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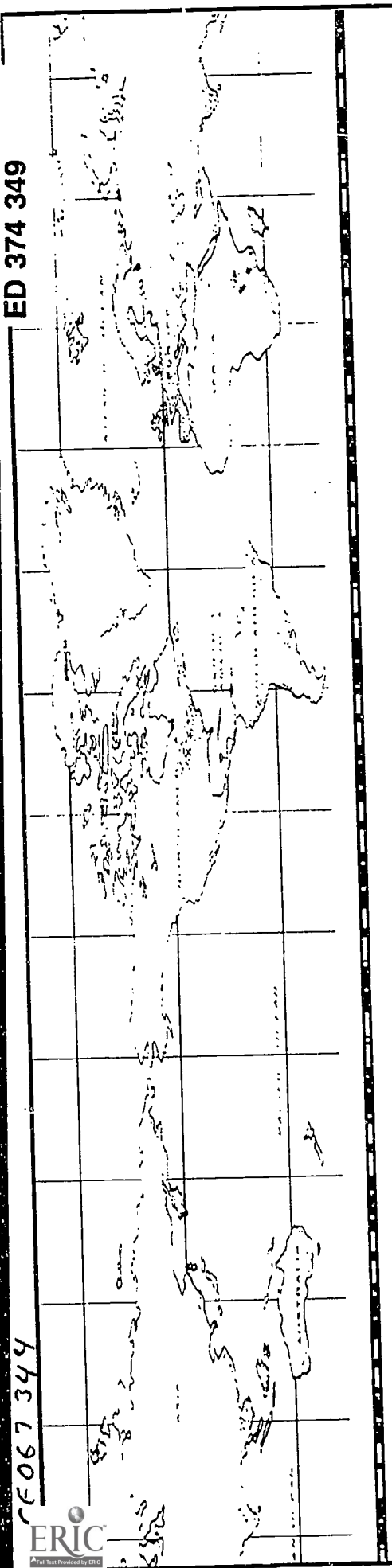
ABSTRACT

U.S. business, labor, and public policy representatives visited Denmark, Sweden, and Switzerland to study the roles of their counterparts in school-to-work systems. They identified these common strengths: education viewed as an economic investment tool by all partners; strong partnerships of business, labor, and government; voluntary national, industry-driven systems of standards, curricular frameworks, assessments, and credentials; school-to-work transition as part of a broader integrated education and training system; decentralized systems and flexibility; broad and specific skill development; common knowledge, skills, and abilities in the workplace as the basis of common elements or course modules in curricula; consolidation of jobs and industries for defining course curricula; combination of classroom and work-based learning; and compulsory, high quality primary school with technical training available by age 16. Common philosophies also resulted in common concerns: integration of academic/classroom and work component; staff development; communication between educators and industry; tension between broad and specific skill development; inflexibilities in changing national standards and curricular frameworks; and training without jobs. Each country had distinctive differences: role of labor; mix of classroom and work-based components; importance of work-based pay; employer commitments to hire; use of contracts between employers and youth; and employer incentives. Next steps for the U.S. Government, employers, and labor were identified. (YLB)



Education for Employment in the New Economy

A joint project of the
Center for Learning and Competitiveness
and the
National Alliance of Business

Center for Learning and Competitiveness
School of Public Affairs
University of Maryland

The Center for Learning and Competitiveness (CLC) works with American practitioners and policymakers to apply the lessons from international education and training systems to policy development and system design in the United States. Improving the level of workforce preparation is a crucial component to improving productivity levels, boosting economic competitiveness and raising living standards. By helping US policymakers and practitioners understand the best practices and current trends in other countries, CLC helps to ensure that American innovation builds on the experience of others and attempts to achieve outcomes of the highest international standard.

CLC's activities provide access to the people and materials that illuminate the critical principles and components of high quality education and training systems. The range of activities include arranging targeted study programs of international systems, undertaking strategic consultancies for organizations or government departments, leading conferences and seminars in the United States, and publishing reports highlighting best practice and innovative methods for system reform. As part of CLC international study programs, American participants meet with their international colleagues and counterparts to examine the components and configurations of well-integrated education and training systems. They gain new perspectives as well as gather specific tools and information that will directly strengthen practice in the United States.

A priority for CLC's work is the dissemination of findings from international investigations to the education and training community, business and union leaders, politicians, journalists and other opinion leaders in the United States. CLC also works directly with state governments and with leading policy organizations to ensure their reform strategies are shaped and influenced by the experience of quality systems in other countries.

Learning from the international experience has already played an important role in building consensus and developing key leadership for nation-wide development of school-to-work transition systems, and in providing technical assistance in the establishment of these systems. A focus on the performance of international education and training systems enables the United States to learn from other policy successes, to avoid reform paths that have been unsuccessful and to ensure that our innovation will place us at the forefront of international best practice.

CLC was founded in 1992 with a three year grant from the German Marshall Fund of the United States (GMF). CLC's Executive Director, Anne Heald, created GMF's acclaimed Program on Improving U.S. Competitiveness, and has ten years of experience in running influential exchanges between the United States and Europe. The distinguished Advisory Board to CLC consists of leaders from American political, business, government and union sectors. The work of CLC is also supported by other foundations, state and federal governments. Support is also provided by the University of Maryland's School of Public Affairs, where CLC is based.

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Education for Employment in the New Economy

A Report of the Economic Partners Team of the Comparative Learning Teams Project

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PREFACE

In February 1993, CLC brought together 25 leading experts from state and federal organizations as well as international leaders, to identify the most pressing questions and problems that confront policymakers and practitioners working to build school-to-work transition systems in the United States. The outcome of that meeting was a consensus that there were five areas in need of immediate in-depth attention:

- Building a System: Governance and Finance
- Developing Standards, Assessment and Credentialing
- Building Partnerships: The Role of Economic Actors
- Designing Quality Programs
- Providing Career Guidance

To address these issues, and with the generous financial support of the German Marshall Fund of the United States, CLC initiated its Comparative Learning Team Project. CLC issued a request for proposal nationwide, and respondents were asked to select one of these areas as the focus for an international learning investigation, developing levels of inquiry in substantial detail and with specific outcomes for their trip. The capacity of teams to effectively disseminate their findings in a way that would positively impact on the development of school-to-work systems in the United States was a key selection criteria.

CLC awarded grants to five organizations in the school-to-work transition field who led, planned and supported a Comparative Learning Team. The grants enabled each team of at least nine people to visit two European sites where sophisticated school-to-work transition systems operate. Each comparative learning team participated in carefully planned 12 to 14 day working sessions in Germany, Denmark, the United Kingdom, Switzerland and Sweden, where they gained direct access to their foreign counterparts and first-hand exposure to European systems.

The members of the learning teams consisted of leading resource people and experts who are catalysts for change in their field at local, state and national levels. Whether they were from the private sector, non-profit organizations or government, team members sought answers to the key strategic issues facing the development of quality school-to-work transition systems in the United States. Hosts in Europe commented on the clear focus of comparative learning team investigations around the pressing lessons of importance to American policymakers. A conference held in January 1994 allowed comparative learning team participants to discuss and refine their reports and findings, and to compare observations about international practice.

Already, the work of the comparative learning teams has had an impact on system-building in the United States. Team members were able to build on their European experience when designing state systems under the guidelines of the new Federal School-to-Work Opportunities Act. Officials in the Departments of Labor and Education, working on school-to-work policies, were briefed by one team member about the comparative learning teams project and team members' observations of European systems. Participants have spoken at numerous conferences, and published comments in newspapers and newsletters. Key findings of the teams are guiding further policy work around key issues such as the engagement of industry in school-to-work programs and in the design of skill standards.

CLC is now pleased to publish the five reports of the comparative learning teams. Each report highlights what the specific team found in their field of investigation, and particularly highlights the implications for American policymakers of European experience. We believe that they will be of equal interest to those who have examined the European models for workforce development previously and those who are being introduced for the first time to international expertise in this field.

For over a decade, American policy leaders have looked to Europe for insight into how to move young people effectively from school to the workforce, while providing them with relevant and valuable skills. The impressive achievements of European systems triggered much enthusiasm in this country about the potential positive impact of reform here. Many supporters of school-to-work reform in the United States first became excited about the potential impact of reform by looking at international best practice and some of the most innovative models of school-to-work transition grew out of exploring European sites.

Now, with the passage of the school-to-work legislation, and with states actively attempting to build school-to-work transition systems that will provide widespread opportunities for young people, the international experience remains highly significant. Issues that challenge American policymakers in building systems, such as developing appropriate funding mechanisms, engaging industry partnership and ensuring relevant standards, have long been at the core of investigation in Europe. Reform in European systems in recent years reflects current thinking about the delivery of quality school-to-work opportunities.

These reports are timely and relevant for American policymakers who not only want to look at the achievements of quality European school-to-work systems, but to explore in more detail the elements that enabled such systems to achieve quality outcomes. As states and sites move to implement comprehensive reform in the United States under this auspices of the School-to-Work Opportunities Act, all five reports will provide valuable information and insight into the best international lessons.

In releasing these reports, CLC would like to thank the German Marshall Fund of the United States for their generous support of the comparative learning teams project. We want to express our thanks to the lead organizations for the project: The Austin Chamber of Commerce, the New Standards Project, The Council of Chief State School Officers, the National Alliance of Business and the Northwest Regional Educational Laboratory.

In particular, we would like to thank the leaders of the five teams who generated such quality learning programs for their teams and led the process of developing these significant reports. To Bob Glover, Davis Jenkins, Glenda Partee, Esther Schaeffer and Larry McClure, our sincere thanks for your dedication and commitment to this valuable learning process.

Anne Heald
Executive Director
The Center for Learning and Competitiveness

EXECUTIVE SUMMARY

The team of ten business, labor and public policy representatives who visited Sweden, Switzerland and Denmark in the Fall of 1993 was a unique one. For the first time in this sort of investigation, virtually all major segments of United States business and labor were represented.

While we came together from very different perspectives, we left for Europe with a common belief that the United States must create a globally competitive, national school-to-work system that adapts the effective elements of systems in industrial and post-industrial nations and builds on the strengths of U.S. programs and learners.

We further believed that the success of the system would be contingent on the foliowing factors:

- quality and relevance for all economic stakeholders (all have part in creating the vision)
- alignment with current and future local labor market demands characterized by high wages/high skills
- reflective of diverse character of the U.S. (its diversity in labor market conditions, attitudes about government, and demographics)
- derivative of current local/state innovations
- supportive of the principle that all learners can achieve -- high expectations for all.

Our focus was to understand the roles and relationships of business, labor and government in Swedish, Swiss and Danish school-to-work systems. We especially hoped to study the processes followed by these economic partners both in the initial establishment of their nations' school-to-work programs and then in response to economic change and system reform. In addition, we hoped to discern those practices employed by these countries that could usefully be implemented in the United States.

Our primary areas of inquiry in the three countries were the following:

- Who are the key players in the school-to-work systems and how do they inter-relate?
- How do both business and labor organize to get involved with the vocational education system and in designing the workplace learning components? Do these relationships differ by industry or geographic region?

- What attracts business to participate? What causes some to participate and others not to do so? How do economic recession and down-sizing of firms impact on their participation?

- How are skill standards developed and revised? How is student achievement assessed? What are the roles of business and labor?

- How does the system adapt to changes in job skill requirements, labor market demands and the nature of the emerging workforce?

- What are the trends with respect to the school-to-work system? In other words, are there weaknesses or changes in the country (e.g. economic, demographic, nature of the workplace) that are causing business, labor and government to reconsider current approaches and what changes are being considered?

We chose to visit Sweden because of its recent efforts to create a school-to-work system by integrating skill standards and workplace components into a school-based system, a situation with similarities to efforts in the United States. We chose Denmark because it was shifting from a primarily work-based program to one that included broader academic and skill development in the classroom. In Sweden and Denmark, it was important to understand the tremendous influence and participation of the economic partners in these reforms. Switzerland was selected because of its highly decentralized education and training system that we believed could provide guidance for the decentralized United States system.

> *We are involved in education and training because we have a responsibility to our country and the next generation.* ♦ Hans Skov Christensen, Danske Industri, Denmark

What did we learn from our visits that was instructive for our efforts in the United States? We learned that the process through which the economic partners -- business, labor and government -- involve themselves in education and training plays a critical role in assuring the quality and relevance of the school-to-work systems in all three countries. We learned that this joint response reflected a history of cooperation among the partners who believe that high quality youth training meets their common needs. But, we also learned that these countries are struggling with faltering economies and social tensions brought on by immigration, high unemployment and long-term welfare dependency. Scarred by recession, the partners, especially business, were concerned about the rigidities and high costs of doing business in their economies. New low-wage labor markets emerging in Poland and other eastern block countries are posing new questions about how to maintain high-wage jobs and remain internationally competitive.

While their current problems are causing them to reassess social and economic policy, the people we talked to agreed that these issues underscore the critical importance of continuing to prepare young people for the labor market. Secondly, we learned that these nations' responses to economic crises can provide useful information to the United States on the strengths and weaknesses of different approaches to similar circumstances. Although some of the rigidities of their economies and school-to-work systems complicated their ability to change, their unanimous, ongoing commitment to training was exceptional.

> *We recognize we need a strategy to keep vocational training at global state-of-the-art standards.* ♦ Rudolf Natsch, Federal Office for Manpower, Crafts & Arts, Switzerland

We were especially struck by shared experiences among the countries we studied. Each country had:

- an increased sense of economic and social vulnerability from global competition that was shared by all sectors of society; this is increasing the demand from the economic partners to focus on economic development and reform social programs, such as welfare.

- the belief among all sectors that human resources were key to their future economic success and that, lacking substantial natural resources, their economic edge must be gained from a more highly skilled workforce.

- reached a consensus that their ability to pull out of the current recession hinges on the ability to develop and implement strategies that develop the creativity of people at every stage. "Lifelong learning" and "learning to learn" are now considered integral components of their education and training systems which are now expected to provide a continuous evolution of skills and opportunities from pre-school to retirement.

- recognized the importance of integrating school-to-work training with education and training for adults. Increasingly, the countries were trying to build a common system, using the same skill standards curricula and assessments.

- forged a partnership between government, business and labor in the area of education and training which depended on a long-term commitment by all sectors to cooperatively shape the national agenda and the local implementation.

While this report will elaborate further on our findings, three critical messages came forward from our investigation that have profound implications for the U.S. as it tries to move forward on school-to-work and other workforce development endeavors.

First, as U.S. economic participants take steps to develop or protect their competitive advantage nationally and internationally, it is in their interest to ensure that the workforce of the future meets their needs and are capable of the productivity levels American have sustained for decades. This means ensuring that, starting at an early age, young people develop the skills necessary to function in the workplace of the future. Our workforce is competing with the rest of the world, and as the competition for high-skill, high-wage jobs grows, other nations will be systematically preparing their workforce to fill those positions.

Consequently, the U.S. cannot compete effectively if it is not more directed and systematic about education and training. This means that business, government and labor must ready themselves--create the mindset and build the structures dedicated to addressing education and training together. To create a strong human capital resource for the future our nation's economic *participants* need to become economic *partners*.

> *We used to adapt to the available workforce. Now we need to adapt the potential workforce to the needs of the economy.* ♦ Jean-Pierre Thorel, Federation des Syndicats Patronaux, Switzerland

Finally, a U.S. system of education and training should be responsive to the concerns of industry and the variable nature of the economy itself. This means that any system must be flexible and able to respond quickly to economic changes. Further, young people, as well as adults must receive training in a broad, as well as more technical, set of skills. For the economic partners, it means establishing efficient processes by which to set and revise standards, develop the curriculum, and assess performance.

The United States has begun slowly, state by state, site by site, to implement new approaches to education and training, but we will not meet with national success until we find ways to involve large segments of our business, labor and government sectors. One site or one company at a time will not bring such a system to a coherent national scale in time to address the competitive challenges that we are already facing. Nor will we be successful in a country as vast as ours if individual state governments or the federal government alone tries to address the problem. We must create structures and processes that build active involvement by all partners at all levels simultaneously. There are existing ones on which to build, but if these do not respond we must seek ways to establish totally new ones.

The three nations we visited had national, regional and local industry structures on which to build. Employers and workers were already part of industry-based organizations which in turn were part of large confederations, thus governments had somewhere to turn to get systematic input from their economic partners. But, even in these countries, business and labor needed to redirect and refocus these institutions, so that now all partners recognize that education and training, and in this instance especially school-to-work preparation, cannot go on without industry leading the way in defining its needs or articulating program content, largely through curricular frameworks. Workforce preparation also can not occur without all three partners investing financially.

As demanding as these over-riding implications might be, we returned convinced that they can be overcome. In the United States today, there is growing commitment to joint public/private efforts to solve many problems. As American business have restructured, worker skills have become a growing concern. At the same time, more attention is being paid to worker involvement in decision-making, whether or not the company has a union organization. Finally, there are employer and employee organizations in certain industries on which to build that can help show the way for other industries. In general, existing organizations need to be refocused, but concerted efforts led by federal and state leaders and selected business and labor leaders could begin this process.

In sum, we found striking similarities in the philosophies and accomplishments with respect to school-to-work on the part of business, labor and government within the three countries. At the same time, the differences, while far fewer than expected, and the weaknesses, also greatly enriched our thinking, especially in considering next steps for the United States. All three of these areas -- common strengths, common weaknesses, and distinctive individual country features -- and their implications will be the subject of this report.

CONTENTS

FORWARD

In the Fall of 1993, a team of primarily business and labor representatives visited Denmark, Sweden, and Switzerland to study the roles of their counterparts in these nations' school-to-work systems. This report reflects the findings of that investigation.

The title of the report, *Education for Employment in the New Economy*, is a conscious one. For the three countries we visited, it is a truism. In the eyes of all of the economic stakeholders -- business, labor and government -- education will accomplish little if it does not prepare young people for employment. It is an explicit connection, solidly held by all. At the same time, the title acknowledges that the stakeholders also recognize that the economies of today and tomorrow will be very unlike the economies of the past. Instead, they will be marked by constant change in which old jobs are replaced by others requiring different skills, skills often anticipated only months before they are needed. These stakeholders are truly *economic partners* who have concluded that the "new" economy demands that education be seen as economic investment and provide broad skills whose full benefit may not be realized for years to come. Short-term payoff is not the focus. The ability of their workers to compete long-term is.

The European economic partners recognize that this state of flux in the economy keeps them ever vigilant not only in how they conduct their businesses, but in how they structure and conduct their systems of education. So, they are trying new approaches. In one case, in Sweden, they are instituting large-scale changes in the secondary years. In the other two countries, Denmark and Switzerland, they are revising previously well-established approaches. All these countries are striving to provide broad-based skill development in utilizing classroom and work-based instruction, while also streamlining training to shorten the duration (and reduce costs.) We were especially struck by the active and complementary roles played by business, labor and government in these school-to-work systems.

At the same time, the economic partners, especially business, in all three countries were worried about allowing their systems to be too rigid or too costly to keep up with the changes in training necessary to meet their evolving competitive challenges. Facing high unemployment, these concerns were growing. However, while they questioned the value of some state social benefits and policies, the partners continue to support the need for their country to maintain a national system of education and training. Furthermore, they continue to invest time and money in driving the system in order to ensure that it meets their changing needs.

The team was impressed by much of what we saw. Not only do the accomplishments of these countries teach us much, but also the shortcomings. While the U.S. is not Europe and our approaches may well differ, all of us on the team -- business and labor -- left convinced that their example of integrating the economy, education, employment, and competitiveness is one our nation should heed.

Esther F. Schaeffer, *Team Leader*
National Alliance of Business

FINDINGS AND IMPLICATIONS:
LEARNING FROM COMMON STRENGTHS, COMMON CONCERNS AND DISTINCTIVE DIFFERENCES

The U.S. Economic Partners that traveled to Sweden, Switzerland and Denmark knew they were seeing three distinctive countries with three different histories, three different economies, and three different school-to-work systems. We drew our lessons from both the similarities and differences. It was the similarities in attitude and behavior, however, especially on the part of business and labor that were most striking. While the U.S. may choose not to emulate their approaches, the commonalities reveal key aspects of a school-to-work system that we must consider, for not just one country, but three, have established or are working to establish these recurring features in their school-to-work designs. The box below (Figure 1) provides a summary of the common strengths we identified.

LEARNING FROM COMMON STRENGTHS

Education Viewed as an Economic Investment Tool by all Partners

In all three countries, the economic partners jointly recognize that global competition is affecting industry structure, economic conditions and the nature of jobs available in the economy. As all three countries face their toughest economic recession in decades, they have reflected extensively on the causes and the solutions. The three economic partners in each of the three countries have concluded that education and training will be critical to the long term success of economic development and job creation. While social programs and benefits have come under some scrutiny, none of the partners was willing to diminish its commitments to education and training for young people. In fact in Denmark, which has the most expensive system in the world, a recent public poll indicated that the Danes are not interested in seeking cuts in the federal budget for education and training. According to Niels Christen Nielsen, a leading Danish manufacturing consultant, "The reason why Denmark is one of the richest countries in the world is that in four critical times of major economic change, there have also been major changes in education. Denmark is at that point today."

There is a consensus that an important role for education is preparing youth for work and each sector must participate towards that end. For the later years of schooling, educators recognize that industry can best articulate needs and provide more relevant preparation. Business and labor see that they have a responsibility to provide this leadership in education and training.

While there are differences in opinions on a variety of issues, as will be discussed later, these attitudes contrast sharply with the United States where most secondary school educators focus on preparation for college and measure their success by college admittances, and where business and labor generally believe that the educational preparation of young people for work is not their responsibility. These cultural attitudes and barriers will be difficult but critical to overcome if the United States is ever to build a system for large numbers of students.

Common Strengths

Education Viewed as an Economic Investment Tool by all Partners

Strong Partnerships of Business, Labor and Government: Employer and Employee Organizations in all Industrial Sectors See Training as Important

Existence of Voluntary National, Industry-Driven Systems of Standards, Curricular Frameworks, Assessments and Credentials; Premium Placed on Portability of Credentials

School-to-Work Is Seen as Part of a Broader Integrated Education and Training System

Decentralized Systems and Flexibility

Combination of Broad and Specific Skill Development Increasingly Valued

Common Knowledge, Skills and Abilities in the Workplace Form the Basis of Common Elements or Course Modules in Curricula

Consolidation of Jobs and Industries for Defining Course Curricula

Combination of Classroom and Work-based Learning Valued as Most Effective

Compulsory Primary School High In Quality with Technical Training Available by Age 16

Figure 1

Strong Partnerships of Business, Labor and Government: Employer and Employee Organizations in all Industrial Sectors See Training as Important

In Europe, education and training are at the top of the national agenda and have been there for at least the last twenty-five years. Business, labor and government have each committed to building systems that prepare young people for work, maintain the skills of the current workforce, and further the national and local economic development agendas. This partnership has developed over the past century and has been institutionalized by the system's federal framework. In Denmark, representatives from both business and labor profess that the Danish system of education and training is the tripartite partnership.

In each of these countries, employers are highly-organized into an elaborate system of industry associations or "employer unions" at the national and local levels. While these resemble trade association structures in some industries in the U.S., the pervasiveness of these structures in almost all industrial sectors in these three countries is noteworthy. More significant are the differences between the U.S. and the three countries in the focus of these organizations. Industry associations in this country rarely concentrate on worker education and training. The preponderant emphasize lobbying before the executive and legislative branches. However, while these are important roles for industry in European countries, worker preparation and training are considered *key* responsibilities of their employer associations. This model is important to the United States because it is the linchpin (along with the labor unions) to the national system. The employer associations undertake the development of standards, curriculum frameworks for training, and member technical assistance in partnership with each other and the government, thereby creating uniform expectations and consensus on outcomes, providing on-going leadership, and serving as a resource to members, the community and the schools.

> *Sometimes, small and medium-sized firms get help from their associations to be able to have apprentices. This may include books and course materials, tests and administration, political action and lobbying, and conducting seminars about apprenticeship for new association members.* ♦ Christina Daratz, Swiss Union of Arts and Crafts

Labor is similarly well-organized by industry in Sweden and Denmark (less so in Switzerland where only 30 percent of workers are organized), and these labor organizations also see the preparation of young people as an important role and responsibility. In these countries workers become members of a union by virtue of their training. Once individuals have successfully completed their training and final test of mastery, they are eligible and become members of the labor union in their industry. They pay monthly dues to the union and are members for life. The union then takes responsibility for assisting them with further training (actually buys class time from technical schools), administers unemployment benefits and represents them at the local and national levels. Clearly, in this model the unions have a

vested interest in maintaining the caliber of training in their field and the training of the worker. The more members they have and the more members they have working, the stronger their position as an organization. Unlike the U.S., the European unions do not feel that in-company training for youth is a threat to existing workers, instead they see it as a necessity to maintain the quality of their profession and the strength of the union. For them, the higher the skills of all members (especially new ones), the stronger the union's position when negotiating for higher wages.

The American lack of employer and employee organizations and commitment to youth education and training significantly hinders our ability to create a national school-to-work system. Individual companies or labor organizations may develop programs, but without committed employer and employee organizations it will be difficult for industries to come together to assume leadership roles, and equally as difficult for government leaders to identify those who can come together in efforts to cluster occupations and industries, determine industry standards, or lay out curricular frameworks.

Existence of Voluntary, National, Industry-Driven Systems of Standards, Curricular Frameworks, Assessments and Credentials;
Premium Placed on Portability of Credentials

Even in a country as decentralized as Switzerland, the economic partners are motivated by a strong desire that young people be prepared to high standards that are recognized by employers throughout the country, and even throughout the European Union. The possession of credentials not only reliably signals to an employer a knowledge and skill base for its own hiring decisions, but also indicates the quality of the workforce of its suppliers. Thus, a company sees its competitive position dependent on worker preparation not only within its own walls but within companies on which it relies. This concept is considered by very few American companies.

> *The Berufsmatura is new. It's a four-year school with an entrance exam feature. It provides the student with more theory and culture training. It was created to respond to the Brussels Mandates, and to respond to new needs in a global economy.* ♦ Peter Becskehazy, U.S. Embassy, Switzerland

The standards were not always explicitly stated separately from the curricular frameworks. In Sweden, for instance, they were imbedded in the curricular frameworks that industry (business and labor), or more often clusters of industries, developed. While business, labor, and the schools at the local level did not need to follow the frameworks rigidly, and had complete freedom to develop the full curricula, they were judged on their outcomes and were thus expected to meet or exceed the requirements (in reality standards) of the curricula. Measurements to judge skill attainment were also jointly decided. These assessments were developed in Denmark and Switzerland and were only beginning to be put into place in Sweden. Even in the latter case, however, they were judged to be needed.

As Europe develops the new European Union and begins to negotiate inter-country work rules, standards, assessments and credentials, the U.S. may find some additional lessons from their experience. In the U.S., there will be simultaneous development of standards and curricular frameworks at the federal, state, and local levels as school-to-work programs are initiated. If one considers the European Union analogous to the U.S. and the European countries analogous to our states, it would appear that strong standards, assessments, and credentials developed by the states can enrich efforts at the national level.

In some cases in the U.S., where national leadership on training is emerging in an industry, the early development of a process similar to the European experience may occur. While the federal and many state governments are actively working on structuring the partnerships and regulatory frameworks necessary to build a system, a U.S. system is most likely to begin at the local levels where individual employers, educators and employee representatives will determine standards and curricula site-by-site. At some point, these local experiences will hopefully be collected by national employer and employee organizations that will work to create national standards and guidelines in curricula and assessment. This will likely happen if the U.S. develops strong employer and employee organizations focused on education and training. A well constructed federal-level legal framework that encourages and guides industry development of standards, curricular frameworks, and assessments is a most important first step.

School-to-Work Is Seen as Part of a Broader Integrated Education and Training System

All three countries are trying to knit their education and training programs for youth with those for adults, although none has achieved that end. Sweden is perhaps furthest along in its thinking. The curricular modules being developed for school-to-work are to be the same for adults. Because it is modular, adults need to take only those course segments they require to have the skills for new occupations or careers

> *Thirty percent of our workers are engaged in continuous learning and training. The idea is to extend the apprentice model to life-long learning of the current workforce.* ♦ Rudolf Natsch, Federal Office for Manpower, Crafts and Arts, Switzerland

This desire to integrate all education and training programs is very far from the categorization of programs in the U.S. While difficult to achieve, this integrated approach would appear possible only when standards or training outcomes are clear and curricula have flexible entry and exit points. National standards and curricular guidelines make it less expensive and less time consuming for locales to develop such curricula.

Decentralized Systems and Flexibility

Decentralization is an important component of these European school-to-work systems. It provides the basis for program flexibility to meet local conditions. While changes in standards and curricula at the national level generally require two or more years, changes can be adopted quickly at the local level.

Americans believe that European countries run highly centralized education and training systems. This is not the case. In fact in Switzerland, there is no federal ministry of education; education rests at the canton level. And, most American political leaders would be surprised to realize that in Sweden, federal funds are provided with no strings attached. Sweden's federal government is concerned only with outcomes and leaves program decisions for achieving them to the municipal level.

Curricular frameworks and credentialing are developed nationally through the work of education, business and labor, but decentralization is considered key to respond to individual labor markets and rapid changes in the workplace. The intention is, however, for local decisions to feed back into the national frameworks so that they can be updated. The same business, labor and education structures that translate national decisions downward feed local needs back up. For example, if employers are finding they require higher standards than those developed nationally, they can feed this information back through their and labors' associations at higher levels. This provides the basis for upgrading national requirements. (In Switzerland, however, since some major industrial sectors are largely unorganized, feedback has to come almost exclusively from employers in those cases.)

> *Combining apprenticeships where skills have merged can be done at the Canton level. Since apprenticeships are set at the national level, this is done by waiver. As an example, we might pilot three ideas, then seek federal approval of the best.*
> ♦ Roger Beuchat, Office Cantonale d'Orientation et de Formation Professional, Switzerland

Thus, there can be and is a marriage of national leadership and guidance with high degrees of local control and authority. The three countries therefore can provide a good road-map for the U.S. with respect to the kinds of authorities and responsibilities that can best rest at the various jurisdictional levels.

A Combination of Broad and Specific Skill Development Increasingly Valued; Common Knowledge, Skills and Abilities in the Workplace Form the Basis of Common Elements or Course Modules in Curricula

All three countries were concerned about rigidly channeling students into narrow course curricula. They wanted students to be able to change their minds without having to start all over again. They also recognized that jobs and the workplace changed so rapidly that too narrow a preparation today would limit workers' flexibility in the workforce of tomorrow.

While all were concerned, Sweden had done the most about it, and Switzerland the least. Sweden had consciously developed curricula into modules. Basic modules are required in almost all curricula. Remaining modules are selected to meet particular industry requirements. Many of these modules are also shared among industry clusters, especially in the first year or two of the curricula. Denmark has also acted on the need for broader skill development that crosses among occupations; it has expanded its largely two-year work-based apprenticeship program to three years with a broader education and classroom component. While Switzerland's approach still maintains more narrow skill development, the economic partners expressed growing concern about this approach and were beginning to increase preparation time to allow for broader skill development.

The conclusions of the economic partners in all three countries provide a warning for the United States where the "marriage" of strong academic skills and vocational skills frequently does not occur and with vocational education tending to be narrow in focus. Some tech prep programs have served to provide both broader and more specialized skill development, but many have not. The U.S. clearly has a long path to follow to meet what all three of these countries see as major steps for meeting future workforce needs.

Consolidation or Clustering of Jobs and Industries for Defining Course Curricula

While alluded to above, it is important to note that all three countries have come from different vantage points to conclude that standards and curricula for young people should not be narrowly defined but prepare young people to work in a broad array of jobs. In developing its system in 1991, Swedish business, labor and government worked together to develop 14 occupational clusters (plus two university-oriented clusters in the social and natural sciences) around which all school-to-work preparation would be developed. Denmark has moved from about 360 to 86 clusters, and Switzerland is moving towards reductions.

These decisions were made by industry, with government playing a convener and sometimes mediator role, for although there was general agreement on the need, there were differences of opinion on the degree to which consolidation should take place. In Sweden, for instance, employers wanted at least 25 clusters, while labor wanted only five. With impetus from the federal education agency, agreement was reached on 14 with sub-branches for specialties in the third year of preparation.

Without employer or labor organizations historically active in education and training, it would appear particularly unlikely that clustering among industries will occur early in the development of the United States' school-to-work system. The economic partners in the United States should recognize the importance each of these nations has placed on the need for breadth in student development and should begin now to build a process for identifying common areas among similar industries to facilitate the development of broadly defined standards and curricula.

Combined Classroom and Work-based Learning Valued as Most Effective

The economic partners in all three countries have become increasingly convinced that a mix of classroom and work-based learning is the most effective approach for educating youth for work. Worksite training provides students with training in the newest technology and professional techniques. It develops organizational skills in context, such as working in production teams. And it engages students in an adult environment with the expectations, support and responsibilities that accompany it. According to Hans-Peter Nazger of ASCOM (a large Swiss employer), "We provide both technical skills and work behavior skills. We see our apprentice programs as experience-based, future-oriented, broad competency-based, beyond the requirements of current rules and regulations". Unfortunately, not every technical student can secure a position in a company. To accommodate these students, each country provides other program options that utilize in-school simulations, however they are not as valued by the students or the companies.

Sweden is moving to add work-based learning to a classroom education system, while Switzerland and Denmark move to add more classroom to a largely work-based vocational education approach. In either case, these countries are committed to an approach that blends academics and work, and they believe that it is the strongest strategy to meet changing economic needs.

At the same time, these countries do provide other program options. In Sweden these are very limited with only about 2-3 percent of all young people participating in apprenticeships that are almost entirely workplace based. In Denmark, technical school programs exist that prepare young people for work with no in-company workplace component. These programs are generally not preferred but exist for young people who cannot find employers to sponsor their workplace experiences.

There may be other reasons for keeping different program options in the United States. Obviously, until there is greater employer and labor commitment to these programs, surrogates for the workplace experiences will be needed. In fact, having the economic partners participate in programs that might initially be less demanding of their time may be a way to later interest them in providing work-based training.

Additionally, the U.S. is far less homogeneous than these European countries, and different approaches may work more successfully with different youth. The team encountered several programs in Sweden, for example, that were entirely sponsored by companies which provided the full curriculum appropriate to their industry cluster at the place of work. By providing young people more hands-on experience initially, they were motivated to learn the more theoretical classroom work that followed. These programs appeared to have special appeal for more disadvantaged youth.

I noticed I understood things, and that turned me on. Before this I didn't give a s... about school. ♦ Roger, a student at Energi's company run school in Sweden where he had hands-on, practical experiences before theory.

While options may be needed, it is important for the U.S. to heed the broader trends in these European countries. We have created many options but have failed to develop the one the Europeans value most -- bringing together the talents and commitments of all the economic partners into a combined school and work-based approach. We are well behind and well overdue in building that requirement to scale.

Compulsory Primary School High In Quality with Technical Training Available By Age Sixteen

Educators, business people and labor representatives stated a firm belief that age 16 is not too early for young people to begin to make decisions about their futures. In fact, they believe that many students become frustrated when those decisions are put off, as they find school work irrelevant to some un- or ill-defined future. More contextual learning is deemed appropriate for all students but certainly those not immediately bound for a university degree. Roland Osterlund of the Danish Ministry of Education told us, "As long as you don't have them make the choice, they are not mature enough to do it; but if you have them make a choice, they can do it".

These countries strive to ensure that all youth have developed good basic skills before age 16, including proficiency in math, languages, reading, and writing. Schools actively provide career information and job shadowing opportunities as part of the school year and curriculum to kids as young as eleven and twelve. (*For more information on career guidance see the Career Guidance Team Report.)*

While the later school years, after the equivalent of our ninth grade, are not considered compulsory, the countries are committed to involving all youth in either the school-to-work curricula or university preparation. And, in fact almost all youth are so engaged. In Sweden, 98 percent of all eligible young people are participating in an upper secondary school program. The percentages in Denmark and Switzerland are also very high.

This means in Denmark and Switzerland that the involvement of business and labor in the preparation of young people is pervasive. Sweden's program is too new to have that level of engagement although the intention of industry leaders in both business and labor is to have large-scale involvement.

In terms of United States thinking, deferring applied learning until tenth grade is often too late for many students who have lost interest and dropped out psychologically if not physically by that time. The European attitudes point out how different our thinking has been about deferring career decisions.

Furthermore, especially with the move by the Swedes and Danes to combined broad and specific skill development in these years, these programs provide choices rather than tracking. They make it possible for students to move from one program to another. To the extent our programs are designed in this way, we would in reality be providing different learning options for students rather than channeling them in a narrow way that many U.S. educators and parents fear.

In the U.S. a different kind of tracking takes place. Students follow either college, general or vocational tracks. Regardless, the education is often not correlated with real employment opportunities.

LEARNING FROM COMMON CONCERNS AND PROBLEMS

Common philosophies and approaches also resulted in some common problems and inefficiencies. Figure 2 below summarizes those issues that have particular implications for business, labor, and government in the United States. It is especially noteworthy that many of these stumbling blocks or problems have occurred despite the intentions of the national legislation and the economic partners. In some cases, like staff development, national leaders had specifically recognized that preparation of both public and private staff was essential, but in the execution of the legislation, it has received inadequate attention. In other cases, such as the integration of academic and work components, concerted efforts have still not brought about the fully intended results. These problems thus raise important "r :d flags" as the U.S. proceeds in its school-to-work efforts. These areas will deserve extra measures of attention by all partners.

Common Concerns

Integration of Academic/Classroom and Work Component Difficult

Staff Development Often Short-Changed in Education and Industry and Communication between Educators and Industry Not Deemed Adequate

Tension Between Broad vs. Specific Skill Development

Certain Inflexibilities in Changing National Standards and Curricular Frameworks

Training Without Jobs

Figure 2

Integration of Academic/Classroom and Work Component Difficult

As programs have focused on broader skill development, school classroom time has increased. Contextual learning drawn from the workplace, however, has tended not to follow. Integration of classroom practice and curricula with work-based learning has been elusive in many cases.

All three countries have found it difficult to connect experiences in the workplace to the classroom, especially new core education components. The classroom tends to be too theoretical to meet the learning needs of many young people. This is especially true in Sweden where a work-based component is very new and little from the workplace is applied in the classroom despite legislative intentions for this to occur. But even Denmark, where classroom and work-based learning curricula have been in place for some time, is encountering problems as it tries to expand the classroom component to increase basic education skills. Denmark is now seeing dropouts increase as students who learn better in more contextual ways are "turned off" by more traditional pedagogical approaches. Furthermore, schools struggle to transform information from industry into the curriculum, to maintain the skills of teachers and to keep up with technology.

Even though the development of curricula fitting work-based needs is important to all of the economic partners, they are still struggling to make it happen. The U.S. needs to recognize the importance and difficulty in making these changes and assure that they receive proper attention.

Staff Development Often Short-Changed in Education and Industry, and Communication between Education and Industry Not Deemed Adequate

While all three countries expect government funds to be used for teacher development and release time to develop new curricula, funds are not earmarked for these purposes, and tend to be used for other activities. Similarly, funds can also be used for training workplace supervisors and mentors, but again seem not to be used for these purposes.

In Sweden, business and labor complained that teachers did not understand the workplace and did not communicate sufficiently with workplace supervisors. In Denmark and Switzerland, many teachers were formerly from industry, but there was concern that their skills and knowledge of the workplace were not current.

Yet, all of the partners recognized that the vitality of the curricula rested with the quality of the teachers in both the classroom and the workplace and on their ongoing communications to build context and connection between the curricula in both locations.

> *Without current workplace experience, the teachers are teaching the trade they learned 40 years ago.* ♦ Jorgen Andersen, Danish Metalworkers Union

While U.S. legislation also makes staff development an allowable expense, it is clear from the experiences in all three countries that more impetus is needed for it to occur. Designs can utilize one or several methods such as requiring adequate training, providing for internships for educators in places of business, or paying for release time for the educators and supervisors to meet and plan. Federal legislation and state implementers need to be more explicit in demanding that time and training for teachers and workplace trainers are available to permit the development of creative learning experiences.

Tension Between Broad vs. Specific Skill Development

While there is general agreement among all partners that broader skill development is needed so that new workers will be able to adapt to the changing economy, tensions remain about how broad v. how deep or specific skill development should be.

> *Companies want to have widely skilled persons, not narrow.* ♦ Gunnar Wellmar, Ericsson (large Swedish company)

Business tended to place greater emphasis on somewhat narrower skill development, although interestingly far from limited highly job specific skills, while labor and government supported broader skill development. The partners in all three countries continue to struggle with this tension, convinced that a balance is needed. We should expect the same to occur.

Certain Inflexibilities in Changing National Standards and Curricular Frameworks

All three countries have left to local business, labor and schools decisions on program content and the flexibility to expand on program requirements. These system attributes do enable programs to be responsive to rapidly changing workplace needs.

At the same time, the process for change at the national level so that national standards and credentials can keep pace with the workplace is somewhat laborious. Processes have been created through which business and labor translate change upwards to national bodies, but formal change appears to run at best two years and often more.

All three countries are sensitive to this problem but have not identified solutions. Issues of flexibility are major ones for American business and U.S. approaches will need to take extra care in this regard. Decentralization provides some relief as the European countries have found, but processes to assure currency of national credentials must be present in our system. Industry should drive these processes.

Training Without Jobs

All three countries have used education and training as a means to keep youth and unemployed adults active, even when placement in a job may not be likely. This makes their expenditures for education and training higher than they probably should be. The economic partners in all three countries have relatively recently recognized the critical need to marshal resources to create more high wage/high skill jobs. They have not found the answer.

Some of the partners, especially business in the three countries, believe that certain social policies that increase the cost of jobs are to blame. This includes policies that may actually encourage unnecessary training while discouraging trainees from seeking employment. These partners believe that high unemployment insurance benefits, often comparable to regular wages, and even high welfare benefits, are responsible for the high costs of training. While this is not an issue for young people in school-to-work programs, it does become one once they are out and cannot find work. At that time, in Denmark they become eligible for unemployment insurance.

At the same time, the partners generally do believe that once a student has graduated or received a credential he or she should receive additional training if subsequently needed to get a job. The dilemmas posed by insufficient high skill jobs can create a backlash against school-to-work expenditures in the U.S. It is clear that greater investment in high skill job creation is vitally important. This is of course easier said than done, although the European business people were often envious of the flexibilities in the U.S. system overall that offered more rapid opportunities for job creation.

LEARNING FROM DIFFERENCES

While the most pervasive finding of the team was the similarity in roles and responsibilities and commonality of interests and concerns among the economic partners in the three countries, each had some distinctive differences that provided the team further insight in the design of an American school-to-work system. These are listed in Figure 3. These differences point out that while there are some components that appear critical for the U.S. to establish a viable and valuable school-to-work system, we must develop our approach taking into account our particular governance structures and economic environment.

Systems Differences of Note

Role of Labor

Mix of Classroom and Work-Based Components

Importance of Work-Based Pay

Employer Commitments to Hire

Use of Contracts between Employers and Youth

Employer Incentives

Figure 3

Role of Labor

In Sweden and Denmark, all parties spoke of an equal partnership between business and labor; all councils at all levels of government that participated in these programs had equal representation from both sectors. Almost all businesses belong to employer associations and over 80 percent of the workforces are unionized in both countries. In reality, these equal partnerships were clearly at work in many industries, but not all. While we could not quantify it, the labor role seemed less marked in at least some white collar fields. In the case of Sweden, our limited visits seemed to indicate that stronger union involvement resulted in more rigorously defined work-based learning components. Since the Swedish program was new, however, more time is needed to make a firm judgment.

More significant were the variations on the role of labor in Switzerland. With a workforce only 30 percent organized, unions did appear active in most fields at the national level, but employers alone were responsible for the activities at the canton and local levels in many industries. This did not appear to affect the overall quality of the programs, although this may reflect the strong national commitment to youth apprenticeship as part of their good corporate citizenship.

The team was mixed on the implications of these observations for the United States. Some believed that all school-to-work programs must have equal representation of employers and organized labor throughout the U.S. Others strongly disagreed, believing that organized labor's role should reflect its existing strength and level of activity in a particular industrial sector.

All team members did believe that consultation with existing employees was important. Because employers and employees worked together on these programs, incumbent employees tended to accept apprentices even during lay-offs, because they understood the nature of the commitments to apprentices, recognized that they were not jeopardizing their jobs, and in many instances were assured of training for themselves as well. It must also be recognized that supervisors and mentors will play vital roles in the workplace and their involvement in program design would appear fundamental.

At the national level in the U.S., major national business and trade associations and labor organizations can be very important in setting the tone for their members and in influencing others. The federal government should mount efforts to encourage their active leadership.

Mix of Classroom and Work-Based Components

As we discussed earlier, each country is devising its own balance between classroom and worksite instruction. The countries were varied in terms of the mix between the classroom and work-based components. In Switzerland, students generally spent about 3 1/2 days at the work-site. In Denmark, most students usually spent 10 to 20 weeks at one time in a particular component with the work-based component usually totaling more than 50 percent of the program. Sweden was quite different. National law required at least 15 percent of the program be in the workplace. While some programs will exceed that percentage, most students in the early years of the program will spend almost no time in the workplace. Most Swedish employer associations regretted this arrangement, but labor had expressed concern about displacement of current workers.

It is not clear what mix is most effective but there must be well-structured, work-based learning for all students in combination with the classroom. Percentages of time in each component are determined by industry in all three countries within what appear to be the countries' customary parameters.

> *The students in the dual system have an advantage because they know the actual job, and the expected job site behaviors.* ♦ Silvio-Armond Ferrari, Ecoles Techniques et de Metiers, Switzerland

It would appear best for U.S. legislation to stipulate at least minimal requirements, since Swedish experience is showing that educators need to be pushed to negotiate meaningful amounts of time with employers. Beyond that, however, it would appear that each industry should be determining what it believes can best be conveyed in the workplace and working

with educators to determine the best way to integrate that learning with the classroom. Initially in the U.S., without national employer structures to assume this role, these determinations will probably be made locally company by company or at the state level. Hopefully, the recommendations and experiences from the state and local levels can be collected by industry, or preferably clusters of industries, and national guidelines in standards, curricular frameworks, and assessments can be made.

Importance of Work-Based Pay

In Switzerland and Denmark, young people are considered employees, and are paid special apprenticeship wages. The economic partners would want it no other way. Lacking a history of apprenticeship, Sweden struggled with this approach and eventually decided not to consider the students as employees while at the work-site, although students do receive a stipend while in the program.

At this point, it is too early to judge the Swedish experience except to note that employers in many sectors are far less structured in their training of students, than in the other two countries, where employers sign formal contracts that outline their responsibilities, which include pay.

Clearly, more interviewees than not favored pay as a means to build rigor into the work-based component for both students and employers. But the Swedes were finding it difficult to recruit adequate numbers of employers during the recession, and did express concern that mandated wages without incentives would probably make employer recruitment even more difficult.

It should be pointed out that Sweden was trying to mount a massive nationwide system all at once. The U.S. situation is far more limited. We have a number of non-pay school-to-work programs, and it appears time for the U.S. to experiment with strong, work-based components for which students are paid. New federally financed school-to-work legislation should require, or at least place very high priority on, funding efforts where students are paid. Employers in Europe did indicate that students were productive at least by the second year; by at least that time pay for work would appear necessary.

Employer Commitments to Hire

History and recession coupled with individual employer attitudes left the issue of employer commitment to hire after program completion clearly one without a single answer.

Sweden's new law does not mandate such a requirement, and there is as yet no experience since there are no graduates. Swiss and Danish employers are also not required to hire their apprentices, although many do. However, in a number of cases, especially where large, high performance companies were involved, employers trained far more apprentices than they intended to keep.

They did this for a variety of reasons. Some believed that it was their responsibility overall to assure a well-educated and trained workforce. Others were committed because they recognized an indirect pay-off; more well-prepared young people meant that suppliers would be able to find quality workers to provide them quality products or services. Others expected that eventually many that they trained would return to work for them, but they wanted the students to round-out their experiences elsewhere after completing their training. Some companies even had overt policies that required students to work elsewhere after graduating. Some small employers, who had previously often hired their apprentices, but could not during the recession, still continued their programs hoping that as conditions improved, they would have access to high quality employees.

This mix of reactions would seem to indicate that the U.S. should be open and not require employer commitments to hire their students after program completion. The quality of the employers' work-based learning programs does not appear to suffer in the three countries, even though the employer has no final hiring commitment. Besides, motivations for participating vary by company. Those U.S. companies unable or unwilling to hire their graduates but motivated to participate to improve education in this country should not be discouraged from doing so. Those companies retrenching and cutting back but still willing to train should likewise be urged to participate. The quality of the work-based learning experience should be the determinant for a company's involvement, not the promise to hire.

Use of Contracts between Employers and Youth

As noted earlier, Denmark and Switzerland do require contracts between employers, youth, and parents (and in some cases, the schools). Sweden does not. The contracts appeared to have considerable benefit. They required all parties to specify their responsibilities and commitments. Where the responsibilities of schools and employers were carefully laid out, programs appeared tighter and more rigorous.

Contracts in the U.S. among the parties would appear desirable, because they should cause the parties, especially the schools and employers, to be more precise about their commitments. In a country where integrated curricula and work-based learning are new, the contracts would appear to be a useful, although not sufficient, tool in bringing about greater communication and thoughtfulness among the parties.

Employer Incentives

The use of employer incentives is a puzzle. Denmark and Switzerland generally have not had them. Working with youth apprentices is a part of their culture and history. But, recessionary times have made maintenance of high levels of employer involvement more problematic.

> *We feel the concept of life-long learning is culturally imbedded in our nation and our firm.* ♦ Hans-Peter Nazger, ASCOM, large Swiss company

Meanwhile, the Swedes, just beginning their program, are making a small payment to employers (about $2/hour worked by students). Johan Eimmerfeldt of ALMEGA, the 2nd largest Swedish employer association, told us, "It is harder to involve smaller employers. I try to provide them with materials to make it easier". They recognize however that this is only a small part of the employer costs and do not believe that it is a sufficient incentive.

There appeared to be growing concern about the need for incentives, not only because of recession but also given the highly competitive global economy, but no one could offer the proper approach. Many believed that the U.S. will need to offer some incentives.

The team left as unclear about incentives as before they went. We should recognize that in the U.S. individual employers will largely be beginning their programs from "scratch" with little existing tools or structure; there will be no industry-wide standards or curricular frameworks to guide them. Their initial work with their schools will need to begin by developing these. Then employers will need to train supervisors, design workplace learning experiences, and carry them out. Some incentives would appear needed, given the demands placed on employers for developing these early programs.

NEXT STEPS
FOR THE UNITED STATES

In new legislation, the United States is beginning to develop a national school-to-work system that requires structured work-based learning environments and integrates them with the classroom. The intention is to engage the economic partners at all levels in the design and implementation of this new system. Existing efforts will provide a foundation from which a new system can be developed.

These efforts appear to be in the right direction; yet, they are very far from building a school-to-work system that will serve large numbers of young people. On one level, these seemingly small steps appear appropriate. We cannot expect to move too far too fast. If the European experience were to make only one thing clear, it is the importance placed throughout society, most notably in business, labor and government, on the value of education for career development and work. The European experience points out also the vital importance of putting structures and processes in place for needed collaboration to occur on all levels. Lacking that, the sudden infusion of large sums of money to mount quickly a large-scale effort would be futile and wasteful. National commitment and structures need to be built if we can expect school-to-work efforts to be brought to scale.

> *We hope to get into the European Union, because it will create equality of opportunity for our people. And we need more cooperation between employer associations and employee unions.* ♦ Brunella Brazzola, Swiss Labor Union

Some will argue that this task will be too difficult in the U.S.; we should instead continue what we have and avoid more sophisticated structured approaches. Young people will get work and eventually be trained. That does not appear to be a feasible option. In a highly global economy, where low skill jobs bring only low wages, we must cultivate the high skill workers capable of doing ever-changing, ever-demanding high skill, high wage work. Our competitors are moving quickly in tnis regard. We cannot afford to be left out.

While we take initial steps towards a national system by mounting small scale efforts in the United States, we need to take steps to establish over time a strong school-to-work system. However, we should avoid over-burdening the system with mandates that will make it too costly or too slow to respond to the changing workplace. For example, our processes will need to allow for the frequent adjustments that will be necessary in standards, curricula, and assessments.

To begin to lay the ground work for multi-sector collaboration, we need to encourage employers, educators and labor to participate in the development of the new system. Their role will include developing national industry standards, curricula, and assessments that can guide efforts nationwide and eliminate the need to begin with a blank page in every local program and state system. This role will beg the question of the effectiveness and extent of

financial incentives for employers to participate. And, it will require training teachers in new curricula development and pedagogical approaches and financial resources to give them the time to interface with employers and unions and understand the workplace.

The European experience highlights a number of weaknesses in our approaches today that will keep us from getting to a strong school-to-work system. In so doing, the lessons from Europe point to some critical next steps that must be taken as the U.S. begins a federally-led, but national, effort to establish a school-to-work system in this country.

The development of a system at the state and national level requires a long-term political and public commitment, not simply to establishing individual programs in communities, but to building structures within and among the economic partners to carry them out, and assure that those involved in the programs are prepared to assume new responsibilities.

At the same time, our national attention cannot solely be turned toward improved education and training for new workers. Business, government, and labor must be awakened to the need to build high performance workplaces, and the federal government should assure that mechanisms are put in place to provide assistance to employers and labor to create such workplaces, and to enable the economic partners to transition to new market opportunities with the least economic upheaval for employers and employees. Finally, government should be working with industry to build workforce preparation systems that are integrated whether they are serving youth or adults, current or displaced workers, disadvantaged or more "advantaged" workers. Fortunately, there is mounting evidence that such integration is taking place.

This agenda will require action by federal, state, and local government -- from elected officials to education departments to schools and teachers -- and employers and labor. Each must work both *within* its own institutions and with each other. This is no small task.

The following sections examine the next steps for each sector -- those *participants* in today's economic and worker preparation programs who must become tomorrow's economic *partners* in a coherent system. None of these actions can be fulfilled independently, but there are leads that each "partner" should take.

GOVERNMENT

Develop Federal Legislation That Provides a Framework

Like the countries the team visited, a U.S. school-to-work system needs to be industry-driven. However, at the core of the partnership must be a long term commitment by business, labor, educators and state and federal governments to developing and continually refining the structural framework for the system. An on-going commitment to partnership is the critical enabler of a national system.

State government can develop state systems, and many have begun to do so already. However, the federal government can provide the national framework which provides the consistency of outcomes and the state links that allow for portability of credentials. A national framework can also inspire the development of a system in which industry develops national standards that can guide broad-based and technical skill development.

Federal legislation can articulate the critical elements of the system and provide resources for some of these elements that can otherwise easily be neglected. These include a national organization that can draw together the work of our states and localities and provide leadership and guidance, leadership in building awareness and understanding, identification of best practices, research, and resources to states and localities to help them leverage existing resources to create strong integrated curricula with classroom and work-based components.

Decentralize but Assure Quality in Initial School-to-Work Programs

The European experiences indicate that certain underpinnings of individual school-to-work programs cannot be left to chance. As funds are made available, leadership must place special emphasis on assuring that classroom curricula change, that work-based components are structured learning experiences, that both classroom and work-based components have clear outcome requirements, and that the two are integrated.

These changes will not occur without the involvement of industry. They will also not occur without training for the adults who are designing the programs and working with the students. Before grants are made, proposals should explicitly show that industry is actively involved. No program should be funded without evidence that industry representatives have articulated requirements and participated in curricular design. The federal government should require information on teacher training to ensure that teachers have the skills to develop new curricula and change pedagogy and have the techniques for working with private sector partners. These initial programs should be exemplars for future efforts. There should not be a rush to fund programs unless these requirements are met.

The study team also uncovered weaknesses in the three countries in career awareness and guidance for students prior to entry into these programs. While career guidance is conceptually valued in Sweden, Denmark and Switzerland, students generally select technical programs the way our children do through peer and family influence. As a result, many change programs. Some drop out. Student unpredictability has caused schools and employers to delay more expensive hands-on work-based experiences until later months or years of the program. Because these delays in more contextual learning can also lead to more dropouts, especially for lower performing students, it is important for the U.S. to exercise even greater care in providing career exposure and guidance in the years before entry into school-to-work programs. The report of the study team on career guidance is especially applicable in this regard.

Orchestrate Major Awareness Campaign; Build Public Will and Understanding

As a nation, we value college and university preparation to such a degree that we lose sight of the fact that 75 percent of our young people do not graduate from these institutions. We also do not recognize that 75 percent of all jobs do not currently require, and are not expected to require, college degrees. While college or university graduation for all is a noble ideal befitting our nation, it causes our education systems to attempt to fit all students into one pattern of learning. We fail to realize that people learn differently and are motivated in different ways. Furthermore, the skills they will need are not provided in most college and university settings. In addition, this tendency to "track" our human capital into college discounts the idea of lifelong learning whether you go to college or not.

> *The move [through Sweden's new school-to-work legislation] is to increase each person's ability to adapt to a changing world.* ♦ Gunnar Karlsson, Swedish Metall (Swedish Metalworkers' Union)

On its face, it is wrong for our country to lack a system that provides all of its young people the skills they need to become productive members of the workforce. It is particularly troubling that the majority of our young people -- 75 percent -- leave school without a solid and directed educational foundation that would allow them to secure high skill jobs or even the advanced training leading to high skilled jobs.

Government leadership is vitally important to raise public awareness and understanding of the need for and value of school-to-work programs. Government must orchestrate a major awareness campaign. This message must reach parents, young people, educators, business, labor, and the public at large. Special efforts need to be made to promote the business, education, and labor collaborations needed to design and carry-out these programs. All media should be engaged in the process, along with leaders in each of the sectors.

Create Quasi-Nongovernmental Organizations of the Economic Partners at the Federal and State Levels

While the countries the team visited did not create an independent entity to orchestrate their youth apprenticeship or school-to-work systems, they already had in place many of the critical business and labor institutions for orchestrating their efforts nationally. All three have strong business and labor organizations. Unlike most U.S. trade associations and labor unions, these organizations recognize that building and supporting a strong school-to-work system is a significant responsibility for themselves and their members.

As a result, there are structures in the three European countries at the national, regional, and local levels that provide the vehicles for input from the private sector in school-to-work programs. At the national level, confederations of business and labor organizations provide input into broad public policy development. They also build commitment within their respective sectors to education and training. Also at the national level, business and labor

organizations from each industrial sector come together to enunciate standards, curricular frameworks, and assessments. At the regional/canton and local levels, similar industry-specific organizations exist. As curricula are broadened to cover several related industries, representatives from each of these associations together develop the curricula and work-based experiences needed to achieve the national standards.

> *Construction employers actually went to teachers to tell them how the academic and vocational (educators) need to come together.* ♦ Anita Ferm, Stockholm Education Agency

Similar structures are needed in the United States at national, state and local levels. The team believes that the United States should consider federal legislation that creates a national, non-government organization for the economic partners to convene and cluster industry sectors, set standards, develop curricular frameworks, and determine assessments and credentials. A new organization of this nature would emphasize industry as a driver of a national system, while fostering cooperation between the economic partners. This organization could also play an intermediary role between the various partners and their organizations in fostering the systems necessary for a system on a national scale.

Because this work needs to be ongoing and not subject to the vagaries of the electoral and political process, the team advocates that it be supported through special dedicated funding. However, we would expect that its initial funding would be through general revenues.

As part of the federal framework, the team believes states should establish similar quasi-nongovernmental institutions to develop an implementation strategy, including setting standards and more defined curricula and assessment methods for the state; to translate these standards, curricula, and assessment methods to the local level and assist districts and schools in adopting them; to form regional consortia with other states to share information and build region-wide systems over time; and to be the prime intermediary for translating local and state experiences to inform state and national policy development.

At the local level, districts would convene employers and labor to determine labor market demand and create advisory councils for industries for which curricula would be developed.

As initial federal school-to-work legislation passes, federal, state, and local governments will undoubtedly focus immediately on creating the means for business, labor, and education collaboration at the *local* level where initial programs will be put into place. But stopping there would create only isolated programs and would not establish a system accessible to a majority of students. Increased resources over the years would result in increased duplication of effort as communities across the country develop curricula for the same jobs or industries. Clustering occupations and industries to develop broader-based curricula would also be unlikely as schools, business, and labor focus on local needs. Establishment of credentials having nationwide acceptance would not be possible.

It is too easy for institutions like the National Skill Standards Board established by federal legislation to become too government-led or too government-responsive. To overcome these limitations, the team believes the federal government should create industry-led quasi-non-governmental organizations around which large-scale systems can be built.

EMPLOYERS

Pursue Unified Effort Led By Key National Business Organizations To Engage Business

It is not in the culture of the U.S. for American employers to assume joint responsibility with educators and labor for the education and workforce preparation of the nation's young people. The federal government should enlist major business organizations to build awareness and understanding of the importance of these efforts and provide assistance to employers who respond.

Instead of a scatter-shot, duplicative approach, these national business organizations (e.g. National Alliance of Business, National Association of Manufacturers, The Business Roundtable, U.S. Chamber of Commerce, Committee for Economic Development, American Business Conference) should build on their respective strengths as part of a unified plan for building employer commitment to these programs.

A part of this plan should include stimulating action by trade associations. It is important to identify national industry-based organizations that can help interest their own members in engaging in school-to-work programs as well as exercise leadership in creating national standards, curricular frameworks, and assessments. Unlike Sweden, Switzerland, and Denmark, the industry trade associations generally do not have an orientation to these activities. This interest must be built.

The national business organizations should also take the lead on behalf of government to identify needed incentives and other policies that can enhance business involvement in the school-to-work system.

Define Standards on an Industry-Wide Basis

Standards must be developed by industry. It would be far better to build on existing business and labor institutions for these efforts. Trade associations can serve as the focal point for employer involvement for many industries. Some have already begun to develop skill standards for their industries. It is important to engage many more.

We hope too that, like their counterparts in Europe, industries will identify the commonalities in skill requirements among them and be able to build standards and curricular frameworks across industry clusters. Creating national standards and curricular frameworks are especially important because they make it much easier for industry to be involved on the local level by reducing the duplication of efforts and costs to individual companies and communities.

Improve Climate for Greater Labor-Management Cooperation

Both employers and labor need to see the outside challenge of international competition as the stimulus for greater cooperation. This will enhance the opportunity for greater cooperation in building school-to-work programs.

LABOR

Pursue Unified Effort to Engage Employees in School-to-Work Programs

Employees doing the jobs themselves are vitally important in defining standards, determining how they can best be met, and in doing the training on-site. Furthermore, they can often be reluctant to provide training if they themselves do not understand the purposes of the program or fear possible job loss to younger workers.

National labor organizations (e.g. AFL-CIO and its affiliated unions) are important to building employee understanding and openness to school-to-work efforts. These same organizations can also provide guidance to federal and state policymakers based on the ongoing experiences of their members in school-to-work programs. They can further be the focal point for showcasing examples of credential development. Finally, working with trade associations, organized labor can be a partner in defining the industry standards.

The team differed in its views about the ways to engage employees in non-unionized settings. Some believed strongly that there should be an undiluted, independent voice of workers in the development of standards, curricular frameworks, assessments, and throughout the learning process. While other members recognized that no program will work without line employee support and involvement, they believed that the creation of an "undiluted, independent" voice was not necessary and often not appropriate to particular industries or in certain states. All agreed more research was needed.

Enhance Long-Term View with Management

Unless both employers and employees seek ways to see the "bigger" picture and work together constructively to counter worldwide competition, there will be fewer and fewer opportunities to work together to improve the preparation of young people.

> *Our apprenticeship system is a good one, but we need more coordination between school and work, more of the system in small and medium-sized firms, and more access to both occupational and university tracks for all.* ♦ Brunella Brazzola, Swiss Labor Union

It is as important for employees to understand this message as well as their employers. Government support for awareness-building campaigns by American labor for their members and other workers is important.

CONCLUSION

As the U.S. confronts the challenges of a highly international global economy, it serves us well to reflect on the strengths and weaknesses of our economic institutions and systems in comparison to those of other countries.

We should not and cannot blindly try to adopt the approaches of other countries. Our trip to Sweden, Switzerland, and Denmark did however point out some areas demanding far greater attention. Their economic partners have placed a high value on the development of their human resources and have seen it in their best interest to work together to maximize the productivity of their workers. This means participating with the schools to motivate and prepare young people and continuing close collaboration to improve the skills of their current workers.

> *It is considered important in Switzerland to have an apprentice program. You are then seen as a leader, and it gives you prestige.* ♦ Rosemarie Rohrback, Migros (large Swiss department store)

Our jobs, like theirs, are changing. Our "good" jobs, those requiring high skills and paying high wages, like theirs, require a well-educated and trained workforce that has learned to learn. Each country wants these jobs in order to maintain and increase its standard of living. This puts each country in a race to assure the high quality of its workforce so that it has the innovativeness to create the new ideas that will put it on the cutting edge and the talent to turn these ideas into high quality products and services.

The U.S. is in competition to build the strongest workforce possible. The experiences of the three countries visited by the Economic Partners Team told us that we must build a cooperative system in which business, labor, and government work together here far better than they do now to develop and implement the strategies that will assure that virtually all of our young people have the education and technical skills to move smoothly from school to work -- work characterized by high skills and high wages.

APPENDIX

Additional Comments:

Nathaniel M. Semple
Committee for Economic Development
Washington, D.C.

I first would like to thank the Center for Learning and Competitiveness and the National Alliance of Business for providing me with the opportunity to greatly expand my understanding of the culture, economies, and people of Switzerland and Denmark, the two countries I visited. Although I have travelled on study trips to Europe before, none was as well thought out and as purposeful as this one. I especially would like to thank Esther Schaeffer, Phyllis Eisen and Samantha Guerry and the staffs of the National Alliance of Business and the Center for Learning and Competitiveness for their hard work in putting this trip together.

Since our investigation, I have studied the U.S. economy and labor market in depth and have come to question the extent to which our recommendations can be applied to the U.S. Specifically, as policymakers in this field, we still need to make a strong enough economic or social case to support our conclusions, or at least a case that could be used to attract industry to making a commitment to be involved in a system such as we describe. This is, admittedly, a difficult task. There is no clear evidence in the economic literature which supports the need for many of our more elaborate recommendations. Indeed, there appears to be a growing consensus among leading U.S. economists that the United States economy is creating jobs and improving productivity faster than our European competitors largely because the U.S. has *avoided* the costly rigidities of the European labor markets and the high costs of supporting their welfare systems. In addition, there is considerable debate as to whether the European training programs increase national employment or the productivity of individual firms any more than the myriad of public and private programs now offered to youth in the United States.

To cite one specific example: The German apprenticeship model is used in varying forms in Denmark and Switzerland. This model serves the European social partners in different ways. For youth, an apprenticeship provides a temporary "employment" opportunity in a highly restricted labor market, although for the privilege young people in some countries begin making choices that restrict their future options as early as the 6th grade. For government and society, these programs are seen to provide youth with constructive activity designed to enhance a young person's long term employment prospects and to "keep them off the streets." The unions support the program for similar reasons and monitor the program to be sure firms do not substitute older more expensive employees with apprentices.

Businesses gave mixed messages. Some businesses we talked to cited social obligations for supporting the program, saying it was part of their "social contract with society." Among these, several admitted that these programs were cost centers and were willing to reduce or do

away with them in times of economic difficulty. Indeed, even in Germany, only 10% of industrial concerns and 40% in commerce participate in these training programs which raises the question of just how much European business as a whole value these programs.

Then, there were other firms which confirmed the popular notion that the apprenticeship program was a source of reliable and trainable youth and prospective employees and that their firms were getting good labor at what in the United States would be considered a sub-minimum wage. The firm, MIGROS, Switzerland's largest retailer uses apprenticeships extensively this way, and can do so because MIGROS, like the rest of the Swiss retail industry, is non-unionized.

My research indicates that while apprenticeship programs benefit certain firms and certain business sectors in Europe, it is not certain that such programs generally increase the productivity of individual firms or the labor force, nor do they raise the wages of youth any more than the education programs available to youth in the United States.

The social case could possibly be more readily made. Common sense suggests that young people, indeed all of us, learn a great deal in a situational work experience. In this nation, the work site has been, for almost 200 years, the place where people are actually prepared for their work. And it is in the work place where we learn the value of discipline and good work habits. Properly done, such experience will likely improve a young person's long term employability. The common wisdom is that there is a vast new cohort of youths who, without this kind of experience, will be destined to fail in the labor market. Whatever the number, even serving a relatively small number might have beneficial social consequences.

Even if we are able to make the economic and social case to support our proposals, local business will need to be sold on the notion. Local commitment can only be secured at the local level, not through federal legislation. There are already school-to-work efforts flourishing at the local and state level without benefit of a federally-driven national structure, such as in Maine and Wisconsin.

As we proceed, we should look at where school-to-work programs are now working in the United States and find out what it is about those efforts that make them effective. These efforts appear to have overcome years of suspicion that has characterized the relationship between schools and business and government. Few have had any but peripheral involvement from the federal government. Once we learn what works, then we can proceed to engage business at the national level to lead the charge.

In the meantime, the school-to-work program recently enacted by the Administration appears to be the best way to proceed. This modest effort may well provide us with answers to how best to involve business, the schools, and the unions. We should let Secretary Reich's thousand flowers bloom before embarking on the nation-wide effort envisioned in our recommendations.

Study Team Members

The Economic Partners Team was headed by ***Ms. Esther Schaeffer***, Senior Vice President of Education and Workforce Quality Programs and Director of the National Alliance of Business' work in employer-based training, youth apprenticeship, and education. Her expertise consists of policy analysis and development on education and job-training issues and their impact on U.S. competitiveness. She oversees the implementation of $5 million in projects annually to motivate business to increase involvement in education and training in the public sector and individually-owned companies. In addition, she secures funding from federal departments, private and corporate foundations, and companies to support grant efforts. For 25 years, the Alliance has been active in formulating national policies and programs on issues related to the development of the nation's human resources. The Alliance informs both the public and private sectors of workforce development policies and issues, interprets the implications of these issues, and identifies programs or actions that can combine public and private resources to improve our nation's education and training systems.

Mr. Paul Cole holds the second highest office in the New York State labor movement, as Secretary-Treasurer of the AFL-CIO. Since 1974, he has been Vice President and a member of the Board of Directors of the New York State United States Teachers. The New York Federation of the AFL-CIO is the largest state federation of labor, with 2.3 million members and 3,000 local affiliates. Mr. Cole is a nationally sought speaker on the gap between the skill requirements of the workplace and the skill preparation provided to this nation's young people. He served as a Commissioner for the U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills (SCANS) and is currently on the advisory board for Jobs for the Future National Youth Apprenticeship Initiative, a member of The New Standards Project Work Readiness Advisory Board and is on the International Board of Governors for the State of Maine's Center for Youth Apprenticeship. Also active in efforts to improve the quality of vocational education, Mr. Cole is a member of the Design Group for "New Designs for the Comprehensive High School" for the National Center for Research in Vocational Education. He is chair of the National Advisory Panel for the New National Assessment of Vocational Education and a member of the Task Force on Creating Career Pathways for New York's Youth. He is a key participant in the efforts in New York to build the quality of both the secondary and postsecondary education systems.

Ms. Phyllis Eisen, Senior Policy Director of the National Association of Manufacturers' Education and Workforce Readiness and Industrial Relations Department, led the design and direction of NAM's initiative on the high performance workforce. She has been elected project director for NAM/USDOL "Partnership in Workforce Readiness," which is a four year project designed to expand research on high performance in the manufacturing sector, create models for change and design aggressive programs to implement them -- especially for small and medium size companies. She is also Director of Risk Management, Industrial Relations Department, National Association of Manufacturers. She serves as spokesperson for the department on a broad range of labor related issues and is responsible for policy, budget, committee, and administrative activities for the Risk Management Department.

Dr. Richard Green is the Director of Apprenticeship, Education to Employment Transition and Work and Family Programs for Honeywell Corporation. Dr. Green is currently responsible for the development and implementation of Honeywell's Corporate Apprenticeship and Work and Family Programs. From 1988 to 1992, he was Director of Honeywell Education Affairs with primary responsibility for education policy development supported by the company on a national level. He has been active in the education reform movement as a member of the Minnesota Business Partnership, the Business Roundtable Education Committee Working Group and the Minnesota State Education and Employment Transition Council. Prior to joining Honeywell, Dr. Green was a professor of chemistry, a college dean and vice president for academic affairs.

Ms. Samantha Guerry, the Associate Director of Policy and Programs for the Center for Learning and Competitiveness (CLC), was a principal manager of the Comparative Learning Teams Project. Her research in Scandinavia and Europe investigating systems of education, training and economic development laid the ground work for the teams' visits. She works with international representatives from business, education, labor and government to implement CLC programs on a wide range of issues. Formerly, Ms. Guerry was the Program Director for the New American Schools Development Corporation, where she worked with America's leading corporations, practitioners and policymakers on dramatic, comprehensive reform of the K-12 education system. She has also worked as a communications and strategic planning consultant for corporate and national non-profit organizations.

Mr. Richard Kazis is Vice President, Policy & Research for Jobs for the Future (JFF). He directs JFF's National Youth Apprenticeship Initiative, a multi-year effort to research and develop new models for linking employers with schools that create better career pathways for more young people. The Initiative consists of work at the local, state and national levels. Mr. Kazis also heads JFF's exploratory and applied research activities. Prior to joining JFF, Mr. Kazis coordinated the M.I.T. Commission on Industrial Productivity's research and recommendations on education and training, presented in the Commission's 1989 report "Made in America; Regaining the Productive Edge". During the 1980s Mr. Kazis worked as a consultant on issues of work, technology, and economic change for clients that included the Massachusetts Executive Office of Labor, the Massachusetts Industrial Services Program, and the State of Connecticut. A graduate of Harvard College, Mr. Kazis received his Masters in City Planning from M.I.T. He is the author of the recently reissued "Fear at Work : Job Blackmail, Labor and the Environment" and has also taught social studies at a high school for returning dropouts. He has served as a member of the Training Subgroup of the Competitiveness Policy Council and is currently on the Board of Directors of the Institute for Local Self-Reliance. His most recent publication "Improving the School-to-Work Transition in the United States" is a paper on federal policy options prepared for the Competitiveness Policy Council.

Leon Lynch is currently serving his fifth term as the International Vice President (Human Affairs) for United Steelworkers of America (USWA). He joined the USWA in 1958 at the Youngstown Sheet & Tube Co. steel mill in East Chicago, Ind., and served on the grievance, bylaws and education committees and as president of the YS & T federal credit union. In 1968 he was appointed staff representative and assigned to Memphis, TN until being named international representative in 1973. He chairs the USWA's Container Industry Conference and Public Employees Conference, and serves on the General Executive Board of the AFL-CIO Industrial Union Department. Mr. Lynch oversees the USWA's efforts in the fields of civil rights and human rights and also directs the union's political and legislative activities. He serves as an at-large member of the Democratic National Committee and its Executive Committee. He also serves on the boards of many civil rights and human rights organizations. He is chair of the A. Philip Randolph Institute and the Labor Roundtable of the National Black Caucus of State Legislators, and president of the Workers Defense League. He has frequently represented the USWA and the AFL-CIO as a delegate at conferences of the International Labor Organization and in other international labor activities.

Ms. Rae Nelson is Executive Director of the U.S. Chamber of Commerce's Center for Workforce Preparation and Quality Education. The U.S. Chamber's infrastructure includes 200,000 corporations, 3,000 state and local chambers of commerce, and 1,200 trade and professional organizations. The 3,000 chambers are strategically placed in cities, suburbs and rural areas nationwide. Over 1,000 of these chambers are developing and implementing local programs to help communities achieve the national education goals by the year 2000. Over 70 percent of chambers have education committees; many are currently involved in business-education partnerships. Through its Center for Workforce Preparation and Quality Education, the Chamber is helping business leaders develop and implement effective education and training initiatives. The Center assists in institutionalizing the linkage between business and education as an essential catalyst in local economic growth. The Center is currently undergoing its strategic planning process to identify objectives and priorities for the coming year. It is anticipated that the revised objectives will focus on preparing workers for the internationally competitive workforce of the 21st century.

Mr. Nathaniel Semple is Vice President and Secretary of Research and Policy of the Committee for Economic Development (CED). CED is an independent, non-partisan, non-profit organization devoted to public policy research and the implementation of its recommendations by the public and private sectors. CED is unique among business-oriented organizations. Its 250 Trustees-- mostly heads of major corporations and university presidents--personally select the issues to be studied. They formulate and vote on policy recommendations and speak out forcefully for their adoption by business and government. In its 50th year, CED continues to reflect the best thinking of the business world, shaping innovative public policy for a healthy American economy and society. Since coming to CED, Mr. Semple co-founded the Business Working Group for Human Resources. He is a member of the Executive Board of the Institute for Educational Leadership, is a member of the ACSN/Blue Ribbon Panel on Math and Science Education, and has served on a variety of advisory groups to the Council on Competitiveness and Congressional Economic Leadership Institute.

Mr. Donald Treinen is Executive Director at The Alliance for Employee Growth and Development, Inc.,"The Alliance". The Alliance is a wholly owned not-for-profit venture of AT&T, CWA, and IBBW whose mission is to provide training and educational experiences to unionized AT&T employees. Mr. Treinen is also one of two Presidents of Alliance Plus, Inc. a for-profit subsidiary of The Alliance. Alliance Plus provides consulting and training activities to external clients on a global basis, with an interest in workforce preparedness programs. His background includes experience as a labor representative at the local and national levels of Communications Workers of America (AFL-CIO). Mr. Treinen has extensive experience in education and training program administration, both at the local and national levels. His experience includes adult instruction within the union, and within the public school system.

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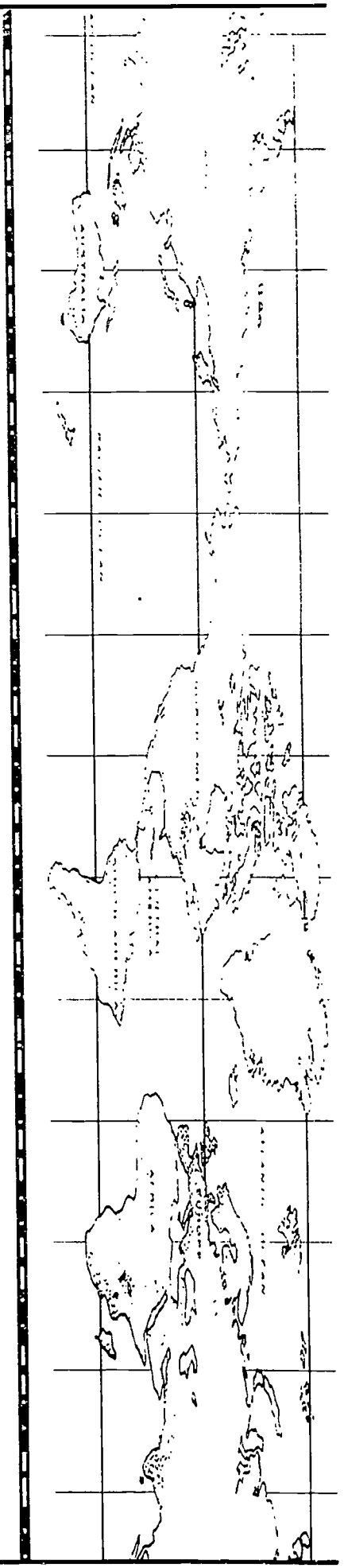

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