

Working in a new generation: Youth job creation and employer engagement in urban manufacturing

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Abstract

This paper offers a solution to a dual labor market challenge facing many urban areas today: high youth unemployment combined with hard-to-fill job openings in urban manufacturing. This paper presents a case of Chicago's Manufacturing Connect program, demonstrating opportunities for providing high school students within high-poverty neighborhoods with the foundational skills and tools to embark on successful manufacturing careers post-graduation. Manufacturing Connect goes well beyond student education and career preparation: it also uses innovative strategies of employer engagement to shift perceptions of inner-city youth and increase employer awareness of their potential contribution to industry innovation and long-term survival. With this in mind, the program helps employer partners—mostly small and medium-sized manufacturers—identify and resolve gaps in organizational and human resource management. In this regard, Manufacturing Connect provides a replicable model for helping firms not only recruit and retain recent high school graduates, but also formalize internal mentoring and training systems that benefit incumbent workers more generally.

Keywords

Youth employment, Chicago, urban manufacturing, education, workforce development, training

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Urban areas in the United States and Western Europe face a labor market paradox. Local governments are struggling to develop solutions to high youth unemployment, while at the same time urban manufacturing companies are struggling to fill vacancies and face increasing skills shortages as a result of their aging workforce (Leitch, 2006; Kalafsky, 2007; Bryson et al., 2008). Since the 2008 financial crisis, manufacturing has become an important element of urban policy as industrialized nations emphasize the contribution manufacturing makes to economic growth. The steady decline in manufacturing employment since the late 1960s has meant that manufacturing is less visible in urban centers, and that new entrants into the labor market are often less likely to consider manufacturing jobs to be a source of economic security. This disconnect is further compounded when we consider that many surviving small and medium-sized enterprises (SMEs) have dismantled internal training systems, in part because they have been able to replenish needed skills by hiring displaced workers made redundant by larger manufacturing firms. But as that incumbent workforce nears retirement, firms face the reality that the release of skilled labor by closing or relocating firms offers only a temporary solution. In response, manufacturing firms are replacing labor with machines, relocating or trying to develop alternatives to replenish their skilled workforce. Skill shortages and hard-to-fill vacancies represent major policy challenges, but also an opportunity for coordinated action.

The dual labor market challenge of high youth unemployment and hard-to-fill vacancies has encouraged urban-based experimentation with workforce development. This includes youth-oriented programs that expedite pathways into work that are less dependent on traditional routes involving completion of a residential, four-year college degree. Quicker youth

transition into full-time employment is increasingly justified in light of rising college debt, low degree completion rates for certain institutions, and persistent high joblessness among recent college graduates. A further motivation is projected growth in “middle-skill” jobs that are not dependent on a four-year degree. While higher education can certainly play a role in alternative models of youth employment, there is growing awareness that learning opportunities should be embedded within, rather than serve as a pre-requisite for, the work experience itself, institutionalized through apprenticeships, technically-oriented diplomas, or employer-sponsored tuition reimbursement programs.

This on-going reworking of the relationship between work and formal education implies that employers need to take a more active role in guiding and investing in the career development of younger workers. In their ideal role, employers would signal what skills are needed for younger workers now and into the future; offer a learning environment in which skills, including those initially learned in a classroom setting, can be transferred and applied; and create an organizational setting for augmenting and rewarding worker skill, including a clearly staged and transparently signaled progression for career advancement and mobility.

But while many workforce development practitioners recognize a need for employer partners to support the transition to work for younger generations of job seekers, they often wrongly assume employers are fully prepared to step into that demanding role (Fitzgerald, 2004; Conway and Giloth, 2014). Many employers, especially smaller-sized firms, are not able or interested in undertaking this role (Osterman and Weaver 2014). In turn, this undermines opportunities for creating a work experience with long-term value for younger job seekers. Pre-employment, education-focused interventions that prepare youth for entering the work

environment, including aligning educational programs to provide skills in response to industry needs, will continue to have a clear role to play in addressing the urban labor market paradox. Equally important though are strategies of employer engagement that simultaneously shape and improve the work environment itself to create the conditions for the success of the newest generation of workers.

A promising solution may exist in the activities of sector-based workforce intermediaries; organizations that serve as a bridge between job training programs and employers (Giloith, 1998; Conway and Giloith, 2014). Intermediaries rely heavily on active employer participation to design “jobs-driven training” and to ensure job seekers are prepared in ways that respond to employer demand. They also use strategies of employer engagement to strengthen training systems and career pathways internal to firms, helping manufacturers nurture and reproduce skills from within.

This paper presents an analysis of one such program – the *Manufacturing Connect* program at Chicago’s Austin Polytechnical Academy high school, that incorporates a workforce intermediary framework to influence human resource strategies of small metal manufacturing firms in Chicago, Illinois. Launched in 2005, Manufacturing Connect helps students and graduates of the Austin Polytechnical Academy prepare for and secure job opportunities in urban manufacturing firms. A central aim of this program is to educate high school students and their parents and guardians about rewarding careers in manufacturing and to provide them with the foundational skills and tools to embark on manufacturing careers post-graduation. But Manufacturing Connect goes beyond student education and career preparation in its work to nurture Chicago’s next generation manufacturing workforce. It is designed to engage local

employers in ways that shift perceptions of inner-city youth and their potential contribution to industry innovation and survival. With this in mind, the program helps employer partners—mostly SMEs—identify and resolve gaps in organizational and human resource management. These changes not only improve the ability of firms to recruit and retain recent high school graduates, but also lead to the formalization of mentoring and training systems that benefit incumbent workers more generally.

While Manufacturing Connect (MC) is a relatively new initiative, it has already been recognized as a potentially transferable model by federal agencies, receiving a US\$2.4m grant from the US Department of Labor to help shore up and formalize strategies of employer and student engagement. This suggests an opportunity to shed light on and learn from MC's innovative strategies for engaging employers collaboratively to generate new pathways for youth to enter and grow into urban manufacturing careers.

After a brief review of existing writings on workforce intermediation and its current extension to youth employment, we turn to the origins and mission of the MC program, with an initial focus on its educational program. We then outline the innovative strategies that staff at MC use to secure and then deepen engagement by partner firms and in the process, motivate firms to introduce organization-wide improvements to their human resource practices. Through these strategies, MC helps employers recognize their own human resource shortfalls, yet equally gain access to knowledge, resources and peer support that can help them overcome these constraints. As such, MC offers an institutional platform for positioning employers as active partners in solving their own internal human capital constraints, and also presents a replicable model for addressing the problem of urban youth unemployment.

Intermediation as a Strategy for Labor Market Internalization

Studies of labor market institutions have drawn attention to their role in mediating exchanges between employers, job seekers and workers. An aspect of this research emphasizes the role that intervening institutions play in intensifying worker vulnerability, at times encouraging private firms to outsource key labor market and related-management functions (Peck and Theodore 2001). This represents a significant departure from earlier forms of institutional action—most notably by labor unions—that pushed employers to reinforce and reproduce internal strategies to support worker rights and job quality standards (Doeringer and Piore 1971; Reich, Gordon, Edward 1973). Peck and Theodore have documented the growing influence of employer-serving institutions that instead work to promote temporary and precarious employment arrangements and in ways that enable “businesses to externalize the costs of economic fluctuations and regulatory risks” (Peck and Theodore 2006:176). Chris Benner, drawing on his research in Silicon Valley, reinforces this observation by noting related actions taken by labor market institutions to help employers “reduce their own internal labor force and shift economic risk through a series of more short-term contracts with external agents” (Benner 2003:628). While some workers certainly benefit from having access to institutions that facilitate mobility across organizational and labor market boundaries—particularly those in professional occupations or with highly sought after skills—there is growing concern that strategies of externalization come at the expense of workers in the middle or bottom segments of the economy and through accompanying reductions in wages and benefits and deterioration of other labor standards (Weil 2014; Doussard 2013).

Workforce intermediaries (WI) represent an important institutional alternative in the face of labor market flexibility. WIs not only seek to reduce sources of worker vulnerability, but offer a potential institutional platform for (re)embedding key labor market functions within firms (Lowe 2015). In this regard, they fill an institutional void created in the wake of precipitous decline in union membership.

Workforce intermediaries have existed for many decades and in multiple formats, some as extensions to more resilient labor unions (Conway and Giloth 2014). Sector-based applications are particularly noteworthy in urban areas, drawing on vast networks of urban manufacturers and pulling together technical expertise within a targeted sector or industry to simultaneously promote industry upgrading and extend quality employment opportunities to low-income individuals.

Job training is often a key component of workforce intermediation and is offered by many intermediaries as a means to forge stronger connections with local employers (Giloth, 1998; Conway and Giloth, 2014). Few WIs however are the direct providers of training, preferring instead to help employers connect with existing public and private training institutions. WIs use their connections to training institutions to also enhance the quality of training, establishing channels through which employers can provide constructive input based on changing labor processes and skill needs. In essence WIs help create dynamic feedback loops that ensure existing training programs are preparing workers in ways that create value for local employers (Lautsch and Osterman, 1998). In isolation, this strategy might appear to reinforce the externalization of training investments and commitments that in previous decades would have been internally provided by employers (Cappelli 2012). But there is a growing call for

workforce intermediaries to use strategies of employer engagement to also push firms to make improvements to internal “human resource systems, career ladders, job quality, and overall competitiveness” (Giloith 1998; 7; parentheses added); in other words, helping firms make internal changes in support of worker skill development and career advancement.

Fitzgerald (2004) has echoed this recommendation, arguing that it is not enough for workforce intermediaries to simply take a “dual customer” approach—that is to say, helping to match job seekers and employers and with some assistance for job training. As she suggests, WIs should evaluate how successfully they can leverage their support for “jobs-driven training” as an opening to *also* improve employers’ human resource practices from within.

Lowe (2015) highlights examples where WIs have made gains on this front by developing strategies of skill reinterpretation to engage employers in a negotiated process around skill and in ways that open up employment and advancement opportunities for workers that might otherwise be overlooked or undervalued. As Lowe describes, “strategies of skill reinterpretation are fundamentally about getting employers to cast a wider net to recognize multiple channels for accessing and advancing skills” (Lowe, 2013: 17). With these strategies, WIs have helped manufacturers in particular strengthen and formalize internal training systems and provide tools for employers to take a more critical and strategic look at how they frame and fulfill their skill needs. The skill reinterpretation framework applies at the point of hiring, helping employers recognize opportunities to relax restrictive hiring criteria and in the process broaden the pool of qualified candidates, including job seekers with lower levels of formal education. But these strategies have also been used to improve downstream practices in support of workers’ long-term career development: “reinterpretation is about encouraging

employers to accept greater responsibility for upskilling through continued investments in their workforce and the development of internal pathways for career advancement” (Lowe, 2013: 27).

New York City’s Garment Industry Development Corporation (GIDC) has used strategies of skill reinterpretation to influence internal employment practices by pairing job training with technical assistance. In that role GIDC helped garment firms acquire new technology and also access new export markets and industry supply chains (Conway and Loker, 1999: 26). They combined technology and marketing support with workplace improvements, helping firms introduce cross-training and team-based production models to increase flexibility and decision-making of shop floor workers. GIDC framed these changes as necessary to enhance overall industry competitiveness. In other words, “to stay in business while maintaining an ability to provide a decent wage, employers must learn to compete differently” (Conway and Loker, 1999: 54). Wisconsin’s Regional Training Partnership and Chicago’s ManufacturingWorks program also combine technical assistance with similar strategies that help firms improve internal employment practices (Schrock, 2013; Lowe, 2015).

Despite these well-publicized successes, many other WIs struggle to influence employer behavior. Admittedly, it is a significant strategic undertaking for a WI to shape both employer hiring *and* internal human resource practices. Most WIs can influence who gets a job, but often struggle to gain traction beyond the hiring point. In a 2008 review, Paul Osterman pointed to “career ladder programmes” implemented by workforce intermediaries as a promising approach, but noted significant “worries.” Taking a deep dive into one “highly touted” program, Osterman reported that participating “firms were not willing to invest in career ladders” and

“lacked the internal capacity to promote career path development among their entry-level workers” (FutureWorks, 2004: 21, quoted in Osterman, 2008: 128). Osterman also noted that smaller firms in industries like manufacturing often “lack the organizational slack to improve their human resource systems,” thus adding an additional challenge for WIs in that sector (2008: 131).

Furthermore, WIs are often hesitant to push employers to make significant internal changes, out of fear that this requirement might jeopardize their relationships with employers and in the process, undermine their ability to place job seekers. One intermediary that we interviewed for an earlier project noted that when they become aware of problems on the shop floor of a partner firm, they respond by coaching the job seeker—rather than the employer—on how to handle the situation. The only leverage this intermediary felt they had with partner firms was to threaten to stop sending the firm new candidates if too many workers reported negative experiences.

A major question, then, is how workforce intermediaries can increase their influence over employer decisions beyond the point of hiring to also strengthen internal human resource practices? And how can they influence change in ways that employers perceive as value-creating and thus, worth sustaining overtime? The Manufacturing Connect case illustrates how one sector-based workforce intermediary in urban manufacturing has made headway on this challenge, but equally points to a pressing need for a well-articulated and replicable framework for helping small manufacturers build internal structures to attract, nurture, develop, and reward younger talent.

Methodology

The primary data source for this study is a set of 20 in-person interviews conducted with Manufacturing Connect staff and participating SME employers in 2014 and 2015. The goal of interviewing both staff and employer partners was to understand how MC staff design and execute strategies to engage employers, as well as how employers perceive, react to, and are influenced by those strategies. One of the strengths of the program is its dynamic feedback loop between employer partners and program staff around all aspects of training and placement. By interviewing both, our goal was to capture a freeze frame of that feedback loop in action.

In interviews with employers, we asked about their experiences with MC graduates and in interviews with program staff, we asked about how they prepare students to succeed in the manufacturing workplace. Interviews with five program graduates added additional insight into how that preparation shapes students' expectations, perceptions, and experiences when they arrive on the shop floor. They gave insights into how students understand the role of MC's training and placement services in their long-term career plans and socioeconomic outcomes. Interviewees were identified through the snowball method, with Manufacturing Connect's director acting as a key point of contact.

In addition to one-on-one interviews, several meetings hosted by Manufacturing Connect with both internal groups and potential partners were observed. These meetings provided additional insight into how the Manufacturing Connect program communicates about its work and mission to a variety of external stakeholders. Business development meetings also included testimonials by students and employer partners that gave us opportunities to hear

how they frame the impact of the program in their lives and work, and to directly observe how program staff interact with employer partners and students.

Chicago and the Manufacturing Connect Program

Manufacturing Connect is one element of a larger planning effort to stem manufacturing job loss in the Greater Chicago Area. In the early 1980s, Chicago faced a significant industrial crisis: manufacturing employment in the city once known as the “city of factories” had dropped by nearly two thirds from its height in the late 1940s (Clavel and Giloth, 2015: 20). Numerous commentators, including those within Richard Daley’s mayoral regime of the 1970s, presumed manufacturing in Chicago was “dead.” The city government invested in downtown redevelopment and the service economy, envisioning “the replacement of formerly downtown industrial functions by residences for professional and managerial workers” (Clavel and Giloth, 2015: 20). But while this “corporate center” approach may have offered a solution for growing the city’s tax base, it failed to replicate a critical function of Chicago’s former industrial base: offering an accessible pathway into the middle class for Chicago’s less educated workers (Rast, 2005).

The election of Mayor Harold Washington in 1983 brought significant changes to economic development strategy in Chicago, with a new focus on “jobs, not real estate,” including retaining manufacturing jobs that were key to the economic welfare of the city’s poorer neighborhoods (Clavel and Giloth, 2015). A key legacy of the Washington administration was the Local Industrial Retention Initiative (LIRI), which initially served as an “early warning system” for potential plant closings and relocations (Fitzgerald and Green-Leigh, 2002). The

work of LIRI was delegated to community development organizations throughout Chicago, creating a critical opportunity for these organizations – which in many peer cities focused narrowly on housing – to build new relationships with the small factories that were vital to the economic health of their neighborhoods. Empowerment from the City also came with financial resources, with up to US\$3m flowing from City Hall to neighborhood organizations (Clavel and Giloth, 2015: 25). While the City also worked on initiatives to retain larger firms, for example through the Task Force on Steel in Southeast Chicago, economic developers “had more luck with smaller, local manufacturers, the vast majority of firms in any case” (Clavel and Giloth, 2015: 25).

While many elements of Washington’s original industrial retention effort have been modified or weakened in recent years, the formation of new coalitions in support of urban manufacturing remains a lasting legacy of this period. These coalitions have enabled neighborhood organizations, labor activists, and small manufacturers to identify and reinforce their shared interest in the future of manufacturing in Chicago. They provided a resilient platform for continued experimentation, including the development of newer initiatives like Manufacturing Connect.

The Manufacturing Connect program at the Austin Polytechnical Academy (APA) was developed by the Chicago Manufacturing Renaissance Council (CMRC), a coalition of organized labor, manufacturing firms, local government, community leaders, and educational institutions. The CMRC was initially founded by labor organizer Dan Swinney and has direct links to Washington’s original LIRI network (D. Swinney, 2000). Swinney and other Chicago labor and manufacturing leaders became convinced that the manufacturing job losses they were

witnessing were not inevitable, but were a result of locally specific structural barriers, including loss of industrial land availability, that might be addressed through collective action. They formed the CMRC in 2001, with active participation from the Illinois Manufacturers Association and the Chicago Federation of Labor (CLCR, 2001; D. Swinney, 2014, personal communication).

In the early 2000s, the CMRC began to work toward an ambitious vision to transform the relations of industrial production in Chicago through the implementation of new career development pipelines. CMRC leaders came to believe that innovation in manufacturing techniques had to be paired with institutional innovation, and set about developing a concept for new educational infrastructure to support “a consistent stream of educated and skilled young people to provide leadership in all aspects of manufacturing” (D. Swinney, 2010). In 2005 they began to develop plans for the establishment of a manufacturing-oriented high school.

The CMRC selected Chicago’s Austin neighborhood as the site for a pilot manufacturing-oriented high school. Austin is a predominantly African American neighborhood where approximately one quarter of households and 40% of households with children live below the federal poverty line (American Community Survey, 2009-2013 5-year estimates). In selecting Austin, the goal was to bring large-scale economic opportunity to older industrial neighborhoods by building the community’s capacity to reengage the manufacturing economy and by leveraging the manufacturing activity in areas surrounding the neighborhood. As Swinney explained, “rebuilding manufacturing in Chicago should begin in those communities hit the hardest by deindustrialization like Austin. We (the Council) believe that these communities

need to be prioritized in promoting development despite the many difficulties” (D. Swinney, 2014; parenthesis added).

Austin Polytechnical Academy’s program and curriculum

The Austin Polytechnical Academy (APA) opened in 2006 as a traditional public high school governed by the Chicago Public School System, and graduated its first four-year cohort in 2011. The majority of APA students are African American living in the Austin neighborhood. The Manufacturing Connect (MC) program was created the same year as a set of optional manufacturing electives for APA students; approximately 50-75% of students from each cohort participate in the MC program. From 2011-2014, more than 130 APA graduates completed the MC program, and have received services ranging from technical and soft skills training, short-term experiences with employers, and job placement assistance.

MC’s manufacturing and engineering elective courses start in students’ second year at APA. Through this classroom training, students have the opportunity to earn up to five nationally recognized credentials from the National Institute of Metalworking Skills (NIMS). The NIMS credential, developed in the mid-1990s with support and funding from metalworking trade associations, was selected because it offers portable credentials that are known to many U.S. metal manufacturers. The school’s manufacturing curriculum is co-taught by a Manufacturing Connect staff member and an APA teacher, and the machine shop is funded and designed by MC’s employer partners (described below). Manufacturing Connect and its employer partners select machines most commonly used by partner firms, thereby giving

students a realistic shop-floor experience. MC staff also work with APA teachers to incorporate manufacturing and engineering concepts into their daily lesson plans.

Beginning in their second year, students participate in a range of work-based learning experiences, from job shadowing to paid summer internships. The goal here is for students to learn about the internal “culture” of manufacturing firms and observe and practice behaviors that are valued in the manufacturing workplace (El Jamal, 2014, personal communication). This work to “build cultural bridges” between students and manufacturing firms is supported by additional training that takes place in the school environment, where MC staff facilitate explicit discussions with students about soft skills and behavioral expectations in the manufacturing workplace. This is particularly important given that many of the workplaces that students visit have an older white labor force, which makes the issue of “cultural” interpretation and fit take on a racialized dimension (Moss and Tilly 2001). The staff member who leads these discussions has a background in community organizing and serves as a trusted resource to students both during their time in the school and after they have been placed in full-time employment.

Efforts are underway to extend the Manufacturing Connect curriculum to provide leadership training, designed to prime students to step into management roles later in their careers. Currently, those skills are developed through extracurricular activities like MECH Creations, a student-run co-operative business that manufactures and sells trumpet mouthpieces designed by Manufacturing Connect’s machining instructor (who is also a jazz trumpet player).

With additional leadership training, MC will prepare students to succeed at all levels of the firm. As Dan Swinney notes:

We regularly have to clarify that APA is not a trade or vocational school but one geared to all careers related to manufacturing including all positions within the firm as well as positions outside the firm. Our career range includes skilled production technicians, marketing and management, ownership, a Ph.D. researcher in nanotechnology, or a leader in industrial policy (5).

Students buy into this message about training for diverse positions along the entire manufacturing career ladder; as one student noted in a promotional video for the school, “my long-term goal is for me to own my own company that gives back to the community” (AFL-CIO, 2014).

Student impact

Since the school’s inception, 47% of all graduating students have participated in a paid manufacturing work experience, and 52% have earned at least one NIMS metalworking credential (E. Swinney, 2014, personal communication) (Table 1). Of graduating students, MC has made 27 post-graduation placements in manufacturing firms (some graduates have had more than one placement)—all placements involve African American students. The average starting salary for an entry-level job placement is around US\$12/hour plus benefits, although graduate salaries range widely; one graduate now earns more than US\$70,000 annually only a few years post-graduation.

[Table 1-insert here]

Although to date only 13% of APA’s graduates have pursued careers in manufacturing, a growing number of those exploring interim options have returned 1-2 years after graduation to

seek manufacturing jobs. To further encourage this, MC's placement and mentorship services remain available on an open-ended basis after graduation – this means that placement numbers for the classes of 2013 and 2014 are likely to rise in the coming years.

MC employer partners and established employment practices

Classroom training and short-term work-based learning facilitated by MC staff plays an important role in generating employment opportunities in manufacturing for graduates of Austin Polytechnical Academy. Transforming this first job experience into a lasting career opportunity also requires a level of employer commitment that is often difficult for workforce intermediaries to secure. The remainder of this paper focuses on the innovative strategies that MC staff use to convince employer partners to improve their human resource strategies. To contextualize these changes, it is useful to first provide a brief overview of the typical established hiring and career development practices at MC partner firms. These practices, intentionally or otherwise, obscure pathways for skill development and career advancement for newer employees. Formalizing more accessible and transparent pathways requires that employers recognize not only the immediate benefits for APA graduates, but also the inherent value of new pathways and practices for their entire workforce.

MC's current partner network consists of 55 SMEs, all Chicago-based. The median size of a partner firm is 40 employees, with the largest having about 700 employees in Chicago (E. Swinney, 2014, personal communication; ReferenceUSA). Most partner firms are metal manufacturers, and the products they make range from custom small parts like springs and gears to large finished goods like industrial ovens, transit seating, and high-end airbrushes.

Many are family-run, and most have an aging white workforce – the average tenure of these firms’ workers can run into the decades.

In our interviews, company owners acknowledged they have typically hired through word-of-mouth, looking in particular to their own families and friends or those of their workers. One employer, for example, where the average worker tenure is nearly 30 years, described one current employee whose mother was working at the company when she was born; now mother and daughter both work at the company.

The practice of hiring through personal networks has meant the firms have emphasized worker loyalty and “cultural” fit rather than skills and experience. As one employer described, “typically we’ve had a pretty low bar as far as qualifications are concerned, and that was a reasonable command of the English language.” While a few employers have looked for evidence of formal industry credentials when hiring, they have often interpreted these as a sign of interest in manufacturing rather than an indicator of technical skill.

The tendency of employers to hire on the basis of “fit” and personality more than specific skills presents both opportunities and barriers for a workforce intermediary like Manufacturing Connect. On one hand, it implies a degree of flexibility around hiring – to some extent, employers are willing to take a chance on any job seeker that comes recommended by a trusted source. On the other hand, this emphasis can make it harder for both students and MC staff to decode what they need to do to demonstrate value to partner firms.

For most employers, the informality around hiring has carried over to their advancement practices. Admittedly, many MC partner firms entered the program with some elements of a well-articulated career ladder, with shop floor job functions that progress in skill

– from operator, to set-up man, to CNC programmer or tool and die maker, to quality control and in some cases to engineering. Workers have been able to move up these implicit ladders; each firm we interviewed offered examples of top-level supervisors who had progressed through the ranks from entry-level positions, and several even said that given a choice, they preferred to “grow their own” talent.

Still, few partner firms have had a consistent policy around advancement that they communicate to workers. In most cases, worker advancement has been based on management identification of desirable characteristics, which are not always transparent to employees. These characteristics have often been highly subjective, with advancement depending less on demonstrated skill and competency than on “observed” personality traits. For example, one employer said the most important characteristic they have used for advancement was “follow-up” – “simply doing what you say you’re going to do and communicating well with supervisors and co-workers about the completion of tasks. People that are responsible enough to do that, to me, are the ones that are gonna make it.” Another employer said that workers who have advanced in his firm often share an innate “curiosity” and desire for continued learning about manufacturing.

More often than not, the onus has been placed on the employee, with the expectation they will make their interest in advancement known to management. As one employer put it, “if someone has interest, they could go to the plant manager, they could go to HR and say, ‘I’m a machine operator, I’d like to learn more skills.’ [...] And we won’t say no.” This practice creates potential risk for workers who might have all the skill to advance, but might lack the

self-confidence or awareness of firm culture to put themselves forward as prospective candidates.

Another employer directly addressed the existing communication gaps around advancement within his firm: “We recognize that some people view their positions as dead ends, and it doesn’t have to be that way, if the person is willing to progressively work at it - and we want those people to do that. We don’t do a great job of communicating that, but that’s what we want.” Another company acknowledged supervisors and plant managers have often failed to “mentor and be able to pluck these people out.” In other words, what these firms often lack is not a career ladder *per se* or even a desire to advance employees along that ladder. Rather, they lack the human resource infrastructure to make those expectations clear and transparent to all employees.

Another missing piece for many MC partner firms has been a formal or explicit training infrastructure that workers can use to ascend career ladders. Although many of the firms interviewed have traditionally offered employees some form of training, that “training” has often encompassed a broad range of activities, only some of which provided long-term value to the worker. Training at most firms has taken the form of short-term fixes, mostly occurring on an as-needed basis. While this spot training has helped prepare workers to meet the firm’s more immediate needs, it has done less to support longer term career planning.

Firms we interviewed acknowledged having a desire to strengthen their human resource infrastructure, and that their involvement in Manufacturing Connect had increased their awareness of this need. But they also pointed to constraints that can make it difficult to implement significant changes without this additional assistance. As one employer noted,

I certainly understand that [human resource investment and business performance] feed off each other and it gets into a positive cycle, so that if we had a formal program in place with more training, that's going to make our workers more productive and that's going to make everything go upward. But that's easier said than done, in the short run anyway, because we've got a day-to-day business to run and satisfying our customers is number one.

In conclusion, MC partner employers have traditionally lacked clear internal mechanisms for and transparent communication about advancement, which in turn has hampered their ability to promote from within. Many also acknowledge their past sources of workers will likely be less available in the future, both because they have already tapped the limit of "friends and family" hiring sources, and because the children and younger relatives of current employees seem less interested in manufacturing careers than in past decades. Finding ways to recruit a younger workforce and providing clear pathways for them to advance to fill roles at all levels of the firm is therefore critical to firms' medium- to long-term survival. It is here that Manufacturing Connect has been focusing its strategies of employer engagement.

Initiating employer engagement with the philanthropic pitch

Employer engagement starts with efforts to recruit firms to become MC partners. MC staff often recruit employer partners by appealing to their intrinsic desire to be good philanthropic organizations and give something back to their community. As Bill Vogel, outreach coordinator for Manufacturing Connect, explained it: "There is something that's inherently valuable to any organization when you're helping a young person. We feel it's in our bones, it's in our DNA, to want to share our experience with a young person, hopefully that we can influence that young person's life." Participating employers reiterate this strong moral

sensibility. As one employer noted, “I’m a firm believer [that] we need to give these young people an opportunity. We have a social responsibility as manufacturers.”

An executive leader at one employer partner, for example, noted that he initially became engaged because the program was a good fit for his company’s philanthropic profile – local, focused on education and youth – and talked about the personal inspiration he derives from the impact his involvement has on MC students: “These kids need every advantage they could possibly get. [...] As much as I’d like to see the success of Manufacturing Renaissance [as a coalition transforming the manufacturing industry], I’m really focused on this community and this particular set of kids and seeing them succeed.”

This philanthropic lens not only facilitates initial employer recruitment, but also gives partner firms a basis for a more flexible interpretation of the actions of younger-aged, low-income students upon entering their workplace. One MC employer partner illustrated this by describing a situation in which a high school student, recruited through a different program, was caught stealing lunches during a summer internship placement. Because the employer in question was aware of the socioeconomic background of this student and the specific challenges this implied, they opted to not dismiss them outright. Rather, they used this as a conversational moment to help uncover the underlying circumstances that might lead to this particular act. Through these discussions, it became clear the theft stemmed from the student’s basic need for food and that this was an opportunity for the employer to consider additional resources and assistance.

Similarly, another employer noted initial concern when discovering summer employees hired through MC had not yet deposited their paychecks. Upon further review, the employer learned these students did not have their own bank accounts. This motivated him to accompany them to the Social Security office to help them secure proper identification and to a local bank branch to create individual savings accounts. In yet another example, a summer intern from APA showed up at work wearing baggy jeans that sat very low on his hips, a fashion trend popular among youth in Chicago. The employer was quick to classify this as an example of “normal kid things” and even compared this to disagreements over acceptable hair length they had encountered during their own youth. They helped the student understand why this was both unsafe and inappropriate for a manufacturing work environment, but they also stressed this as example where they, as employers, have a responsibility to create a nurturing environment that helps inner-city youth ease into the working adult world.

MC staff build out from this philanthropic core, helping employers deepen their investment in and commitment to the program and APA students. Indeed, a key distinction between Manufacturing Connect and many other workforce intermediaries is that MC staff explicitly ask for employers’ help. When employers join MC as partners, they are expected to contribute US\$500-\$750 and sign a letter of commitment promising to participate in pre-hire activities including hosting job shadows and internships, participating in advisory committees, and contributing to external presentations of the program. MC staff consistently communicate in large and small ways that employers are true partners in creating socioeconomic change – and because of that, are expected to co-invest in the program, not just receive its benefits.

Reinforcing that, one employer indicated that as a result of MC's primary mission to improve socioeconomic outcomes for low-income students, that they "don't expect Austin to tailor a program for us." Compared to other training programs they use – which they see as primarily providing instrumental value to their company – this employer acknowledges that when it comes to MC, some of the onus will be on their firm to bend toward the needs of these younger job seekers, rather than expecting them to seamlessly plug in to existing human resource practices.

Taken together, these examples illustrate the benefits for younger, less experienced job seekers when potential employers interpret their actions through a philanthropic lens. Their actions are viewed more sympathetically and are less likely to result in a punitive response. Still, labor scholars have rightly noted the risks of promoting school-to-work programs as charity ventures, arguing that this pitch could lead employers to view their role narrowly as a form of social welfare and thus overlook opportunities for promoting mutual benefit (Bailey 1995; Bailey et al. 2000). These analysts have even suggested that school-to-work programs avoid a philanthropic pitch altogether and focus instead on preparing youth with skills that employers know they need; however, as the next section illustrates, MC staff reduce this risk by getting firms to act upon this charitable mission in ways that not only support youth employment but also result in opportunities for worker mobility and empowerment across the entire organization.

Strengthening internal infrastructure with students (and eventually all workers) in mind

MC partner firms often recognize the need to change entrenched human resource practices after their initial experience hosting Manufacturing Connect students for paid internships or job shadows. Several employers described having felt “underprepared” for those experiences and subsequently requested additional help from MC staff in improving their ability to give students a successful experience. One employer, for example, described their first experience hosting MC internships as “chaotic.” Another employer, reflecting on early exchanges with Austin students, stressed “the bottom line is that we need to be prepared just as much as the students are when they come in to work.”

For their part, Manufacturing Connect staff have collaborated with employers to make the student internship experience more successful. This includes capturing employer recommendations for introducing improvements to MC internship management. Between the first and second year of the internship program, MC staff developed formal internship curricula and guidelines. They also visited each partner company to meet with supervisors and leadership. As much as these changes have created stronger relationships between MC staff and employers, they have also helped employers initiate a review of their own internal human resource practices, including developing new approaches to communicating those needs within the firm.

One employer described a conversation with a shop floor supervisor after receiving feedback from MC about the need to improve the summer internships experience:

I talked to one of my top manufacturing guys, I said ‘Look, we’re bringing a kid or two in here over the summer and I really need it to work. The last guys floundered a bit because they didn’t have a mentor to help them out. They need guidance.’ So there was sort of an ‘Aha!’ moment with the manufacturing guy where he says, ‘You didn’t tell me that’s what you wanted, okay.’ So he thought about it and said, ‘I have some ideas and

now I'm going to nurture and make sure these guys (from MC) have a better experience when they come through here.'

In this example, the primary challenge that made the employer's first experience difficult was a communication gap between executive leadership and shop floor supervisors. Through better communication, company leaders were able to convince shop floor supervisors to implement strategies that would improve the internship experience of future Austin students.

Improved communication alone has not resolved all frictions, especially when employers bring on MC graduates full time. One employer emphasized this point by describing a situation where an MC graduate they hired was marked for advancement by upper management, but whose direct supervisor was "giving him a hard time [...] because he sees this kid has a lot of attention on him." While this firm sought to communicate their new expectations to supervisors, they initially did so in ways that were actually dissonant with their firm's established organizational routines and human resource strategies. As such, supervisors initially perceived the MC graduate as receiving special treatment that was different from what they could access. Related to this, another employer indicated their incumbent workforce was initially fearful that MC graduates were being hired to replace them.

Ultimately, tensions like these that have arisen between new MC hires and incumbent workers are important for raising employers' awareness of larger cracks in their strategic human resource foundation that need to be addressed. They also represent an opportunity for staff at MC to help employers recognize the need to broaden and formalize the types of targeted changes they have made in support of MC graduates to also build stronger supports for and transparency around advancement for all workers.

With this in mind, one MC employer took steps to formalize internal mentoring strategies, both as a means to better communicate expectations to newly hired MC graduates, and equally to empower their incumbent workforce. This intervention was brought on by a situation involving an MC graduate who took unsolicited steps to introduce changes to an established shop floor process, but had failed to first communicate the desire to introduce those changes to his foreman. Rather than bypass the established chain of command to engage directly with the new MC hire, the employer in question reinforced the mentoring role of incumbent supervisors, helping them to develop better approaches to teaching and supervision. The employer realized that “someone needs to tell them (the MC graduate) before it happens.” Rather than having this come from the top and thus risking further tensions within the workforce, this employer worked with incumbent mentors to convey to all new hires: “We are interested in your ideas, but we want you to come up with your ideas before you do anything.” While all new hires at this firm are assigned a mentor, the experiences with a younger employee highlighted areas where internal mentorship support could be much stronger in ways that also reinforce the leadership position and contribution of more experienced workers. Echoing this point, another employer stressed that as a result of internal improvement to mentoring practices, his incumbent supervisors were more proactive in preparing for MC graduates to enter the organization, even taking the initiative to independently plan for incorporation of four recent MC graduates later this year.

The significance of these broader changes is magnified if employers also introduce MC students as representative of their future workforce pipeline. One employer, for example, initiated a conversation with shop floor supervisors about the learning expectations of Austin

students and stressed that these could eventually be the supervisors' co-workers in the future. As they said to staff, "It's no secret we need young people!," underlining the importance of engaging younger workers and communicating that they expected incumbent workers to play a key role as the firm extends beyond its traditional hiring pool.

Reinforcing this connection, one employer acknowledged drawing inspiration from his experience hiring MC graduates to introduce company-wide strategies for better integration of *all* new employees. As a result of his MC experience, he has become much more sensitive to frictions with incumbent workers also when hiring for more skilled positions: the tension here reflected the ability of new hires to demand starting wages that were significantly higher than what the incumbent workforce was making at the time. This wage difference was due in large measure to less updated skill sets and qualifications of the incumbent workforce. Still, the conflict this pay differential created made it much harder for the company to retain newly hired workers, especially given high industry demand for their skills. To solve this problem, the employer is now working with partner organizations of Manufacturing Connect to develop an in-house apprenticeship program, thereby creating an internal mechanism for equalizing skills and pay scales across their incumbent and newly hired workforce. While MC graduates have not been directly involved in this apprenticeship planning effort to date, this example nonetheless demonstrates the ways that initial changes introduced with the MC cohort in mind are inspiring employers to identify and resolve broader human resource bottlenecks within their organizations. Furthermore, this presents a critical opportunity for MC to build on employers' willingness to extend special treatment to MC hires, initially for philanthropic

reasons, leveraging that openness into a broader commitment to improve human resource practices more generally.

Reflective Conclusions

The Manufacturing Connect case demonstrates that successful labor market interventions designed to encourage youth to pursue careers in urban manufacturing require a joint focus on educational opportunities and strategies of employer transformation. Jobs-driven training, whereby the intermediary simply responds to an employer's immediate skill needs, is not enough to engage young workers if they are placed in an environment where paths to advancement are not well-articulated and transparent. On its own, this "supply-side" training approach risks making only a short-term impact on firms and workers, instead of transforming job openings into career opportunities that can both support positive long-term socioeconomic outcomes for workers and ultimately, contribute to industry growth and regeneration.

Manufacturing Connect (MC) models itself as a workforce intermediary, seeking to influence employer behavior in ways that improve the overall work experience. MC engages firms with two logics: giving disadvantaged youth a hand, and helping facilitate organizational transformation. Firms may not initially perceive a strong link between the two, but MC guides firms through a set of experiences that influence them to start connecting the dots. Early mismatches between MC students' expectations and firms' existing human resource practices lead employers to institute new practices, initially in the name of philanthropic impact. Viewed through the narrow lens of the firm's ability to support MC's "philanthropic" mission, it is relatively easy for firms to admit that their human resource practices fall short and to apply

targeted fixes including increased mentorship, clearer frameworks for advancement, additional training opportunities.

When new human resource strategies in support of MC students begin to cause fissures among the broader workforce, firms then begin to take an interest in broadening their investment to include more widespread organizational changes. Indeed, perhaps the most important change to human resource strategies that has resulted from MC's intervention is at the meta level: based on experiences that have demonstrated to employers that their current human resource infrastructure has gaps that will make it difficult for them to support and retain the workforce of the future, they have started to actively demand resources that can help them make changes. This desire on the part of employers reinforces MC's framing of the role of employers as true partners who are expected to co-invest in the transformation of the manufacturing industry in Chicago. MC leverages this expectation to encourage partners to make larger changes precisely because the philanthropic logic is so tightly interwoven with goals of industrial transformation. That is, employers' expectation that they will play an active role in investing in these disadvantaged young people implies an expectation that they will play an active role in reshaping the future of the manufacturing industry in Chicago. That agency is manifested as employers embrace new approaches to human capital that support the long-term success of the next generation of manufacturing workers.

Manufacturing Connect has clearly made progress on the intermediary front, engaging employers in a way that enables them to recognize their contribution to industry workforce development. Manufacturing Connect is now working to develop additional supports, including trainings and peer learning opportunities for incumbent workers, which will enable them to

take advantage of firms' willingness to change. MC's work so far has created a valuable resource – a community of small firms that are committed to building a stronger human resource infrastructure. As MC continues to develop and refine its model, it will provide an important example to build on as federal and state policy makers hasten the spread of sectoral workforce intermediation.

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Table 1. Student participation in the APA program.

Graduating Class	Total APA Graduates	#MC Participants^a	..with at least 1 NIMS	...with 2 or more NIMS	...with at least 1 mfg. work experience	...with 2 or more mfg. work experiences	...pursuing career or college in mfg or engineering
2011	72	38 (53%)	15	3	38	32	4
2012	68	53 (78%)	53	31	46	26	12
2013	29	22 (76%)	18	15	15	10	7
2014	45	25 (56%)	25	21	19	14	5

APA: Austin Polytechnical Academy; MC: Manufacturing Connect; NIMS: National Institute of Metalworking Skills credentials

^a "MC participants" are defined as those who have participated in at least 2 MC opportunities, including earning a credential or participating in a manufacturing work experience