PREPARING 
tomorrow’s innovators

A COMMUNITY DIALOGUE ON CONNECTING YOUTH WITH TECHNOLOGY SKILLS AND OPPORTUNITIES

JOINT VENTURE’S 2003 WORKFORCE FORUM REPORT
JOINT VENTURE: SILICON VALLEY NETWORK
is a regional, nonpartisan voice and a civic catalyst for solutions to problems that impact all sectors of the community. Joint Venture brings together established and emerging leaders from business, labor, government, education, nonprofits and the broader community to build a sustainable region that competes globally. We work to promote economic prosperity and improve the quality of life in the region, making Silicon Valley a better place to live and work. Joint Venture welcomes your participation in its various activities, which are described in detail at www.jointventure.org.

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Dear Friend,

As an organization that promotes broad-based regional collaboration, Joint Venture places a high value on public input. Perspectives provided by community members are essential to defining challenges facing Silicon Valley and creating regional solutions.

In spring 2002, Joint Venture partnered with the Valley’s three Workforce Investment Boards to convene a series of community forums on a question of great regional importance: How can Silicon Valley do more to help the region’s youth prepare for the highly-skilled technology jobs that will drive our long-term economic growth? The impetus for these forums was provided by two Joint Venture studies—conducted in 1999 and 2002—that revealed a serious need to increase young people’s interest in technology professions and connect them with career opportunities and information.

Over 100 community members attended the three forums, sharing their views on the status—and, in some areas, the shortcomings—of the region’s education and career preparation efforts. This report highlights the key messages from these forums, including the many solutions envisioned by participants. The results of these forums make it clear that preparing young people for the jobs of tomorrow must be the shared responsibility of all segments of the region. Educators, businesspeople, public sector employees, nonprofit staff, philanthropists, labor representatives, students and parents will all gain from what forum participants had to say.

Our intention is that this report will promote continued dialogue on Silicon Valley’s key workforce trends and catalyze action to help our young people thrive as innovators in the “next” Silicon Valley economy. We invite you to visit www.jointventure.org/workforce to learn more about how you or your organization can get involved.

Sincerely,

Marguerite Wilbur
President and CEO
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Executive Summary

Joint Venture’s 2002 Workforce Study: Connecting Today’s Youth with Tomorrow’s Technology Careers identified several challenges the region faces in preparing its young people for the types of high-tech occupations that are predicted to drive future job growth in the Valley. Among the key challenges were increasing young people’s understanding of and interest in technology careers, and connecting a broader population of students—including more young women and minority students—with career opportunities, information and guidance.

To gather broad public input on how Silicon Valley might address these challenges, Joint Venture and the region’s Workforce Investment Boards held three community forums across the Valley during spring 2002. Participants identified various organizations and programs that work to connect youth with technology careers and technical skills, and indicated that many programs have experienced success. Forum participants also highlighted several areas that the region needs to explore to more effectively prepare young people for future careers:

• Young people need to be provided with more information on the nature of technology professions.
• Additional opportunities to integrate technology and project-based learning into academic curricula should be identified.
• Improved coordination is needed among the various parties involved in preparing young people for future careers.
• Young women and minority students should be better directed toward preparation for technology careers.
• Parental involvement in educating students about technology and careers should be enhanced.
• There must be a greater commitment of resources for preparing young people for technology careers.
• Tracking and assessment of training and career preparation programs should be improved.

Participants at the forums identified various strategies by which the region might move forward on these areas: increased business participation and investment in school-based programs; increased information-sharing among businesses, schools, public agencies and non-profit service providers; increased funding for teacher training; increased support for career counseling for youth; a greater emphasis on project-based learning opportunities for young people; increased mentoring programs for—and outreach to—young women and minority students; and new programs designed to teach parents about technology and related careers.

A recurring theme heard in the community forums was the need for a single source of information on the many Silicon Valley programs and resources related to youth and workforce issues. In response, Joint Venture is launching a comprehensive, Web-based directory of programs, organizations and events focused on youth education, job training and career development.

Based on the discussions at the forums, Joint Venture has identified several other actions that might be undertaken by the region as “next steps” in advancing the solutions highlighted by forum participants. This set of potential actions is not meant to be prescriptive, but rather is intended as a menu of options for how our community might follow up on the insights shared at the forums. These actions include:

1. initiating a regional discussion on how to create a “cultural shift” in perceptions of technology careers and technical skills;
2. exploring the creation of a communications strategy to increase youth knowledge of high-tech careers and build public awareness of the issue;
3. convening stakeholders to discuss strategies targeted to young women and minorities;
4. gathering additional information on school resource needs and strategies for meeting them;
5. convening the various stakeholders to discuss strategies for expanding—and increasing the impact of—parental involvement in young people’s education and career preparation; and
6. developing a plan for improving evaluation of programs that prepare youth for the workforce.

Wherever possible, these actions should be coordinated so as to maximize their combined regional impact.
Connecting Young People with Technology Training and Careers: Why It Matters

How Silicon Valley addresses its workforce training and development needs is an issue fundamental to the region’s economic health and quality of life. For the business community, an effective regional approach to workforce training and development means that businesses can feel confident they will be able to meet their short-term and long-term demand for qualified workers. For individual workers, a workforce training and development system that gives them the right skills can pave the way for economic opportunity and long-term career mobility.

In light of the changing work environment—characterized by rapid technological change and intense global competition—the region undoubtedly must find ways to help current workers to gain new skills and, where necessary, transition into new career paths. Yet any regional approach to workforce development also must take into account how well our future “homegrown” workforce—young people currently in Silicon Valley high schools—is being prepared for high-skill, high-wage jobs. We need to focus not only on preparing young people for technology careers, but also on helping them develop the technology skills that are needed in an ever-increasing number of professions.

Findings presented in the 2003 Index of Silicon Valley, Joint Venture’s annual “scorecard” of the region’s progress toward the Silicon Valley 2010 vision, show the importance of putting young people on the path to high-skill jobs. An analysis of occupations that had the fastest job growth during the economic boom of the late 1990s revealed that the local labor market is becoming increasingly split between high-wage jobs that require a bachelor’s degree and lower-wage jobs that require no formal postsecondary education. In addition, within the fast-growth occupations requiring a college degree, two-thirds of the newly created jobs required a degree in a technical field (for more information, see page 21 of the 2003 Index of Silicon Valley, available at http://www.jointventure.org/2003index/2003index.pdf).

Cultivating a homegrown workforce is ultimately about creating sustainable communities, making it possible for those who grow up in the Valley to have fulfilling careers and afford to live right here in the region. When individuals raised here must move away to find suitable work, it is disruptive to families as well as to community life.

Silicon Valley must make a long-term commitment to ensure that all of Silicon Valley’s young people have the opportunity to benefit from and contribute to the region’s future economic growth and prosperity. The two workforce studies put out by Joint Venture in conjunction with A.T. Kearney—the first in 1999, and a follow-up in 2002—and the series of regional forums that grew out of these studies fostered much-needed dialogue around the region’s workforce and education needs.
The 1999 Workforce Study: An Analysis of the Workforce Gap in Silicon Valley, a collaborative effort between Joint Venture and A.T. Kearney, showed the great difficulty that the region’s businesses face in finding enough qualified technology workers in the local labor pool during periods of strong economic growth. In considering the region’s need for skilled workers over the long-term, the 1999 Workforce Study reported that the future supply of technology workers could be jeopardized by the fact that Silicon Valley high school students generally were not well-informed about technology careers and were not building the skills needed to prepare for such careers.

In early 2002, Joint Venture and A.T. Kearney released a follow-up report, 2002 Workforce Study: Connecting Today’s Youth with Tomorrow’s Technology Careers. Based on a survey of more than 2,500 8th- and 11th-graders in public and private Silicon Valley schools, the 2002 Workforce Study provided an in-depth analysis of the linkage between current high school students and technology careers. Like the previous study, the 2002 Workforce Study found that Silicon Valley needed to increase young people’s awareness of and interest in technology professions. In addition, the 2002 Workforce Study indicated that more should be done to connect students with career opportunities, information and guidance. Key findings from the 2002 Workforce Study included the following:

- Computer access and usage are very high among Silicon Valley students. Ninety-nine percent of students have access at some location (home, school, friend’s home, library, etc.), although Hispanic students and students from lower-income families are less likely to have home access to computers.
- Although 73 percent of students reported having some familiarity with at least two high-tech occupations, student awareness of high-tech careers lags behind their awareness of more traditional professions.
- There is a considerable drop-off between student awareness of high-tech careers and student interest in these careers, with 32 percent of students planning to pursue technology- or computer-related careers.
- The proportion of Hispanic students planning to attend four-year college (53 percent) is significantly lower than that of Asian (74 percent), African American (69 percent) and White students (69 percent). This suggests that Hispanic students are less likely than their peers to obtain the type of post-secondary training required for the region’s higher-paying jobs. Added to this is the fact that Hispanic students lag behind their peers in terms of pursuing math curricula while in high school. According to the 2003 Index of Silicon Valley, Hispanic or Latino students had the lowest rate of enrollment in Intermediate Algebra of any ethnic group.
- There is a gender gap with regard to student awareness of and interest in technology careers, with females being only about half as likely as males (23 percent vs. 42 percent) to report wanting to pursue a high-tech career. It is important to note, however, that the region’s gender gap in terms of college degrees in math, science and engineering appears to be closing. According to the 2003 Index of Silicon Valley, women earned 27 percent of such degrees in 2000, up from 20 percent in 1990.
Another important insight from the 2002 Workforce Study was the significant influence that students’ social networks have on their career interests and access to career information and guidance. Students whose parents are both in high-tech professions are more likely to be interested in technology careers. In addition, more than three-quarters of students obtain job and career information through family and friends, although students from lower socioeconomic backgrounds are far less likely to rely on personal relationships for this information. Two thirds of students obtain career information from the mass media, a source that—as outside research has shown—generally presents unflattering and unrealistic images of technology workers.

To encourage public dialogue on these findings, the 2002 Workforce Study concluded with a “Call for Discussion,” which outlined the questions the region must address to more fully cultivate a homegrown workforce. For example: How can we build better awareness among students concerning the full range of career opportunities in Silicon Valley’s technology sector? How can we help students to acquire the skills that will be in demand in the future labor market? How can we increase female and Hispanic students’ awareness of technology careers? How can we help all students—and especially those from low-income families—establish new personal connections and networks that increase their awareness of different careers and foster upward mobility? (The complete Call for Discussion can be found in the 2002 Workforce Study, available at http://www.jointventure.org/workforce/Workforce_Final.pdf)

In spring 2002, Joint Venture partnered with Silicon Valley’s three Workforce Investment Boards—NOVA Workforce Board, San Mateo County Workforce Investment Board and the Silicon Valley Workforce Investment Network—to hold a series of community forums based on the 2002 Workforce Study findings and Call for Discussion. Attended by more than 100 people, the forums provided an opportunity for community members—both youth and adults, including representatives from business, education, labor, government, and the nonprofit sector—to discuss strategies for preparing young people for technology professions. (For a list of forum participants, see page 16 and 17 of this report.)
What Was Learned: Ideas and Insights from the Community Forums

Forum participants were asked to reflect on three main questions: What programs and practices are currently in place for preparing youth for technology careers? How effective are the programs and practices? What new ideas and practices might be developed to enhance opportunities and effectiveness?

In addressing these questions, forum participants provided feedback that aligned well with the 2002 Workforce Study’s Call for Discussion. Information obtained from the forums offer a rich portrait of the multitude of programs available to help young people learn about and apply technology. Forum participants also identified significant challenges in preparing today’s students for careers in high-tech, and proposed some strategies for meeting these challenges.

Findings from the community forums are presented here in two sections. The first section summarizes the existing programs and resources identified by forum participants, while the second section describes participants’ perspectives on successes, challenges and proposed solutions.

Existing Technology Education and Training Programs for Youth

Forum participants indicated that a wide array of organizations, programs and services play a role in increasing young people’s access to technology, teaching them about technology or related skills, or providing students with career guidance or information. The following is a summary of the types of programs, services and resources identified by forum participants.

**School-Based Programs: programs, activities and events offered by a school site**

- Classes in Web design, programming and other technology skills
- Computer labs
- Science fairs
- Career Days that bring technology professionals into schools
- Learning labs to assist students with math and science coursework
- Academic enrichment programs, which provide tutoring, mentoring, individualized counseling, cultural activities and other support to help students finish high school and move onto college
- Magnet schools for students with a special interest in technology
- School-to-career (STC) programs, which utilize special courses, mentoring and work-based learning to create a stronger link between classroom learning and the world of work (The STC category includes career academies, which take a “school within a school” approach.)
- Programs that enable students to learn technical skills by refurbishing donated computer hardware for classroom use
- Teacher technology training provided at community colleges
- Project-based learning
Business-Run Programs: programs and activities operated, hosted or primarily funded by businesses or industry associations

- Comprehensive technology training (in programming, database skills, networking and other areas)
- Industry-sponsored teacher development that provide hands-on technology training
- Work-based learning opportunities for students, including job shadowing, internships and paid employment
- Academic enrichment and applied learning programs that help attract minority students into math, science and technology careers
- Mentoring (including “e-mentoring”)
- Internships for high school students
- Intensive summer camps that provide technology training to low-income youth
- Bring Your Daughter/Child to Work Days
- Computer donations to schools

Programs in the Nonprofit and Public Sectors: programs operated by nonprofit organizations or by government agencies

- Comprehensive youth employment programs
- Computer classes
- Community-based vocational education and career exploration programs
- Nonprofits that offer students a structured, age-appropriate curriculum in technology skills, economics and workplace readiness
- Afterschool tutoring and academic enrichment
- Community technology centers
- Basic computer skills classes for immigrants
- Summer math/science camps specifically for young women
- Mentoring programs, including those targeted to minorities and young women
- Regional competitions in robotics

Connecting Youth with Technology Training and Careers:

Successes, Challenges and Solutions

In addition to identifying the many systems and services that play a role in preparing young people for careers, forum participants explored some of the issues involved with connecting Silicon Valley youth with technology careers and skills. Forum participants pointed to several successes, thus highlighting examples of promising strategies for preparing youth for future careers.

- **Community technology centers** provide training and hands-on exploration with technology.
- **Computer use in schools** (for example, for Internet research and word processing) exposes youth to technology.
- **School-based career academies** appear to be effective in placing students in four-year colleges.
- **Computer classes** are effective in introducing students to technology and preparing them for technology careers.
- **Career days and Bring Your Child to Work Day** help introduce youth to careers.
- **Internships and job shadowing** introduce young people to technology careers and help in career preparation.
- **Mentors and internships** help prepare youth for technology careers.
- **Programs that connect female and minority students to internships** help engage them in technology-related careers.
- **Technology programs at community colleges** provide participants with training in the most up-to-date skills and are closely aligned with specific labor market needs.
While identifying many current successes in preparing young people for technology careers, forum participants also discussed some of the major challenges and needs that the region must address. The remainder of this section highlights the major challenges identified by forum participants, as well as the various solutions that participants recommended.

1) YOUNG PEOPLE NEED TO BE PROVIDED WITH MORE INFORMATION ON THE NATURE OF TECHNOLOGY PROFESSIONS.

Key Points from the Forums

- Youth do not have a clear sense what they might do in a high-tech job.
- Career counseling at the high-school level is not effective at—or oriented toward—informing young people about high-tech careers.
- There is no clear definition of what a “high-tech career” means.

Solutions Proposed by Forum Participants

- Greater involvement by the business community in mentoring and other means of building awareness of high-tech opportunities. Businesses should promote employee involvement in mentoring and offer increased support for work-based learning (internships, job shadowing). Also, more businesses should participate in career days and other career exploration events.
- A media and marketing strategy to promote technology careers. Marketing and advertising efforts conducted with support from industry should be undertaken to build youth awareness of and interest in technology careers. Celebrity spokespeople should be identified who would elevate the visibility of technology careers.
- Better support and increased resources for career counselors. Resources should be made available to increase the number of career counselors in schools. In addition, career counselors should receive additional training with regard to technology careers.
- Greater recognition of students’ accomplishments in technology. There should be increased support for science fairs and similar awards programs at the high-school level.

To provide some additional insights on the issues discussed at the community forums, this report includes a series of viewpoints offered by local leaders with expertise in helping young people explore technology and related careers.

VIEWPOINT

What’s Needed Is a Cultural Shift

Peter Giles, President and CEO, The Tech Museum of Innovation

Back in the 1960s, the dominant image of a technology career would have been working with the space program, exploring the universe. Somewhere along the way, the stereotype of the high-tech nerd developed, and we lost the sense that technology careers were cool. We need to think of connecting young people and technology careers not simply as a matter of getting more students to pursue math and science curricula (though this would be a very good first step). Rather, we must create a cultural shift in how technology careers and high-tech workers are viewed.

We all know that young people’s lack of interest in technology careers is not the result of a limited interest in technology itself. Young people as a whole are extremely tech-savvy and have integrated a range of technologies—mobile communications, instant messaging, digital music and photography—into their daily lives to an astonishing degree. This is something to build on. The challenge is to provide a link between using the latest technology and aspiring to create the latest technology.
WHAT WAS LEARNED: IDEAS AND INSIGHTS FROM THE COMMUNITY FORUMS

2) ADDITIONAL OPPORTUNITIES TO INTEGRATE TECHNOLOGY AND PROJECT-BASED LEARNING INTO ACADEMIC CURRICULA SHOULD BE IDENTIFIED.

Key Points from the Forums

- Technology is not well integrated into the school curriculum. Computer classes tend to be limited to word processing and other applications.
- Students have only limited opportunities for hands-on, project-based learning because of the heavy emphasis currently placed on standardized tests.
- Interactive multimedia technology can be an effective teaching tool across all academic subjects.

Solutions Proposed by Forum Participants

- Additional support for project-based learning. Applied, project-based learning should receive more emphasis in schools. For example, virtual training courses or virtual job experiences would enable students to apply academic skills while exploring high-tech careers.
- Students serving as teachers of technology. There should be opportunities for high school students to teach younger students about technology.

3) IMPROVED COORDINATION IS NEEDED AMONG THE VARIOUS PARTIES INVOLVED IN PREPARING YOUNG PEOPLE FOR FUTURE CAREERS.

Key Points from the Forums

- Greater collaboration between the business community and workforce preparedness programs could strengthen the linkage between these programs and specific labor market needs.
- There is a need for increased collaboration between the education system and other youth-serving institutions (such as public agencies and nonprofits). Such collaboration could improve service integration and reduce duplication of efforts.
- Technology companies, schools, and nonprofits and other service providers do not typically share information with each other about current programs.

Solutions Proposed by Forum Participants

- A single source of information on technology programs. A centralized database of technology career programs, events and other resources (such as speakers and mentors) should be created and made available to the public. This would be a valuable tool for students and parents; school and nonprofit staff working with young people; and the business community.
- An annual (or semi-annual) high-tech “summit.” This event would bring together the business community and Silicon Valley schools and provide a vehicle for future collaboration. Alternatively, a series of ongoing forums between business and educators could be held.
- More intensive business involvement in schools. The business community should be involved with schools on a more consistent basis and should help design school curricula and vocational training programs.
WHAT WAS LEARNED: IDEAS AND INSIGHTS FROM THE COMMUNITY FORUMS

4) YOUNG WOMEN AND MINORITY STUDENTS SHOULD BE BETTER DIRECTED TOWARD PREPARATION FOR TECHNOLOGY CAREERS.

Key Points from the Forums
- There is a shortage of female and minority role models in the technology field.
- Many community-based technology training programs are not reaching female or minority students.
- Technology access in certain communities still lags behind that in other parts of the region.

Solutions Proposed by Forum Participants
- *Increasing the capacity of mentoring programs that target either young women or minority students.*
  There should be expanded efforts to identify female or minority leaders in the technology field, and match them with selected students.
- *Better overall outreach to young women and minority students.*
  Existing technology programs need improved volunteer outreach to female students and to minority communities.

VIEWPOINT
Changing How Young Women Think of Math, Science and Technology

Marie Wolbach, Director and Originator, American Association of University Women-California (AAUW-CA) Tech Trek Science Camp for Girls

Providing role models who have pursued technology careers can make math or science more appealing for young women. There is a common perception among young women that being good at math and science—and especially going into high-tech—means you’re probably a nerd without a social life. So it’s valuable when they meet women who have succeeded in technical professions and who are interesting, have families, and so on. At the same time, we need to help young women see that strong math and science skills will help them in any career they pursue.

It is essential that we cultivate young women’s interest in math and science and keep them engaged in these subjects. One important strategy is to show them that math and science are fun. Giving young women hands-on experiences with math and science lets them see the fun side of these subjects, and makes it much more likely that they’ll stay in them. Experiencing success with hands-on activities as well as with more challenging math and science courses helps young women build their self-confidence and reach for higher goals.

5) PARENTAL INVOLVEMENT IN EDUCATING STUDENTS ABOUT TECHNOLOGY AND CAREERS SHOULD BE ENHANCED.

Key Points from the Forums
- Parents need to be aware of the importance of technology—and technology career opportunities—for their children.
- There should be opportunities for parents to learn more about technology.

Solutions Proposed by Forum Participants
- *Programs targeted at parental education and involvement.* Forums, workshops and/or focus groups should be held to educate and involve parents. Public libraries could be used to educate parents and adults on technology. Also, parents groups could be created that expand parents’ social networks.
- *Events/programs that involve parents and students together.* Opportunities should be created for young people to teach their parents about technology. Also, parents should be invited to attend career days at schools.
WHAT WAS LEARNED: IDEAS AND INSIGHTS FROM THE COMMUNITY FORUMS

6) THERE MUST BE A GREATER COMMITMENT OF RESOURCES FOR PREPARING YOUNG PEOPLE FOR TECHNOLOGY CAREERS.

Key Points from the Forums
- There is a lack of continuity in funding for technology training programs. Funding is usually short-term, fragmented and inconsistent.
- Corporate volunteerism in the schools is sometimes weak if it is not part of the company’s internal culture or if it lacks buy-in from a key executive.
- Computer equipment in schools, which is a key resource in promoting technology-oriented education and training, tends to be incompatible and outdated. Although many businesses generously donate equipment, schools often do not have the resources needed to provide adequate technical support.

Solutions Proposed by Forum Participants
- **Increased corporate volunteerism in schools.** Businesses should encourage employee volunteerism with school-based programs. This would bring additional resources into the schools while providing more role models and mentors for students.
- **Greater investment in programs that introduce younger children to technology.** Industry and other funders should continue to support programs in junior high and high schools, but also invest in programs that help younger children learn about technology.
- **Outside funding for schools.** Companies and nonprofits should be invited to help fund school-based technology programs.

7) TRACKING AND ASSESSMENT OF TRAINING AND CAREER PREPARATION PROGRAMS SHOULD BE IMPROVED.

Key Points from the Forums
- Limited data exist on whether current programs and practices are actually working.
- There is limited coordination across programs in evaluating outcomes. Different programs use different measuring tools and standards, and there is no current effort to look at how individual youth are impacted across different programs.

Solutions Proposed by Forum Participants
- **Greater emphasis on collecting evaluation data.** Businesses, schools and service providers in the community need to improve efforts to collect data on the effectiveness of technology training programs.
- **Improved coordination in evaluation tools and processes.** The various education and training service providers—schools, nonprofits, public agencies—should share data and develop common evaluation tools and standards. This would make it possible to assemble outcomes data on a regional basis and compare results across different programs and strategies.

Giving Youth a Passion for Technology: What Businesses Can Do

Deirdre Hanford, Senior Vice President, Worldwide Application Services, Synopsys

One key to getting young people interested in technology careers is to build their awareness and excitement about uses of technology. Everything around us is designed by engineers. We need to help young people develop a passion for what technology means in the real world.

Businesses can partner with schools to give young people opportunities to touch, feel and experience the uses of math and science. Business support for science fairs helps give students the chance to apply math and science, and receive public recognition for what they create. This type of hands-on experience will do far more than any textbook to interest students in math and science.

Ultimately, more students will pursue tech careers if they have a clear picture of what these careers are really like. One effective strategy is job shadowing, where young people spend a day at the company and learn what really goes on in these big buildings along highways 101, 237 and 680. This approach “humanizes” the tech world for youth and also helps them visualize how they might fit into the high-tech field.
Next Steps: A Call for Regional Action

The solutions identified by community forum participants call on all parties—students, parents, schools, nonprofits, labor, government and the business community—to create new ways of working together. Joint Venture and other organizations, as well as individual community leaders, can promote such collaboration and ensure that the forums lead to real action.

Joint Venture manages a variety of initiatives, each focused on facilitating regional cooperation and stewardship. Three current Joint Venture initiatives* in particular are relevant to the challenges and solutions raised at the community forums:

- **Web-Based Directory of Youth Education and Career Development Efforts**
  Joint Venture is compiling a comprehensive directory of programs, events and resources related to youth education, job training and career development. Accessible through the Joint Venture Web site (www.jointventure.org), this directory will provide students, parents, educators, business representatives, labor, and nonprofit and government staff with credible information on existing services and increase communication among these parties.

- **The Next Silicon Valley Initiative**
  Joint Venture is convening and catalyzing the valley’s leadership to create the Next Silicon Valley—to develop a strategy for stimulating the next wave of technology innovation in Silicon Valley, maintaining the region’s global economic competitiveness and addressing the region’s pressing social issues.

- **Joint Venture’s Index of Silicon Valley**
  Joint Venture’s annual *Index of Silicon Valley* provides an in-depth look at Silicon Valley’s economy and quality of life, and measures the region’s progress toward the Silicon Valley 2010 vision. By tracking dozens of regional indicators, each year’s Index provides valuable insights on regional trends in economic growth, education, health, environmental quality and civic engagement.

Beyond these Joint Venture-led efforts, it is possible to identify other kinds of regional collaboration that would build on the input provided at the community forums. Forum participants recommended numerous strategies for helping Silicon Valley students gain technology skills and prepare for future careers. Here we offer some potential “next steps” by which stakeholders might explore these strategies, establish priorities and develop plans for moving forward. Although each action described below could be taken independently of the others, coordination of these activities—where appropriate—could heighten collaboration and increase regional impact.

- **Initiate a regional discussion on creating a “cultural shift” in the perception of technology careers.**
  Undermining the widely held stereotype that technology careers are boring, intimidating or “uncool” could help change the cultural factors that prevent some young people—especially young women and minority students—from exploring these careers. A regional discussion led by cultural anthropologists and experts in education and youth development—and including students, parents, business leaders and other interested community members—could examine what would be needed to create a “cultural shift” in how technology skills and careers are viewed. Such a shift could occur through helping young people experience the excitement of hands-on technology projects and emphasizing the benefits that technological innovation brings to individuals and communities.

- **Explore the development of a communications strategy.**
  A general consensus emerged at the community forums around using the media to increase awareness and understanding of technology careers. An effective communications strategy could increase young people’s knowledge of current technology careers, increase their understanding of the diverse professions that involve technical skills, and build community awareness of the need to provide young people with skills in math, science and technology. Regional organizations (Joint Venture, chambers of commerce, industry associations and others) could seek *pro bono* assistance to develop a communications strategy.
Convene stakeholders to discuss strategies targeted to young women and minorities.

Forum participants stressed the need for strategies that help women and minorities pursue technology careers. As a next step, community leaders, parents and students, business representatives, educators, nonprofit staff and labor representatives could come together to (a) assess what’s currently being done to reach young women and minority students; (b) discuss regional strategies for getting more women and minorities into math and science curricula; and (c) explore strategies for increasing the portion of minority students—especially Latino students—who complete high school and go on to college.

Gather additional information on school resource needs and potential strategies for meeting them.

Many of the solutions put forth at the forums call on schools either to do more or to do things differently. However, schools have severely limited resources and, in the current fiscal climate, are being forced to cut programs. There is an opportunity to convene educators (including representatives from school districts, county Offices of Education, traditional and charter schools, community colleges, and other institutions of learning) and business, government and foundation representatives to discuss what schools currently do in the area of technology training and education, what types of changes are planned or desired, and what resources can be made available to support these changes.

Convene educators, service providers, youth and parents to discuss strategies for expanding—and increasing the impact of—parental involvement in young people’s education and career preparation.

Feedback from the forums emphasized the value of parents helping their children learn about and prepare for career opportunities. Schools, public agencies and nonprofit service providers all might have some role in assisting parents as they support their children’s personal and professional development. As a next step, these various stakeholders might convene to discuss collaborative approaches to enhancing parental involvement.

Develop a plan for improving evaluation of programs that prepare youth for careers and expanding or replicating effective practices.

Forum participants identified the need for a more intensive look at what programs work and how we gauge program impacts on youth. To begin addressing these issues, program staff, foundation representatives, academics and policymakers could convene to discuss evaluation needs and standards as well as long-term strategies for replicating effective programs and bringing them to scale.

These potential actions are intended to be meaningful and inclusive, and to provide the region’s various stakeholders—individuals as well as organizations—with opportunities for involvement and leadership. Working together as a region, we can show all young people the full spectrum of career possibilities open to them—including, but not only, technology careers—and provide them with the proficiencies, confidence and motivation needed to pursue these opportunities. Ultimately, our efforts should aim to inspire students to create the kinds of innovation that both drive the region’s economic vitality and improve the quality of life across Silicon Valleys’ many communities.
ADDITIONAL RESOURCES FROM JOINT VENTURE

**Workforce Studies**


2002 Workforce Study: Connecting Today’s Youth with Tomorrow’s Technology Careers; http://www.jointventure.org/workforce/Workforce_Final.pdf

**The Silicon Valley 2010 Vision**


“Next Silicon Valley” White Papers

Next Silicon Valley: Riding the Waves of Innovation, December 2001; http://www.jointventure.org/nsv/nsvpaper.pdf


**COMMUNITY FORUM PARTICIPANTS**

Joint Venture thanks the more than 100 individuals who participated in the three community forums. Participants included parents and students, educators, nonprofit and government staff, individuals from the business community and labor, and members of the community at large. Organizations represented at each of the forums are indicated below. The forums were facilitated by Shawn Spano, Professor of Communication Studies at San Jose State University and Consultant with the Public Dialogue Consortium.

**San Mateo Community Forum**

Convened in partnership with the San Mateo County Workforce Investment Board, April 24, 2002

Belmont-Redwood Shores School District
College of San Mateo
County of San Mateo Human Services Agency
Department of Rehabilitation
EdVoice
Menlo-Atherton High School
Morantes Financial and Insurance
OICW
PWDC–Jobs for Youth
Redwood City Chamber of Commerce
Redwood City School District
San Mateo Community College District
San Mateo County Office of Education
San Mateo County School-to-Career Partnership
Sequoia Union High School District
Stanford University
Youth and Family Assistance
San Jose Community Forum
Convened in partnership with the Silicon Valley Workforce Investment Network, April 30, 2002

Asian Americans for Community Involvement
California Alliance of African American Educators
California Technology Assistance Project
Catholic Charities
Center for Employment Training
Center for Training & Careers
City of Morgan Hill
City of San Jose
City University of New York
The Cornerstone Project
Evergreen Valley College
IBM
InterLink Training
Junior Achievement of Silicon Valley and Monterey Bay
KICU-TV
Metropolitan Education District Board
National Hispanic University
New Horizons Computer Learning Center
NOVA
San Jose/Evergreen Community College District
San Jose State University
Santa Clara & San Benito Building & Construction Trades Council
Santa Clara County Alliance of Black Educators
Santa Clara County Council, Boy Scouts of America
Santa Teresa High School
Schools Online
Silver Creek High School
Social Services Agency of Santa Clara County
Stanford University
Sun Microsystems
Yahoo! Inc.
Youth Employment Opportunity

Sunnyvale Community Forum
Convened in partnership with the NOVA Workforce Board, May 8, 2002

AAUW of California (AAUW-CA) Tech Trek Science Camp for Girls
BaB Consulting
BayScan
Central Elementary School
De Anza College
Department of Rehabilitation
Entrepreneurs Foundation
Fremont High School
Housing Trust of Santa Clara County
Industry Initiatives for Science & Math Education
Junior Achievement of Silicon Valley and Monterey Bay
KGM Group
League of Women Voters
Milpitas High School
Milpitas Unified School District
NOVA
NOVA Workforce Board
Santa Clara County Office of Education
Santa Clara Unified School District
Second Start
SJJC Job Corps
Social Advocates for Youth
Stanford University
TransAccess
Workforce Silicon Valley
SPONSORS
Visionary Leaders
The David and Lucile Packard Foundation
The James Irvine Foundation
Sun Microsystems, Inc.
Therma
Community Builders
Aspect Communications
Rudolph and Sletten, Inc.
Joint Venture Partners
CNF Inc.
Rosendin Electric, Inc.
Synopsys, Inc.

Public Sector Partners
City of Campbell
City of Cupertino
City of East Palo Alto
City of Foster City
City of Fremont
City of Gilroy
City of Hayward
City of Milpitas
City of Monte Sereno
City of Morgan Hill
City of Mountain View
City of Newark
City of Palo Alto
City of Redwood City
City of San Carlos
City of San Jose
City of San Mateo
City of Santa Clara
City of Santa Cruz
City of Scotts Valley
City of Sunnyvale
County of San Mateo
Town of Los Gatos

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