchise Tax board (FTB).

Using these data, an aggregate benefit cost (B/C) indicator and an aggregate return on investment (ROI) indicator were constructed. The B/C ratio was calculated by comparing ED>Net and non-ED>Net companies along several dimensions, including from jobs created, increased sales, and increased earnings. ROI fiscal returns were calculated from the additional taxes paid by both workers and businesses. Costs used in calculating both the B/C ratio and the ROI were ED>Net's aggregate budget data (as discussed below).

An additional methodological issue was the structure and organization of the programs that constitute the ED>Net system.

Programs have different outputs based on their maturity and stage of development. When a new program is established, it will initially develop curriculum and train faculty and staff. During this period its output is the building of capacity within the ED>Net system.

Next will come a stage during which some ED>Net centers begin offering the new program's services to California businesses while, at the same time, capacity building continues at other community colleges. During this period the program's output is both the building of the ED>Net's system capacity and the delivery of service to businesses.

The final stage for most programs occurs when there are no further changes in mission or purpose, faculty and staff training at all community colleges interested in is completed, and the program's total activity is directed toward service delivery. During this period, the program's total output is the delivery of service to California businesses. Some programs involve technology that is changing with such rapidity that capacity building is required on a continuing basis. For these programs, the second stage becomes permanent.

The above stages have important implications for both the summative and formative assessments.

ED>Net's costs are the costs of all three stages of a program's maturation but ED>Net's benefits come exclusively from the service delivered to companies. At any point in time therefore, it is necessary to adjust for the relative levels of effort going into capacity building and service delivery in order to derive a consistent indicator that measures performance over time. This problem exists over and above the issue of outcome "lumpiness" that can be addressed by using a multi-year outcome indicator moving average. It requires separating ED>Net costs and benefits into their "investment" and "operating" cost components. Ideally:

- current benefits would be compared to current operating costs to derive a B/C ratio; and
- expected future benefits would be compared to the capitalized value of capacity building costs plus expected future operating costs.

The expected value of the resulting B/C ratio would than become the benchmark against which future program operations would be judged.

The time and budget limits of the current assignment precluded such an approach. The methodology employed consequently develops proxy estimates that reflect program maturation stages to the maximum extent feasible. The methods employed are elaborated below.

Finally, there is a category of community college based economic development programs that relate to neither capacity building nor service delivery. These programs are related to the administration and coordination of the community college based economic development network. In economic terms, activities falling into this category are overhead costs, and should be allocated proportionately between investment (capacity building) and operating (service delivery) costs.

A technical specification of the impact (summative) evaluation methodology is as follows.

**Benefits**

Let: $\beta$ = some measure of the vitality/growth of a company

$\beta_t$ = the value of $\beta$ in time t

$\beta_{t-1}$ = the value of $\beta$ in the prior time period t-1

c = a company that that has received services from one, or more, of ED>Net's programs, projects, initiatives

g = a company that that has not received services from one, or more, of ED>Net's programs, projects, initiatives

k = an industry

$db_k$ = direct benefits in the $k^{th}$ industry

tdb = total direct benefits

$M_k$ = multiplier for industry k from the BEA's RIMS-2 system

tb = total (direct plus indirect) benefits

Then: $$db_k = \sum^1_c [\beta^c_t - \beta^c_{t-1}]_k - \sum^1_g [\beta^g_t - \beta^g_{t-1}]_k \quad (1)$$

That is, ED>Net's direct benefit for any single industry is the difference between the summed economic performance of companies in that industry that have and have not received community college based economic development services.

$$tdb = \sum^1_k db_k \quad (2)$$

Or, ED>Net's total direct benefits are the sum of the direct benefit in each industry where community based economic development services were received; and

$$tb = \sum^1_k dm_k (M_k + 1) \quad (3)$$

Which says that ED>Net's total benefit equals the sum of the benefit in each single industry times that industry's RIMS-2 multiplier.

There is no accepted or straight forward indicator of a company's vitality/growth ($\beta$) for which data are readily available, consequently $\beta$ will be defined separately in terms of a company's employment, gross wage and salary payments, and gross profits. The different measures of each definition of $\beta$ will be analyzed, compared and used to arrive at a single direct benefits measure.

## COSTS

Let: z = cost of providing community college based economic development service to a company

i = an ED>Net program/project/initiative

c = a company that that has received services from one, or more, of ED>Net's programs

Z = total cost of providing community college based economic development services

Then: $Z = \sum^{1}_{c} \sum^{1}_{j} (z_{cj})$ (4)

That is, ED>Net's total cost is the sum of the costs incurred by all programs/ projects/initiatives providing community college based economic development services to all of ED>Net's client companies.

The relationship between the total cost of providing community college based economic development services to companies (edsc) and the community college system's economic development budget is given by the following relationships.

Let: tedb = the total budget for community college based economic development programs

edsc = operating cost of providing community college based economic development services

edi = the cost of ED>Net programs that develop curriculum and train faculty/staff (i.e., that invest in ED>Net's capacity to deliver workplace related economic development services in the future)

$edi_{CEd}$ = the cost of ED>Net programs that develop curriculum and train faculty/staff specifically to support contract education (CEd)

cci = the cost of ED>Net programs/projects/initiatives that develop community college curriculum and train community college faculty/staff (i.e., that invest in the community college system's capacity to deliver workplace related economic development services in the future

edo = the cost of managing/administrating/coordinating ED>Net programs

$\delta$ = amortized annual cost of edi

Then: tedb = edsc + edi + cci + edo (5)

Which says that ED>Net's total budget equals the sum of the budgets for providing economic development services to companies, investing in the future capacity of both ED>Net and the community college system to deliver workplace related economic development services in the future, and administrating/coordinating ED>Net programs; and

$$Z = \sum^{1}_{c} \sum^{1}_{j} (z_{cj}) + \delta_{edi} + [edsc / (edsc + \{edi - edi_{CEd}\} + cci)]\ edo \quad (6)$$

or, total economic development service costs equal the operating cost of delivering services to all companies by all of ED>Net's programs, plus the amortized annual cost of developing ED>Net's capacity to deliver service to companies, plus a prorated share of ED>Net's overhead costs.

Community college based economic development services provided by ED>Net to California companies should make their vitality/growth greater than companies that did not received ED>Net services. This relative increase in vitality/growth ($\beta$) is the measure of ED>Net benefits. It also generates increased business and worker income; and this leads to an increase in the state taxes paid by businesses and workers. The net present value (NPV) of these taxes needs to be subtracted from edsc to arrive at a cost estimate appropriate for calculating ED>Net's (benefit cost or summative) impact indicator. To do this:

Let: $\Delta y$ = the increased income resulting from ED>Net's provision of community college based economic development services

$w$ = workers

$x$ = California tax rates on income

$\Delta T$ = total state taxes collected from the increased income resulting from ED>Net program

$r$ = the real interest rate

Then: $$\Delta T_t = [\Delta y_w (1 + M_w) x_w + \Delta y_c (1 + M_c) x_c]_t \quad (7)$$

Which says that the additional taxes generated in any given year as a result of ED>Net services provided to companies equal the state income tax rates times the direct plus indirect business and worker income created;

$$\Delta T = \sum_{t+n} \Delta T_t \quad (8)$$

or, total additional taxes generated in any given year as a result of ED>Net services provided to companies equals the state's income tax rates times the direct plus indirect business and worker income created;[9] and

$$\Delta T_{NPV} = \sum_{t+n} [\Delta T_t / (1+ r)^n] \quad (9)$$

or, the net present value of total additional taxes equals the state's additional income tax collections in each year discounted by the real interest rate.

Modifying equation (6) by equation (9) to obtain ED>Net's net cost of delivering community college based economic development services gives:

9 There are taxes other then income taxes paid out of the additional income generated by business growth, however only income taxes are included in the analysis because of data limitations.

$$Z = \sum^{1}_{c} \sum^{1}_{j} (z_{cj}) + \delta_{edi} + [edsc / (edsc + \{edi - edi_{CEd}\} + cci)] \, edo - \Delta T_{NPV} \qquad (6A)$$

Several terms in equation (6A) require operational definitions. The term $\delta_{edi}$, the amortized annual cost of ED>Net programs that develop curriculum and train faculty/staff (i.e., that invest in ED>Net's future capacity) is difficult to measure from available electronic data bases, which only go back two-years. The working assumption used was that the speed with which technology is changing makes an ED>Net curriculum obsolete after about five to seven years and that the ratio (w) calculated from the last two academic years

$$[(edsc + \{edi - edi_{CEd}\}) / edsc] = w$$

is a constant. The value of $\delta_{edi}$ then lies in the range of 0.14 (w) to 0.20 (w) of annual operating costs. For calculation purposes, annual operating costs (edsc) are defined as the budgets of ED>Net programs that deliver services to companies. Using the term "B" to designate the sum of these operating budgets, the calculation of (6A) becomes:

$$Z = B(1 + w\,h) + (B / tedb) - \Delta T_{NPV}$$

where: $0.20 > h > 0.14$

The term $\Delta T_{NPV}$ is calculated from California's marginal corporate and individual income tax rates (x); $\Delta\beta$, which measures of the relative vitality/growth of companies receiving ED>Net services; and the real interest rate, defined as the rate on a 30-year government bond minus an inflation rate of 2-percent.

The cost of ED>Net programs that develop community college curriculum and train community college faculty/staff (cci) are excluded from the (summative) impact performance measure since no data about the benefits and costs of these community college programs is available. Also excluded is the cost of ED>Net programs that invest in ED>Net's capacity to deliver workplace related economic development services in the future (edi).

The ratio (tb/Z) than becomes the summative performance measure of all community college based economic development services funded through the Chancellor's Office and provided by ED>Net to California companies.

The services provided by Contract Education (CEd) are excluded from the analysis due to time and schedule constraints. If they were included, they would have to be analyzed differently however.

**CEd Analysis**

Let: m = the dollar revenues paid by companies to CEd for workforce based economic development services

$\beta_{CEd}$ = the benefits companies perceive they obtain by purchasing CEd services

$edi_{CEd}$ = the cost of ED>Net programs/projects/initiatives that develop curriculum and train faculty/staff specifically to support CEd activity

$edsc_{CEd}$ = the operating cost of providing CEd services

$Z_{CEd}$ = total cost of CEd

$\Delta T_{NPV\text{-}CEd}$ = total state taxes collected from the increased income resulting from CEd activity

Then: $\beta_{CEd} = m$ (10)

Which says that the benefits of CEd services equal the amount companies are will to spend to obtain them; and

$$Z_{CEd} = edsc_{CEd} + edi_{CEd} + [edi_{CEd} / (edsc + edi + cci)]\ edo - \Delta T_{NPV\text{-}CEd} \quad (11)$$

or, total CEd costs equal the operating cost of delivering services to all companies by CEd, plus the annual cost of ED>Net's support for CEd activity (which is the equivalent of $\delta$; the amortized annual cost of edi); plus a prorated share of ED>Net's overhead cost

The ratio ($\beta_{CEd} / Z_{CEd}$) than becomes the summative performance measure of all community college based economic development services provided to California companies that are not fully funded through the Chancellor's Office.

**Summary**

The (summative) impact performance measure for all community college based economic development services provided to California companies (regardless of funding source) than becomes the ratio

$[(tb + \beta_{CEd})_t / (Z + Z_{CEd})_{t-1}]$.

Costs are calculated for the period t-1 which is when economic development services are provided to companies. Benefits are the relative difference in viability in the following year (period t) between companies that received community college based economic development services and those that did not. That is, benefits are expected to occur the year following the delivery of service.

## APPENDIX 2 Definitions

# Definitions

The behavior captured by alternative assessment measures reflects different aspects of a project, program or policy. The topology used in this analysis involves a hierarchy. One or more projects make up a program, and one or more programs make up a policy. It's possible for a single project to be an entire program and the single program to be an entire policy ↑ but it's rare. In most cases several projects combine to constitute a program, and several programs combine to constitute a policy. In the case of ED>Net, its policy is to enhance the viability of California's economy by supporting the growth and profitability of California companies. Its programs are the various initiatives that address the economic viability of a single industry and/or region. Its projects are the community college centers that receive grants to deliver service to companies (or build their capacity to do so).

Specifically, this project uses the following definitions:

- *Project monitoring* addresses the congruence between a project's actual activity and the activity specified in its grant documents. It seeks to answer the question: "did a project do what it was supposed to do?" by comparing a project's grant narrative and budget with its actual operation. Monitoring applies only at the project level. However project monitoring can generate interesting information about the proportion of projects through which a program is implemented that are doing what they are supposed to. We will not be doing any project monitoring.
- *Formative program assessment* addresses the effectiveness and/or efficiently of a program's operation. It seeks to determine combined "through-put" efficiency of all the projects in a program ↑ i.e., the relationship between the resources utilized and the output produced. A formative program assessment measures a program's performance but not its impacts. We will be deriving formative program assessment indicators for ED>Net's community college based economic development programs/projects/ initiatives.
- *Summative policy evaluation* addresses a policy's outcomes. It measures the results, or impacts, of a policy on a targeted environment. A summative measure is normally summed over the range of programs that constitute an entire policy. For ED>Net, we will be deriving a *benefit-cost* summative policy indicator.

# APPENDIX 3 Data Tables

TABLE A3-1

SERVICE DELIVERY PROGRAMS

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 043 | 135 | 143 | 144 | 145 | 198 | 228 | 230 | TOTAL |
| | | | | | | | | | |
| No. Community College Locations | 6 | 12 | 18 | 14 | 14 | 10 | 54 | 29 | 54 |
| | | | | | | | | | |
| TOTAL NUMBER BUSINESSES SERVED | 16 | 941 | 12,109 | 4,125 | 2,797 | 910 | 4,521 | 1,193 | 26,612 |
| Type of Business/Employer | | | | | | | | | |
| CBO's | 0% | 9% | 48% | 4% | 25% | 0% | 8% | 4% | 27% |
| Women Owner | 0% | 8% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Minority Owned | 6% | 8% | 42% | 3% | 31% | 2% | 7% | 5% | 24% |
| Size of Business/Employer | | | | | | | | | |
| 1-19 | 24% | 31% | 97% | 21% | 66% | 48% | 53% | 13% | 67% |
| 20-49 | 14% | 20% | 3% | 18% | 22% | 31% | 14% | 43% | 12% |
| 50-249 | 62% | 18% | 1% | 42% | 8% | 9% | 10% | 24% | 11% |
| 250-499 | 0% | 11% | 0% | 10% | 2% | 3% | 2% | 8% | 3% |
| 500 + | 0% | 20% | 0% | 9% | 2% | 8% | 21% | 12% | 7% |
| Industry of Business/Employer | | | | | | | | | |
| Agriculture | 0% | 1% | 1% | 0% | 19% | 0% | 0% | 1% | 3% |
| Mining | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Construction | 0% | 8% | 4% | 0% | 1% | 1% | 2% | 0% | 2% |
| Manufacturing - Durable | 10% | 13% | 14% | 68% | 18% | 1% | 13% | 45% | 23% |
| Manufacturing - Non-Durable | 5% | 4% | 4% | 14% | 12% | 1% | 27% | 2% | 10% |
| Transportation & Utilities | 0% | 6% | 0% | 1% | 0% | 45% | 1% | 4% | 2% |
| Trade Wholesale | 10% | 0% | 5% | 2% | 25% | 0% | 2% | 1% | 6% |
| Trade Retail | 0% | 10% | 19% | 2% | 6% | 24% | 9% | 3% | 12% |
| Fin., Insurance & Real Estate | 0% | 3% | 1% | 0% | 1% | 0% | 8% | 8% | 2% |
| Services - Health | 0% | 3% | 7% | 0% | 2% | 0% | 4% | 1% | 4% |
| Services - Other | 14% | 35% | 46% | 10% | 15% | 22% | 28% | 25% | 32% |
| Government | 62% | 17% | 0% | 2% | 2% | 7% | 6% | 10% | 3% |
| | | | | | | | | | |
| STUDENTS SERVED | 15 | 3,446 | | - | - | 236 | 11,818 | 3,871 | 19,386 |
| Gender of Students | | | | | | | | | |
| Male | 67% | 38% | - | - | - | 96% | 59% | 59% | 56% |
| Female | 33% | 62% | - | - | - | 4% | 41% | 41% | 44% |
| Ethnicity of Students | | | | | | | | | |
| White | 53% | 37% | - | - | - | 44% | 43% | 15% | 36% |
| Hispanic | 13% | 29% | - | - | - | 22% | 16% | 29% | 21% |
| Asian | 7% | 16% | - | - | - | 22% | 9% | 6% | 10% |
| Black | 0% | 6% | - | - | - | 6% | 7% | 47% | 15% |
| Other/Unknown | 27% | 13% | - | - | - | 6% | 26% | 3% | 19% |

TABLE A3-1

SERVICE DELIVERY PROGRAMS [continued 2/3]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 043 | 135 | 143 | 144 | 145 | 198 | 228 | 230 | TOTAL |
| EMPLOYEES SERVED | 134 | 7,521 | 9,966 | 13,070 | - | 4,313 | 7,384 | 4,593 | 46,981 |
| Gender of Employees | | | | | | | | | |
| Male | 40% | 59% | 50% | 72% | - | 94% | 62% | 58% | 64% |
| Female | 60% | 41% | 50% | 28% | - | 6% | 38% | 42% | 36% |
| Ethnicity of Employees | | | | | | | | | |
| White | 60% | 41% | 59% | 31% | - | 12% | 51% | 58% | 43% |
| Hispanic | 10% | 30% | 16% | 15% | - | 10% | 18% | 17% | 18% |
| Asian | 8% | 8% | 8% | 7% | - | 6% | 14% | 9% | 9% |
| Black | 19% | 10% | 14% | 1% | - | 1% | 3% | 10% | 7% |
| Other/Unknown | 2% | 11% | 2% | 45% | - | 71% | 13% | 6% | 24% |
| START-UP BUSINESSES SERVED | - | - | 4,034 | - | 624 | - | - | - | 4,658 |
| Gender of Start-Up Businesses | | | | | | | | | |
| Male | - | - | 51% | - | 57% | - | - | - | 52% |
| Female | - | - | 49% | - | 43% | - | - | - | 48% |
| Ethnicity of Start-Up Businesses | | | | | | | | | |
| White | - | - | 44% | - | 49% | - | - | - | 45% |
| Hispanic | - | - | 22% | - | 20% | - | - | - | 22% |
| Asian | - | - | 9% | - | 15% | - | - | - | 10% |
| Black | - | - | 17% | - | 7% | - | - | - | 16% |
| Other/Unknown | - | - | 7% | - | 9% | - | - | - | 7% |
| NEW INTER'L TRADERS SERVED | - | - | - | - | 981 | - | - | - | 981 |
| Gender of New Traders | | | | | | | | | |
| Male | - | - | - | - | 67% | - | - | - | 67% |
| Female | - | - | - | - | 33% | - | - | - | 33% |
| Ethnicity of New Traders | | | | | | | | | |
| White | - | - | - | - | 55% | - | - | - | 55% |
| Hispanic | - | - | - | - | 14% | - | - | - | 14% |
| Asian | - | - | - | - | 15% | - | - | - | 15% |
| Black | - | - | - | - | 7% | - | - | - | 7% |
| Other/Unknown | - | - | - | - | 8% | - | - | - | 8% |
| EXISTING INTERNATIONAL TRADERS SERVED | - | - | - | - | 1,157 | - | - | - | 1,157 |
| Gender of Existing Traders | | | | | | | | | |
| Male | - | - | - | - | 68% | - | - | - | 68% |
| Female | - | - | - | - | 32% | - | - | - | 32% |
| Ethnicity of Existing Traders | | | | | | | | | |
| White | - | - | - | - | 57% | - | - | - | 57% |
| Hispanic | - | - | - | - | 14% | - | - | - | 14% |
| Asian | - | - | - | - | 17% | - | - | - | 17% |
| Black | - | - | - | - | 6% | - | - | - | 6% |
| Other/Unknown | - | - | - | - | 6% | - | - | - | 6% |

TABLE A3-1

SERVICE DELIVERY PROGRAMS [continued 3/3]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 043 | 135 | 143 | 144 | 145 | 198 | 228 | 230 | TOTAL |
| STRATEGIC PARTNERSHIPS FORMED | 112 | 230 | 148 | 122 | 230 | 131 | 576 | 372 | 1,921 |
| **Mix of Partnerships** | | | | | | | | | |
| **Public** | 79% | 48% | 63% | 36% | 55% | 47% | 41% | 40% | 47% |
| **Private** | 21% | 52% | 37% | 64% | 45% | 53% | 59% | 60% | 53% |
| **Type of Partnerships** | | | | | | | | | |
| **Service Leveraging** | 9% | 24% | 29% | 23% | 21% | 11% | 18% | 18% | 19% |
| **Resource Leveraging** | 11% | 19% | 27% | 24% | 27% | 18% | 20% | 14% | 20% |
| **Worksite Experience** | 1% | 10% | 1% | 8% | 6% | 6% | 7% | 13% | 8% |
| **Product Development Collaboration** | 12% | 11% | 4% | 9% | 10% | 15% | 15% | 12% | 12% |
| **Economic Development Consortia** | 46% | 13% | 12% | 13% | 11% | 10% | 12% | 19% | 15% |
| **Information & Referral Networking** | 21% | 19% | 27% | 22% | 23% | 30% | 24% | 21% | 23% |
| **Other** | 0% | 3% | 1% | 2% | 2% | 10% | 3% | 3% | 3% |

Service Delivery Programs

| | |
|---|---|
| 043 | Regional Workforce Preparation & Economic Development |
| 135 | Workplace Learning Resource Centers |
| 143 | Small Business Development Centers |
| 144 | Centers for Applied Competitive Technologies |
| 145 | Centers for International Trade Development |
| 198 | Advanced Transportation Technologies |
| 228 | Industry Driven Regional Education & Training Collaboratives |
| 230 | Job Development Incentive Training Fund |

TABLE A3-2

CAPACITY BUILDING PROGRAMS

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | |
|---|---|---|---|---|
| | 192 | 204 | 225 | TOTAL |
| | | | | |
| Number of Community College Locations | 6 | 8 | 9 | |
| | | | | |
| IN-SERVICE FACULTY SERVED | 1,154 | 1,315 | 16 | 2,485 |
| Gender of In-Service Faculty | | | | |
| Male | 44% | 49% | 44% | 46% |
| Female | 56% | 51% | 56% | 54% |
| Ethnicity of In-Service Faculty | | | | |
| White | 66% | 60% | 69% | 63% |
| Hispanic | 5% | 12% | 25% | 9% |
| Asian | 6% | 11% | 0% | 8% |
| Black | 2% | 4% | 0% | 3% |
| Other/Unknown | 21% | 13% | 6% | 17% |
| | | | | |
| CBO CLIENTS SERVED | - | 1,426 | 949 | 2,375 |
| Gender of CBO Clients | | | | |
| Male | - | 59% | 61% | 60% |
| Female | - | 41% | 39% | 40% |
| Ethnicity of CBO Clients | | | | |
| White | - | 1% | 47% | 19% |
| Hispanic | - | 0% | 15% | 6% |
| Asian | - | 0% | 23% | 9% |
| Black | - | 0% | 13% | 5% |
| Other/Unknown | - | 99% | 2% | 60% |
| | | | | |
| STRATEGIC PARTNERSHIPS FORMED | 66 | 93 | 102 | 261 |
| Mix of Partnerships | | | | |
| Public | 39% | 26% | 56% | 41% |
| Private | 61% | 74% | 44% | 59% |
| Type of Partnerships | | | | |
| Service Leveraging | 4% | 10% | 18% | 12% |
| Resource Leveraging | 5% | 20% | 16% | 15% |
| Worksite Experience | 29% | 2% | 4% | 9% |
| Product Development Collaboration | 14% | 16% | 11% | 13% |
| Economic Development Consortia | 1% | 22% | 20% | 16% |
| Information & Referral Networking | 29% | 26% | 25% | 26% |
| Other | 19% | 3% | 7% | 9% |

TABLE A3-2

CAPACITY BUILDING PROGRAMS [continued 2/2]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | |
|---|---|---|---|---|
| | 192 | 204 | 225 | TOTAL |
| | | | | |
| SERVICES PROVIDED AT COLLEGE LOCATIONS | 331 | 3,029 | 114 | 3,474 |
| Types of Services | | | | |
| Needs Assessments | 29% | 0% | 4% | 3% |
| Curriculum Development | 4% | 0% | 12% | 1% |
| Demonstrations | 11% | 0% | 28% | 2% |
| Information Services | 0% | 5% | 0% | 4% |
| Technical Assistance | 56% | 95% | 56% | 90% |

Capacity Building Programs

192 Centers for Applied Biological technologies
204 New Media/Multimedia Entertainment Centers
225 Business & Workforce Improvement/Centers of Excellence

TABLE A3-3

SERVICE DELIVERY & CAPACITY BUILDING PROGRAMS

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | |
|---|---|---|---|
| | 148 | 226 | TOTAL |
| | | | |
| Number of Community College Locations | 6 | 9 | |
| | | | |
| NUMBER BUSINESSES SERVED | 1,777 | 5,213 | 6,990 |
| Type of Business/Employer | | | |
| CBO's | 5% | 0% | 2% |
| Women Owner | 0% | 3% | 3% |
| Minority Owned | 11% | 1% | 4% |
| Size of Business/Employer | | | |
| 1-19 | 33% | 4% | 11% |
| 20-49 | 19% | 9% | 12% |
| 50-249 | 28% | 55% | 48% |
| 250+ | 20% | 32% | 29% |
| Industry of Business/Employer | | | |
| Construction | 8% | 0% | |
| Manufacturing | 16% | 0% | 6% |
| Services Health | 5% | 98% | 74% |
| Services Other | 39% | 2% | 11% |
| Government | 16% | 0% | 9% |
| | | | |
| BUSINESS/EMPLOYER SERVICES | | | |
| Environmental Audits | 34 | | |
| Environmental Audit-Participants | 85 | | |
| Regulatory Compliance | 95 | | |
| Regulatory Compliance-Participants | 125 | | |
| | | | |
| IN-SERVICE FACULTY SERVED | 192 | 387 | 579 |
| Gender of In-Service Faculty | | | |
| Male | 76% | 27% | |
| Female | 24% | 73% | |
| Ethnicity of In-Service Faculty | | | |
| White | 81% | 60% | |
| Hispanic | 7% | 12% | |
| Asian | 2% | 8% | |
| Black | 2% | 9% | |
| Other/Unknown | 8% | 11% | |
| | | | |
| COLLEGE SERVICES PROVIDED | | | |
| Type of Service | | | |
| Curriculum Development | - | 117 | 117 |
| Demonstrations | - | 32 | 32 |
| Employee Education | - | 191 | 191 |
| Environmental Audits | 4 | - | 4 |

TABLE A3-3

SERVICE DELIVERY & CAPACITY BUILDING PROGRAMS [continued 2/2]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | |
|---|---|---|---|
| | 148 | 226 | TOTAL |
| | | | |
| Information Services | 384 | - | 384 |
| Needs Assessments | - | 49 | 49 |
| Assessments | - | 1,953 | 1,953 |
| Regulatory Compliance | 10 | - | 10 |
| Technical Assistance | 174 | 99 | 273 |
| | | | |
| STUDENTS SERVED | - | 6,398 | |
| Gender of Students | | | |
| Male | - | 19% | |
| Female | - | 81% | |
| Ethnicity of Students | | | |
| White | - | 31% | |
| Hispanic | - | 20% | |
| Asian | - | 11% | |
| Black | - | 14% | |
| Other/Unknown | - | 24% | |
| | | | |
| EMPLOYEES SERVED | 6,260 | 4,985 | 11,245 |
| Gender of Employees | | | |
| Male | 72% | 28% | 52% |
| Female | 28% | 72% | 48% |
| Ethnicity of Employees | | | |
| White | 25% | 51% | 37% |
| Hispanic | 12% | 24% | 17% |
| Asian | 2% | 10% | 5% |
| Black | 2% | 15% | 8% |
| Other/Unknown | 59% | 1% | 33% |
| | | | |
| STRATEGIC PARTNERSHIPS FORMED | 143 | 36 | 179 |
| Mix of Partnerships | | | |
| Public | 33% | 58% | 38% |
| Private | 67% | 42% | 62% |
| Type of Partnerships | | | |
| Service Leveraging | 19% | 26% | 20% |
| Resource Leveraging | 23% | 21% | 22% |
| Product Development Collaboration | 18% | 11% | 16% |
| Information & Referral Networking | 23% | 22% | 23% |
| Other | 17% | 19% | 17% |

Service Delivery & Capacity Building Programs

148 Regional Environmental Business Resource Assistance Centers
226 Regional Health Occupations Resource Centers

TABLE A3-4

ADMINISTRATION & COORDINATION PROGRAMS

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | |
|---|---|---|---|---|---|---|
| | 20 | 146 | 147, 231, 232 | 159 | 229 | TOTAL |
| | | | | | | |
| No. Community College Locations | 1 | 9 | 4 | 7 | 8 | |
| | | | | | | |
| TOTAL NUMBER BUSINESSES SERVED | - | - | - | - | 139 | 139 |
| Type of Business/Employer | | | | | | |
| CBO's | - | - | - | - | 1% | 1% |
| Women Owner | - | - | - | - | 0% | 0% |
| Minority Owned | - | - | - | - | 0% | 0% |
| Size of Business/Employer | | | | | | |
| 1-19 | - | - | - | - | 2% | 2% |
| 20-49 | - | - | - | - | 38% | 38% |
| 50-249 | - | - | - | - | 38% | 38% |
| 250-499 | - | - | - | - | 20% | 20% |
| 500 + | - | - | - | - | 2% | 2% |
| Industry of Business/Employer | | | | | | |
| Agriculture | - | - | - | - | 7% | 7% |
| Mining | - | - | - | - | 0% | 0% |
| Construction | - | - | - | - | 0% | 0% |
| Manufacturing - Durable | - | - | - | - | 0% | 0% |
| Manufacturing - Non-Durable | - | - | - | - | 0% | 0% |
| Transportation & Utilities | - | - | - | - | 0% | 0% |
| Trade Wholesale | - | - | - | - | 0% | 0% |
| Trade Retail | - | - | - | - | 0% | 0% |
| Fin., Insurance & Real Estate | - | - | - | - | 0% | 0% |
| Services - Health | - | - | - | - | 0% | 0% |
| Services - Other | - | - | - | - | 83% | 83% |
| Government | - | - | - | - | 9% | 9% |
| | | | | | | |
| IN-SERVICE FACULTY SERVED | - | - | - | - | 235 | 236 |
| Gender of In-Service Faculty | | | | | | |
| Male | - | - | - | - | 35% | 35% |
| Female | - | - | - | - | 65% | 65% |
| Ethnicity of In-Service Faculty | | | | | | |
| White | - | - | - | - | 76% | 76% |
| Hispanic | - | - | - | - | 16% | 16% |
| Asian | - | - | - | - | 2% | 2% |
| Black | - | - | - | - | 3% | 3% |
| Other/Unknown | | | | | 3% | 3% |

TABLE A3-4

ADMINISTRATION & COORDINATION PROGRAMS [continued 2/3]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | |
|---|---|---|---|---|---|---|
| | 20 | 146 | 147, 231, 232 | 159 | 229 | TOTAL |
| | | | | | | |
| SERVICES TO COLLEGES | | | | | | |
| Core Services | - | 100% | 100% | 100% | - | |
| Program Improvement | - | 7% | 11% | 1% | - | 6% |
| Program Design & Development | - | 4% | 4% | 0% | - | 3% |
| Regional Coordination & Assistance | - | 13% | 27% | 51% | - | 30% |
| Regional Development | - | 5% | 3% | 0% | - | 3% |
| Information Dissemination | - | 20% | 24% | 34% | - | 26% |
| Information Services | - | 69% | 57% | 97% | - | 74% |
| RFP Opportunities | - | 14% | 9% | 2% | - | 8% |
| Articles Distributed | - | 17% | 35% | 1% | - | 17% |
| Other Core Services | - | 50% | 32% | 14% | - | 32% |
| ED>Net Project Development | - | 7% | 14% | 2% | - | 8% |
| Committee Support | - | 24% | 25% | 55% | - | 35% |
| ED>Net Support | - | 34% | 28% | 0% | - | 21% |
| Regional Support | - | 23% | 25% | 40% | - | 29% |
| External Visits & Networking | - | 13% | 8% | 2% | - | 8% |
| | | | | | | |
| SERVICES TO EMPLOYERS | | | | | | |
| Core Services | 100% | 100% | 100% | 100% | - | |
| Program Improvement | 0% | 8% | 0% | 0% | - | 3% |
| Program Design & Development | 0% | 4% | 7% | 1% | - | 4% |
| Regional Coordination & Assistance | 0% | 19% | 37% | 92% | - | 49% |
| Regional Development | 0% | 2% | 5% | 0% | - | 2% |
| Information Dissemination | 0% | 34% | 3% | 0% | - | 12% |
| Information Services | - | 74% | 41% | - | - | 38% |
| RFP Opportunities | - | 4% | 59% | - | - | 21% |
| Articles Distributed | - | 22% | 0% | - | - | 7% |
| Other Core Services | 100% | 33% | 49% | 8% | - | 30% |
| ED>Net Project Development | 0% | 14% | 2% | 7% | - | 8% |
| Committee Support | 0% | 27% | 1% | 43% | - | 24% |
| ED>Net Support | 0% | 6% | 7% | 0% | - | 4% |
| Regional Support | 0% | 16% | 31% | 43% | - | 30% |
| External Visits & Networking | 100% | 37% | 58% | 7% | - | 34% |
| | | | | | | |
| SERVICES TO PARTICIPANTS | | | | | | |
| Core Services | 100% | 100% | 100% | 100% | - | |
| Program Improvement | 0% | 1% | 5% | 0% | - | 2% |
| Program Design & Development | 0% | 2% | 3% | 1% | - | 2% |
| Regional Coordination & Assistance | 0% | 5% | 53% | 87% | - | 48% |

TABLE A3-4

ADMINISTRATION & COORDINATION PROGRAMS [continued 3/3]

*(Source: Chancellor's Office Database)*

| | CHANCELLOR'S OFFICE PROGRAM NUMBERS | | | | | |
|---|---|---|---|---|---|---|
| | 20 | 146 | 147, 231, 232 | 159 | 229 | TOTAL |
| | | | | | | |
| Regional Development | 0% | 1% | 2% | 0% | - | 1% |
| Information Dissemination | 0% | 4% | 11% | 7% | - | 7% |
| Information Services | - | 85% | 76% | 97% | - | 86% |
| RFP Opportunities | - | 10% | 8% | 3% | - | 7% |
| Articles Distributed | - | 5% | 16% | 0% | - | 7% |
| Other Core Services | 100% | 87% | 26% | 5% | - | 55% |
| ED>Net Project Development | 0% | 2% | 9% | 16% | - | 7% |
| Committee Support | 21% | 3% | 18% | 47% | - | 22% |
| ED>Net Support | 55% | 2% | 25% | 0% | - | 21% |
| Regional Support | 0% | 3% | 23% | 36% | - | 16% |
| External Visits & Networking | 24% | 90% | 24% | 2% | - | 35% |
| | | | | | | |
| STRATEGIC PARTNERSHIPS FORMED | 8 | 130 | 24 | - | 14 | 176 |
| Mix of Partnerships | | | | | | |
| Public | 100% | 52% | 50% | - | 14% | 51% |
| Private | 0% | 48% | 50% | - | 86% | 49% |
| Type of Partnerships | | | | | | |
| Service Leveraging | | 15% | 18% | - | 9% | 14% |
| Resource Leveraging | 50% | 24% | 18% | - | 22% | 24% |
| Worksite Experience | | 7% | 13% | - | | |
| Product Development Collaboration | | 20% | 18% | - | 30% | 19% |
| Economic Development Consortia | | 8% | 16% | - | 13% | 9% |
| Information & Referral Networking | 50% | 27% | 18% | - | 26% | 26% |

Administration & Coordination Programs

| | |
|---|---|
| 020 | Locally Based Statewide Economic Development Network |
| 146 | Strategic Priority Leadership, Coordination & Technical Assistance |
| 147,231,232 | Business & Workforce Improvement/Professional Development Institutes |
| 159 | Regional Business Resource Assistance & Innovation Network |
| 229 | New Program Development & Marketing |

# APPENDIX 4 Data Organization: EDD & FTB Data

# Data Organization: EDD & FTB Data

**ED>Net Sample Selection**

The following service delivery (or service delivery and capacity building) programs were contacted through the Chancellor's Office and the ED>Net Program Director's Office and requested to supply a list of company names and associated federal Employer Identification Numbers (EINs) where the program provided an economically significant level of service.

| No. | Program Name |
|---|---|
| 135 | Workplace Learning Resource Centers |
| 143 | Small Business Development Centers |
| 144 | Centers for Applied Competitive Technologies |
| 145 | Centers for International Trade Development |
| | Regional Environmental Business Resource Assistance Centers |
| 198 | Advanced Transportation Technologies |
| 228 | Industry Driven Regional Education & Training Collaboratives |
| 229 | Job Development Incentive Training Fund |
| CEd | Contract Education |

A significant level of service was defined to include at least one of the following:

- Providing training and/or education services to a company's workers
- Providing workplace environmental audits and/or providing related management and technical assistance
- Providing workplace health audits and/or providing related management and technical assistance
- Providing training and/or technical services on new/emerging technologies, including computer assisted manufacturing
- Assisting companies to export their products/services or import resources/ intermediate goods
- Providing counseling/training/management services to companies seeking to expand or otherwise obtain funding/resources and to entrepreneurs attempting to start new businesses

The rule was made that for a company to have received an economically significant level of service the interaction between the company and a program had to involve a minimum of 10 hours of service.

A web site was established where program directors could post the companies' names, EINs, program numbers, and addresses. The web site was kept open for thirty days. A total of 1,177 companies were reported.

The company list was edited as follows:

- Companies whose federal EIN numbers had either fewer than or more than nine digits were excluded
- Companies whose program number for the services they received was not reported were excluded.
- Public agencies, public organization, CBOs and other not-for-profit organizations were excluded, including: housing authorities, water districts, colleges, universities, community colleges, city/regional transit authorities, school districts, city/county/state utilities, medical centers, health centers, hospitals, chambers of commerce and community associations

All together, these edits reduced the ED>Net EIN company list by about two thirds.

| | INITIAL COMPANY LIST | | EDITED COMPANY LIST | |
|---|---|---|---|---|
| PROGRAM NUMBER | NUMBER COMPANIES | PERCENT COMPANIES | NUMBER COMPANIES | PERCENT COMPANIES |
| 135 | 161 | 14% | 44 | 13% |
| 143 | 189 | 16% | 107 | 31% |
| 144 | 225 | 19% | 64 | 18% |
| 145 | 85 | 7% | 54 | 15% |
| 148 | 25 | 2% | 3 | 1% |
| 198 | 137 | 12% | 11 | 3% |
| 228 | 117 | 10% | 27 | 8% |
| 230 | 91 | 8% | 8 | 2% |
| CEd | 55 | 5% | 31 | 9% |
| unknown | 92 | 8% | | 0% |
| | 1,177 | 100% | 349 | 100% |

**EDD Data**

The edited list of companies was provided to the EDD with a request that it assign a 4-digit Standard Industrial Classification (SIC) code to each establishment and than create a "comparison group" of establishments stratified by [a] SIC code, [b] geographic region, and [c] number of employees. It was requested that the comparison group statistics be calculated as the average (mean) value of five stratified random samples of 300 companies each drawn from the universe of EDD companies that did not receive ED>Net services. In all, the comparison group statistics represent the mean value of 1,500 companies drawn as five independent stratified random samples of 300 each from the EDD universe of companies not receiving service from ED>Net programs

The number of employee strata used to select establishments for inclusion in the "comparison group" was to be in the range of 1-5 employees, 6-10 employees, 11-25 employees, etc. It was

subsequently agreed that EDD would use the size ranges normally used by the federal Bureau of Labor Statistics (BLS) or organizing companies by size of establishment.

Using the ED>Net and comparison group statistics, EDD was requested to generate the following information:

- Total annual wages and salaries paid by all ED>Net establishments.
- Total annual wages and salaries paid by all Comparison Group establishments
- Average monthly employment by ED>Net establishments
- Average monthly employment by Comparison Group establishments

EDD was requested to generate the information for the years 1996, 1997 and 1998.

After EDD's initial match of the ED>Net company EINs with their UI-tax database, it was discovered that there were EINs with multiple locations. American Airlines, for example, had over 50 locations separately recorded under its EIN. Altogether, the edited ED>Net company list of 349 EINs produced over 2,000 EIN locations. This presented two problems: (a) some companies had so many multiple locations that it was not reasonable to expect the entire company (at all its locations) to be impacted by the service one or two of the locations received from ED>Net programs, and (b) some companies were so large that it was not reasonable to expect the level of service provided by ED>Net to impact their economic growth/viability or profitability.

To address both these problems, the following rules were adopted: (a) any company with a single EIN that reported five or more locations was dropped from the ED>Net company list; and any company with average monthly employment (at all locations) greater than 1,000 workers was dropped from the ED>Net company. These rules reduced the number of EIN ED>Net companies from 349 to 227. The number of companies in the comparison group samples remained at 1,500.

Finally, the first calculation for the comparison group had a large number of businesses in the Eating and Drinking industrial category than was true for the ED>Net EIN companies. This caused the average wage paid by the comparison companies to be low relative to the ED>Net EIN companies. The problem with this was that the results would be biased upward showing ED>Net companies doing better than they actually were – not because of any community college based economic development interventions but simply because of the industrial concentration of Eating and Drinking establishments in the comparison sample. It was decided to re-calculate the data excluding SIC 58 – the industrial category in which Eating and Drinking places fall. This reduced the number of EIN ED>Net companies to 224. The number of companies in the comparison group samples remained at 1,500. Both the EIN ED>Net companies and the comparison group companies excluded all SIC 58 establishments.

The following tables give the industry and size distributions of the EIN ED>Net companies and the comparison companies.

TABLE A3-5
INDUSTRY DISTRIBUTION OF ED>NET & COMPARISON COMPANIES
*(Source: EIN ED>Net Sample & EDD Comparison Company Sample)*

| | ED>NET COMPANIES | COMPARISON COMPANIES |
|---|---|---|
| Agriculture | 2% | 1% |
| Construction | 4% | 5% |
| Manufacturing-Non-Durable | 16% | 7% |
| Manufacturing-Durable | 29% | 6% |
| Transportation | 1% | 1% |
| Communications | 1% | 1% |
| Wholesale Trade | 13% | 8% |
| Retail Trade | 8% | 24% |
| Finance, Insurance & Real Estate | 4% | 2% |
| Services | 24% | 45% |
| | 100% | 100% |

TABLE A3-5
INDUSTRY DISTRIBUTION OF ED>NET & COMPARISON COMPANIES
*(Source: EIN ED>Net Sample & EDD Comparison Company Sample)*

| | ED>NET COMPANIES | COMPARISON COMPANIES |
|---|---|---|
| 1-3 | 12% | 0% |
| 4-9 | 13% | 57% |
| 10-19 | 11% | 17% |
| 20-49 | 23% | 17% |
| 50-99 | 14% | 5% |
| 100-249 | 15% | 4% |
| 250-499 | 8% | 0% |
| 500 + | 2% | 0% |
| no size known | 2% | 0% |
| | 100% | 100% |

**FTB Data**

The FTB was provided with the list of EINs for both the ED>Net sample companies and the comparison companies identified by the EDD. It matched the EINs with its tax records to generate the gross profit from both samples. As with the EDD, a total of five comparison group samples was drawn. Both mean and median gross profit were calculated for all the groups. Consistent with the high degree of skewness normally observed in gross profit data, mean gross profit was significantly greater than median gross profit. It was consequently decided to use the mean of the five comparison groups' median gross income and to compare it with the median of the ED>Net companies' gross income.

Although the federal EINs transferred to the FTB were all associated with companies having UI tax records at the EDD, there was a considerable loss of EINs for which income tax schedules had been filed. The match rate for the ED>Net companies was fifty three percent in 1996 and fifty six percent in 1997. The mean match rate for the five samples of comparison companies was sixty three percent in 1996 and fifty six percent in 1997.

Because of delays in obtaining tax records from the federal government, the FTB was only able to provide gross profits data for 1996 and 1997.

# APPENDIX 5 Data Organization: Chancellor's Office Administrative Database

# Data Organization: Chancellor's Office Administrative Database

Administrative database files for AY 1997-98 and AY 1998-99 were provided by the Chancellor's Office and their programming consultant. The core files (and their respective form abbreviations and number of items) were provided for the following data entry screens:

| File Name | Number of Items |
|---|---|
| Business/College Profile (BC) | 23 |
| Participants Profile (PP) | 148 |
| Products (PR) | 4 |
| SCANS Competencies (SC) | 36 |
| Strategic Partnerships (PA) | 12 |
| Technical Assistance & Information Services (TA) | 247 |
| Training (TR) | 132 |

Additional data files were also forwarded, however these tended to focus on administrative and/or process measures associated with program activities, e.g., lists of committee members, data dictionaries, project-program descriptive characteristics.

The Economic Development Program Data Collection Companion (98/99) was also provided along with hard copy of the multiple forms in use across programs within each data set. (For example, the Technical Assistance and Information Services data set includes six forms that vary by program and project used.) Importantly, the Data Collection Companion provides a "key" for identifying common data elements used across multiple forms, thus assuring consistent data management and summary calculations (see below).

**Data Management**

This section will briefly describe steps taken to generate files for analysis. Each form had some unique as well as common issues to be addressed during data management. This often resulted in customizing procedures within each substantive file. However, a common set of protocols were developed and implemented regardless of content or program. It is these latter programming activities which will be the primary focus for this appendix.

All data files provided to the contractor were imported into Statistical Package for the Social Sciences (SPSS, Version 9), a widely used statistical application. Data records were provided at the project level. However, varying types of project records were included. For example, some files contained a project's quarterly data submissions to the Administrative data base as well as year-end "total" records. Others only included quarterly data. Some files also reported data within the academic year but with multiple grant year records. According to the Chancellor's Office and their programmer this was done to distinguish activities performed under different budgeted years and reflected carry-over issues. Finally, some forms (e.g. TR and TA) were

provided as multiple files within each type because of the large number of data elements or items.

Data cleaning for the two academic years and across the seven types of files included:

- checking consistency of data between quarterly totals and the "total" record;
- developing numeric identifiers based on the text string for year, program and project;
- correcting errors in program and project identifiers;
- merging multiple files within a particular form and year;
- renaming data elements (based on SPSS constraints);
- examining all items in all forms via frequencies and ranges.

The last item above deserves more detailed discussion. Not surprisingly, some values across the hundreds of fields in these files could be identified as data entry errors. The obvious examples involved values in the millions for businesses where training may have occurred. These responses were edited and set to system missing within SPSS. However, there were some values within sets of items (e.g., hours of training) where very high values were examined further in relation to the number of training, types of activity, etc. Here, if the values were outliers but appeared reasonable in relation to other values for that record, then those responses were left as originally provided. It does, however, raise the question that some projects or programs may be operationalizing their responses differently. For example, under hours of TA it is possible that one project used total hours in group presentation while another may have multiplied hours in the presentation times the number of participants. Future work should consider examining implementation issues for these types of systematic variation.

Beyond data cleaning, a summary measure was computed that totaled blank or zero values within each type of file for each record. This was done to check whether quarterly or total project records had been sent that were essentially "nulls," i.e., contained no usable information. Based on examining results from this computed measure, the Chancellor's Office, TLA and JBA decided to focus analysis of the administrative data base on the 1998-99 program year. Forms for AY 1997-98 often had more than 50% of the projects reporting no information. This turned out to be reasonable given either their start-up status or that software development and dissemination had not occurred until well into that academic year. It is also critical to point out that a project reporting data values for very few fields on a particular form did not mean that they were negligent in this administrative activity. TLA/JBA do not know the extent to which fields may not have been applicable to a particular project and therefore would not yield valid responses versus those times when data values should have been provided but, for some reason, were not. Regardless, the relatively large percentages of missing information - even from programs that did forward valid responses on some or many items - may be an issue to address during development of a formative evaluation system.

**Aggregation**

As noted above, the various files contained either quarterly, annual or multiple contract years for each project. These varying (and redundant in the case of quarterly/yearly) records per project could not be analyzed as provided. First, where quarterly and yearly records were provided the contractor selected the yearly ones for further data management and analysis. Second, files were summarized across relevant multiple records based on key measures. That is, AY 1998-99 records were aggregated within projects across multiple grant years (where applicable given the varying number of grant/fiscal records of activity provided). Then projects were aggregated to the program level. During each of these steps, check variables were created to insure that these aggregating procedures were generating valid results.

During the aggregation process **all** items provided in the original files were incorporated. In general, values were summed across all records within either the project or program. This is reasonable given the desire to generate global measures of activity and performance. For example, the number of businesses served were added across records for a project with multiple grant records within AY 1998-99.

The aggregation procedures resulted in each file having a relatively limited number of program records with many data elements or variables. However, additional computed measures were required to produce the summary statistics used in the report. Specifically, each form was reviewed for sets of data elements (or column headings) that could be used jointly. For example, on the TA forms, the number of employers involved two fields: business/government and CBOs. Likewise, on the BC form industry sectors included 12 possible (and independent) responses from agriculture to government. Similar sets of items included: contract hours (business/gov and CBO/colleges) training participants (bus/gov, CBO, colleges), etc. In fact, there were many sets of these items across the various files. For each set of total value was calculated (e.g. total number of businesses across industries). This total was then used to generate the proportion of each category within that set (e.g. percentage of businesses that were in the agricultural sector). A similar procedure was implemented for all other sets of items based on these column variables. Importantly, these column "manipulations" were done uniquely for each row of each file so that one could present, for example, the percentage of employers that were business/government for TA demonstrations as well as for Assessments, customized curriculum development, etc. Similar row-specific computations were done with all files based on the forms provided.

A second set of summary variables had to be created based on **row** variables within the participants profile. In this case, the actual variable "sex" was constructed based on the values provided for male and female rows for each column (faculty, students, CBO clients and employees). A similar set of recodes and computes were used to generate race/ethnicity. For

each of these variables both n's and percents were generated for their relevant values (males, females; whites, Hispanics, etc.). Future data collection within the formative evaluation may explore alternative approaches to the one being used in the administrative data base. This might result in more straightforward data collection. Finally, the calculations made for these summary measures (as well as in aggregating) were based on SPSS's "sum" function. This results in totals being generated even if one or more of the items used was blank or missing (based on user-defined values). The alternative approach using a standard addition function would have resulted in virtually no usable summary values since it requires complete information on all measures used in the calculation.

An important aspect of the above sets of created variables is that within each form the percentages may be based on different total numbers. For example, calculating the percentage of women-owned businesses based on the total businesses served may use a different denominator when calculating the percentage of agricultural businesses among all those listed under industry sectors. This would occur when there was incomplete data on the industry sectors identified for businesses served by a project or program. However, it was critical to use the calculated sum of businesses listed in the industry sector to insure that percentages summed to 100% based on valid responses. In general, the variation was relatively minor in denominators for each of the programs across sets of items within a file. However, for total n's used in the report text or graphs for different descriptive variables (gender, race, industry sector, etc.) may vary - but that this variation is reasonable given program and project-level missing information for one or more measures.

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