Building Capacity for Transit Training: International and Domestic Comparisons

Working Paper-December 2008

TRANSPORTATION LEARNING CENTER

Working Paper – December 2008[1]

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International and Domestic Comparisons

Executive Summary

As the US public transportation industry continues to make strides toward more effective workforce development systems to address pervasive skills challenges, an important opportunity exists to identify useful lessons from the most effective industry-wide training programs in other countries and other US industries. The "Best in Class" among these other industry-wide training systems share a number of common features that contribute to their quality and effectiveness. These common features include industry-wide and local training partnerships, data-driven curriculum and courseware development, high quality integrated delivery of classroom and on-the-job training and certification, and secure sources of adequate funding. Understanding these distinctive features of successful industry-wide training systems in other countries and industries can contribute to enhancing workforce training in this country as part of ongoing innovations in transit workforce development.

This working paper provides an initial overview of the findings from ongoing research at the Transportation Learning Center[2] regarding strong industry-wide workforce development systems in six other countries and in several US industries. Its focus is on training systems for blue collar employees whose counterparts in the United States generally receive less investment in developing their knowledge, skills and abilities. It identifies key features that could be adapted for use within an emerging system of more effective US transit training. Detailed comparisons with training systems of other countries and other US industries will be published by the Center in 2009.

Introduction

The transit industry and its workforce development systems find themselves at an historic crossroads as the calendar turns to 2009. The industry is facing the challenges of an aging workforce and a smaller, more diverse population for recruitment, global warming, oil dependency, and economic meltdown and recovery with an opportunity to creatively address its long-brewing skills crisis.

The principal drivers of public transportation's skills crisis include:

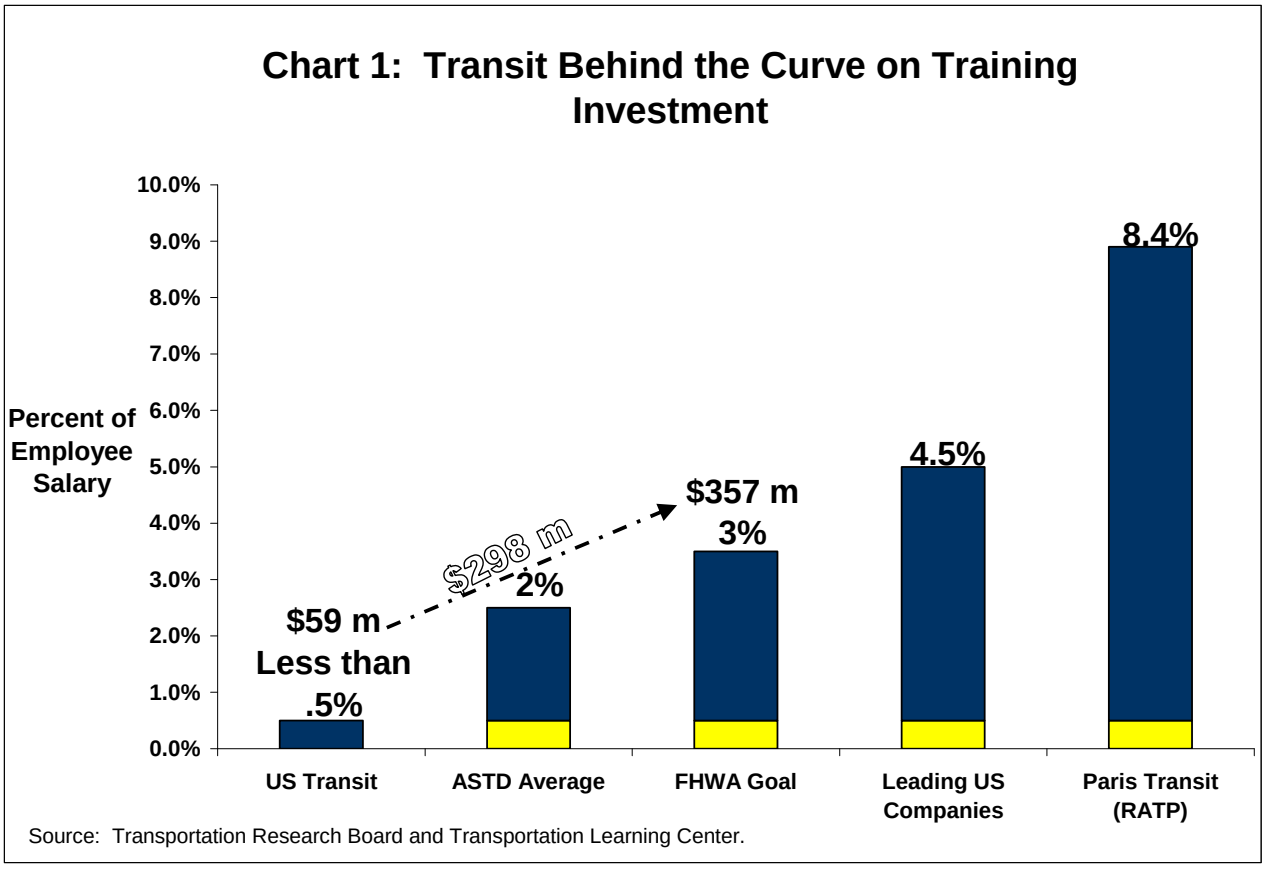
- Rapidly changing technology, as digital, electronic and telecommunications-based systems and new energy-efficient propulsion systems are becoming pervasive.
- Pending retirement, with 40 percent of skilled technical workers reaching retirement age in the next five years. A limited national

investment in education and training opportunities for Americans not headed to four-year colleges heightens the challenge.

- Record increases in transit ridership, more than 25 percent nationally since 1995, with more future growth predicted.

The transit industry's ability to respond to these challenges has been hampered by limited training capacity, low investment in the human capital needed to support the industry's enormous investments in the physical capital of buses, trains and infrastructure, the local focus of transit systems and unions, and a failure to consistently collaborate nationally on issues of joint concern to management and labor.

In spite of these clear challenges, transit continues to dramatically under-invest in workforce development, with less than ½ of one percent of industry payroll going to workforce training – far lower than found in other benchmark industries in the US and in other countries. Transit's training investment is far below the 2 percent of payroll invested by other US industries, the 3 percent goal set by the Federal Highway Administration, and the 8.4 percent payroll invested by the Paris regional transit system (though the Paris system is clearly not the whole French industry). The US industry is spending less than $59 million annually on training – a number that would need to rise to by $298 million to reach the FHWA goal of 3 percent of payroll - $357 million for transit training.



Source: Transportation Research Board and Transportation Learning Center.

In addition to low levels of financial investment in human capital, there has historically been no collective approach to workforce training in the industry. By not having the opportunity to rely on an industry-focused system of training, leaders of individual transit systems and local unions have had to determine for themselves, on their own, the kind of training needed. In most cases they develop courseware and deliver that training in the context of their own individual properties. With each local organization conceiving, designing, engineering and manufacturing its own wheel, the industry's training "system" is highly inefficient and expensive. It entails considerable cost for those systems willing to take on the effort. In the absence of a system of national curriculum, shared courseware and effective joint standards for certification, local training programs are often quite different from one another, with very different levels of quality.

The good news is that the US transit industry has begun to meet these challenges. A brief historical review can highlight the progress now being made.

After the mid-1990s, with growing recognition of the industry's emerging skills crisis,[3] leading national public transportation organizations called for much greater focus on the industry's training needs. Emphasis was placed on joint labor-management approaches to address the workforce challenge.

In 2000 the Board of Directors of the American Public Transportation Association (APTA) launched its Workforce Development Initiative (WDI), and the WDI's leaders invited labor representatives to participate in the WDI task force. WDI's report, *Workforce Development: Public Transportation's Blueprint for the 21st Century*, called for much greater focus on the people side of the industry – its human capital – and welcomed opportunities for leaders from transit management and labor to work together in addressing these challenges.

The Amalgamated Transit Union and the Transport Workers Union, the two unions with the largest membership in public transportation, both called for greater training opportunities for their members, specifically through joint labor-management training partnerships. Working with transit executives, they formed a joint national nonprofit, the Transportation Learning Center, and successfully accessed in-state training funds originating with the US Department of Labor – funding that by federal legislation requires union signoff on training projects involving a union-represented work force.

Since 2000, a series of local and national innovations in transit workforce training have built on this progress, with decisive leadership from key national and local figures in transit labor and management. Supported in part by public investments

from US Departments of Transportation and Labor and the Transportation Research Board, this joint leadership helped launch very positive labor-management training partnerships in a number of states that have:

- Provided new training for thousands of transit workers,
- Moved workers up career ladders as they have enhanced their skills, and
- Saved transit agencies millions of dollars by achieving greater equipment reliability, eliminating unnecessary parts usage, reducing spare equipment requirements, and increasing the efficiency of core maintenance activities[4] as summarized in *Transit Partnership Training: Metrics of Success.*

Building on the momentum of these new local, regional and statewide training partnerships, transit's joint leadership also sponsored a nationwide partnership among hundreds of transit system union and management representatives to develop jointly supported national training guidelines. As of the end of 2008 national training guidelines have been proposed for five technical maintenance occupations along with a national framework for apprenticeship (see *Working Together: A Systems Approach for Transit Training*, Transportation Learning Center, October 2008). These national resources for the first time provide a system framework for a common training curriculum, objective skill gap analysis, assessment of gaps in available training programs, sharing existing courseware across locations to fill gaps in training capacity, and developing new courseware in areas where no good training materials currently exist.

These recent practical developments provide a good beginning for the broader changes necessary to ensure effective training opportunities for the operations and maintenance work force in the US transit industry. Equally important is the contribution of these new training partnerships to changing and modernizing the culture within transit agencies. Successful partnerships for training have helped support industry leaders in framing the possibility of intentionally building a new culture of cooperation and mutual respect within the transit industry. These leaders of transit labor and management are moving toward transcending the top-down, ultra-hierarchical and long obsolete command-and-control military model in favor of a modern workplace culture based on partnership and joint problem solving. From Philadelphia and the rest of Pennsylvania to Los Angeles, Atlanta, Portland, Louisville and Albany, from Salt Lake City to the San Francisco Bay Area and New York City, transit executives and labor leaders are finding new ways to work together for developing their workforce and modernizing their organizations.

With the newly emerging setting of joint training activities, national training resources and consensus training guidelines, US public transportation leaders can now look realistically, perhaps for the first time ever, at how best to adapt the key features of successful training systems in other countries and industries.

Research Approach

The focus of this paper is training for the transit industry's blue collar hourly work force. This group makes up at least 75 percent of total transit employment, with union membership exceeding 90 percent in the largest systems.[5] It has been estimated in the Transportation Labor Relations Guide reports that 95 percent of these workers are represented by labor unions, including the Amalgamated Transit Union (ATU), Transport Workers Union (TWU), Electrical Workers (IBEW), Machinists (IAM) and the Service employees (SEIU) among others.

This working paper previews the findings of research undertaken over the past several years with support from the US Department of Labor, US Department of Transportation and the Transportation Research Board's Transit Cooperative Research Program. More detailed analyses of comparisons with other countries and with other US industries will be published by the Center in 2009.

Comparative Benchmarks. How can the transit industry – labor and management working together – find and implement the best solutions to its skills challenges and opportunities? Where can transit look to better understand its options for success?

An essential first step to understanding the possibilities for better approaches to training systems in the US transit industry is to analyze relevant comparison cases. Studying and understanding what works in other countries or other industries is of course only a starting point. The comparative method should not be used to justify simply copying what works for others. What's needed is careful learning, consciously adapted to the circumstances in our own country and industry. With that caveat in mind the US transit industry has an opportunity to learn many useful lessons from effective industry-based, customer-driven training and certification systems elsewhere.

There are three sets of useful comparisons for helping understand how to improve US transit training:

I. Comparisons with training systems for blue collar technical employees in **other countries**. The public transportation industries in the countries with strong national training systems follow general nationwide training models that are then implemented in each major industry.
II. Comparisons with the handful of **other industries** or crafts in the US that have effective nationwide joint labor-management industry training systems. A number of these industries have similar workforce characteristics to public transportation, including comparable union density among the hourly blue collar work force served by their training programs.

III. Comparisons with **recent best practice innovations in US transit** training programs can clarify the current starting point for future developments in the industry workforce development.

I. Effective Industry-wide Training Systems in Other Countries

In comparing other countries' systems of workforce training and certification to those that exist in the US transit industry, we must recognize the significant difference between the industry-wide, organized participative systems of training that bring together employers, unions and educators in those countries. The US transit industry – like most US industries – lacks any systematic approach to help employers and their workers efficiently identify and deliver quality curriculum in effective training settings.

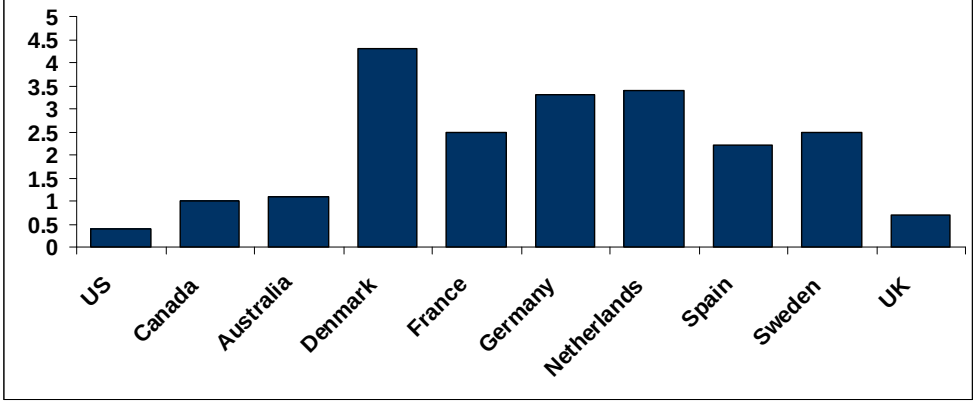
A. International Differences: the US Lags in Training Investments

There is a strong correlation between the level of well managed investment that countries make in blue collar workforce development and the degree to which workforce training has succeeded. In general, countries that spend more on well planned and coordinated workforce training – both governmental expenditure and employer expenditure – have highly developed systems for workforce training. In the US transit industry, until quite recently, this correlation occurs, but in reverse: Average expenditures fall at the low end of the international spectrum of investment in workforce training, and the industry's training overall has not been developed as a coherent, self-reinforcing system.

1. US public investment in workforce development is one of the lowest among industrialized economies. US public investment in training – see chart 2, Public Expenditures on Labor Market Programs – is 0.4 percent of gross domestic product – a figure that ties the US with South Korea for last among OECD member countries. By contrast the countries with the strongest public investments in workforce training, such as Germany, Denmark and the Netherlands, spend eight to ten times as much.[6]

2. US employer expenditures on workforce training are also relatively low among other industrialized countries, despite the significantly downward trend in performance of US high school graduates in

Chart 2: Public Expenditures on Labor Market Programs as a Percent of GDP, 2005-2006



learning in math, science and other fields, compared to other countries. Since 70 percent of the US work force will not go on to earn a 4-year college degree, there is a significant need to further develop the skills – the human capital – of the US work force. The fact that the transit industry finds itself at the low end of the spectrum for employer investment in workforce training further highlights the depth of its workforce investment challenge.

B. International Differences: Industry-Specific Training Systems in Other Countries.

Countries with a high priority for training demonstrate the highest levels of investment in workforce training and are generally considered to have the most effective systems of workforce training. While more funding alone can not create an effective training program, nor guarantee strong results in a new setting, the countries that have the most training resources tend to have well organized, effective training systems. The Center research team has studied these examples as part of its project to identify useful lessons the US might be able to adapt to circumstances in this country.

The European countries with the strongest investments in workforce development – such as Germany, Denmark and the Netherlands – have similarly well-developed sector training partnerships that are deeply rooted in law and custom. These countries feature sector-focused, partnership-based training systems that address all aspects of workforce training on an inclusive, collaborative basis—from curriculum design and training delivery to certification,

These national systems provide:

- A template that is implemented across the full spectrum of industries and occupations within each country, providing coverage for public transportation and its main occupations for maintenance and operations
- Sector partnerships that develop curriculum
- Secure sources of funding
- Validated tracks linking work-based training with classroom education
- Apprenticeship and skill certification for young new entrants as well as adult job changers or lateral entrants from other industries

In Denmark, this template spans across seven main groups of vocational occupations. The German approach to training youth, commonly known as the dual system because it involves coordinated learning at work and in school, covers 356 occupations. The Netherlands organizes occupations in broad sectors, such as services, healthcare and agriculture.

In Denmark and Germany, costs for training are split between the public and private sectors. Government provides funding for education in vocational schools while firm-based learning costs are absorbed by employers and

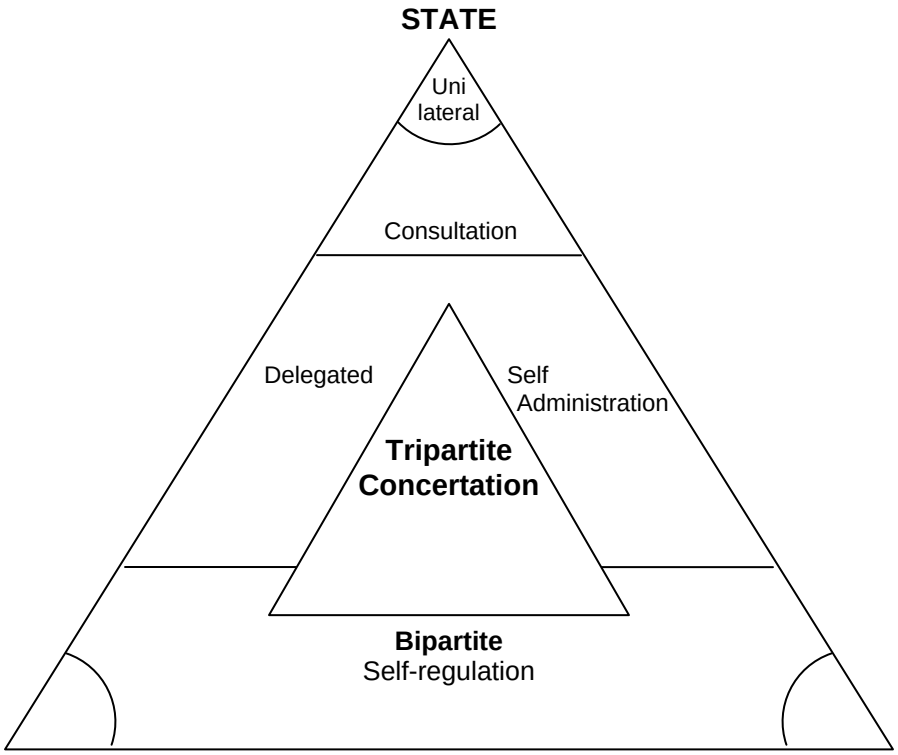
Chambers of Industry and Commerce or Chambers of Crafts. By law, every employer must have membership in a Chamber and their dues are used in large part to fund the training system. The result of this arrangement is to use the authority of the government to raise funds but keep it in private hands. Denmark also has a Collective Employer Fund (AER), which pays for school-based training when no agreement on education was met with the company. In the Netherlands, the guilds of the craft trades were eradicated by the process of industrialization to a higher degree than in either Germany or Denmark. With less workplace institutional capacity to oversee apprenticeship training in the Netherlands, school-based training dominates.

In Denmark, a core level of apprenticeship includes 50 weeks of school-based training for new entrants and 37 weeks for adult job changers. Continuing education courses of study are organized as modules or thematic units, making it much easier for workers to be assessed for prior learning. The Danish system allows for formal certification for skills learned through prior job experience. The German system is also moving in this direction.

In each of these countries, the training and certification systems are tripartite in composition at the national and state or provincial level, bringing together representatives of employers, labor, and relevant government entities (including education but also governmental departments relevant to each industry). Workers have meaningful input into training both through their works councils and through their unions. At the level of the individual firm or workplace, labor and management work together in bipartite partnership structures characterized by 100 percent worker participation in the locally elected works council – regardless of the degree of union representation in their industry or firm.

In the following chart mapping potential structures of training partnerships, these Northern European models are clearly in the central tripartite area at the national level, with bipartite implementation locally. In the European Union, management and labor are commonly referred to as “social partners” in governing and implementing workforce training; this language underscores the depth of the labor-management partnership for training and its recognition throughout these cultures.

Range of Variation in Participation in Training Systems



Source: Bernhard Ebbinghaus, 2005, "Variations in Social Governance and Institutional Change"

The training systems of the major English-speaking industrial countries outside the US – Australia, Canada and the UK – are similar to the Northern European countries in that they are:

- Sector focused on a national basis
- Partnership based, though the depth of partnership integration is less than in continental Europe.

In Canada occupations and training are organized by sectors in a very structured manner within the National Occupational Classification – subdivided at four levels including skill type, skill level, etc. Both Canada and Australia divide occupations into six skill levels, while the UK has five – each one having a higher level of responsibility.

The main ways these countries differ from the Northern European countries are that:

- They are reasonably new systems
- Union involvement isn't nearly as strong.

The Canadian system has been in existence for 45 years. The UK adopted this newer system less than 30 years ago, with the Thatcher Administration. The Australian system was instituted in 1992 in a major effort to upgrade workforce

training as part of a national strategy to strengthen international competitiveness of the Australian economy.

Training in all three countries is governed at the national level on a tripartite basis, with involvement from labor, management and government. The difference in these examples is with the relative roles of the national partners. In the UK for example, decision making is strongly weighted toward the governmental entities. In Australia, government involvement is very limited – government observes and influences but does not sit on the skills council board. Industries with high levels of union membership have stronger levels of union involvement; this higher degree of union involvement is evident in the transportation industry. Australia's resemblance to the Northern European examples should not be surprising as it was explicitly modeled on the German plan. Canada lies somewhere in the middle, with a relatively smaller role for labor.

The industry-wide training systems in these other countries share important features with each other. It turns out that some of the most important of these common features are also found in the best training systems in other US industries.

II. Best Practices Across US Industries

In comparing the US economy to these other countries, the US overall clearly has a much more modest approach to workforce training. There are important islands of excellence of US industry-wide training, but they are more the exception than the rule. As transit and other industries face the challenges of growing workforce retirements and new workplace technologies, these more developed models in the US (and in other countries) have received more attention.

Sector partnerships

The most fully effective industry-based training systems in the US are in the handful of US industries and occupations that have created national sector-focused partnership systems of training. Unlike their counterparts in the other countries considered here, US sector training programs are generally governed on a labor-management or bipartite basis, with government's role limited to state or federal short-term grant funding. Over the past two decades there have been important, if limited, developments of sector-based training consortia in the US, mostly at the state, local or regional levels, and often with little or no involvement by labor. The 1990s saw a major push for voluntary labor-management development of national industry skill standards, but outside of general manufacturing and metalworking skills most of that effort has dissipated.

Joint partnership-based training and apprenticeship systems

By far the strongest nationwide training programs for skilled crafts in the US are found in the joint partnership-based training and apprenticeship systems developed in construction and several other industries. Construction crafts provided 204,000, or nearly 70 percent, of the total of 292,000 apprentices in the entire US in 2007. Beyond construction, well developed national systems of training and apprenticeship are especially prominent in other US transportation sectors such as the maritime trades, railroad crafts, and airlines as well as utility workers and industry-based craft workers such as tool and die makers and machinists in important segments of American manufacturing. Local or regional joint systems have been developed very effectively in the health care and hospitality industries.

The largest and best documented US industry-wide training systems have been developed by labor-management partnerships in the construction trades. Construction apprenticeships were developed on a tradition of construction craft apprenticeship with deep roots in European history. US construction unions and employers have institutionalized modern sector-focused, partnership-based systems for apprenticeship and training that produce very high skill levels for the employees of union-represented firms.[7]

Best Practice in US Nationwide Sector Training Programs Shares Common Features with Best Practice in Other Countries

The structure and operating principles of construction apprenticeship and training systems are similar across a range of crafts. National Joint Apprenticeship and Training Committees (JATCs) and counterpart local JATCs function in most major US regions for the crafts of electrical work, plumbing and pipefitting, carpentry, sheet metal work, masonry, structural iron work, heavy equipment operations, painting and other crafts. These partnerships are formally registered at the national level with the US Department of Labor's (US DOL) Office of Apprenticeship and at the state level with regional offices of US DOL or with state apprenticeship agencies. A few states offer partial funding for related classroom instruction, and some states provide grants to help start apprenticeship and training programs, but in general public funds are not available to sustain the ongoing operations of training and apprenticeship systems in US private industry.

The core features of these most effective national joint industry-focused systems in the US bear an important resemblance to the most effective industry training systems in other countries. These universally shared features include:

1. **Sector-Wide Training Partnership**
   - At the national level, a sector-focused national partnership bringing together labor and management coordinates and governs the

overall industrial or craft training system. This is embodied in a separate joint institution that is distinct from both management and labor organizations, the National Joint Apprenticeship Committee. Their functions include developing and maintaining current standards of the knowledge, skills and abilities needed for the covered occupations (see below). They provide training and certification for trainers in local JATC programs through national joint training centers. They interface or partner with universities, other research organizations and equipment/materials manufacturers that are developing the next generations of workplace technologies. They organize industry training seminars and conferences, review the quality and consistency of the training and certification provided by local training partnerships and maintain current information with the US Department of Labor. [8]

- At the level of the individual work place, and sometimes on a statewide or regional basis, a local JATC carries out workforce training, typically at a joint training center funded through the collective bargaining process by negotiated contributions for each hour worked by covered employees. The negotiated contribution to joint training funds is based on cents or dollars per hour worked in the industry. Local JATCs assure that their trainers are kept current on new industry technologies and work techniques by sending them to the national JATC's national training center. Trainers are typically recruited from among the best craftworkers in the area, with additional training provided to build their skills as trainers and course developers. Local JATCs coordinate closely with employer and customer needs as dictated by the particular circumstances of their local labor market, geography, climate, equipment, etc. They provide training for new entrants into the industry (typically, but not exclusively, relatively young workers) as well as training to update and expand the skills of experienced workers who have already reached the journeyperson level. They work with community groups and educational institutions to recruit new entrants into their craft or industry, often coordinating with broader efforts of the national JATC to promote industry recruitment and image building.

2. Maintaining Curriculum Content through a Data-Driven System

- Developing curriculum and courseware matched to the current technologies and equipment of their industry is accomplished by working teams of subject matter experts – the best craftspeople, instructors and knowledgeable supervisors – working together and with manufacturers and developers of the industry's equipment. Periodic reviews and updates of curriculum are undertaken to keep it up date with changing technology and practices. Interestingly, the union-side participants in these efforts are typically the ones

advocating for the most stringent training and certification standards.

3. **Providing a Secure Source of Funding**
    - Funding for construction training and apprenticeship systems is provided by negotiated cents-per-hour contributions within local collective bargaining agreements. In most cases these contributions have expanded over dozens of two and three-year contracts, yielding substantial flows of funds available for workforce training. In the construction trades, the hourly contributions range from a few cents for each hour worked in the industry up to $2 per hour. To take just two examples, the national joint training system for the electrical industry (IBEW and National Electrical Contractors Association), spends over $100 million on training annually for a covered membership of about 600,000, of whom just under 44,000 are apprentices receiving relatively intensive training. The joint program for the plumbing and pipefitting industry (jointly between the United Association and the plumbing and pipefitting contractors) spends $130 million for a membership of about 300,000 and just under 19,000 active apprentices.
    - JATCs' funding through negotiated contributions provides a needed stable base of income for training activities. In addition, some JATCs also seek federal, state or local government grants to explore new areas for training development. When they choose to pursue such grant opportunities, JATCs can demonstrate a high level of quality and positive training outcomes through their core training programs.

4. **Training and Certification for New Hires – Training and Apprenticeship**
    - The traditional core activities of local JATCs are recruitment and training of new hires – typically relatively young people – who are ready to launch a career in the particular industry or craft. It is noteworthy that in the industries that have these training systems workers can expect to pursue a long career within the industry, thus justifying for both employer and employee the time and expense of the training; this same long job tenure is also found in technical occupations in the transit industry. The training program combines on-the-job learning (OJL) with related classroom instruction over a progression that typically lasts from three to six years. Through each year the trainee moves up a ladder of instruction and hands-on experience, with on-the-job mentoring by more experienced craftspeople and detailed workplace checklists of activities to be mastered that correspond to the topics covered in classroom education.

- As trainee/apprentices progress, their wages increase. They finally achieve the full journeyperson rate when they complete their training and the typical dual certification evidenced by written knowledge and hands-on demonstration of skills. From an economic perspective, trainees contribute to the cost of the instruction by agreeing to receive a lower wage while they are learning. Their pay increases as skills and productivity advance.
- An important element of many current apprenticeship programs is providing college credit to their students as they learn. Through local or national arrangements, training systems negotiate college credit for their apprenticeship graduates that often fulfills most of the course requirements for a college associate degree. Similar college credit is also arranged for the more advanced instruction given to industry trainers for their certification. A benefit of this coordination is that learners are not forced to choose between an occupational or educational track; they can move up the academic credentials ladder in tandem with progress up the industry career ladder.

5. Training and Certification for Lateral Entrants and Experienced Incumbents

- Under US Department of Labor regulations, all apprenticeship systems provide for advanced placement and "testing out" for employees who already have meaningful related work experience and learning. In the past decade most of the construction training and apprenticeship systems have substantially expanded their availability to lateral entrants – job changers entering their industry after acquiring experience in other industries, the military or other sectors of the same industry outside the reach of the joint training system. Construction local JATCs have expanded their use of formal assessment of lateral entrants – through both written and hands-on tests – so they can identify gaps in skills or knowledge and provide training tailored to the areas where a lateral entrant needs further instruction. This practice can lead to relatively rapid completion of journeyperson training and certification for new hires.
- With the accelerating introduction of new workplace technologies, national training partnerships have expanded their use of required upgrade or refresher training for incumbent journeypersons. This refresher training typically focuses on new technologies and on technical issues that pose specific current challenges in the workplace.

III. Conclusion: Workforce Development Potential in the US Public Transportation Industry

The best innovations in transit training for blue collar workers over the past eight years are a very good fit with the best practices in other countries and other US industries.

As indicated at the beginning of this paper, since the year 2000 national labor leaders and senior executive leaders in the transit industry have encouraged and developed a broad series of national and local workforce training initiatives. These include:

- Initiatives for joint local and statewide training partnerships now operating in five states and pending in a half-dozen other states
- Joint development of national training guidelines and curricula for five priority technical occupations and a related framework for apprenticeship, using a high quality data-driven process
- Joint exploration of significant funding for transit workforce development – to provide adequate investments in human capital to match the industry's large and growing investments in physical capital of buses, trains and infrastructure
- A jointly developed national framework for transit apprenticeship training that can provide training and certification both for new entrants and lateral hires, and which can provide needed stability to local training initiatives.

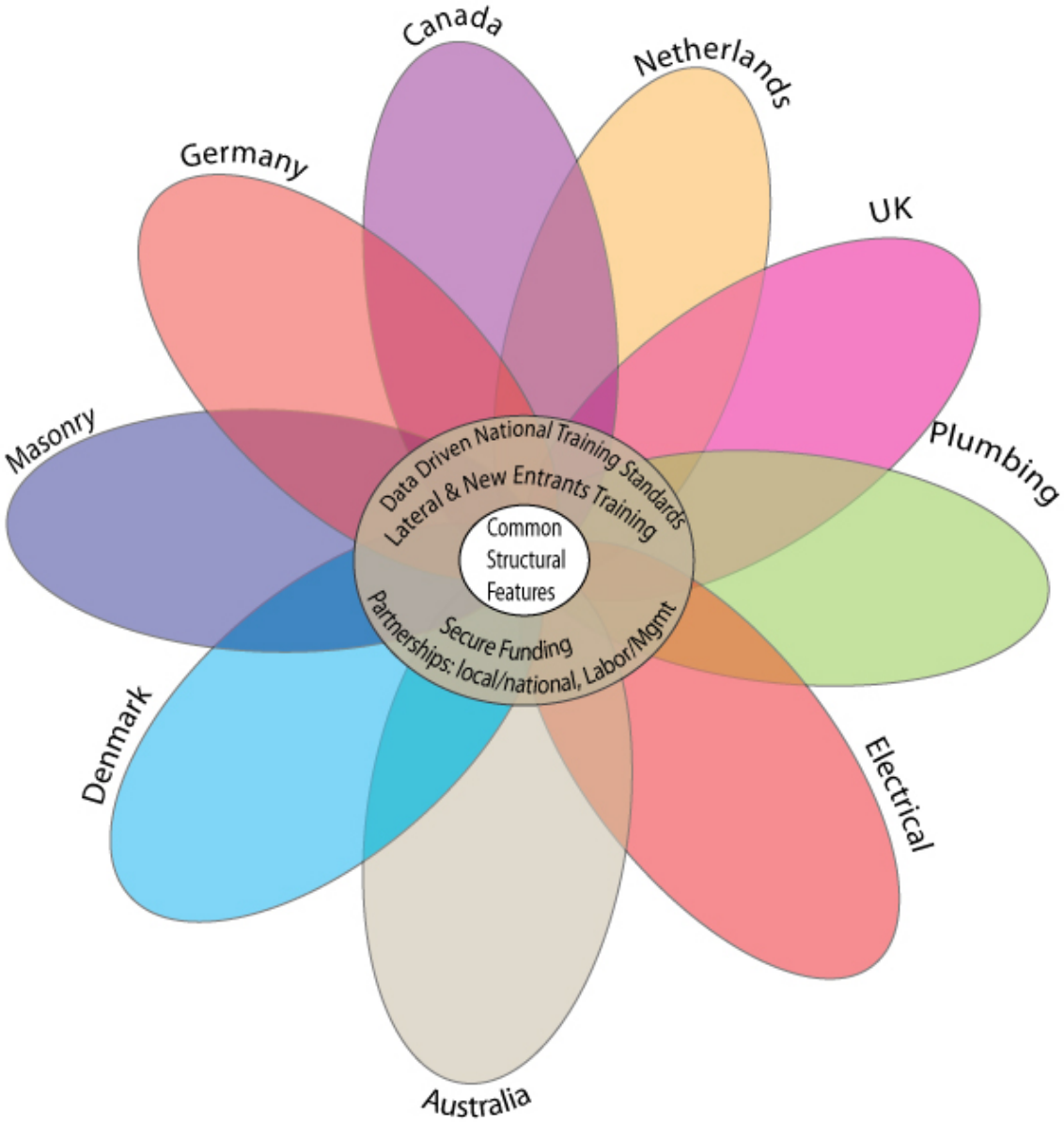
The table on the following page provides a high level overview of the training systems reviewed in this summary along with the changing baseline of training practices and possibilities in the US industry. It shows:

- The training systems in other countries with much stronger histories of effective workforce development
- The national industry-wide training systems in the US construction trades and other effective industry-based training partnership systems
- The historic baseline of fragmented training in the US transit industry
- The direction of recent joint innovations for workforce training in the US public transportation industry
- Potential goals for the further development of a partnership-based, data-driven training system for the US industry.

Another view of these comparisons is found in the chart 3 on the subsequent page. This Venn diagram shows how the most effective industry-wide training systems share a set of core common features. This area of overlapping features deserves careful attention from those interested in implementing effective systems for transit industry training in the United States.

Table: International and Domestic Comparisons of Training Systems

Region	Sector partnerships: National & statewide	Local partnerships	Data Driven training: classroom & on-the-job curriculum	Secure Funding	Youth & New entrants: training/certification	Lateral Entrants: training/certification and Incumbents: Refresher Training
International: Northern Europe Australia UK Canada	Tripartite	Bipartite	National and/or regional for major industries & occupations	Secure blend of public and work-related funding via legislation & bargaining	Training and apprenticeship	Well provided in some countries (Denmark, the Netherlands, etc.) weaker in others
US: industry-wide partnerships	Bipartite	Bipartite	Through Nat'l JATCs, local JATCs	Negotiated in contracts	Strong apprenticeship training systems	Testing and fill-in-the-gap training, certification
US Transit: Traditional Baseline	None	Few, and unstable	None (or a few local uncoordinated initiatives)	No	Sporadic, local variation	Sporadic, local variation
Recent US Transit Innovations	Bipartite – Transportation Learning Center; National framework for apprenticeship	PA, NY, UT, GA, N. CA, and other states in the pipeline	Joint national training guidelines for 5 maintenance occupations 2008	TBD – could be addressed in re-authorization of federal Transit and Highway bill	Implement national guidelines with courseware sharing; 3rd party	Testing and fill-in-the-gap training and certification under new apprenticeship
Possible Future US System	Broader implementation	In all states	Completed guidelines for all occupations	Stable Combination of public and bargained funds	Complete system, articulate with school programs	Extended



Progress in US Transit Training, 2000 and Today

These comparisons suggests that – contrary to any reasonable expectations in the year 2000 – US transit leaders today are actually within sight of being able to create a top quality partnership-based system of workforce training.

The Way We Were in 2000. The practical starting point for US transit training as a snapshot in 2000 – before the recent innovations in transit training – shows considerable variation in level of investment and quality of workforce development systems. As indicated earlier, overall levels of investment in workforce development are very low – less than one half of one percent. Some transit systems operate well above that average level. Eighteen US transit agencies and their unions, for instance, had created joint maintenance apprenticeship training systems, but these have proven to be unstable institutional innovations. While several of these apprenticeship systems were registered with state apprenticeship councils or even the US Department of Labor, none enjoyed the stabilizing effects of regional, state or national level joint industry councils that could provide support and guidance. In fact, of the several transit apprenticeships hailed as promising models by the Transportation Research Board between 1995 and 2002, by 2007 one large one had been completely dismantled and another very large one had become inactive (though it was later revived with new local leadership).

Before the very promising and cost-effective innovations since 2000 in building joint transit career ladder partnerships and national curriculum guidelines for training in technical occupations, many transit systems had little or no training activity beyond the short introductions provided by equipment vendors when procurements brought in new vehicles. In fact the US public transportation industry found itself in the same position as most other US industries for training their work force: local employers and local unions are essentially left to their own devices to determine what training should be provided, develop their own curriculum and courseware independently, train their own expert trainers and design their own training delivery system. Obviously this “system” – or relative lack of system – dramatically raises costs and undermines cost-effectiveness in US transit training. These inefficiencies also contribute to the very low levels of investment in transit workforce training, since the cost of the investment is high and the outcome is relatively uncertain.

In this “legacy” context, hundreds of smaller transit agencies have very limited access to training – with no trainers, not to mention training departments. With no meaningful federal or state funding for workforce training, most medium-sized agencies were often unable to fund more than a single trainer position, if that. And while most large transit systems had training departments, almost all lacked a comprehensive training for new hires and upgrades for incumbents. In at least one very large agency there were no technical trainers on staff at all.

In addition to the new local, regional and statewide transit labor-management training partnerships and the national guidelines for transit training, the US industry has seen other workforce training innovations. Southern California and Florida have regional training partnerships linking transit agencies and local colleges, but excluding labor unions. ASE transit tests have been adopted in collective bargaining in a number of locations as the basis for wage premiums, but new training promised for incumbents prior to ASE testing, and demanded by transit labor, has generally not been forthcoming. The transit bus mechanic training guidelines jointly developed by the transit industry cover the material in the ASE tests but go to greater depth as required for developing highly qualified technicians.

Path to a Successful Future

US transit's emerging integrated framework of partnership-based data-driven solutions combines local, regional and statewide training partnerships with a national industry-wide framework of consensus training curriculum. This combined framework leads to significant value-added opportunities in applications such as:

- Conducting a skill gap analysis to identify training priorities for each work force and support career ladder advancement through learning
- Mapping existing training courseware against the national guidelines
- Sharing courseware among training programs to fill local training courseware gaps
- Developing regional training networks, especially for smaller properties
- Developing new courseware to fill national gaps in transit training materials

There is solid evidence that this partnership-based, data-driven, system-based approach can achieve better training at lower cost and with better outcomes for transit stakeholders throughout the public transportation industry. The business case for investment in high quality data-driven, partnership-based training is well demonstrated, with return on investment exceeding 300 percent annually, and therefore increasingly being adopted.[9]

The work accomplished since 2000 answers the questions that might have been raised as serious challenges eight years ago. One such question might be called "the problem of missing union density." Are comparisons with countries with higher levels of union density relative for the US? The United States does have lower levels of overall union membership compared to the countries of northern Europe, Australia or Canada. Yet, while there are real differences in overall levels of density, 95 percent of the hourly operations and maintenance workforce in the US public transportation industry are already represented by labor unions. It is hard to argue that the US transit industry does not have sufficient density to

support an effective training partnership. The major unions representing US transit workers support a partnership approach for transit training, as did APTA's Workforce Development Initiative in 2001 and many transit executives since then. To highlight a related potential concern, it is also important to note that unions in the statewide transit training partnerships developed since 2000 are all quite comfortable having their partnerships provide training to transit workers in small systems who are not union members.

Joint labor-management systems as a method for workforce training have unique sources of program effectiveness that have been demonstrated time and time again. National studies of construction industry training by the US Government Accountability Office, among others, and state-level studies by several research organizations have documented that joint training programs have higher enrolment, better graduation and retention rates, greater success with women and people of color, and greater durability and flexibility than counterpart programs operated by employers and education providers without union participation.[10] The success of recent joint workforce development innovations in the US public transportation industry derives in large part from the fact that – particularly in the union-represented work environment – training developed with active workforce (and union) participation is more likely to succeed. Training developed and implemented on a partnership basis is much more likely to reflect the full range of knowledge, concerns and priorities of both workers and managers. Many transit executives have come to recognize that training developed with this constituent participation is more likely to be supported by the work force and their unions when it comes to implementation.

Establishing a secure and reliable source of funding for the workforce training needed by the US transit industry is a challenge that requires special attention.

The strong industry-wide partnerships for apprenticeship and training that are already functioning in the US have been established and improved through many rounds of collective bargaining over the last fifty to eighty years. In beginning to make up for missing decades of developing partnership-based industry-wide training institutions, the US industry can take advantage of the fact that public transportation is clearly a public service. It is a public good for which government at all levels recognizes its public responsibility to provide funding to assure safe, quality transportation service. Nowadays the public interest in a sustainable environment, livable communities and independence from unstable petroleum exporters adds even greater urgency to that governmental responsibility. The U.S. Department of Transportation has provided just under $10 billion annually to the transit industry. The overwhelming majority of that federal investment goes to support purchases of physical capital – the capital equipment of buses, trains and infrastructure. For all practical purposes none of this public funding is directed toward supporting the needed complementary investments in human capital - the people, knowledge and skills essential to provide reliable, safe,

environmentally sound transportation services. Both the major transit unions and the American Public Transportation Association have established funding for transit training as an important goal for the reauthorization of the highway and transit bill that expires in September 2009. With major blue-ribbon commissions proposing that public funding for transit needs to be doubled or tripled, it seems reasonable to provide funding for workforce training that will protect and maintain this investment and pay back the public several times over. A data-based target would be to increase transit training investments from not quite 0.5 percent today toward three percent – a six fold increase that would cost an additional $298 million annually.

It would also be beneficial for local collective bargaining agreements to institutionalize joint approaches to directing expanded training. Negotiated pennies per hour could help stabilize funding transit training, alongside ongoing public investment in transit workforce development. Combined with the other beneficial developments in the near-term future, providing this public-private financial support may be able to move workforce training in the US transit industry decisively toward the most effective models in other countries and other US industries.

A Good Solution Requires More than Funding. A fundamental lesson from analyzing the experience of other countries and other US industries is that success involves much more than just sufficient financial resources, vital as they are. The keys to secure success include effective operating partnerships between labor and management, nationally as well as locally. Success requires a consensus-based determination of what knowledge, skills and abilities workers need to operate at the highest levels of proficiency. Success in workforce development means solid, effective courseware matched to consensus curriculum, with training and certification provided delivered in settings that coordinate classroom and on-the-job learning and that work for young new hires and more mature lateral entrants to the industry. As much as anything long-term stable innovation requires developing organizational capacity and expert personnel within transit agencies and unions. Building the capacity of the partner organizations is a key to success.

Adaptive Learning through International and Domestic Comparisons

While the US transit industry can learn from other countries and industries, the US transit context is distinct. As emphasized at the outset, it can not be a question of copying what others do. What will work best here is to apply adaptive learning from the successful experience of others. We can adapt what works well in other contexts – their structures, processes and organizational approaches – to the particular circumstances of this industry. That we can do.

Major differences between US transit and other countries and industries do not mean that their experience is irrelevant.

The United States does not have a statutory or customary framework that requires joint problem solving around training and other issues outside the realm of collective bargaining. But in recent years the US transit industry on a voluntary basis has made a good start down the road toward pragmatic labor-management partnerships and an integrated framework for industry training.

The US transit unions do not have the exclusive jurisdiction found in the US construction trades, so there is no feasible option for an industry-wide partnership associated with associated with a single union as in the construction joint apprenticeship and training committees. But the diverse unions representing US transit workers have been able to work cooperatively in building statewide, regional and national training partnerships, even extending the benefits of regional training partnerships to transit workers who are not represented by unions. Transit's industry-wide multi-union labor-management training partnership is a new precedent in this country, but one that is working well.

The US transit industry does not have secure sources of adequate funding for workforce training, but it can develop them over time.

With these and other challenges the US transit industry – labor and management working together – has already begun to build a national framework for training, apprenticeship and certification that bears a strong family resemblance to the best training systems of other countries and industries. Hopefully these international and domestic comparative studies can help the US industry make further progress in building capacity for an effective system of workforce training.

[1] The Center wants to recognize in particular the contributions to this research by Robert Glover, Research Scientist at the Ray Marshall Center for the Study of Human Resources at the LBJ School of Public Affairs, University of Texas at Austin, and Dr. Moira Nelson at the Hertie School of Management in Berlin. The Center's internal research team is headed by Brian J. Turner and includes Mark Dysart, Julie Deibel and Shapell Randolph.

[2] Formerly known as the Community Transportation Development Center.

[3] The Transportation Learning Center in 2008 published selections from six studies from the Transportation Research Board and its Transit Cooperative Research Program as *People Make the Hardware Work* (www.TransportCenter.org/publications).*:*

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[4] See Transportation Learning Center, 2008, *Working Together: A Systems Approach for Transit Training*, for an overview of new national training guidelines and how they can be used, and 2007, *Transit Training Partnerships: Metrics of Success*, for quantitative analysis of effectiveness of data-drive partnership-based transit training, including savings from different sources and analysis of return on investment.

[5] At New York City Transit, total union membership is 90.37 percent of total employment. This includes union membership among first tier supervisors.

[6] US Department of Labor, *International Chartbook*, January 2008, p 30.

[7] U.S. Government Accountability Office (GAO) (2005) *Registered Apprenticeship Programs: Labor Can Better Use Data to Target Oversight* GAO-05-886. Washington, D.C.

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[8] Some national training partnerships operate a broad nonprofit (501(c)3) that undertakes industry research and promotion, going beyond the usual training activities of a joint 501(c)6 labor-management training partnership.

[9] See Transportation Learning Center, 2006, *Measuring Up*, and 2007, *Transit Training Partnerships: Metrics of Success*. Robert Glover, 2007, "Developing a Joint System of Training and Apprenticeship in American Transit: Lessons from the Experience in Other Industries" (Ray Marshall Center for the Study of Human Resources, University of Texas at Austin).