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Innovative Apprenticeship and Internship Models in the IT Sector in the United States

International Labour Office Geneva

Branka Minic

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FOREWORD

Quality apprenticeships based on robust social dialogue and public-private partnerships help young people overcome the work-inexperience trap that blocks their transition from education to decent work.

This paper recounts three examples of innovative public-private partnerships in the Information Technology sector in the United States that help disadvantaged young people stay in secondary school and make the transition to good jobs. These programmes provide practical training as well as equip young people with critical core skills and a better understanding of the world of work that improves their chances for success in the labour market.

The evidence and lessons drawn from these case studies provide both motivation and practical recommendations for partnerships between employers, schools and communities to improve young people's access to workplace learning, internships and apprenticeships. These lessons may be particularly relevant to other sectors and other countries which do not have well-established apprenticeship systems but which are building up dual training systems that combine classroom and workplace learning. These examples expand the compelling business case for employers' initiatives to scale up apprenticeship-like programmes – to meet their own needs for a pipeline of work-ready, qualified workers and to be part of the solution to the youth unemployment crisis.

The analytical case studies and comparative analysis were prepared by Branka Minic, a consultant working in the United States with long experience advising global corporations, governments and international NGOs on human capital investment. She was formerly ManpowerGroup's Senior Director of Global Corporate & Government Affairs and served on the World Economic Forum's Global Agenda Council on Youth Unemployment. I would like to thank her for partnering with the ILO to produce these studies and expand knowledge-sharing on innovative public-private partnerships to enhance the skills and employability of young people.

Christine Evans-Klock
Chief, Skills and Employability Branch

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Executive Summary

The Cases

The three programmes documented in this report demonstrate innovative and effective public/private strategies for helping disadvantaged young people successfully transition from public secondary education systems into the economic mainstream. The three selected programmes are:

- **Genesys Works:** Founded in Houston, Texas in 2002, the programme has since been replicated in three additional U.S. cities. Genesys provides students entering their final year of secondary education with an intensive summer of professional and technical training, followed by a year-long part-time corporate internship, accompanied by strong support for the college application and enrolment process.
- **Year Up:** Founded in Boston, Massachusetts in 2001, the programme now operates in 12 U.S. cities. Year Up provides disadvantaged out-of-school youth who have completed only a secondary education with six months of intensive professional and technical training followed by a six-month full-time corporate internship.
- **PTECH (Pathways in Technology Early College High School):** Founded in New York City in 2011 in partnership with IBM, the programme is in the early stage of replication with IBM and additional corporate partners in Chicago, Illinois and multiple other locations. PTECH aims to extend and transform public secondary education by establishing partnerships among schools, universities and major employers, so that career-relevant skills and credentials now associated with two-year tertiary degrees become the norm for all secondary school graduates.

Innovative Programme Elements and Lessons Learned

While each programme serves a slightly different demographic group and has its own distinctive operating and partnership model, the three programmes share certain core missions, principles, and innovative, conceptual approaches, and all three have demonstrated significant success in dealing with widespread and intractable challenges in the school-to-work transition:

1. These programmes share a focus on students from highly disadvantaged backgrounds, who may lack the knowledge, motivation, role models, and social capital that would help them understand the full range of their career and professional options and the role that higher education can play in their personal success. This group is widely recognized as being hard-to-serve through traditional apprenticeship and school-to-work programmes.
2. These programmes share a theory of change under which exposure to “mainstream” professional corporate work experiences can have a transformative effect on the personal ambitions, career horizons, and in-school motivation of young people from disadvantaged backgrounds. Key programme components therefore focus on ensuring access to high-quality

corporate internship experiences and to providing behavioural and cultural training as well as technical preparation.

3. All three programmes have developed effective strategies for reinforcing workplace interpersonal skills and professionalism, and for generating behavioural transformation that will promote success in a corporate work environment. These strategies are based on frankness, respectfulness, positive psychology, peer-group reinforcement, and caring adult mentors. In many cases, these training elements are considered even more important to participants' workplace effectiveness than the job-specific technical training that the programmes also provide.
4. These programmes have been effective in identifying and engaging with employers who can provide appropriate, professional internships for their graduates. (In the case of PTECH, employers are currently serving in a partnership and programme design role but will eventually provide internships and apprenticeships as students advance into those programme stages.) "Appropriate and professional" internships include positions that are accessible to entry-level applicants with modest targeted technical training, that represent high-demand occupations with favorable wage levels and an abundance of long-term opportunities, and that open doors to a well-defined professional career progression. All three programmes have targeted the IT sector and some have expanded into engineering and finance positions as well as other occupational areas.
5. All three programmes have found ways to draw significant business investment into the youth training field. They have been effective in attracting employer interest by identifying and targeting occupations where employers face significant recruitment costs and challenges, especially in the IT sector and in other technical occupations. They have succeeded in constructing a value proposition for employers that attracts a continuing and expanding number of paying clients. Employers show high levels of enthusiasm for each programme as well as high levels of repeat business for the two programmes (Year Up and Genesys Works) that are currently placing interns.
6. These programmes incorporate unusually strong and institutionally transformative public-private partnerships between employers and educators. While many existing partnerships between schools and employers are mainly advisory and may have limited organizational impact, the three profiled programmes have drawn employers into major roles in curriculum development and programme design, student mentoring on and off the job, and of course direct investment in internships. The most direct and sophisticated institutional connections are evident in the PTECH programme, but Year Up and Genesys Works serve as bridges between schools and employers and focus on identifying, articulating, and fulfilling employers' hiring requirements.

7. All three programmes have developed relatively sustainable financial models that help them to scale and replicate their operations in a public policy environment where new financial resources are not abundant. More than 40 per cent of Year Up's operating budget is provided by employer fees for internships; for Genesys Works, the figure is 75-80 per cent. PTECH is designed to operate within existing public school budgets, leveraging creative programme leadership and expanded institutional linkages rather than additional funding.

Target Audience, Programme Effectiveness, and Documented Benefits for Participants

Each programme has documented its impacts in terms of its own specific goals. To some extent the three featured programmes have complementary target audiences and missions:

Genesys Works targets students in the final two years of their secondary school experience, though it is beginning to expand its outreach and information programmes for younger students. It focuses closely on raising career expectations as a motivator for the transition from secondary school to college, and it hopes to transform the culture of participating secondary schools by generating a "critical mass" of college-bound and career-oriented students.

- Genesys participants are overwhelmingly from disadvantaged backgrounds but 92 per cent of programme graduates go on immediately to college after completing secondary school, while 76 per cent persist in college after their first year. A 2012 study by the University of Texas estimated that compared to a "non-participating" group with similar demographic and academic attributes, the programme generates a 15-20 per cent increase in these two measures for those who participate.
- Genesys has been able to increase its number of internships slots and participating students by about 10-20 per cent per year in each city where it operates. Growth is driven by Genesys' ability to attract new business clients, generally through referrals from existing, satisfied clients. Genesys' staff cites the strong track record demonstrated by its interns as indispensable in overcoming employer hesitation about hiring high-school-age interns.

Year Up targets young people, generally aged 18-24, who have completed secondary school and have obtained a secondary degree but who are struggling in the job market due to their limited skills, credentials, and social capital. Year Up participants are overwhelmingly from minority communities and a substantial number of participants live in circumstances that include significant family, health, housing, and other social risk factors.

- In 2010, a randomized controlled study found that Year Up programme graduates earned on average 30 per cent more than a control group in their first year after programme graduation. Half of these graduates had obtained employment in the IT and financial sectors especially targeted by Year Up, at salaries averaging 50 per cent more than those obtained by the control group, while no control group members had obtained access to comparable IT and financial-sector jobs.

PTECH consists of a growing set of innovative secondary schools and its mission envisions a more deliberate and comprehensive institutional transformation of the U.S. secondary school system than the other two programmes documented here. The PTECH programme is still too young to have produced graduates and a placement record. Its model sets an ambitious goal of ensuring high academic achievement, effective preparation for the workplace, and more market-relevant degree credentials for all secondary school graduates. It promises to deliver on this goal by integrating a career vision and work experience programme comparable to Year Up and Genesys Works, providing expanded access to college-level academic resources, and providing individualized paths to academic success tailored to the readiness and learning style of each student.

- To date, PTECH has demonstrated substantial success in helping 9th- and 10th grade students with a wide range of prior academic achievement levels to prepare for and pass minimum skill assessments that open the door to accelerated college programmes.

Ongoing Learning and Challenges – Continuous Improvement

Each of the three featured organizations was founded with – and has sustained – a clear and focused sense of mission. But each has also evolved over time, and is continuing to explore new ways to impact its graduates as programme experience accumulates.

Both Year Up and Genesys Works are exploring ways to provide greater long-term support for their programme alumni.

- Year Up leaders initially hoped that by launching individuals into living-wage careers, the programme would empower them to obtain further education on their own, as needed, in support of continuing career growth. Limited available indicators of long-term education and degree completion for its alumni show mixed results.
- Genesys Works has seen very encouraging rates of college enrolment and persistence after the first year, but is concerned about longer-term college completion rates among its alumni.

In each case, certain financial, social and other barriers to success in higher education may have been outside the original programme model but these organizations have come to see successful long-term outcomes for alumni as crucial to their definition of programme success.

- Both organizations are undertaking initiatives to improve data collection on long-term outcomes and to adjust programme elements to enhance long-term success for programme alumni; both are encouraging the development of alumni peer and mentoring networks.
- Year Up is piloting adaptations of its model that embed its programme within community college settings, which provide individuals with support for a more diverse range of early career and education pathways.

The PTECH model must still evolve strategies to deal with a potential subset of students who may have difficulty meeting ambitious academic goals; the programme will likely face other emerging support

issues as students take on more challenging academic work and professional internships. But initial results suggest that PTECH's emphasis on focused curriculum goals, supplemental class hours, intensive remedial support, and a culture of "try and try again" is effectively raising achievement levels for its students.

All three programmes share an interest in deepening their understanding of which programme strategies work most effectively for individual young people. Improved data collection and more rigorous effort-to-outcome analysis are common themes in all three organizations' strategic planning.

Bottom Line for the Community of Practice

The three programmes outlined in this case study offer a sense of excitement and hope for the creation of truly inclusive and comprehensive school-to-work strategies based on public-private partnerships. Their common experience reinforces clear lessons for successfully engaging disadvantaged students and transforming disadvantaged schools, for attracting serious business engagement and creating effective business partnerships, and for opening new channels to employment and further education. The relative sustainability of their business and financial models has helped these programmes grow steadily, and suggests good near-term prospects for further refinements that can lead to even more significant programme expansion and replication in the future. At the same time, the three programmes offer complementary strategies that can be deployed in concert at the early-secondary, late-secondary, and post-secondary/early-career stages to create more comprehensive support networks for youth at risk of falling outside the economic mainstream. Finally, each programme's leadership demonstrates a strong commitment to programme transparency and documentation, which will help the practitioner community study and learn from the further innovations these programmes develop as they engage strategically with their ongoing challenges.

Case Study 1: Genesys Works

Introduction

The purpose of this case study

Genesys Works is a Houston, Texas-based NGO that aims to change a “culture of low expectations” in secondary schools with low-achieving student populations by giving students the “skills and confidence to pursue higher education and a professional career.” It does this by creating substantial opportunities for senior (final) year students to gain “meaningful” and “professional” work experience through technical training and part-time corporate internships.¹ It also provides these interns with intensive support for the college application process. Genesys’ core model is based on the assumption that too many students in poor and disadvantaged neighborhoods lack a vision and understanding of their own potential opportunities in the workforce. By providing that vision and a powerful experience for a “critical mass” of students in each participating school, Genesys Works hopes to transform the attitudes and motivation not only of those students who directly participate in its programmes but of their peers within the school environment as a whole.

This case study is motivated by Genesys’ notable accomplishments in four areas:

Effective delivery of credible and meaningful work experience for very young participants. Early workforce experience can help young people more fully grasp their career choices and motivate them to achieve in school at a time when they are making critical decisions about their own education and career preparation. Yet it is difficult to persuade employers to provide meaningful corporate-style work experiences for high-school students. Many internships for 16- and 17-year olds are seen as “hand-holding” by employers and as meaningless clerical or reception work by the students themselves. Such internships are also often unpaid, which does not encourage either side to take them very seriously. By contrast, Genesys has persuaded its participating employer clients to create – and pay for – internship positions that provide high-school-age (secondary school) students with real work experience in areas like IT help desk support, network administration, engineering drafting, and programme and budget analysis.

Design of an efficient, low-investment framework for schools to partner with employers. Public secondary school systems face formidable budget and resource constraints in initiating new partnerships and programmes such as those offered by Genesys. Genesys serves as a “bridge” between schools and employers and allows schools to integrate with an established set of work- and college-preparation programmes and participating workplaces, with only modest engagement of school staff and facilities. For schools, partnering with Genesys represents a low investment with high potential returns.

¹ **Note on Terminology:** in the U.S., the term “apprenticeship” is sometimes (though not exclusively) associated with programmes operated specifically by labour unions and the term “apprentice” may refer to certain categories of worker defined in collective bargaining agreements. Although usage is not consistent, some advocates for broader apprenticeship-style training in the U.S. have adopted more generic terminology such as “internship” to characterize training programmes that combine classroom and workplace-based learning.

Financial sustainability of the programme model. While many employment programmes for young people are highly dependent on a philanthropic or public funding model, Genesys obtains 75-80 per cent of its funding from fees paid by employers for interns. Employers committing to the programme pay a per-hour rate for interns that covers their salary and programme overhead costs, just as if they were hiring and paying hourly contractors. Rates are of course highly competitive compared to hiring regular contractors.

Transformative outcomes for students. Although the Genesys programme focuses on work experience, its primary intent is to transform career horizons for its participants, and to motivate them to go on to tertiary education and complete tertiary degrees. Internships are not intended as permanent job placements and they end during the summer after a student's senior year (final year of secondary school). During the internship year, Genesys requires students to participate one evening each week in its Career and College Connection (CCC) programme, where students are assisted in identifying and selecting colleges, completing applications, securing financial aid, etc. Ninety-two per cent of programme completers go on immediately to college after they graduate from high school, and 86 per cent persist in college after their first year.

The timing of this case study also mirrors Genesys' ongoing transition from an "inspirational" or "visionary" leadership model to a more rigorously documented and replicable operation, as the programme matures and seeks new ways to scale its operations and reach a "critical mass" of students in targeted schools. We think this is a good time to help outline this programme for a broader practitioner community.

Programme at a glance

The Genesys Works programme recruits junior-year (second-from-final year) high school students from disadvantaged backgrounds for an eight-week summer professional and technical skills training programme, followed by the prospect of a year-long part-time corporate internship during the senior (final) year of high school for those students who succeed in the training programme. The programme was founded in Houston, Texas in 2002 and also operates in Minneapolis/St. Paul, Chicago, and the San Francisco bay area.

- Students attend training for four hours per day in the summer, with a total of 80 hours focused on professional workplace and behavioural skills and another 80 hours dedicated to IT, engineering, or accounting skills relevant to their internship.
- Students who are successful in the training programme earn a paid year-long internship at one of Genesys' employer client sites beginning in the fall and running through the summer after high school graduation.
- During their senior year, students will generally attend school for four hours each morning and work at their internship for four hours in the afternoon; in the summer and during school

holidays students and their employers have the option of establishing a full-time work schedule.

- Students generally earn US\$8-10 per hour while working at their internship; the fee to employers is about double that rate and these revenues support Genesys' programme operations.
- While nearly all programme graduates go on to college, Genesys has begun working with its clients to provide supplemental internships for college-age students, during school terms and during the summer.
- Genesys is also creating a "pipeline programme" for potential future applicants, promoting its programme and providing an adapted version of its summer training curriculum for younger students in 9th through 11th grades (the 3 years prior to the final year of secondary school).

Genesys impacts not only individual students but school environments as a whole. Their aim is to engage a "critical mass" of students in each of the high schools they work with, so that the programme's direct impact on participating students, and these students' own influence on their friends and peers, makes high aspirations and high achievement a more widely respected and widely shared goal in the school community. This in turn will have positive ramifications on the attendance, motivation, and performance of the broader student body, on the effectiveness of instructional and other activities, on school performance in standardized evaluations, and on life and career outcomes for graduates. Studies conducted by Genesys Works and its partners have quantified the concept of "critical mass." They estimate that if at least 10 per cent of seniors in a school participate in Genesys internships, they will create a "tipping point" in the culture of the school.

Research methodology

We reviewed the available literature on Genesys Works including a recent study by the University of Texas on programme impacts in Houston and an internal study Genesys commissioned from Accenture on strategies for programme scaling. We then interviewed staff at Genesys' downtown Houston programme office, including leadership staff from both the national and local offices. We held a roundtable talk with a group of interns currently participating in the programme. Genesys Works also shared internal programme handbooks, strategic planning documents, and other materials documenting its operations and plans. We want to thank the leadership and staff of Genesys for arranging these interviews on very short notice and for their courtesy, assistance, and enthusiasm during the interview process.

Context

Discussion of relevant skills (demand vs. supply) specific to IT sector and programme locations

Like other programmes that aim to expose young people to career-oriented work, the Genesys model must ensure access to internship slots that provide meaningful work experience and help participants gain a compelling vision of their potential future careers. That means that the programme must target occupations that not only represent attractive professional and career paths for students but also are areas where employers face significant challenges in recruitment.

Genesys originally focused on positions in the IT sector in Houston. Genesys' founder, Rafael Alvarez, had a background in the IT industry and knew that employers had continuing demand and "were paying too much" for IT help.² In each of the cities to which the programme has expanded, Genesys initially focused on the IT sector.

Over time, targeted occupations in Houston were expanded to include engineering (mostly drafting and design support) and accounting (mostly financial and programme analysis) in response to information gained from Genesys' employer clients.

The criteria for targeting occupations are laid out most rigorously in a study Genesys commissioned from Accenture in 2012 for exploring strategic growth opportunities,³ although these criteria reflect the pragmatic practice of Genesys from the outset. Targeted occupations must be:

1. **Fast-growing**, with high and continuing future demand according to projections published by the U.S. Bureau of Labour Statistics.
2. **Not experiencing a labour surplus** – low current occupational unemployment rates and challenges in attracting and hiring skilled personnel indicate potential demand for Genesys' services among employers.
3. **Perceived (by employers) as open to young entry-level candidates** with minimal prior work experience. Genesys surveyed employers and also identified occupations normally filled by new college graduates working in their first corporate job.
4. **Accessible to inexperienced candidates after a relatively rapid training period** – Genesys' programme provides for 80 hours of training in relevant technical skills, so positions requiring more intensive pre-internship training would be precluded. Although interns also gain additional on-the-job training and increase mastery of their jobs over the course of a year, Genesys must target positions where it can provide minimally-qualified personnel within the constraints of its own summer training resources.

² List of Author Interviews (Alvarez), p. 33

³ Accenture, Strategic Growth Study, 2012

5. **Professional** – positions must provide a corporate office environment, where interns work side-by-side with other career-track professional employees on job content that is not merely clerical or administrative. For example, Genesys is considering adding a track for customer service positions, but will focus on financial and insurance services rather than simply on retail transactions, in order to ensure that internships provide sophisticated and professional job content.

Genesys has focused to date on jobs that are available within Fortune 500 and Fortune 1000 companies, since its experience suggests that these employers are most likely to have enough jobs in appropriate categories to allow interns to work on a team of professional peers, and are most likely to have the management capacity to support “meaningful internship” experiences for multiple Genesys programme participants.⁴ As part of its expansion strategy, Genesys is currently measuring whether successful internships can be developed in a cost-effective way among smaller and medium-sized businesses.⁵

The 2012 Accenture study also estimated the size of the potential market for “meaningful internships” in the cities where Genesys was operating at that time, in order to measure options for Genesys’ strategic growth. The study found that in Houston, Minneapolis/St. Paul, and Chicago together there were a total of about 28,000 positions that met the identified criteria for Genesys’ occupational targeting.⁶ If Genesys can approach 10 per cent market penetration throughout its national operations, the resulting 2000-3000 internships would be sufficient to provide positions for a “critical mass” (see p. 8) of seniors at participating high schools in these three cities. Genesys has not at this time set a specific future growth target or timeline.

Background of the “backbone” programme organization

The founder of Genesys Works, Rafael Alvarez, has a professional background in the IT industry and has been extensively involved in the charter school movement (which promotes the creation of independent alternative schools supported by the U.S. public education system). He has served on the board of several Houston-area charter schools. Genesys Works remains strongly motivated by a vision of transforming schools and improving the secondary-school experience for low-achieving students. Alvarez often tells a story about attending a charter school graduation where he met many bright and energetic students, but when he asked them about their career plans, most could not see prospects beyond their current minimum-wage jobs. Alvarez strongly believes that raising young people’s sense of their personal career potential is a key element in motivating them for academic success and for overcoming cultural attitudes, especially in low-income communities, that devalue effort and achievement in school.

Alvarez founded Genesys Works in Houston in 2002 with an initial class of just 10 students. It took several years for the model to begin to show significant success: only three of the original 10 participants were successfully placed in internships, and the programme had to work hard to attract interest in the public school system and to establish credibility with employers.

⁴ List of Author Interviews (Kongkasonkichkan), p. 33

⁵ Rice University strategic growth teams, various presentations

⁶ Accenture, Strategic Growth Study, 2012

Genesys Works developed a proprietary Professional Skills curriculum that it considers essential for preparing young people for the cultural and behavioural demands of the corporate workplace. This curriculum comprises half of the summer training programme that Genesys students undergo between their junior and senior years, in order to prepare for their senior year Genesys internships. (The other half, representing job-relevant technical training, is delivered by outside contractors at the Genesys training facility.⁷)

By its third year of operation Alvarez thought Genesys had established a proven programme model and the organization began to grow more rapidly – from about 50 participating students in 2004 to 100 in 2006, 300 by 2009, and nearly 800 today.⁸ Genesys opened a second regional office in Minneapolis/St. Paul in 2008 and that office today serves as large a student base as Houston. A third office, in Chicago, opened in 2010 and currently serves about 100 students per year. A fourth office, in the San Francisco Bay area, opened in 2013 and operations there are just getting under way.

Along the way, Genesys Works received increasing recognition in the practitioner community: in 2005, Alvarez and Genesys were recognized by the Houston CIO Summit; in 2006 Alvarez won an Ashoka Fellowship for innovative global entrepreneurship. In 2009, Genesys was one of four organizations recognized by President Obama at a ceremony marking the opening of the administration's Office of Social Innovation.⁹

Genesys' evolution has resulted in some growing pains;¹⁰ by 2012 the organization faced some challenges in meeting ambitious business expansion targets and experienced some executive-level turnover. In response, Genesys both created a set of internal task forces and commissioned an external study by Accenture to recommend strategies for more effective programme operation and expansion. Measures currently being developed or implemented include improved internal information systems and knowledge sharing; better tools for monitoring programme performance and alumni outcomes; more systematic internal talent management; additional specialized staff for business development, IT, and alumni support; expanded engagement with participating school partners; and strategic evaluation of potential new market opportunities for creating internships.

Genesys maintains both its national office and a local programme office in Houston, Texas, though they are at separate locations. The national office focuses on strategic and programme development issues, including incubating new programmes for alumni and for younger students, and is engaged in developing new information and knowledge systems for the organization as a whole.

Of the four existing Genesys programme offices, the Houston office is the oldest and in some ways represents the most mature version of the programme model. The office is located in downtown Houston's central business district, with a satellite office in Houston's West End district serving schools and clients that are more remote from downtown. The Houston regional office employs about 10

^{7 7} List of Author Interviews (Maria Pickett and Shannen Garza), p. 33

⁸ Annual Report 2012

⁹ Recognition referenced in Client Handbook

¹⁰ List of Author Interviews (Alvarez), p. 33

Programme Coordinators (plus several “Senior Programme Coordinators”) who are responsible for working directly with schools, students, and clients in the course of the recruitment, training, and internship phases of the programme. Each Programme Coordinator works with about 20 students per year in the course of intake, training, and internship, and maintains a close relationship with that student, his or her employer, school staff and other key influencers as needed. (Programme Coordinators report that they are in touch with their students “almost daily.”)¹¹ Houston also has created specialized staff positions for business development and for high-level liaison with schools. In addition to hosting programme staff, the programme office includes a training facility for students that is used both for the eight-week summer training programme and the term time Career and College Connection programme.

The Minneapolis/St. Paul office operates on a comparable scale, but does not yet differentiate business development from other programme coordination functions. Chicago and the San Francisco Bay Area are at present significantly smaller operations.

Background of all other organizations (partners) involved in the programme

Genesys requires conceptual “buy in” and defined roles from its school and employer partners, but offers each a significant value proposition.

Schools

Genesys’ programme model and its theory of change assume that individual students can have their personal career expectations transformed by the experience offered by successful corporate internships, and also that these students can further influence their peers in a positive way. School cultures will be transformed as a “critical mass” of students (about 10 per cent) participate in Genesys’ programmes and serve as examples and influencers to their friends and fellow students. As high aspirations and a focus on high achievement gain traction in the school community, schools will benefit from improved student attendance, motivation, and academic performance. This will create better school environments for all students and staff, better school performance on standardized evaluations, and better life and career outcomes for graduates.

The first step in implementing the model is to identify and target disadvantaged students. Genesys works with specific schools and targets those schools where at least 80 per cent of the student body is eligible for free or reduced-cost lunch programmes – an indicator of relative poverty among students’ families.¹²

Genesys currently operates in 20 schools in Houston and 20 in Minneapolis/St. Paul. At present, expanding to new schools in these cities is not as high a priority as more deeply engaging the existing student body in the schools that currently participate.¹³ In Chicago and San Francisco, where the programme was established more recently, a smaller number of schools are currently engaged and the programme continues to be rolled out to new schools.

¹¹ ¹¹ List of Author Interviews (Maria Pickett and Shannen Garza), p. 33

¹² ¹² List of Author Interviews (Drummond), p. 33

¹³ ¹³ List of Author Interviews (De Leon), p. 33

Within each school, there are no formal demographic or GPA criteria for admission to the programme, though some informal selection criteria are applied to target the programme to students in the “middle range” of achievement. Genesys assumes that the top 20 per cent of students probably do not need the programme, while the bottom 20 probably require more intensive services than the programme can offer. Students are principally selected based on evidence of their interest, understanding, and commitment to the programme, and must be on-track to graduate on schedule.¹⁴

In order to implement the school-based phase of programme intake, Genesys engages “School Champions” – sometimes the school principal, but often an especially dedicated teacher or guidance counselor. The School Champion helps to coordinate in-school recruitment activities and may provide supplemental counseling and support for programme participants, though primary responsibility for working with participants rests with Genesys staff.¹⁵

Genesys has a structured, year-long recruitment and intake process that is designed to maximize the student body’s exposure to the programme. The cycle begins with information presentations in the fall, where possible in each classroom and in dedicated school assemblies, followed by a more focused recruitment drive and an online application process in January and February. This in turn is followed by two interviews for selected students in March and April, followed by the final selection of summer trainees in May. Interviews as well as training are conducted at Genesys’ facility, in part to minimize the burden on school facilities but largely to give students a motivating exposure to a downtown corporate environment.¹⁶

Employers

Genesys currently works with about 55 employers in Houston, about 40 in Minneapolis/St. Paul, and smaller numbers in Chicago and San Francisco. Major employer partners include 3M, AT&T, Blue Cross/Blue Shield, BP, ConocoPhillips, Dell, Halliburton, Hines, J.P. Morgan Chase & Co., Office Depot, Target, Travelers, Office Depot, Wells Fargo, and others in the IT, energy, finance, health care, manufacturing, and retail industries.¹⁷

Genesys targets Fortune 500 and Fortune 1000 firms, because its experience suggests that these firms are large enough to offer multiple internship possibilities, include a sufficient number of peers and middle-management mentors to enrich the work experience for programme interns, and have sufficient organizational resources to commit to running a meaningful work experience programme rather than a “busywork” or “handholding” internship.¹⁸

Businesses that use Genesys interns receive “work ready” young people who are highly motivated, have the personal and social skills to be effective on the job, and have a solid technical foundation for rapid

¹⁴ ¹⁴ List of Author Interviews (Drummond), p. 33

¹⁵ ¹⁵ List of Author Interviews (Drummond) p. 33. See also School Champion Recruitment Toolkit 2013

¹⁶ ¹⁶ List of Author Interviews (Drummond) p. 33; also School Champion Recruitment Toolkit and Houston Recruitment Plan 2013-14

¹⁷ From various Genesys marketing materials

¹⁸ ¹⁸ List of Author Interviews (Kongkosonkichkan), p. 33

further training on the job. Employer partners commit to providing year-long internships running from the start of a student's senior year through the summer following their high-school graduation. They are expected to offer interns real, entry-level jobs side-by side with other professionals in the workforce, and to provide appropriate on-the-job training and mentoring to help interns gain professional competence and have a successful work experience. Employer representatives may also choose to be engaged more directly in the summer training programme and may, for example, participate in mock interview exercises for programme candidates.¹⁹

Internships are paid, and employers expect Genesys interns to make a real contribution in the workplace.²⁰ This in turn means that the Genesys programme – both its Programme Coordinators and its newly specialized business development staff – work to understand these employers' specific requirements and ensure that interns are appropriately prepared and well matched with each workplace (internships are assigned at the completion of training based on Genesys' judgment about what will make a good match). Genesys Programme Coordinators work with employers to periodically evaluate intern performance and to pro-actively deal with any emerging problems on the job. Interns may be dismissed for unsatisfactory performance.²¹

Genesys' goal is that employers who create an internship slot will maintain that slot year after year, providing openings for successive classes of Genesys interns. In fact, about 85 per cent of employers renew their relationship with Genesys from one year to the next. Separately and in addition to this, many employers maintain relationships with successful interns and may invite them back while they are in college for their regular summer internship programmes, or even for entry-level openings once they graduate.²²

Policy context

It is widely established that people who complete tertiary education – especially those with at least a bachelor's degree – tend to have substantially higher incomes and greater career opportunities than most people who do not have these educational credentials. According to surveys from the U.S. Bureau of Labour Statistics, median weekly earnings for individuals with a bachelor's degree were US\$1,025 in 2009, 64 per cent higher than the US\$626 median weekly earnings for high school graduates. Completion of higher education is also strongly associated with lower unemployment rates – in 2009, high school graduates experienced a 9.7 per cent unemployment rate in the U.S., while the rates were 5.2 per cent for holders of a bachelor's degree. Higher education is also associated with lower rates of a variety of other social pathologies.²³

While it is increasingly evident that a college degree does not automatically (or exclusively) guarantee personal success, it remains a fundamentally important gateway to economic opportunity and integration into the social and economic mainstream. Consequently, social and educational policy in

¹⁹ ¹⁹ List of Author Interviews (Osborne), p. 33

²⁰ ²⁰ List of Author Interviews (Carillo), p. 33

²¹ ²¹ List of Author Interviews (Osborne), p. 33

²² ²² List of Author Interviews (Kongkosonkichkan), p. 33

²³ ²³ Cited in UTD Impact Study, 2012

many countries includes measures that encourage young people to obtain a college education, that enhance college preparation, and that remove financial and other barriers to access.

Many of these programmes focus on academic preparation, and involve major curriculum reform efforts that extend through earlier stages of primary, middle, and secondary school. But ultimately, individual students must choose to take advantage of the resources that are made available to them. Problems relating to poor student focus, ambition, and motivation, especially among young people from disadvantaged backgrounds, remain some of the most intractable barriers to obtaining higher levels of education.

Emerging research and lessons from practice show that young people's behaviour and motivation can be substantially impacted by "experiential" learning activities: these experiences introduce them to radically new environments and help them envision unexpected destinations for their own lives. In practice, this means that disadvantaged young people, who may never have been exposed to a corporate workplace and who may have limited access to successful career role models, can acquire a new vision of their own career possibilities by being directly exposed to those environments, and by being shown a clear path to their own participation in those workplaces. These students' greater motivation and ambition will then reflect back directly on their school experience: having a reason to work hard and plan more aggressively for the future, they will do so and take better advantage of the resources available to them.

If this theory of change is valid, then training programmes with an experiential learning component can make a tremendous contribution to overcoming barriers to young people's effective pursuit of higher education. This is especially true when young people are the first in their families to go to college, and lack appropriate family advice and role models, as is the case with many of the Genesys Works students. That is not to say that policymakers can ignore cost barriers to higher education or deficiencies in secondary skills curricula, but it does mean that strong programmes at the secondary level involving career education, work experience, employer partnerships, and adult mentoring have an essential role to play in opening doors to higher education and future opportunity for disadvantaged young people.

Programme Description

Programme elements and goals

The Genesys Works programme is designed to give young people from disadvantaged backgrounds a year-long, successful experience in the corporate world of work during their senior year of secondary education. This experience serves multiple purposes:

- It is intended to open the eyes of young participants to the opportunities genuinely available to them in the workforce, motivating them to greater effort and greater success in their education and to more flourishing careers in their adult lives.
- In particular, it is intended to motivate high school students to continue on to college, and to provide support and encouragement in the college application process, especially for many participants who will be the first in their families to get a college education.
- It is intended to bring these young people's new attitudes and ambitions back into the secondary school environment, where they can influence their peers and the culture of their schools to make high achievement a more normal expectation in their communities.
- It is intended to demonstrate that high-school-age students can do "real" work in "meaningful internships", providing real value to corporate partners and thereby encouraging employers to open up additional work experience opportunities for young people.

Core programme elements include:

1. **School-based selection and recruitment activities**, as outlined on pp- 12-13 above
2. **Job Preparation**

The Professional Skills Curriculum covers the following areas:

- Written Communication skills
- Speaking Skills
- Basic Office Skills (emails, Microsoft Word, Excel, PowerPoint)
- Business Etiquette
- Conflict Management/Problem Solving
- Stress Management
- Harassment Prevention
- Self-Esteem
- Work Values²⁴

The Professional Skills Curriculum is based on what Genesys calls its "ACHIEVER" model, which also informs the principles of the organization as a whole. ACHIEVER stands for:

²⁴ List of Author Interviews (p. 33) and correspondence, Osborne

- Attitude
- Communication
- Honesty
- Initiative
- Enthusiasm
- Vision
- Excellence
- Respect²⁵

During the course of the 80-hour professional training course, students engage in a variety of lessons, exercises, role-playing, and assignments that reinforce each of these behavioural principles and establish their relevance to workplace and professional success. Students are evaluated based on whether their participation reflects these principles and can only earn an internship based on successful evaluations that indicate they are ready for the workplace.²⁶

3. Internships, as described on p. 14 above.

4. The Career and College Connection programme (CCC). In support of Genesys' mission to support further education for its participants, programme participants attend sessions one evening a week at Genesys' regional office where they learn about careers and college course programmes, research and identify suitable colleges, and are guided through the process of college and financial aid applications. This programme is led by Genesys Programme Coordinators, though sometimes School Champions will participate in order to encourage and support their students. Participants must complete at least 5 college applications and apply for relevant financial aid including at least 15 scholarship programmes.

Other CCC programme activities include learning about college life, reinforcing the ACHIEVER model, and providing supplemental counseling about any challenges that are emerging during a student's ongoing internship.²⁷

Supplemental Programme Elements:

Genesys also has additional programme elements in the development or piloting stage that are intended to reinforce its core mission and strengthen programme outcomes:

- **Alumni Outreach:** In addition to its regular programme internships for high school seniors, the Houston office separately coordinates about 20-30 summer college internships for its alumni and plans to further expand this service. The Houston office is also piloting the Houston Alumni Network, a community of support for Genesys graduates attending Houston-area colleges. Genesys is exploring ways to build stronger face-to-face and virtual alumni communities,

²⁵ Multiple interviews referenced the ACHIEVER model in both student and staff contexts; elements documented in Client Handbook

²⁶ ²⁶ List of Author Interviews (Maria Pickett and Shannen Garza), p. 33

²⁷ CCC Handbook

including peer mentoring connections, and to provide other ongoing services to help alumni succeed in college.²⁸

- **Pipeline Programme:** The “pipeline” programme, being piloted by the national office in Houston, will provide an adapted version of Genesys’ professional skills curriculum to younger (9th- 10th-, and 11th-grade) students in selected schools starting in January, 2014. This initiative is part of Genesys’ plan to “dive deeper” in its engagement with its educational partners, building awareness of the programme and attracting and motivating potential recruits. Other elements of this strategy may include enhanced outreach to parents, teachers, and other community and school-based “influencers.”²⁹

Programme operations and funding

Genesys Works has created an enviable funding model, with 75-80 per cent of its programme budget funded from “earned income” – specifically, employer fees for internships – in each of its regions. This makes it considerably easier to solicit philanthropic contributions to close the remaining gap.³⁰ Philanthropic contributions remain a substantial requirement for opening new offices, which according to Rafael Alvarez may involve capital costs of up to US\$1 million.³¹

Programme Results and impact

1. Alignment with target audience

Genesys aims to serve students from disadvantaged communities. Demographic data was not extensively available and may not be strictly comparable across sites – see the discussion on p. 28 below on ongoing efforts to improve and standardize data collection across the Genesys organization. But two sets of statistics may be of interest:

- The 2012 University of Texas study found that in 2010, 70.5 per cent of students accepted into the programme in Houston came from disadvantaged backgrounds. 36.6 per cent were black, 58.0 per cent were Hispanic, and just 5.4 per cent were white, Asian, or “other.” Among all students accepted, 42.9 per cent were classified as “at risk” due to academic or personal circumstances. 47.3 per cent of accepted applicants were female.

In comparison, data on successful programme completers in Houston from the previous year (2009) showed that among those students who successfully completed their 2009-2010 internships, 87.5 per cent were from disadvantaged backgrounds. 35.9 per cent were black, 62.5 per cent were Hispanic, and just 1.6 per cent were white, Asian, or “other.” Among all

²⁸ List of Author Interviews (Kongkosonkichkan), p. 33

²⁹ List of Author Interviews (De Leon), p. 33

³⁰ List of Author Interviews (Rhodes), p. 33

³¹ List of Author Interviews (Alvarez), p. 33

students completing the programme, 39.1 per cent were at-risk, and 60.9 per cent of completers were female.³²

- Current programme enrolment data for Houston (2013) indicates that 21 per cent of current interns are African American and 65 per cent are Hispanic, with 14 per cent categorized as “other.” 55 per cent are female.³³

2. Transformative effects on young people

We had the opportunity to interview half a dozen current interns and were uniformly impressed by their poise, professionalism, and focus on the future – and by the substantive work that they were doing.³⁴

- **Alyssa** was selected to work at the Genesys programme office itself, side by side with the Programme Coordinators dealing with schools, employers and fellow interns. She greatly enjoyed the summer training, which “taught her how to be a professional.” She was particularly affected by the speech and presentation requirements, which were “not difficult, but challenging” because she had never seen herself as an outgoing person. She wants to study to become a special education teacher. A main motivation for participating in the Genesys programme was that she had seen her family struggle financially all her life, and wanted something different for her own life.
- **Yvonne** grew up in Mexico before her family relocated to Houston. She was excited that Genesys introduced her to the “problem solving” nature of work and business. She is currently working as an engineering intern at Cheniere Energy, where she is converting older sketches and drawings of liquefied natural gas facilities into three-dimensional plans using AutoCAD; in the course of her work she often has to identify and correct errors in the original drawings. She wants to take that problem-solving approach into a career in business administration.
- **Jose** is working on budgeting and cost estimation projects for TransCanada, using financial, project management and AutoCAD software; he wants to study mechanical engineering in college and become an engineering project manager working on infrastructure projects that take him “all around the world.” He has already been accepted at four colleges. “Genesys gave me confidence,” he said. “They taught me that where I come from doesn’t define me, but that I had to plan instead of dream. They showed me opportunities and said, ‘This is you.’”

³² UTD Impact Study, 2012

³³ Houston School Recruitment Kit – Intern Snapshot

³⁴ Interviews with these interns were conducted in a round-table format at Genesys Works Houston Programme Office on December 9, 2013 (p. 33)

- **Amanda** is interning at an energy company and assists with depreciation studies and other tax-related issues relating to pipelines and other fixed assets. She wants to become an industrial psychologist. “Genesys showed me a bigger picture, showed me the outside of the box that I was in. They got me to work harder, to go the extra mile.”
- **Celeste** is working in the AP department of EP Energy, processing invoices and ensuring that state taxes are handled correctly. She considers it “great experience because I want to major in accounting and become an accountant.” She is very happy that Genesys has given her a chance to work in a corporate environment: “The other people I work with are all professional and they treat you with respect; I used to work in places like McDonalds and they do not treat you with respect. It is a big difference and I am not going to go back to that.”
- **Jessica** prepares and checks invoices for a large oil company; she heard about Genesys from a friend and applied at the last minute. She wants to work in communications and media. “They told me I could work downtown,” she said, and she had never believed that was possible. “I was an OK student but didn’t really care about doing better; Genesys pushes you to be the best version of yourself.”

Programme Evaluation

Programme effectiveness

Formal programme evaluation studies for Genesys Works are limited, but in 2012 the University of Texas undertook a study of the impact of Genesys on students in the Houston public school system.

The study found that programme alumni see significantly improved transitions to further education – 92 per cent of programme completers go on to college and 86 per cent persist after their first year. Although the cohorts who succeed in the Genesys programme are more likely to be college-bound in the first place than non-participants, the study found that, isolating for other factors, participating in Genesys programmes increased the likelihood that a student would transition to higher education by 16-20 per cent, increased the likelihood that he or she would transition to a 4-year college by 10-13 per cent, and increased the likelihood that he or she would persist in college beyond first year by 17 per cent. These are estimates of the programme’s impact on a hypothetical “untreated” group with similar demographic and achievement profiles, though a rigorous control group comparison was not undertaken. While the study did not find statistically significant improvements in attendance or on-time graduation it noted that the programme cohort and comparable peers were already generally high achievers in those areas.³⁵

Internal surveys of Genesys alumni, which are not necessarily rigorous given limitations in the existing data, suggest that programme graduates have a four-year college completion rate of 30 per cent.

³⁵ UTD Impact Study, 2012

Genesys find this troublingly low and is developing and implementing additional support resources for alumni; however this figure is substantially higher than the eight per cent college completion rate typical of the low-income, disadvantaged demographic groups targeted by the Genesys programme; this suggests that Genesys has a substantial positive impact on college completion, though it would like that impact to be even greater.

The programme's impact extends beyond its participants and graduates. At present, for every student who receives an internship, four or five begin the application process. An even greater number hear about Genesys from in-school recruitment activities, and also learn about Genesys from friends and peers who are participating in the programme. These extended impacts are the basis of Genesys' assumption that 10 per cent student participation in its internships will represent a "critical mass" or "tipping point" for the broader transformation of a school's culture and of achievement horizons for the student body as a whole.³⁶

Among the 20 Houston high schools participating in Genesys Works, participation rates currently vary widely, from under one per cent each year to about eight or nine per cent in some smaller schools. Demonstrated commitment among School Champions is also somewhat variable – with about a quarter demonstrating "a very high level" of commitment and participation, including volunteer participation in summer training and a willingness to work intensively with students. Consequently Genesys leadership is committed to scaling its programmes within its currently participating high schools as an even greater priority than expanding the programme to new schools.³⁷

By attracting a larger pool of applicants, Genesys also believes that it can reduce attrition during the training and internship phases of the programme. While Genesys would like to reduce attrition rates through more competitive applicant pools, better selection, and support for applicants, it is not particularly concerned about the current programme impact of attrition, since the number of students who complete training is roughly consistent with the number of employer internships it has been able to obtain. For 2013, Houston's participation numbers by programme stage broke down as follows.³⁸

³⁶ List of Author Interviews (Heath), p. 33

³⁷ List of Author Interviews (De Leon). P. 33

³⁸ Sources: numbers by application stage from Houston recruitment plan; reasons for attrition from interviews with Drummond, Osborne, Heath (p. 33)

Programme Stage	Number	Reasons for Attrition
Application Received	908	
Invited for Interview	700	Basic prescreening: wrong school or grade level, not eligible to work, lack of a serious, thoughtful application essay
Accepted in Programme	300	No-show at interview; weak attitude, understanding, motivation; lack of teacher or parent support; evident schedule conflicts
Began Training	245	No-show or withdrawal; programme competes with other summer plans and potential activities; transportation problems. Typically lose about 20 per cent at this and next stage.
Completed Training	228	Low performance or attendance, self-select out. Some had schedule conflicts, family issues, transportation problems.
Placed in a Job	193	Unsatisfactory performance in training, “not ready for work”
Completed Internship	TBD	Generally about 10 per cent attrition in prior years

Formal statistics on employer satisfaction with the programme are limited. However, among Genesys Works’ employer clients, about 85 per cent renew their participation from year to year, preserving open internship slots for the next class of Genesys interns.³⁹ This demonstrates generally high levels of employer satisfaction with the programme. A survey by Accenture indicated that employers perceived community involvement, opportunities for mentorship, and good value for the work performed by interns as the principal benefits of programme participation; budget controls were the principal limitation on the number of interns an employer could take on, while about 30 per cent cited a limited number of trainable jobs for high-school students and smaller numbers cited cultural or management challenges to expanding their programme.⁴⁰

Programme cost/benefits analysis to each partner

Students

Participating students are asked to invest significant time in the application process as well as, of course, in the unpaid summer training programme. The application process is intended in part as a test of commitment and perseverance, and the training component is indispensable in preparing participants

³⁹ ³⁹ List of Author Interviews (Osborne), p. 33

⁴⁰ Accenture, Strategic Growth Study, 2012

for their internships. Genesys believes that students should see themselves as “earning” an internship through hard work and dedication in the training phase.⁴¹

The internships themselves pay US\$8 to US\$10 per hour, significantly above the minimum wage commonly earned by young people lacking work experience. (The current federal minimum wage in the U.S. is US\$7.25 per hour, and in certain cases young trainees without work experience may legally be paid US\$4.25 per hour for the first 90 days of their employment. In addition, U.S. law permits internships meeting certain educational and other criteria to be unpaid.)

Students also benefit long-term from higher college attendance and completion rates (see p. 20 above). Genesys programme staff remain concerned about long-term college completion rates among their graduates, especially those in four-year programmes. Education costs and other barriers may remain significant for this group. As a consequence, Genesys has identified additional support for its alumni as an emerging programme priority. They have created an additional internship track for college students; at present this serves only 20-30 students each year but they are working with their client base to expand these opportunities. Genesys is also exploring ways to stay in touch and provide ongoing mentoring to alumni to help them stay in college through graduation.⁴²

School Systems

The Genesys programme is designed to provide benefits for schools by changing their culture in a way that makes high academic and professional expectations more normal for the student body. When Dan De Leon took over as principal of Houston’s Chavez High School seven years ago, he found a culture of low achievement and skepticism about academic success, coupled with weak student performance on standardized testing. “As a new principal, you look around to see what is working and what isn’t, and I noticed this group of kids who dressed in jackets and ties, seemed more motivated, and seemed to be having a good influence on their friends.” That was his first introduction to Genesys Works, and he became a strong advocate for the programme and its beneficial impact on the school community. By the end of De Leon’s tenure, about five per cent of Chavez seniors were participating in Genesys Works internships. (In fact, on his retirement from the Houston school system last year, De Leon joined the national office of Genesys Works as Director of Educational Initiatives.)⁴³

Genesys Works has found that “buy in” to the programme concept on the part of school principals is essential to programme success,⁴⁴ but the model does not require financial investment from school systems and operates with only modest demands on the time and resources of volunteer staff. A “School Champion” – sometimes the principal, but often a teacher or guidance counselor – serves as the principal school liaison with Genesys Works. The School Champion helps with activities that support a structured year-long programme of recruitment and intake, which may include organizing in-school announcements and presentations, encouraging individual students to apply, and providing some

⁴¹ List of Author Interviews (Osborne), p. 33

⁴² List of Author Interviews (Kongkosonkichkan), p. 33

⁴³ List of Author Interviews (De Leon), p. 33

⁴⁴ List of Author Interviews (De Leon), p. 33

supplemental personal support to programme participants.⁴⁵ (Most of Genesys' direct mentoring and support activities are the responsibility of its own Project Coordinators, and most Genesys training and college-preparation activities take place at Genesys' own facility.) Internships take advantage of existing school programmes that permit students to attend school on reduced schedules or give academic credit for employment during a student's senior year.

Employers

The value of the programme to employers is most clearly demonstrated by the growing number of clients who are willing to pay for Genesys interns – at a fee of US\$15 to US\$19 per hour – on an ongoing basis, year after year.⁴⁶ Genesys programme staff indicate that they have approximately an 85 per cent client retention rate year from one year to the next, and have generally been able to recruit new clients to compensate for this 15 per cent turnover and sustain an additional 10-20 per cent growth in internships each year.⁴⁷ For Houston, recent year-by-year internship numbers are:

2010	100 students placed in jobs
2011	146
2012	168
2013	193
2014	220 (projected) ⁴⁸

According to the CIO of one large Houston-area Genesys client, most employers need to see Genesys internships in action before they will believe in the model. "If you come up to them cold and ask them to employ high school students in real jobs, they won't take you seriously, but once they see this group, they are amazed. These are professional-looking, professional acting people who are doing real work and adding value on their teams. In the office, we don't call them interns, we just call them by their names."⁴⁹ Genesys-Houston's business development team stresses the near-impossibility of "selling" the model on a "cold call" basis, and emphasizes that it would not be possible to build Genesys' client base without a consistent record of success stories leading to referrals from satisfied employers.⁵⁰

A study by Accenture showed that Genesys offered talented staff at a highly competitive rate – depending on the job category, Genesys' fees are about half the cost of conventionally-qualified contract workers and about 10 per cent less than some comparable social enterprises with a similar employment mission.⁵¹

In addition to providing a cost-effective source of talent for internship positions, Genesys interns have provided a source of long-term hires for some of Genesys' clients. Although long-term data was not

⁴⁵ List of Author Interviews (Drummond), p. 33

⁴⁶ List of Author Interviews (Kongkosonkichkan), p. 33

⁴⁷ List of Author Interviews (Osborne), p. 33

⁴⁸ Houston Recruitment Plan, 2013-14

⁴⁹ List of Author Interviews (Carillo), p. 33

⁵⁰ List of Author Interviews (Kongkosonkichkan). p. 33

⁵¹ Accenture, Strategic Growth Study, 2012

systematically tracked or available, many Genesys alumni have returned to their former employer as summer interns while they were in college, and some have been hired full time after acquiring their degree.⁵²

The satisfaction that comes from participating in initiatives that benefit the community – especially ones that also make business sense – is also a significant factor in employers’ enthusiasm for participating in the programme. In particular many clients’ mid-level managers, especially younger managers, say they get great personal and professional satisfaction from serving as mentors to young Genesys interns.⁵³

Key success factors and lessons learned

Alvarez identified four factors that were critical to the programme’s success and evolution:⁵⁴

1. Finding effective ways to draw students into the programme. Establishing partnerships with public schools and ensuring support from principals and committed “School Champions” was a necessary precondition for success.

2. Securing meaningful internship slots. Building credibility with employers, providing quality interns, and presenting a compelling value proposition have been the keys to sustaining and growing the number of employer clients.

3. Well-chosen staff and infrastructure. The programme’s transformative impact on students depends on having skilled and committed staff with a strong sense of mission and a willingness to be accessible to students dealing with personal, academic, and workplace challenges. Conducting the programme in a physical setting that impresses and excites the students also has a positive impact on students’ attitude and professionalism.

4. Funding. The programme’s sustainability and growth have been greatly enhanced by its successful funding model and the ability of employer fees to sustain most of the programme’s costs.

In the course of the programme’s operations, Alvarez and his team learned some key lessons about ensuring that these success factors were in place:

1. It took great persistence in the early years of the programme and requires continuing effort today for Genesys to secure new business clients. Many employers simply will not believe – until they actually see for themselves – that high-school-age young people can be effective members of their work teams.
2. Consequently, referral business is critical to the programme’s continuance and growth. The ability to sustain the existing client base and develop new clients requires that interns themselves are consistently well prepared and effective on the job; successful internship experiences provide a continuing source of personal referrals from satisfied employers.

⁵² List of Author Interviews (Kongkosonkichkan), p. 33

⁵³ List of Author Interviews (Carillo) p. 33; also Accenture, Strategic Growth Study, 2012

⁵⁴ Interview follow-up, personal communication, Alvarez

3. In order to provide high-quality interns for clients, and ensure high-quality internships for students, it is essential for Genesys to be effective in preparing students for their new roles and new corporate environments. The Professional Skills curriculum and ACHIEVER model were developed as part of Genesys' close attention to the developmental needs of students and the requirements of employers; this element of their training remains their own creation while they generally obtain technical curricula and training from outside vendors.
4. Finding passionate and committed staff is essential, according to Alvarez, for making the programme succeed: personal relationships with students are a major factor in creating transformation in their lives, and staff must be enthusiastic about a support role that may involve late-night calls, and a need to talk through a wide range of students' personal challenges.
5. The location and physical facility of the programme can have strong impact on students. Genesys Works was originally located in a warehouse building on the outskirts of Houston. Alvarez felt this sent the wrong message about the programme's vision and goals. As soon as he was able, Alvarez and his team relocated to an impressive downtown hi-rise building in order to make a strong impression on the programme's young participants and make it clear that they were entering – and welcome in – a new world.

Based on additional lessons learned, Genesys Works is seeking to implement additional service and process improvements on an ongoing basis (see section, "Future Plans," p. 28).

Sustainability, replicability and scalability

Genesys' mission to "transform the culture of secondary schools" shapes its strategic planning for sustainability, replicability, and scalability in several distinct ways:

Sustainability: While Genesys is already distinguished by the high percentage of operating costs that are met directly from employer fees, it is also reviewing a recent study it commissioned from Accenture on strategic growth options, which may provide guidance for increasing its earned revenues by expanding its service offerings, penetrating new market segments, and adjusting its client fees.

Replicability: According to Alvarez, there are "significant capital costs" – of the order of US\$1 million per site – that are associated with opening new Genesys Works offices in additional cities.⁵⁵ This factor limits the replicability of the programme in new geographies and creates a requirement for significant philanthropic support for such expansion. For example, a substantial grant from the AT&T Foundation made it possible for Genesys Works to expand into the San Francisco area in 2013. But programme replication can also occur without the creation of new sites – for example, by expanding the Genesys model to include additional career paths and additional industry sectors, in addition to the current focus on IT, engineering, and accounting.

Alvarez believes that the ongoing strategic review of Genesys may make it possible to identify those elements of the model with the highest impact on students while allowing "higher cost" elements to

⁵⁵ ⁵⁵ List of Author Interviews (Alvarez), p. 33

drop out. If it is possible to specifically identify the highest-impact and most cost-effective elements of the Genesys programme, then it may be possible to create clearer guidelines for replicating Genesys' success in a wider range of programme models, and among a wider range of partners – offering what Alvarez calls “Genesys in a box.”

To explore additional low-cost, high impact programme elements, Genesys seeking to identify “low-touch” supplements to its existing services, including its “pipeline programme” and outreach to parent and community “influencers.” Genesys intends these initiatives to help it build recruitment volume and reduce attrition among applicants and programme participants.⁵⁶ Programme leaders believe that “behavioural economics” offers ways to leverage rapid and low-cost interventions that can incentivize and reinforce positive behavioural change within the programme.⁵⁷

In addition to exploring new market opportunities and leaner programme models, Genesys is seeking to enhance the replicability of its model by better documenting and standardizing its internal processes. Matt Heath, Genesys' recently hired VP of Programme Effectiveness, believes that Genesys is currently at a scale where it is appropriate to evolve from an “inspired leadership” model to a “data-driven management” model. He and Alvarez have been convening staff meetings across Genesys sites to identify best practices, standardize job roles and descriptions, and apply them more uniformly across the organization. They are improving internal software for programme monitoring and knowledge sharing, including the adoption of a “dashboard” for regional managers and regional staff that provides regular reporting on programme elements against key milestones.⁵⁸ They have implemented a one-week annual retreat for the entire national organization, which provides an intense bonding and learning experience and sustains a clearer and more uniform organizational culture.⁵⁹

Scalability: Alvarez maintains that there are two ways to scale: “go wide or go deep.” He thinks that, without excluding expansion to new markets or new geographies, the most effective immediate strategy for Genesys may be to increase the penetration of its model within the schools where it operates, and within its potential local client base (Fortune 500 and 1000 companies) in the cities where it operates.

A major reason for “going deep” relates to Genesys' vision of transforming underperforming secondary schools. In Houston, the 20 schools currently partnering with Genesys graduate about 7000 students each year.⁶⁰ While explicit goals and timelines for future growth have not been established by Genesys at this time, engaging 700 of those 7000 seniors each year would meet the 10 per cent “critical mass” and “tipping point” estimate that has been identified in strategic programme thinking. At present, Genesys provides about 200 internships per year in Houston.

To achieve this level of programme growth, Genesys would need to significantly expand available internship slots at its client sites. It is drawing, again, on the Accenture strategic growth study to identify potential market opportunities based on additional career tracks and the small-to-medium-sized

⁵⁶ List of Author Interviews (De Leon), p. 33

⁵⁷ Interview and follow-up, Heath

⁵⁸ List of Author Interviews (Heath), p. 33

⁵⁹ List of Author Interviews (Alvarez), p. 33

⁶⁰ List of Author Interviews (De Leon), p. 33

business segment. Genesys is also considering ways to raise its media profile, perhaps in partnership with PR staff at client companies, as a way to positively impact both recruitment supply and business demand.

While the key current constraint on programme growth is the availability of internships among employer clients, scaling from 200 to 700 internships per year will also require Genesys to attract significantly more student applicants. Given that only about 1/3 of current applicants are invited for training (and only about 70-80 per cent of those accept and successfully complete the training), Genesys would also like to attract more “high quality” applicants (without compromising its demographic targeting) in order to reduce attrition in the training and internship phases of the programme.⁶¹ One of the key strategies for accomplishing this goal is the creation of a “Pipeline Programme” to build interest in Genesys among students at earlier grades.

The Pipeline Programme is the current responsibility of Dan De Leon, Genesys’ Director of Education Initiatives. It is an abbreviated version of Genesys’ Professional Skills Curriculum adapted for younger students – at the 9th-, 10th-, and 11th-grade levels – and intended to introduce them to the world of business and to the opportunities available to them in corporate careers. It will be piloted beginning in January, 2014, starting with fifty 9th-grade students in each of three schools (for a total of 150 students), and gradually expanding to 200+ students at each grade level. Students will attend six 90-minute sessions in school facilities, at Genesys’ Houston office, and at client worksites, with sessions spread out across the school year. Content will be adapted to the attention span of this younger group, but De Leon’s hope is that this programme will pay dividends in raising the profile of the programme in schools and motivating applications to the summer and internship programmes.⁶²

Future plans

Genesys’ ongoing strategic review process has identified goals for the future that fall into three broad categories (see also Areas for Improvement, below, p. 31):

1. Improving the delivery of services to programme participants. Priorities include improved services to alumni to make sure that the college experience is successful for them; improved engagement with students and student “influencers” to ensure a high-quality recruitment base and reduce avoidable programme attrition⁶³; and more consistent customer service to employer clients, in part through better allocation of the responsibilities and workloads of Programme Coordinators.⁶⁴

2. Improving organizational effectiveness. Genesys is undertaking a variety of initiatives to improve its organizational performance.

IT-focused initiatives include: streamlining and standardizing programme data capture within the Salesforce system in order to make data collection, comparison, and analysis easier; the creation of

⁶¹ Interview and follow up, Drummond

⁶² List of Author Interviews (De Leon), p. ww

⁶³ List of Author Interviews (De Leon), p. 33

⁶⁴ List of Author Interviews (Kongkosonkichkan), p. 33

dashboards of programme data to improve management resources and response time; and the development of internal “cloud”-type storage for programme documentation and data. The goal is to improve programme monitoring and evaluation both in real time and over the long term, to drive better and more agile management decisions; and to improve internal knowledge sharing.⁶⁵

Genesys is also undertaking a review and standardization of job descriptions to rationalize the Programme Coordinators’ multiple roles and to add specialized staff for business development, IT, and alumni engagement. Staff morale, motivation, and sense of mission – in our observation, already strikingly high – will be further reinforced by a variety of talent management initiatives including more regular systems for evaluation and professional development and the implementation of an organization-wide annual retreat.

3. Strategic market expansion: Strategic growth targets are currently under internal review and have not yet been decided.⁶⁶ The 2012 Accenture study provided a quantitative estimate of the potential market for the programme as an aid to this strategic planning process. If one potential goal is to reach “critical mass” within participating schools, Genesys would need to provide about 700 internships per year in Houston (up from the current 200) and about 2000-2800 per year if all four regional offices were operating on the same scale as Houston.⁶⁷ In order to achieve these goals, the organization would need to undertake more aggressive business development initiatives, possibly focusing on additional professional paths (such as customer service for finance and insurance products) and a wider range of potential business partners (perhaps including smaller and medium-sized businesses). It would also need to step up school-focused activities that attract programme recruits, such as its pilot “pipeline programme,” alumni events in schools, and more attention to developing enthusiastic school “champions.” The organization is also considering ways to raise its media profile, possibly by providing more regular press releases and other media relations initiatives in conjunction with client media operations.⁶⁸ This could help generate “pull” business from employers who hear about the Genesys model and also assist with student recruitment.

Conclusion

Why is this programme important/relevant/unique/good to replicate in other locations/sectors?

The example of Genesys Works should be of broad relevance to practitioners with an interest in innovative apprenticeship models, in the expansion of business-education links and partnerships, and in enhancing school-to-work transitions especially for disadvantaged young people.

The programme is notable for creating a relatively sustainable and cost-effective model for pulling employer investment into the youth training space, thereby expanding opportunities for meaningful first

⁶⁵ List of Author Interviews (Heath), p. 33

⁶⁶ List of Author Interviews (Alvarez), p. 33

⁶⁷ Accenture, Strategic Growth Study, 2012

⁶⁸ List of Author Interviews (Rhodes), p. 33

work experiences for young people. By carefully targeting areas of sustained employer demand, effectively preparing young people for entry level work, and keeping programme costs manageable, Genesys has made a successful business case for corporations to invest in professional entry-level internships for high-school-age students, which can be combined with ongoing study during a student's senior year of secondary school.

The Genesys model also addresses challenges specific to disadvantaged students, who are not always served by standard apprenticeship programmes. It specifically focuses on issues related to these students' motivation, confidence, and career information barriers to success.

How does this programme compare to ILO's standards for high quality apprenticeships?

Key elements of the Genesys programme fall broadly within ILO's definition of a "quality apprenticeship." Genesys focuses on creating "meaningful internships" and its careful selection of target occupations allows the programme to provide economically relevant training leading to significant career opportunities. Year-long internships provide substantial work experience and the opportunity to learn and master skills on the job. The programme protects its participants against exploitation by providing paid internships, by ensuring that internship content is "professional" and career related, and by scheduling internships in a way that does not interfere with the completion of schooling. In fact the programme emphasizes students' pursuit of continuing education and provides significant support for students' post-internship transition to higher education.

The programme includes elements of the "dual" apprenticeship model, although classroom and work experience are not as rigorously coordinated as under that model. Genesys provides both job-specific and broad professional training prior to the beginning of an internship, and the work experience element is combined, on a split-day schedule, with regular secondary-school classwork. Employer partners commit to providing real, entry-level jobs side-by-side with other professionals in the workforce, and to providing appropriate on-the-job training and mentoring so that interns steadily increase their professional skills and are successfully introduced to the professional corporate world.

The programme differs from formal apprenticeship in several key ways: most fundamentally, it is not intended to channel students immediately into long-term work, but instead aims at a first, substantial work experience that can clarify and motivate students' pursuit of further education. Although the programme trains participants to perform specific occupations, it is less focused than traditional apprenticeship on obtaining formal vocational certifications and credentials. And although employers commit to providing significant on-the-job training for designated occupations, the programme is not structured around a formal training agreement and does not represent a registered apprenticeship.

At the same time, the Genesys model supplements the traditional apprenticeship model by successfully addressing some challenges that ILO has recognized in traditional apprenticeships. Genesys effectively targets disadvantaged students, an area where traditional apprenticeship models are not always effective. At a time when the ILO is concerned about a shortage of employers willing to participate in

apprenticeship programmes, Genesys has shown effectiveness in inducing employers to create and pay for training slots and invest in training young people new to the workforce.

Areas for improvement

Genesys' ongoing internal review process, and the findings of the study it commissioned from Accenture, lay out an aggressive agenda for continuing to improve the Genesys model.

It is especially important for Genesys to improve monitoring of long-term outcomes and to improve services to its alumni. If Genesys' mission is to instill a more ambitious career vision in its participants and persuade them to go on to college, then it is very important that those newly-motivated students actually experience success in college and realize the long-term benefits of higher education. Social, financial, and other barriers that interfere with college completion can prevent Genesys alumni from achieving their goals after making an enthusiastic start. Genesys is exploring and piloting ways to create social support networks for its alumni, including the use of social networking websites and the creation of on-campus alumni associations. It is working to link alumni with mentoring programmes, paid internship opportunities, and ongoing financial aid opportunities. It is also working to improve its systems for keeping in touch with alumni and keeping track of long term individual outcomes, as well as integrating alumni information into its Salesforce system.

It is also clear that while the Genesys model works for a great many of its participants, it does not work for all of them – the programme experiences significant attrition in the intake, training and internship phases. In part, this challenge can be addressed by improved selection processes, but Genesys is also interested in finding ways to improve support for programme participants. Genesys is focusing on options based on behavioural economics, including stronger mobilization of family, peer, and teacher “influencers,” reinforcement activities based on text messaging, small “nudge” and reward programmes. It is also piloting a substantial “pipeline” programme to raise the profile of the programme in schools, starting in younger grades.

These areas for improvement in programme outcomes may also be supplemented by a range of organizational improvements currently under strategic review and/or piloting. These include the implementation of better information systems for programme monitoring and evaluation, more consistent client service, refinement of effort-to-outcome analyses to identify which programme elements truly make a difference for young people, and the deployment of better knowledge management systems and internal knowledge-sharing within the organization.

These programme management improvements in turn may also be supplemented by strategic expansion of the programme, focused on “going deeper” in schools to attract more candidates and generate a “critical mass” of participation, and on developing new markets for Genesys internships, among a wider range of occupations and business categories. Both market development and school penetration may also be facilitated if Genesys adopts a more aggressive media presence, helping to spread the word about its accomplishments in local communities and among potential local business clients.

Toward the future

Genesys Works has created a highly promising model for bridging the gap between the private sector and secondary schools, with impressive documented results to date. Genesys' ongoing strategic review is a sophisticated process with the potential to further refine, improve, and grow the programme significantly. The creation of a highly-replicable "Genesys Works in a box" model could generate widespread impacts in transitioning youth at risk into meaningful careers and helping them realize their full potential.

Sources

Internal Genesys Works Documents

Handbooks, Toolkits, etc.

School Champion Recruitment Toolkit 2013
Houston Recruitment Plan 2013-14
2013 Student Interview Filters
Career and College Connection Manual 2012-13
Client Handbook 2012
Staff Employee Handbook 2013

Marketing and Recruitment Brochures, Flyers, etc.

Recruitment FAQs
Student Recruitment Flyer, "Steps to Earning a Genesys Works Internship"
Marketing Brochure (untitled)

PowerPoint Presentations, Diagrams, and Other Materials from Strategic Review Process

Accenture, 2012, Genesys Works Strategic Growth Study
Board of Directors - Program Effectiveness Update, October 2013 (presentation)
Genesys Works Strategic Growth Plan (DRAFT), August 2013
Improving Outcomes in 2014 and 2015 (presentation)
Multiple internal performance dashboards from 2013
Pipeline Curriculum
"Team 5" (Rice University) Strategic Growth Recommendations (presentations)

- Assessment of Strategy Options, March 2013
- Strategy Recommendations, April 2013
- Detailed Recommendations, April 2013

"Team 12" (Rice University) Growth Strategy (presentations)

- Strategy, March 2013
- Detailed Designs and Plans, April 2013
- Genesys Works Growth Strategy, April 2013

List of Author Interviews (conducted December 9, 2013)

Rafael Alvarez, CEO and Founder of Genesys Works

Matt Heath - VP of Program Effectiveness - GW National Office

Dan De Leon - Director of Educational Initiatives - GW National Office

Peggy Rhodes - Director of Development - GW Houston

Pawn Kongkasonkichkan, Director of Business Development - GW Houston

Lindsey Drummond - Manager of Student Recruitment - GW Houston

Wendy Osborne, Program manager/Manager of Student Training - GW Houston

Maria Pickett - Program Coordinator – GW Houston

Shannen Garza – Program Coordinator – GW Houston

Jesse Carillo – CIO, Hines (employer of interns)

5 female and 1 male interns

Case Study 2: Year Up

Introduction

Purpose of this case study

This case study reviews the design, history, and impact of Year Up, a U.S.-based apprenticeship-style programme⁶⁹ that combines classroom-based training and structured work experience to help unemployed young people in urban communities “bridge the opportunity divide.” Year Up is notable for its effectiveness in engaging and transforming disconnected youth, and for creating a strong value proposition for employers which has led to a continuing expansion of available internship/apprenticeship slots. It is also notable for the rigor of its programme development, monitoring/evaluation, and documentation, and its strong focus on strategies for replicating and scaling its model.

Programme at a Glance

The Year Up programme provides urban youth with a year of rigorous training and work experience to help them move “from poverty to a professional career.” The programme provides an intense career-preparation experience based on “high expectations and high support.”

The first six months of the Year Up experience constitute the “Learning and Development” phase – a full-time programme of classroom-based training, team activities, and individual and group mentoring during which students acquire job-relevant technical, academic, and professional skills. This experience prepares students for a further six-month period of full-time internship/apprenticeship with one of Year Up’s corporate partners, where they learn to apply their new skills in the workplace and develop additional career-related skills on the job. At the conclusion of their internship, students graduate from the programme and seek regular employment based on their substantially enhanced skills and work experience, often directly with the corporate partners that provided them with internships.

Qualified candidates are aged 18-24 and have at least a high school (secondary) degree or GED (secondary equivalence) certificate. A substantial portion of Year Up’s students come from severely disadvantaged backgrounds. Participants receive a stipend during both the classroom and internship phases of the programme, and typically can receive up to 23 college credits (equivalent to about 1½ full time semesters of study) for completing the programme.

Since its founding in Boston in 2001, Year Up has served more than 7500 young people. It currently operates in 11 U.S. cities and serves about 1900 students per year, with programme cycles beginning twice annually. External reviewers have documented substantial impacts on the incomes and career opportunities of programme graduates, including starting salaries averaging 30 per cent higher than those of a control group, and acquisition of career-oriented IT and financial operations jobs not obtained by any control group members.

⁶⁹ Year Up itself is an apprenticeship programme within the broad context of ILO policy – see further discussion on pages 54 ff. below.

For most of its history, Year Up has specialized in preparing its students for information technology and financial operations positions, though it has recently begun further diversifying its curricula. Year Up develops and retains ongoing relationships with employer partners that have steady and continuing demand for entry-level personnel, offer entry-level salaries that are significantly higher than those otherwise available to programme applicants, and offer clear opportunities for further career development. These employers pay Year Up for “internship slots” and this revenue contributes about 40 per cent of Year Up’s operating budget. Year Up works closely with local employers to develop specifically relevant classroom training for available positions. The programme also works with employers to create internship models at the workplace that provide for further mentoring, coaching, and skills development during the employer-based phase of the programme.

Year Up is currently undertaking pilot initiatives to embed its model within post-secondary educational institutions and, eventually, directly inside large firms. By sharing resources with these organizations, Year Up expects to reduce programme costs, serve a wider range of students and career areas, and more rapidly scale its programme impacts.

Research Methodology

This case study is based on a literature review and interviews with Year Up staff, students, and partners. Because of Year Up’s commitment to transparency and documentation, we were able to draw on past programme analyses, evaluations, and case studies undertaken by Harvard Business School, the University of Wisconsin-Madison, the Economic Mobility Corporation (EMC), the Workforce Strategy Center (WSC), Jobs for the Future (JFF), Corporate Voices for Working Families, and other reputable external reviewers. We also reviewed internal documents from Year Up, including quality monitoring and evaluation data, planning documents, and a recent internal survey of long-term outcomes for programme graduates. We visited Year Up’s national office in Boston, MA and local programme offices in both Boston, MA and Miami, FL. We spoke with Year Up’s founder, Gerald Chertavian, with key personnel in programme development, marketing, and IT, and with instructors and counselors working directly with Year Up students. We observed an enthusiastic “Friday Feedback” – a group mentoring and support activity for students -- and interviewed several students who were currently in the programme as well as graduates who were already in the workforce. We also interviewed education partners at Miami Dade Community College, where a new on-campus pilot programme is being launched.

Context

Discussion of relevant skills issues (demand vs. supply) specific to the IT and Financial Operations sectors

In March of 2013, the U.S. unemployment rate was 7.6 per cent, representing nearly 12 million unemployed persons.⁷⁰ At the same time, U.S. employers faced nearly 4 million unfilled vacancies and reported difficulty in finding appropriately qualified hiring candidates. This result is attributed, in part, to a “skills mismatch,” where available workers simply lack the very specific skills that are currently in demand among employers.⁷¹

The overall patterns of mismatched skills are complex. But certain features stand out which are especially relevant to programmes like Year Up, which aims to “train students in jobs that are both here today and growing tomorrow”⁷²:

- For entry-level positions in particular, employers are currently having difficulty finding applicants with “vital skills such as communication, teamwork, professionalism, and critical thinking.”⁷³ The problem is particularly acute for employers who hire for a large and continuing volume of entry-level positions.
- Some industries offer relatively high salaries, even for mid-level skilled workers in entry level positions, because of high rates of growth and high demand for qualified workers. Year Up’s own research identified Information Technology and Financial Operations as “two of the skillsets in highest demand in corporate America.”⁷⁴
- Many such entry-level positions, while requiring only “mid-level”⁷⁵ skills at the outset, offer access to well-structured career paths that provide substantial opportunities for income growth as further, well-defined skills and credentials are acquired. Careers in Information Technology and Financial Operations again fall into this pattern.

Based on its continuing dialogue with employers, Year Up has sought to identify specific occupations that are now in high demand and are likely to remain so, that are accessible to candidates with the sort of training Year Up can deliver, and that offer both relatively high entry-level pay and good opportunities for further career development. While the list continues to evolve along with the labour market, targeted occupations include, within the IT field: PC network specialists, security analysts and administrators, database management and reporting, and quality assurance positions; within the Financial Operations field, targets include portfolio accountants, fund administrators, and trade reconciliation clerks.

⁷⁰ U.S. Bureau of Labour Statistics, The Employment Situation, March 2013

⁷¹ New York Times, March 6, 2013

⁷² Chertavian (2012)

⁷³ Chertavian (2012-13) p. 10

⁷⁴ WSC (2009) p. 10

⁷⁵ We take our definition of “mid-level skills” from “America’s Forgotten Middle-Skill Jobs,” downloadable at http://www.urban.org/UploadedPDF/411633_forgettenjobs.pdf: “We define ‘middle-skill’ jobs as those that generally require some significant education and training beyond high school but less than a bachelor’s degree. These postsecondary education or training requirements can include associate’s degrees, vocational certificates, significant on-the-job training, previous work experience, or generally ‘some college.’”

Background of the “backbone” programme organization

According to founder Gerald Chertavian,

“Year Up was founded in 2001 . . . in order to help close the gap between disconnected young adults and open job vacancies by providing urban young adults with the skills, experience, and support that will empower them to reach their potential through professional careers and higher education. The goal is, in one year, to take an individual from poverty to a professional career.”⁷⁶

Chertavian had been developing the core vision behind Year Up for all of his adult life.⁷⁷ In his early 20s, while just starting out on Wall Street, Chertavian participated in a local “Big Brother” programme, which pairs adult mentors with inner-city youth. He credits the experience with teaching him to respect the talents and energy of individuals from disadvantaged backgrounds who, despite their personal abilities, may never be able to achieve mainstream careers because they lack resources, connections, education, and access to career channels. A few years later, in his application to Harvard Business School, Chertavian outlined the first version of what would become “Year Up:” a programme to provide intensive mentoring and support to help young people cross what he called the “opportunity divide.”

In his mid-30’s, Chertavian sold the technology startup that he had helped build, and found himself with the financial security and the resources to invest US\$500,000 of his own funds in making his vision a reality. In some ways, Chertavian’s lack of non-profit experience was an advantage to him: he had no illusions about knowing how to build such an organization, and aggressively networked within the Boston nonprofit and philanthropic community to create a team of experts, partners, supporters, and internal leaders for the Year Up startup. A key early inspiration came from Stanley Pollack’s Boston-based Center for Teen Empowerment⁷⁸, which taught Chertavian important lessons about how to promote personal transformation among young people with significant barriers to employability. Year Up adopted Teen Empowerment’s concepts of “contract” and “feedback” – a respectful but frank approach based on clear expectations and commitments, strong peer bonding, and positive psychology.

Year Up began its operations in Boston in 2001 with a single class of 22 students. Year Up received strong support from the Boston philanthropic community, including an early grant from the Boston Foundation which functioned as a “seal of approval” in acquiring additional donors and employer partners. Chertavian’s own financial-industry networks helped him attract early engagement from prominent Boston financial, banking, and other firms. Between 2005 and 2006, Year Up expanded from its Boston base to open offices in Providence, New York City, and Washington. At that time it set a goal of eventually opening a total of 25 offices across the U.S.

Year Up’s second round of programme expansion was funded by a successful capital campaign in 2007. The campaign planned to raise US\$18 million but ended up oversubscribed at US\$20 million.⁷⁹ Between 2007 and 2012 Year Up expanded to six additional regions: Atlanta, Miami, Chicago, San Francisco, Silicon Valley, and the Puget Sound area.

⁷⁶ Year Up Mission Statement, cited in Chertavian 2012, and 2012-13.

⁷⁷ See Chertavian, A Year Up, 2012 for inspiration and early history of the programme.

⁷⁸ See: <http://www.teenempowerment.org/>

⁷⁹ Grossman, HBS Case Study (2008)

In the process of transforming itself into a national organization, Year Up reconfigured its Board membership to attract more national representation, and reorganized its executive leadership to focus on programme design, marketing, and fundraising. It adopted a structure of local programme offices, each run by an executive director and with dedicated staff for instruction, counseling, and outreach to employer partners. Local offices focus on marketing the programme to employers, recruiting candidates, operating core programme training and mentoring functions for candidates, and making and monitoring internship placements. Each programme office is supported by advisory boards made up of leaders from the local business community.

In selecting new cities for programme expansion, community infrastructure is an important consideration: major criteria are the opportunity to partner with local community colleges that are willing to grant degree credit to Year Up participants, and the availability of public transportation so that low-income students have good physical access to jobs. The potential for local business leadership to participate in local Year Up boards and to sustain a philanthropic investment are also significant factors in determining expansion locations.

In 2012 Year Up launched a second, US\$55 million capital campaign which is currently underway. Proceeds will be devoted not only to modest further expansion of the established Year Up model in three new cities, but to a new initiative for research, development, and implementation of additional programme models that can potentially be scaled much more extensively.⁸⁰ These models are designed to better integrate Year Up with the U.S. community college system, to help large employers willing to launch their own programmes on the Year Up pattern, and to support a wider range of young people following a more diverse range of early-career paths through work and education.

Background of all other organizations (partners) involved in the programme

Employer Partners

Year Up currently (2013) works with 273 employer partners across the U.S. This diverse range of companies includes leading technology firms like Microsoft and Google; leading financial firms like American Express, Bank of America, Capital One, Fidelity Investments, Goldman Sachs, JP Morgan Chase, Morgan Stanley, State Street Bank, and Wells Fargo; leading internet and communications firms like AT&T, Comcast, and T-Mobile; internet firms like AOL, Facebook, LinkedIn and Twitter; accounting and consulting firms like Accenture and Deloitte LLC; federal agencies like the Federal Reserve Banks of Atlanta and Chicago, and many others.⁸¹

Corporate partners contribute approximately US\$21,000 for each apprenticeship slot, and these fees fund about 40 per cent of Year Up's programme operations including the stipend for participants. To ensure an expanding supply of internships/apprenticeships, it is essential for employer partners to see a clear business opportunity in partnering with Year Up.

To attract new employer partners, Year Up aims its initial outreach at senior corporate executives. Chertavian's own network from his previous career helped him engage Year Up's first partners in 2001, and the organization continues to leverage the networks of its national and local board members, and

⁸⁰ Year Up Prospectus, The Opportunity Campaign, 2011

⁸¹ See Year Up's website(<http://www.yearup.org>) for a current, complete list

its well-connected local Executive Directors, in this high-level marketing approach. Once executive-level “champions” buy in to the Year Up model, they will generally designate mid-level staff to implement the programme in specific departments.

Year Up aims at establishing ongoing relationships and repeat business with employers – as of early 2013, 44 per cent of partners had hosted and hired at least one Year Up graduate in each of the past three years, and the largest partners may host 20 interns per cycle.⁸² Employers widely report that they view Year Up interns not only as effective and resourceful short-term staff but as a promising source of new entry-level hires.

Participating employers are expected to provide supplemental coaching and mentoring during the internship period as well as additional on-the-job training in economically relevant skills. Although this element of the programme is more flexible than Year Up’s own in-house training curriculum, Year Up has worked with large employers, including AOL and Bank of America, to develop more formal and structured models for employer-based training and mentoring programmes during the internship phase.⁸³ Starting in 2014, Year Up plans to pilot programmes that embed the Year Up model directly within large businesses, integrating it with corporate education and career advancement programmes to help employees acquire postsecondary degrees.

Community College Partners

While Year Up originally partnered with community colleges primarily in order to ensure degree credit for its participants, it has begun piloting programmes in Baltimore, Northern Virginia, Miami, and San Francisco that make greater use of community college-based training resources and that allow programme financing to benefit from government financial assistance to students. The U.S. federal government’s Pell Grant programme provides direct grants to low-income students for higher education expenses, based on financial need. Year Up community college partnerships may include revenue-sharing from subsidized student tuition payments: one such financing model has been piloted at Northern Virginia Community College (NVCC), where the local Year Up office functions essentially as an NVCC satellite campus. 85 per cent of student tuition paid to NVCC by Year Up participants is refunded to Year Up to cover programme operating costs.⁸⁴

This evolution of the Year Up model is intended to help the organization meet its ambitious goals for scaling its programmes and impact. It is also intended to adapt the model to work with more diverse combinations of education and early career development, suitable to an even wider range of potential programme participants.

Policy context

The U.S. Bureau of Labour Statistics projects that between now and 2020, nearly 40 per cent of the jobs that will be added in the U.S. economy will require more than a high school (secondary) education or GED (high school equivalency) certificate. Employment demand in these mid- and higher-level skill

⁸² “Year Up’s Business Proposition”

⁸³ See Case Studies on AOL and Bank of America by Corporate Voices for Working Families

⁸⁴ See “Million Person Model”

categories will grow by 18-20 per cent over this period, while job opportunities for candidates with only secondary education credentials will grow at a slower rate of 12 per cent.⁸⁵

With the exception of relatively well-paying skilled trades jobs, occupations in the U.S. that require no more than a high-school/GED degree provide median wages that rarely exceed the low to mid US\$20,000s, well below the national median wage of US\$33,840 (May 2010).⁸⁶ As a consequence, young people without more advanced skills have difficulty earning sustainable incomes.

In the U.S., young people on a non-university path most commonly acquire post-secondary skills credentials through community colleges, a network of institutions that provide two-year “associates” degrees or shorter-term vocational credentials for employment. This is an effective path toward a sustainable standard of living for some students. A 2010 study by Carnevale, Smith, and Strohl projects that by 2018, the demand for workers with at least an associates’ degree will exceed supply by about three million positions.⁸⁷

However, in the race to acquire higher skills for emerging job opportunities, young people from low-income backgrounds are particularly likely to be left behind. According to a 2007 study,⁸⁸ these young people are substantially less likely than those from higher economic backgrounds to obtain educational credentials beyond high school: in the U.S., only about 27 per cent of low-income secondary-school graduates, and 4 per cent of low-income holders of GEDs, complete a postsecondary programme within six years of high school graduation, compared to 61 per cent of young people from higher economic backgrounds.

Low income students face multiple barriers to further education and training. Lerman and others have noted the limitations of community colleges as a stand-alone source of economically relevant training:

“Although estimates generally show positive average returns to community college (Belfield and Bailey 2011), the primary benefits appear to go to those who complete occupational and technical programmes. However, even in the case of occupational programmes, apprenticeship programmes may outperform community colleges. . . . Moreover, the gains to entering community college are clearly weak for a large segment of students who fail to complete any college credits. The weak counseling and placement functions in community colleges contribute to these problems (Rosenbaum, Deil-Amen, and Person 2006). In recent years, community colleges have become overcrowded with long waiting lists for many occupational programmes and large classes. The rising enrollment has worsened the problem of an inadequate number of advisers to provide information and guidance to students.”⁸⁹

The consequence for these young people’s employability is severe: Currently in the U.S., 6.7 million young people aged 16-24 have only a secondary school diploma or equivalent, and are neither working nor in school.⁹⁰

⁸⁵ U.S. BLS Projections Overview, March 2010

⁸⁶ U.S. BLS Fastest Growing Occupations with median annual wage comparisons

⁸⁷ Carnevale, Smith, and Strohl, 2010

⁸⁸ Cited in JFF (2010), p. 5, reference on p. 14.

⁸⁹ Lerman, Robert J., Expanding Apprenticeship in the United States: Barriers and Opportunities. Forthcoming.

⁹⁰ Cited in Chertavian 2012-13

A report by the Michigan Educators Apprenticeship and Training Association (MEATA) finds significant advantages for work-based training programmes over a sole reliance on community colleges:⁹¹

- Community colleges require up-front investments from students, while apprenticeships provide paid learning. In apprenticeship programmes, training fees to external providers are generally paid for by employers or by government assistance.
- Possibly as a consequence, degree completion rates (about 36 per cent according to the American Association of Community Colleges) are much lower than apprenticeship completion rates (70 per cent according to Urban Institute).
- Community college has smaller earnings impacts than apprenticeships: US\$90,000 over a lifetime compared with over US\$200,000 (Urban Institute)
- Community college degree content does not necessarily mirror specific skills in demand by employers.
- Community colleges do not have comparable strong linkages to employers.
- Classroom-based community college training does not provide the kind of direct workplace experience, and workplace-related interpersonal skills valued by employers, that on-the-job training provides.

By linking classroom training directly with work experience, Year Up aims at filling current gaps and promoting better practices for helping low-income students use postsecondary education and training resources to build sustainable careers.

Programme Description

Programme elements and goals

Key elements of the Year Up model derive from its focus on creating transformative impacts for formerly “disconnected” young people, in order to give them access to the economic mainstream:

- 1. A strong, respectful culture that promotes learning and change.** In order to “prepare students to learn with a receptive attitude,”⁹² the Year Up team believes that a strong internal culture must reflect the programme’s fundamental values. Early in the development of the programme, the Year Up team came up with six “Core Values” that are now posted on the walls of every Year-Up classroom and inform every aspect of Year Up’s activities:
 - Respect and Value Others
 - Be Accountable
 - Build Trust and Be Honest
 - Strive To Learn

⁹¹ Gonzales, Jennifer, Michigan Educators Apprenticeship and Training Programme, 2010.

⁹² Chertavian, A Year Up (2012)

- Work Hard, Have Fun
- Engage and Embrace Diversity

These principles strongly inform two essential programme features that Year Up adapted from the Boston-based Teen Empowerment programme: **Contract** and **Feedback**.

- Students sign a **Performance Contract** outlining the programme’s values, standards and expectations and are evaluated based on a points system, earning additional points for each week that they maintain standards while losing points for things like lateness, absence, unprofessional dress or behaviour, use of street slang, etc. Loss of points will result in deductions from the student’s weekly stipend, and students who lose all points effectively “fire themselves” from the programme.
 - Year Up’s focus on high standards and professionalism is reinforced by continuous **staff and peer feedback**. Training cohorts are organized into “learning communities” of about 40 students and ten to twelve dedicated staff, who stay together and work together for the duration of the programme. During the Learning and Development phase of the programme, instructors identify “teachable moments,” where they have an opportunity to highlight incidents of exemplary behaviour or poor professionalism. Each week, there is a “Feedback Friday” within each learning community: both instructors and peers give frank but respectful feedback to students according to principles of positive psychology. Positive behaviours are reinforced, while negative behaviours are addressed as “growth areas.”
- 2. An environment of “high expectations and high support.”** Chertavian tells students that “the most respect we can pay you is to expect a lot from you.” The programme insists on punctuality, professional dress and presentation, consistent attendance and timely completion of work. The goal is to acclimate students to the unfamiliar and rigorous demands of a professional corporate workplace. Year Up’s focus on high expectations is accompanied by intensive support services for students that help them deal with challenges that could interfere with their success.
- Year Up students typically come from backgrounds with multiple risk factors, including family poverty, patterns of substance abuse, exposure to violence and criminality, and housing, health, and transportation problems. Many students suffer from depression or post-traumatic stress disorder, or have been victims of sexual abuse.⁹³ Year Up provides on-site access to social workers and clinical psychologists to help students stay on course despite the challenges of difficult lives – which may range from having a laptop stolen, to losing their apartment, or even the violent death of a family member.
 - Year Up instructors are selected and trained so that they understand the challenges facing their students and can give and facilitate respectful advice and support. Some of these challenges may be very straightforward and practical, such as helping a student obtain a professional wardrobe or deal with social services bureaucracies.
 - Coaching and mentoring is an essential part of the support system for students, and programme staff and instructors are available to coach and mentor students as needed. Year Up also pairs each interested student with an external Volunteer Mentor, a

⁹³ Year Up: By the Numbers, 2013

professional from the local business community who is available at least once a week for one-on-one mentoring activities.

- Peer connections and mutual reliance are strongly cultivated among students within the Year Up programme. During programme orientation, students engage in team-building and trust-building activities to strengthen their bonds with one another. Throughout the duration of the programme, games, activities, and exercises are incorporated into the daily and weekly schedule for each learning community and students are encouraged to turn to one another for advice and support.

3. Rigorous intake, focusing on attitudes more than on prior skills. While eligible candidates must have a high-school diploma or GED to be admitted to the programme, applicants who lack these credentials are offered guidance in obtaining a GED and may re-apply in the future. Year Up’s applicant screening process – which involves an essay and a series of three interviews – focuses primarily on identifying candidates who are enthusiastic and motivated, and who want what the programme can offer them. Candidates must also have a strategy for addressing any barriers to regular attendance at the programme.

- Participants are assessed for fundamental skills (literacy, numeracy, English competency) and for “baseline academic ability” – the ability to learn in a classroom setting and apply what they have learned.⁹⁴ The assessments are intended to uncover individual social or developmental challenges, but these assessments are not used to exclude candidates; instead they are used to ensure that social services and other support are made available according to individual needs, in order to ensure candidate success in the programme and on the job.

4. Emphasis on professional skills. Both the training content and the overall culture of the Year Up programme place a strong emphasis on professional attitudes and behaviours in the workplace. Year up has created a framework called EPIC (for “Empowered, Professional, In-Demand, and Career-Ready”) to describe the desired professional profile of a Year Up graduate.⁹⁵

- **Empowered** – a Year Up graduate:
 - Demonstrates self-awareness
 - Exhibits resourcefulness
 - Perseveres through challenges
 - Embraces lifelong learning
 - Actively participates in closing the Opportunity Divide
- **Professional** – a Year Up graduate:
 - Embodies professional norms
 - Demonstrates motivation
 - Takes initiative
 - Communicates well
 - Collaborates effectively
- **In Demand** – a Year Up graduate:
 - Thinks critically and problem solves

⁹⁴ Personal correspondence with the author, Mariah Peebles, Manager of Influence Knowledge Transfer, Year Up, June 10, 2013

⁹⁵ See “Bold Outcomes” poster

- Demonstrates the foundational technical skills required in his/her career track
- Applies his/her skills effectively in a professional workplace
- Learns new skills and technologies relevant to his/her work
- **Career Ready** – a Year Up graduate:
 - Possesses the tools and tenacity to secure a professional job
 - Markets him/herself to employers
 - Cultivates his/her professional network
 - Plans for career advancement

Professional skills coursework includes topics in business communication, business dress and etiquette, self-presentation, teamwork, leadership, dealing with different personality types, and conflict resolution.

The professional skills acquired by Year Up students, as well as the technical skills in the Year Up curriculum, are intended to prepare students to make a strong favorable impression on employers during their internship. Because Year Up gets so much repeat business from its employer clients, the programme stresses to its students that their own opportunities are the result of the dedication and performance of previous graduates, and that their own success on the job will not only benefit themselves as individuals, but will open doors for future programme participants.

5. **Internship and ongoing support.** The process for matching graduates with internships is the focus of extensive face to face discussions among Year Up staff who know both the students and the available workplaces. Intern orientation begins two weeks before the beginning of the work-experience phase, so that interns have an opportunity to “meet and greet” their future colleagues, can overcome any anxiety about the new workplace, and can be sure they know how to get to the worksite on time their first day. Year Up staff formally survey employer satisfaction twice during each internship and are available as needed to monitor progress and provide coaching and counseling about any problems. Interns return to the Year Up programme office for a full afternoon each week to share experiences and to obtain advice on challenges they may have encountered. Each of these measures helps ensure that interns have a successful experience and are effective contributors in the workplace.
6. **Ongoing employer relationships. Year Up emphasizes continuing communication with employers to** ensure that classroom training aligns with workplace requirements and that interns are well-prepared to contribute in the workforce. Year Up staff conduct an extensive “due diligence” process with employers, guided by an in-house technical manual, in order to understand the specific skills requirements of available positions, as well as work environments and the personal styles of the managers and colleagues their interns will be working alongside.

Because Year Up focuses on entry level IT and technical positions, it has been able to efficiently develop relevant technical training curricula, and to replicate its model in a wide range of regions where, despite varying economic profiles, the targeted occupations reliably represent a significant component of employment demand. This focus allows Year Up to engage with a set of employers, including large national employers, who have a substantial and recurring demand for entry-level positions.

Each local programme office is free to adapt its programme to the details of local employer requirements, but Year Up maintains strong information and communication links for its staff to ensure cross-site knowledge-sharing and organizational learning.⁹⁶ Over time, Year Up has adapted its initiatives to meet specific patterns of employer skills demand. Early in its programme experience, for example, Year Up featured a web development training programme, but within a few years found that the market for those skills had become saturated. Some programme offices have added modules on Microsoft Project and training on the LINUX operating system, and the programme has adjusted its professional skills training to include stronger customer service components. In 2012, in response to employer demand, Year Up began piloting curricula for two new targeted occupations – Project Management and Quality Assurance – to supplement its longstanding emphasis on IT and Finance.

Programme operations and funding

In 2012, approximately 40 per cent of Year Up’s programme revenue (US\$21.9 million out of US\$51.9 million) came from employer contributions for internship positions (averaging about US\$21,000 per position). A tiny amount (less than 0.5 per cent) came from interest income and other sources. The rest of Year Up’s revenue – US\$29.6 million – came from philanthropic contributions.⁹⁷

The model’s substantial dependence on philanthropic contributions is seen by Chertavian as a limitation on the programme’s ability to grow. “You can rely on donations for growth capital,” says Chertavian, “but if you are depending on it for operations that is not going to get you to scale in the long run.”⁹⁸ Among other issues, the need for donor support limits Year Up’s ability to expand into cities without a well-developed high-end philanthropic sector. In an effort to eventually create a fully sustainable and scalable “Million Person Model,” Year Up is exploring and piloting several new programme models.⁹⁹

The first of these models to be piloted is Year Up’s “Career First Pathway” which envisions greater reliance on community college infrastructure and staff for delivering training that can be combined with term-time internships, and rapidly lead to living-wage jobs. A 2012 budget estimate for this model projects an annual cost of US\$632,000 per 40-student “learning community,” about 1/3 of which is for staff and 2/3 for student educational support. About 80 per cent of these costs will be supported by employers, whose contributions will decline to US\$12,600 per internship position; about 10 per cent will be funded by direct federal tuition-assistance grants to students (known as Pell Grants), leaving at present a 10 per cent funding gap to be covered by philanthropic or other funding sources. The projected funding gaps of two other models to be piloted – Year Up’s proposed “College First” and “Learn and Earn” pathways -- are somewhat higher and these concepts are still in development.¹⁰⁰

Programme Results and impact

The effectiveness of the Year Up programme can be documented in terms of:

- The degree of its success in reaching its target audience of “opportunity youth”
- Demonstrated improvements in income and career outcomes for participants

⁹⁶ Personal correspondence with the author, Mariah Peebles, Manager of Influence Knowledge Transfer, Year Up, June 10, 2013

⁹⁷ Year Up 2012 Annual Report

⁹⁸ Author interview, Chertavian

⁹⁹ See “Year Up’s Million Person Model” concept paper (2011)

¹⁰⁰ See “Million Person Model” for detailed financial discussion

- Qualitative descriptions of the programme’s transformative effects on young people
- 1. Alignment with target audience.** Year Up is intended to focus on young people who lack resources for entering a “mainstream” career path. Year Up outreach focuses on urban communities where young people face significant environmental risks. 84 per cent of programme participants are black or Hispanic. According to “Readiness Assessments” of new programme participants, more than 40 per cent of Year Up students are in “financial” risk categories, including dependence on public assistance or lack of access to health insurance. About one third are in “family” risk categories, including having been in foster care. 14 per cent of students are parents. 9 per cent are homeless.¹⁰¹

While Year Up’s intake process appears to successfully target its intended audience, some critics have suggested that the programme is effective for only a limited portion of that audience. For example, Year Up requires applicants to have a high school diploma or GED, though it also advises applicants without these credentials on how to obtain a GED and encourages them to reapply when they have one. About 70 per cent of programme participants actually complete the Year Up programme, which means that 30 per cent drop out.¹⁰² In fact, the programme strove for 80 per cent completion in its early years but made a deliberate decision to reallocate investments from marginal candidates back into its core programme. Nevertheless, for many youth employment programmes, a 60 per cent completion rate is considered “successful.”¹⁰³ Moreover, Year Up places 100 per cent of its graduates into internships, ensuring their exposure to career-enhancing corporate work experience. While Year Up does not offer a comprehensive solution for all disconnected youth, it clearly has engaged a substantial proportion of programme participants who otherwise face severe barriers to mainstream employment.

- 2. Demonstrated improvements in income and career outcomes.** A randomized controlled study by the Economic Mobility Corporation (EMC) in 2010 demonstrated very significant impacts on the incomes and entry-level career opportunities of Year Up graduates. Compared with equally qualified applicants who, by random assignment, had not been admitted due to programme oversubscription, programme graduates earned on average 30 per cent more than the control group.¹⁰⁴ By contrast, typical short-and medium-term income improvements for young people in U.S. Workforce Investment Act programmes average 15 per cent for men and 26 per cent for women.¹⁰⁵

The EMC study found that 86 per cent of Year Up programme graduates were employed or in further education during the first year after graduation – about the same as the control group – but half of these graduates had obtained employment in the targeted IT and financial sectors at salaries averaging 50 per cent more than the control group – about US\$15.17 per hour compared with US\$10.46 among the control group. None of the control group members were able to obtain jobs in those targeted, desirable occupations. Even those programme graduates who were not able to obtain target-sector jobs, and worked instead in administrative or other positions, were earning modestly more than control-group members.

¹⁰¹ See Year Up “By the Numbers” 2013, and also Chertavian response to Heinrich in Chertavian (2012-13)

¹⁰² See “By the Numbers”

¹⁰³ Grossman, HBS Case Study (2008)

¹⁰⁴ Roder and Elliott (2011)

¹⁰⁵ See Heinrich response in Chertavian 2012-13

Some observers have expressed concern that job training programmes divert young people from post-secondary education. The EMC study found that during the year after programme graduation, college attendance rates were equally high for programme graduates and for the control group.

The EMC study was limited to alumni in the first year after graduation; an obvious question is how long these income and career effects will persist for programme graduates, since according to the U.S. Department of Labour, long term impacts from other youth training programmes are typically “small or nonexistent.”¹⁰⁶ Data on the long-term impacts of Year Up are limited but encouraging, and as the number of programme alumni increases over time, further research should answer this question more definitively. In 2012, however, Year Up undertook an internal survey of more than 2000 alumni from its 2001-2012 classes. They found a general pattern of increased wages over time, with average wages rising to around US\$20 per hour after 3-5 years and to approximately US\$25 per hour for several of the earlier programme cohorts (8-10 years after graduation). The average wage for these programme graduates exceeds the US\$28,000 average wage of recent U.S. college graduates¹⁰⁷ and the increases documented for Year Up alumni substantially exceed the 12 per cent long-term (5-10 year) increase among alumni of the U.S. Job Corps,¹⁰⁸ the federal programme that is widely regarded as having the most powerful impacts on young participants.

3. Transformative effects on young people. The qualitative, personal impact of Year Up on successful programme graduates is best captured in the voices of young programme graduates themselves. In the following quotes, several Year Up students and graduates describe what the programme has meant to them:¹⁰⁹

- “Year Up was one of the hands down BEST DECISIONS that I have made in my life. It gave me the opportunity to show myself that I can achieve anything that I desire and be successful. I will always be sure to recommend Year Up to anyone that would like to attend or that would like to give their time and/or resources.”
- “YU will change anyone's life. When I was a little kid and came to America for the first time, I always saw that big blue glass building and always told my mother how I can only dream of working in that building, and Year Up gave me the chance to make that dream come true. Now I am a full time worker at the John Hancock Tower, working my way up to the top.”
- “I don't know where I would be if I never stepped up and came to Year Up. It has and will always be the turning point in my life where I found myself and created a new identity and broke all statistics that were being hung over my head.”

Students in the Miami programme talked about how Year Up had changed their perspectives on themselves and the workplace.¹¹⁰

¹⁰⁶ Chertavian 2012-13 response to Heinrich

¹⁰⁷ Results in this and previous paragraph from Roder and Elliot 2011

¹⁰⁸ Heinrich response to Chertavian in Chertavian, 2012-13

¹⁰⁹ Results and responses from Long-Term Graduate Success survey (2012)

¹¹⁰ Author interviews, Miami Year Up Students, June 14, 2013.

- “Before Year Up, I worked a lot of odd jobs but I didn’t have a sense of direction. There has been a 180 degree change in my life. Year Up pushed me out of my comfort zone and made me see my opportunities.”
- “At first I felt strange wearing a suit and tie, and it was hard to call people on the phone or even look them in the eye. But now I know I can talk to other people in a corporate office and make an impression. Even if I’m shy about personal conversations, I know I have something to say about the work and the business.”
- “There were challenges, like getting up early every morning so I could be on time for the programme, but it wasn’t all that hard – I wanted to succeed so I did it. The programme helped me grow up and get serious.”

Programme Evaluation

Programme effectiveness

Throughout its history, Year Up has been committed to sophisticated internal monitoring and evaluation systems and to external review and documentation, by reputable organizations, of its programme outcomes.

- As part of its initial expansion phase, Year Up integrated internal programme monitoring into a quarterly “dashboard” that allowed programme managers to evaluate staff recruitment, student recruitment, programme completion, skills acquisition, and quality of service to employers at multiple locations and to identify specific challenges.
- In 2007, it adopted Salesforce (www.salesforce.com) software to more efficiently collect and distribute detailed performance data for the entire organization to all management staff. This software helped to expand the range of relevant metrics, for example by making it easier to track and compare long-term outcomes for graduates.
- At that time, Year Up also began implementing staff retreats where personnel from different programme offices could meet and share experiences and lessons.
- One of the earliest substantial external evaluations of Year Up was a case study by Harvard Business School¹¹¹ that identified successes and challenges relating to the replication of the Boston Year Up model on a national scale.
- In 2010, Jobs for the Future (JFF) prepared a report analyzing Year Up’s highly effective strategies for engaging employers. The Report favorably cited Year Up’s commitment to creating a value proposition for employers, as well as its systems for identifying and responding to employer requirements. The Report suggested that these features could serve as a model for other programmes seeking to expand employment opportunities for young people.

¹¹¹ Grossman, HBS Case Study (2008)

- In 2010, Year Up contracted with the Economic Mobility Corporation (EMC) to formally evaluate the programme's short and medium term impacts on graduates using a randomized controlled trial.

As the passage of time permits valid research into longer-term impacts, Year Up remains committed to documenting such impacts for its alumni and further improving outcomes for future graduates:

- In 2012 it undertook an internal survey of long-term outcomes – including work status, educational status, and incomes – of 2001-2012 graduates.
- It is engaged in a two year “outcomes initiative” to use data from its long-term survey to more closely identify the programme factors associated with different long-term outcomes, and to adjust programme curricula, standards, and practices.
- It is currently participating, along with eight other career pathways programmes, in the Innovative Strategies for Self-Sufficiency (ISIS) long-term evaluation study funded by the U.S. Department of Health and Human Services.

Programme cost/benefits analysis to each partner

The Year Up programme has shown steady growth for more than a decade because it provides significant benefits, in a cost effective way, to its various participants and partners. These include students themselves, employers, and to an emerging extent, community college partners.

Programme Participants

The 2011 EMC study demonstrated that while individuals sacrifice short term income while participating in the programme (the stipend represents about US\$2000 less per quarter than the average income earned by the nonparticipating control group) they experience substantial income growth – in the range of approximately US\$1000 per quarter on average – during the first year after programme graduation.¹¹² If this pattern is sustained in subsequent years the graduates will quickly recover their initial costs of participation. However, it is possible that a favorable cost-benefit ratio is confined to those students who succeed in obtaining targeted IT and Finance positions, since income gains for other graduates are more modest, especially in the short term.

Year Up's internal 2012 survey of alumni suggests substantial longer-term growth in the average income of programme graduates, to levels that exceed average salaries for recent college graduates. However, this has not been systematically compared with results for a control group.

Impacts on graduates' long-term educational achievements are harder to clearly document. 67 per cent of alumni have at some point continued their education and 45 per cent of alumni are currently enrolled in a postsecondary programme, but only 9 per cent have actually completed a postsecondary credential. By comparison, about 27 per cent of low-income high-school graduates and 4 per cent of low-income GED holders complete a postsecondary programme within six years of high school graduation. Although one expectation of the Year Up programme is that higher wages will help alumni pursue further education, 57 per cent of alumni, especially those in the lower part of the income distribution, report

¹¹² Roder and Elliott (2011)

that “paying for education” is a barrier to continuing their education. Limited impacts in this area are a significant reason why Year Up is seeking enhanced partnerships with community colleges and seeking to adapt its model to a wider range of learning and earning strategies for young people.

Employer Partners

The clearest indicators of the programme’s positive return on investment for employers are the continuing growth of internship slots, the willingness of established employer partners to continue using the programme year after year, and the continued willingness of employers to invest US\$21,000 per internship. Bank of America reports that the cost of a Year Up apprenticeship is “slightly less than it would have to spend to get the job done through contract employees and is substantially less than hiring a full-time college graduate.”¹¹³ AOL considers the fee to represent “a competitive cost for access to a skilled talent pipeline.”¹¹⁴

A 2010 report by Jobs for the Future (JFF)¹¹⁵ identified four core elements of the Year Up programme that are designed to offer a compelling business case for employer investment in the programme.

- Year Up offers a “value proposition” that aligns well with the core business objectives of its corporate partners.
- Interns enter their workplace poised to develop the full range of skills that will ultimately make them valuable contributors and quality employees.
- The internship is structured to be low-risk and high-reward.
- Year Up responds to employer feedback, continually adapting to meet employer and industry needs.

Many employer partners reported that they initially engaged with Year Up from philanthropic motives but were pleasantly surprised to find it offered a compelling value proposition.

- John Giurleo, VP of Global Human Resources for State Street Corporation, told Jobs for the Future (JFF) that “State Street’s partnership with Year Up started as a great community service opportunity, but it turned out to be a real win-win from [an employee] sourcing perspective.”¹¹⁶
- Joseph Antonellis, Executive Vice President and Vice Chairman of State Street Corporation, has said that “Our partnership with Year Up is incredibly valuable and has become an integral component of our strategic plan to hire future technology leaders.”¹¹⁷
- Bob Kiely, head of human resources at Leerink Swan, indicates that sponsoring his first ten Year Up apprentices was “first a business transaction and second an act of altruism.”¹¹⁸
- Kristen Wolberg, CIO of Salesforce.com, told Year Up that “We brought five interns to San Francisco, and every one of them immediately started to add value in the departments they were in They help us see the world in a different way, and through that lens they are

¹¹³ Corporate Voices for Working Families, Year Up/Bank of America case study

¹¹⁴ Corporate Voices for Working Families, Year Up/AOL case study

¹¹⁵ JFF (2012) “Dollars and Sense”

¹¹⁶ Quoted in JFF (2010) p. 7

¹¹⁷ Year Up, internal presentation

¹¹⁸ Quoted in Workforce Strategy Center (2009) p. 6

helping this organization become a better and stronger organization overall. It's been a fantastic programme for us."¹¹⁹

In various evaluations over the past decade employers have reported greater than 90 per cent satisfaction levels with Year Up graduates – 91 per cent say they would recommend the programme to a business peer,¹²⁰ and 97 per cent say they would use the programme again.¹²¹ AOL reports that its technology teams have become great believers in Year Up's ability to provide "smart people who want to learn," and that its supervisors compete for access to incoming candidates.¹²²

Community College Partners

Year Up's partnerships with community colleges are a more recent development; these programmes are still in the piloting/learning stage and less susceptible to a rigorous cost-benefit analysis. Pilot projects in Baltimore, Northern Virginia, and San Francisco have encountered challenges as well as successes, particularly with respect to establishing Year Up participants as full members of the student community. But recent experience with Miami Dade Community College has been strongly encouraging: Dr. Billy Jones, Dean of Academic Affairs at Miami Dade's Wolfson Campus, is enthusiastic about the presence of an on-campus Year Up programme: Year Up staff are an "excellent fit for the college's culture," and the students represent an influx of "highly energized and committed students – which is something any administrator is happy to see more of."¹²³ Potentially, Year Up can help community colleges attract an expanded range of candidates, improve retention and degree completion, increase diversity, and improve job placement outcomes for alumni.

Key success factors and lessons learned

The Year Up model demonstrates some important lessons for programmes, such as apprenticeships, seeking to integrate work experience and skills training for youth.

1. Year Up demonstrates the feasibility of reaching out to an underutilized talent pool of disadvantaged youth, and bringing them into the economic mainstream. In order to accomplish this, a key success factor was the adoption of an effective "Theory of Change" that addresses the challenges of engaging disconnected young people and ensuring that they are receptive to learning.¹²⁴

- Drawing on the experience of Boston's Teen Empowerment programme, Year Up creates a culture based on respect, accountability, honesty, striving, fun, and embrace of diversity.
- The programme clearly establishes and reinforces "high expectations" for its participants. Students are selected for motivation and resilience. Each student signs a personal contract agreeing to meet programme standards and expectations, and outlining the consequences of not meeting those standards.

¹¹⁹ Year Up, internal presentation

¹²⁰ Year Up "By the Numbers" (2013)

¹²¹ JFF (2010)

¹²² Corporate Voices for Working Families, Year Up/AOL case study

¹²³ Author interview with Dr. Billy Jones

¹²⁴ See discussion and history in Chertavian (2012), *A Year Up*

- This environment of “high expectations” is enabled by “high support.” This support is provided both by teaching staff, counselors and mental health workers, and by a strong emphasis on peer connection and feedback.

2. Year Up demonstrates a model under which employers can be persuaded to make substantial investments of money, time, and other corporate resources to promote skill development among young people. The programme’s strong focus on professionalism and on market-relevant technical skills, and the close support it provides during the employment process, can overcome employer hesitation about investing in unproven candidates.

- Programmes must demonstrate a clear value proposition to employers, and present themselves as a cost-effective solution to business challenges. Businesses will engage to a limited extent on the basis of philanthropy, but substantial programme success will only follow when employers see a clear business benefit, such as access to a high-quality, cost effective talent pipeline.
- Interns will be well-received when they enter the workplace with strong core professional skills and enough of a technical foundation to be ready to learn and contribute on the job.
- Internship programmes will be well-received by employers when the programme offers low potential risks and high rewards.
- Employer engagement is a sales process based on building communication, trust, and an understanding of the employer’s needs and current “pain points,” with a view toward maintaining relationships and continually solving business problems.¹²⁵

3. Year Up’s commitment to learning and adopting best practices, to monitoring and evaluating its own performance, and to engaging external reviewers has paid off not only in direct results for its students, but also in programme credibility that opens doors among philanthropic foundations and potential employer partners.

Sustainability, replicability and scalability

The history of Year Up can be viewed as a continuing engagement with scaling, replication, and quality issues.

The founder of Year Up was concerned, from the outset, about the limited reach and impact of many job training programmes aimed at disconnected youth. Year Up’s goal, from its inception, was to gradually “build a scalable business model that had the potential to measurably impact the national problem.”¹²⁶

Year Up began its operations in Boston in 2001 with a single class of 22 students. This relatively compact “learning community,” which promotes tight, sustained bonding among students and a small group of teaching and counseling staff, has remained what Chertavian calls the “unit of scale” for all further growth of the organization.¹²⁷

¹²⁵ Points about effective employer engagement adapted from JFF (2010)

¹²⁶ Grossman, HBS Case Study (2008)

¹²⁷ Ibid.

Replication of the Boston model has extended Year Up's reach from 22 students in a single location in 2001, to 1900 students per year in 11 cities in 2013.

Typically a new programme office will launch a single learning community at startup, and then add additional learning community units in each programme cycle as it gains experience, additional employer partners, and a higher recruitment profile.

Between 2005 and 2006, Year Up expanded from its Boston base to open offices in Providence, New York City, and Washington. Between 2007 and 2012, Year Up expanded to six additional regions: Atlanta, Miami, Chicago, San Francisco, Silicon Valley, and the Puget Sound area. Plans call for the opening of three additional offices by 2015.

During the early phases of programme growth, **sustainability** was ensured by generous philanthropic funding, and was significantly assisted by the development of a financial model in which 40 per cent of operating costs were covered by fees paid by employers for internship slots.

However, Year Up's continuing dependence on philanthropy limits the potential future **scaling** of the model: it potentially creates an upper bound on the number of candidates that can ultimately be served by the current Year Up financial model, and it already has created regional barriers to replication in cities without a well-developed philanthropic sector.

As a consequence, Year Up has begun exploring alternative programme models that could reduce programme costs by making better use of available, external training infrastructure. Starting in 2008, Year Up has been developing pilot projects with community colleges in Baltimore, Northern Virginia, San Francisco, and Miami to reduce direct programme costs to the Year Up organization by sharing infrastructure and resources; these innovations are also expanding available learning pathways and credentials for students.

In 2011, Year Up developed a concept paper for a "Million Person Model" which envisions both improving the core Year Up model and piloting a wider range of employer-based and community-college-based programme models, in order to facilitate wider adaptation and greater scaling of Year Up's fundamental strategies for overcoming the opportunity divide. As part of this process, Year Up identified "Core Tenets of the Year Up programme," which are to be adapted and incorporated in each of these models. Year Up believes that fully scalable programmes can be designed based on these core tenets, which include:

- Contextualized Learning
- Attachment to the Local Labour Market
- Soft Skills
- High Expectations
- Social and Emotional Support¹²⁸

In 2012, Year Up undertook a diversification of its curriculum, piloting curricula in Project Management and Quality Assurance to provide more choices for its candidates and to serve the career interests of a wider range of individuals.

¹²⁸ "Year Up Million Person Model" Concept Paper (2011)

Future plans

Year Up's 2012 Annual Report¹²⁹ identifies three broad categories of future goals for the organization:

1. Growing and strengthening the core model. Priorities are:

- Further scaling the programme to a total of 14 sites and 2500 students per year by 2015;
- Improving student retention and full-time work outcomes, through better understanding of factors determining these outcomes (Year Up's "Theory of Change") and better alignment of the core curriculum, programme standards, and programme practices with desired outcomes.

2. Diversifying its model by piloting new strategies. Priorities include exploring three new alternative programme models that can serve a wider range of young people. These include:

- A Career First pathway, similar to the current core model but taking advantage of greater integration with community college resources;
- A College First pathway, leading to timely completion of an associate's (2-year) degree accompanied by significant work experience;
- A Learn and Earn pathway, an employer based programme where students pursue an associate's degree over three to five years while working full time.

3. Promoting systems change. Priorities focus on influencing perceptions, practices and policies that perpetuate the Opportunity Divide. These include:

- Improving perceptions among employers and policymakers about the potential contribution of urban young adults;
- Changing employer talent practices to open doors for urban young adults in the workplace. (In 2013 Year Up is supporting an Ad Council national media campaign to promote "creative and successful" hiring strategies for business.)
- Influencing public policy to expand support for multiple pathways to work for young people.

Conclusion

Why is this programme important/relevant/unique/good to replicate in other locations/sectors?

The Year Up example offers insights into the challenge of creating "better and more broadly available apprenticeships" by showing promising results with respect to two key barriers to the impact of apprenticeship that have been noted by the ILO:

- First, ILO has found that apprenticeship is "not a sufficient solution to improving the labour market transition of young people with poor school achievements and other disadvantages."¹³⁰ Year Up is specifically aimed at "urban youth," or what it prefers to call "opportunity youth," who face significant barriers to entering "mid-level skill" careers offering sustainable wages.

¹²⁹ Year Up 2012 Annual Report, pp. 21-23.

¹³⁰ ILO: Overview of apprenticeship systems and issues: ILO contribution to the G20 task force on employment (2012) p. 2

- Second, ILO notes that in many countries without a highly developed ecosystem for apprenticeship, employer interest in apprenticeship is “not sufficient to meet the huge demand from young people or to have much impact on youth unemployment in these countries.”¹³¹ Year Up has worked to develop a model of employer engagement and participation that offers a credible business case and value proposition for employers to create new apprenticeship slots and to engage in shared training activities that prepare young people for mid-level skilled jobs.

Year Up is notable for the magnitude of its documented impacts in both these areas, and for early success in replicating its Boston-based model in eleven U.S. cities. Year Up is also of interest because of the sophistication of its management team and its commitment to assessing and documenting its programme strategies, impacts, and challenges, in support both of continuous programme improvement and ambitious long term plans for scaling its model.

How does this programme compare to ILO’s standards for quality apprenticeships?

ILO has identified key aspects of quality apprenticeship programmes that enhance young people’s access to decent work. These include:

- Programmes based on sector-based public-private partnerships with high standards that assure quality skills acquisition and quality job opportunities
- Programmes that incorporate entrepreneurship elements to increase the status of vocational career paths
- Programmes coordinated with career information and employment services that expand choice and knowledge among young people and combat gender stereotyping in employment
- Programmes that provide earnings, labour rights, and social protections during the training period
- Programmes that open opportunities for a first job with career potential
- Programmes that combine classroom and workplace training to effectively match training with employer requirements¹³²

The ILO has also expressed concerns about unstructured programmes that may provide a poor quality experience to apprentices. Such programmes may become exploitative and involve long hours, unsafe working conditions, poor or no wages, and limited social protections. More formal apprenticeship systems may guard against this risk of exploitation by providing a firm regulatory framework for apprenticeship, providing for fair and enforceable apprenticeship agreements, and aligning apprenticeship with formal assessment and certification of recognized and marketable skills.¹³³

The Year Up programme includes several core features of ILO’s quality apprenticeship model but omits others and is frankly a less-structured programme than formal apprenticeship. Nevertheless, the programme provides many of the key benefits of “quality” apprenticeship while including effective, if less regulatory-based safeguards against the risks identified in “unstructured” apprenticeships.

¹³¹ ILO: Overview of apprenticeship systems and issues: ILO contribution to the G20 task force on employment (2012) p. 1

¹³² Ibid, p. iii, ff.

¹³³ Ibid, p. 4, ff.

Like formal apprenticeship, the Year Up programme includes the following key features:

- It is a structured programme that combines workplace experience with dedicated classroom-based training
- It is aimed at preparation for specific skilled occupations with career potential and, where appropriate, toward acquiring relevant vocational credentials
- There is explicit agreement among parties on goals, roles, and expectations
- There is a fixed period of classroom-based training
- The employer commits to a fixed-term workplace experience and to employee development
- The apprentice is paid a stipend during the both the training and work-experience period

At the same time, Year Up differs in several respects from a traditional apprenticeship model:

- It is intended to be less expensive, to provide for more rapid skill-building, and to be more flexible than formal apprenticeship models, in order help employers and participants respond to a more rapidly evolving skills marketplace.
- The employer's commitment to on-the-job skills development is less formal and structured than under formal apprenticeship, though there is a commitment by employers to provide relevant on-the-job experience, mentoring, and exposure to career choices. Year Up is working with employers to create readily adaptable models that employers can use to reinforce the internship experience, but most of the responsibility for direct skills training remains with Year Up.
- Most of the programme's formal classroom training precedes the work-experience period, though there is an ongoing half-day-per-week coaching/counseling element that continues during the work-experience period. Alternate models under development combine classroom and work experience throughout the duration of the programme.
- Primary programme "ownership" is by an external entity – Year Up itself or a community college – with employers in a partner or customer role.

Despite these differences, Year Up has been documented to serve some of the most important goals of "quality" apprenticeship programmes. External evaluations document substantially higher pay for programme graduates, and significantly improved access to career-track professions:

- **Access to decent work:** Programme graduates earn 30 per cent more than non-graduates, with an average starting salary of US\$15/hour. Limited long-term studies suggest that these effects are durable and that programme graduates earn more than recent college graduates 3-5 years after graduation.
- **Access to career pathways:** programme participants earn up to 23 college credits toward an associates' degree; half of graduates go on to more college within 2 years. A comparison with a control group showed that Year Up graduates obtained entry-level access to career-oriented jobs that control group members were not able to obtain.

Areas for improvement

While Year Up's successes are impressive and relevant to a broad youth development context, and to new strategies for improving connections between education and work, the organization's experience is also instructive about challenges that remain in integrating dislocated young people into the economic mainstream:

- Despite attracting significant employer contributions to support programme costs, Year Up's experience illustrates the continuing difficulty of creating a fully scalable programme model that is not dependent on philanthropy. In addition to adopting new programme models that will reduce operating costs, Year Up's executive team believes it could do more to develop its marketing organization and refine and diversify its value proposition for employers, in order to further increase the volume of employer engagement with the programme.¹³⁴ For example, the programme is continuing to work on documenting and quantifying the value added by its graduates with the goal of eventually enabling more rigorous ROI analysis for potential new employer partners.¹³⁵
- While demonstrated short-term outcomes for programme graduates are impressive, more time and experience will be required in order to validly document long-term outcomes.
- While positive impacts on graduates' income are clear, the consequences of programme participation for other indicators of career success – including employment rates, continuing education, and occupational advancement -- are encouraging but not as rigorously documented. Some observers¹³⁶ have suggested that Year Up may want to adopt a wider range of long-term goals and indicators, and more clearly align their programme elements with these desired outcomes.
- While the programme works remarkably well for a significant portion of its participants, it does not work for all participants, and it is not clear that valid predictors of success, or strategies for helping specific sub-groups at greater risk of failure, have been (or in fact should be) developed as part of this model. Year Up's leadership believes that diversifying its range of career offerings will allow it to serve a wider range of youth, and is engaged in an initiative to better understand the causes of poor individual outcomes so that its programme standards and practices can be adjusted appropriately.

Toward the future

Year Up's success, in both improving outcomes for students and growing its model, has been impressive, and constitutes the primary rationale for examining a model that does not include all of the traditional components of formal apprenticeship. We hope that the lessons illustrated by Year Up will be of interest to ongoing and future initiatives that seek to duplicate the benefits of apprenticeship in economic circumstances where more flexibility and less cost are required, and to accelerate the creation of

¹³⁴ Chertavian interview

¹³⁵ Personal correspondence with the author, Mariah Peebles, Manager of Influence Knowledge Transfer, Year Up, June 10, 2013

¹³⁶ See for example Heinrich in response to Chertavian (2012-13)

effective youth employment programmes even when government regulatory and funding commitments will not support the creation of a more formal apprenticeship system.

List of Additional Interviews with Author, Miami, June 14, 2013

Demars, Michelle, Program Manager, Year Up, Miami
Grover, Vanessa, Admissions Manager and College Liaison, Year Up, Miami
Lockheimer, Harold, Executive Director, Year Up, Miami
Rosario, Fred, Admissions and Outreach Manager, Year Up, Miami
Viruet, Janelle, Associate Site Director, Year Up, Miami
3 female and 1 male students, YearUp, Miami

Case Study 3: PTECH

Introduction

Purpose of this case study

Pathways in Technology Early College High School (PTECH) represents a highly innovative approach toward linking secondary education with higher education and with jobs that lead to sustainable careers. PTECH schools are built on unusually strong partnerships between educators and large private sector employers (including, to date, IBM, Cisco, Microsoft Corporation, Motorola Solutions and Verizon Wireless), in which the employers provide strong leadership on program design and content and also significant program resources, including mentors for students, curriculum development, internship slots, and hiring opportunities for program participants and graduates.

The PTECH model and a growing number of pilot PTECH schools are explicitly intended by their champions to develop lessons for strong collaboration between schools, universities, and employers, for broad replication by secondary education systems in the U.S. and around the globe. PTECH has generated considerable interest and support in the U.S. business, political, and education communities and has attracted the attention of policymakers and practitioners from many different countries.

At this relatively early stage of PTECH's life, our goal in this case study is to describe the model and its implementation to date, and to outline the factors that have contributed to the interest it has generated. These include the clarity of its underlying concept, its positive early outcomes, and its distinctive approach to partnerships between business and educators and to shared project governance.

Program at a glance

PTECH radically reinvents the U.S. secondary school experience. The traditional pattern of secondary education in the United States is based on "high schools" that include grades 9 through 12 (approximately ages 14-18). All U.S. students have access to a publicly funded high school education, and both academic and vocational coursework is available according to a student's inclinations.

Currently, upon completion of traditional high school (graduation), students at their own discretion move into the work force, obtain further vocational training, or attend further education at a two-year college (generally for vocational/technical programmes) or a four-year university (generally for baccalaureate programmes). Education and training beyond high school must be paid for by the student, though public grant and loan programmes provide significant need-based assistance.

PTECH extends publicly-funded high school education for a further two years, sometimes referred to as a "9 through 14" instead of a "9 through 12" model. This extended programme culminates in an early-tertiary credential (a two-year "Associate's Degree") and an apprenticeship-style transition into the

workplace.^{273a} PTECH's goal is to make these more advanced degrees and workplace linkages available to all students, rather than privileges for a select group.

In order to accomplish these goals, PTECH schools must establish and support higher academic standards, accelerate student progress, and provide a clear and motivating career vision for their students. To do this, PTECH schools and their curricula are organized around strong three-way partnerships between the high school, a local higher education partner (a university or community college), and an employer partner. The higher education partner provides supplemental faculty and curricula, sometimes co-located at the high school facility, and grants recognized degree credentials. The employer partner helps to design and select curriculum elements that provide students with skills in high demand in the economy, and to integrate "workplace learning" into the school curriculum. The employer partner also plays a lead role in transitioning students into the workplace, through the creation of internships, apprenticeship experiences, and in some cases hiring pledges for programme graduates. According to Rashid Davis, Principal of the PTECH school in Brooklyn, NY, the programme's strong focus on the workplace "lets us show young people how far they can go, and gives us the resources to help them get there."²⁷⁴

The first PTECH school, in Brooklyn, New York, opened its doors in September 2011, and since that time the concept has been replicated at five additional secondary schools in Chicago. In addition, the State of New York has awarded grants for 16 additional PTECH startups in New York,²⁷⁵ while a private foundation is sponsoring a rural PTECH-style charter school in the state of Idaho.²⁷⁶ To date, PTECH initiatives have been focused on the information technology industry: technology companies are serving as employer partners and, in fact, are largely driving the movement. However the newest proposed startups include a more diverse range of industries and career destinations including health care and manufacturing.

^{273a} **Note on Terminology:** in the U.S., the term "apprenticeship" is sometimes (though not exclusively) associated with programs operated specifically by labour unions and the term "apprentice" may refer to certain categories of worker defined in collective bargaining agreements. Although usage is not consistent, some advocates for broader apprenticeship-style training in the U.S. have adopted more generic terminology such as "internship" to characterize training programs that combine classroom and workplace-based learning. The PTECH program generally refers to prospective term-time work experiences as "internships" while using the terms "apprenticeship" or "capstone project" for a final, transitional work experience element for graduates. However PTECH aims to integrate school and workplace learning and career preparation in a way that is of broad interest to policymakers in the areas of apprenticeship and public-private school-to-work partnerships.

²⁷⁴ Author interview with Rashid Davis

²⁷⁵ For information on the grant solicitation see: <http://www.p12.nysed.gov/funding/2013-20-nys-p-tech/>; on the announcement of awards: <http://www.governor.ny.gov/press/08282013Students-for-High-Skill-Jobs>

²⁷⁶ Idaho: <http://www.jkaf.org/initiatives/education-choice/grants-available-for-creation-of-innovative-p-tech-schools/>; http://www.bonnerrferryherald.com/news/regional_news/article_23531350-34ee-11e3-bc87-001a4bcf887a.html

Research methodology

In preparing this case study we began with a literature review, focusing on media reports and available project handbooks and documentation; we then visited PTECH in Brooklyn, NY, meeting with and interviewing PTECH partners and staff at City University of New York (CUNY), City Technical College, IBM, and the PTECH facility. We also interviewed Chicago-based IBM representatives by phone. We want to thank key leaders at all of these institutions for their openness and availability and for their willingness to extensively discuss the history, current operations, accomplishments, and challenges of the PTECH initiative.

Context

Discussion of relevant skills (demand vs. supply) specific to IT sector and programme locations

“A high school diploma is no longer an economically relevant credential. You can’t use it to get a job that will support you and your family. It makes no sense for that to be the terminal degree for the public education system.” – Rashid Davis, Principal, PTECH Brooklyn²⁷⁷

Nearly 60 per cent of the U.S. workforce has completed at least some postsecondary education.²⁷⁸ As a result, individuals who have not done so increasingly face barriers in competing for mid-level skilled jobs. And these individuals disproportionately include members of disadvantaged communities.

According to Rashid Davis, educational and social factors are both responsible for an increasing economic divide in the U.S.:

- Average wages for men without high school diplomas have declined 66 per cent since World War II.
- Most sustainable jobs in the U.S. – jobs that can support a family and lead to a middle-class lifestyle -- require post-secondary education or training.
- Most “good” corporate jobs presuppose “middle class values and behaviours” from candidates.
- Most individuals who pursue two year degrees have not yet acquired them after six years.
- Graduation rates from two-year colleges hover around 25 per cent.
- A data analysis at Queensboro Community College in New York found that 99 per cent of students who required remedial education failed to complete even one semester of community college.

As a result, according to Davis, “young people from difficult circumstances must overcome the dual challenges of getting an education and navigating unfamiliar waters to move from poverty to meaningful, long-term employment.”²⁷⁹

²⁷⁷ Author interview with Rashid Davis

²⁷⁸ Ibid.

At the same time that many young people are struggling to acquire economically-relevant skills, many U.S. businesses, in the IT sector and other sectors, are struggling to find qualified candidates for open positions. By 2018, the U.S. expects to see a shortage of nearly three million workers with at least an Associate's-level education.²⁸⁰ Over the next 10 years, mid-level skilled jobs, paying on average US\$40,000 per year, are expected to increase by 50 per cent, creating demand for 14 million additional skilled workers.²⁸¹ Helping young people gain access to these jobs provides a substantial benefit to young people themselves, to their communities, and to the economy as a whole.

One compelling reason for locating the first PTECH school in Brooklyn has been the emergence of a strong IT industry in that borough. More than 500 IT companies are now located in the "Tech Triangle" around the Downtown Brooklyn, DUMBO, and Navy Yard neighborhoods. Forty-eight per cent of those firms expect to at least double employment over the next three years. The high-tech industry in Brooklyn has contributed to that borough's sustained 4.9 per cent annual economic growth since 2007 even as the economy has declined elsewhere in New York City.²⁸²

Background of the "backbone" programme organization and key partners

PTECH in Brooklyn – the original pilot school for the model -- is based on a partnership between the New York City Department of Education (Office of Postsecondary Readiness), the City University of New York (CUNY) Early College Initiative, CUNY's leading technical college (New York City College of Technology, known as "City Tech"), and the IBM corporation. In addition, the local teachers' union, parents' representatives, and other community stakeholders have formal roles in project governance and in the planning process.

IBM: The PTECH programme grew out of an initiative by IBM, the global technology and consulting firm. Headquartered in Armonk, NY, about 40 miles north of Brooklyn, IBM operates in more than 170 countries, has more than 430,000 employees worldwide, and had revenues exceeding US\$100 billion in 2012. It has a strong reputation for innovation and social responsibility. From IBM's perspective, in addition to solving a compelling social problem, PTECH will help increase the supply of skilled talent needed for its own future operations and for the growth of the IT industry as a whole.²⁸³

IBM is providing extensive technical assistance and in-kind support to the PTECH school in Brooklyn, and to one of the five additional PTECH schools that were subsequently founded in Chicago. By documenting and promoting the PTECH model, IBM is also encouraging its replication by other corporate leaders. The

²⁷⁹ Cited in Rashid Davis, Crossing the "Great Divides" to save Our Children, at: <http://asmarterplanet.com/blog/2011/09/crossing-the-%E2%80%9Cgreat-divides%E2%80%9D-to-save-our-children.html>.

²⁸⁰ Carnevale, Anthony P., Nicole Smith, and Jeff Strohl. "Help Wanted: Projections of Jobs and Education Requirements Through 2018." Georgetown University center on Education and the Workforce, 2010.

²⁸¹ Cited in PTECH: "Pathways in Technology Early College High Schools: A Grades 9-14 School Model"

²⁸² Brooklyn Tech Boom: <http://betabeat.com/2012/04/move-over-manhattan-the-brooklyn-tech-triangle-claims-its-bigger-and-better/>

²⁸³ This and three following paragraphs are based on information from the author's interview with Stan Litow

four other new PTECH schools in Chicago were created with leadership and engagement by Microsoft, Cisco, Motorola Solutions, and Verizon Wireless.

IBM's PTECH initiatives are supported through its Office of Corporate Citizenship and Corporate Affairs. IBM's Smarter Cities Programme (a consulting and knowledge-sharing service for the public sector) was also responsible for advocating the replication of PTECH in Chicago during a consultation with Chicago authorities. The Corporate Citizenship Team has designated an overall project manager for PTECH as well as two project liaison persons who are co-located at IBM's PTECH schools in Brooklyn and in Chicago. Stanley S. Litow, Vice President of Corporate Citizenship and Corporate Affairs for IBM, is a former Deputy Chancellor in the New York City school system, and understands both that system's political complexity and its openness to innovation. His experience in both institutions has helped strengthen relationships and mutual understanding among the PTECH partners in New York, and has provided relevant lessons for Chicago.

In New York and Chicago, IBM makes substantial in-kind contributions of staff time, knowledge, and technology, both for programme design, operational liaison, and student support and mentoring. A major role of the employer in the PTECH model is to ensure that students have the resources to visualize, understand, prepare for, and gain access to the technology workplace.

For PTECH, IBM undertook a skills mapping for eight high-demand entry-level IT positions potentially suitable for PTECH graduates, and played a leadership role in identifying career-relevant courses, curricula, and degrees that would qualify students for those positions. It is providing IBM staff as mentors for every student at its two schools, and it supports that mentoring relationship with an online platform, MentorPlace (<http://ibm.mentorplace.epals.org/>), for communication and structured mentoring exercises. It is assisting in the creation of a multi-year Workplace Learning curriculum for PTECH, including: classroom learning about business and the workplace, an introduction to the IT industry, and the creation of a "virtual enterprise" gaming environment to teach students about the competitive and decision environment faced by business leaders. It sponsors worksite visits to IBM facilities and will be sponsoring paid internships and apprenticeships for PTECH students as they advance into those elements of the programme. It makes in-kind contributions of technology and other resources for learning. And it has pledged that programme graduates will be "first in line" for available entry-level jobs at IBM.

City University of New York (CUNY) – Early College Initiative: The City University of New York is the public college and university system of the City of New York; it serves about 270,000 degree candidates and a similar number of adult education and continuing professional education students. The CUNY system includes seven community colleges, eleven "senior" or four-year colleges, one innovative "honors" college, and five graduate and professional schools.²⁸⁴ The Early College Initiative (ECI) is a dedicated office within the CUNY system that helps develop links between New York City high schools and CUNY colleges in order to promote college-readiness among high school students. Nearly 80 per cent of college-bound New York City high school graduates eventually attend schools in the CUNY

²⁸⁴ See CUNY website at: <http://www.cuny.edu/about.html>

system. According to Claire Riccardi, the ECI programme manager dedicated to the PTECH initiative, “building these relationships is something we do a lot of – it is part of CUNY’s mission.”²⁸⁵

In New York City, CUNY-ECI maintains partnerships with 13 “Early College High Schools” to provide early exposure to college-level courses (usually beginning in 9th or 10th grade, or age 14-15) and to ensure that appropriate remedial support is available for students with weak foundational skills. As of 2011, New York City’s ECI has increased graduation rates for participating students to 89 per cent, and graduates typically have earned 20 college credits by the time they complete high school. Seventy-seven per cent of ECI graduates proceeded immediately to college, 96 per cent of them to four-year colleges. Among ECI graduates enrolled at CUNY institutions, 93 per cent were attending college full time.²⁸⁶

According to Riccardi, as ECI has evolved over the past 10 years its goals have become increasingly focused on access to occupations and careers. The programme began as a way to provide high school students with “exposure” to the college experience, often focusing on acquiring a limited number of liberal arts credits. But it became increasingly engaged with the challenges of helping young people who might not otherwise be college-ready to better prepare for college-level work. ECI has helped implement Career and Technical Education (CTE) programmes that improve student motivation by combining academic rigor with exposure to occupational and career paths.²⁸⁷ PTECH in Brooklyn, considered an enhanced Early College High School, represents a distinct further leap, because it provides not only a firm and specific career focus but also a tertiary degree, a strong emphasis on workplace learning and connection, and a unique partnership with a major employer.

New York City College of Technology (City Tech): City Tech is the college within the CUNY system that has direct responsibility for providing academic and curriculum resources for PTECH in Brooklyn. City Tech is the largest four-year public college of technology in the northeastern U.S., with more than 30,000 enrolled students and 426 full-time faculty in 65 degree-granting programmes.²⁸⁸ Bonne August, Provost and Vice President for Academic Affairs, is in overall charge of City Tech’s relationship with PTECH and serves on the PTECH Steering Committee.

According to August,²⁸⁹ PTECH went through a “very quick development” cycle – from project commitment in January 2011 to school opening in September 2011 – that was facilitated by CUNY’s experience with the ECI. City Tech has played a key role in the selection of appropriate courses and curricula and in the logistics of providing instructional services to PTECH students. For example, the programme leadership felt it was necessary to provide some college-level courses directly at the PTECH facility because of the young age of PTECH students, while older and more mature students could travel to City Tech by public transportation in order to have access to a wider range of advanced courses, lab facilities, and other resources. Implementing these steps has required considerable flexibility because of PTECH’s commitment to having students proceed at their own pace through the programme. “We stress

²⁸⁵ Author interview with Claire Riccardi

²⁸⁶ See ECI website at: <http://earlycollege.cuny.edu/>

²⁸⁷ Author interview with Claire Riccardi

²⁸⁸ See: <http://www.citytech.cuny.edu/>

²⁸⁹ Information in this and following paragraph is from author interview with Bonne August.

to students that this is not a race,” said August. “We want to make multiple paths through the coursework available to them.”

August says that it has also been a learning experience for college lecturers to work with high school students in a high school setting. “There is a different level of maturity and a need for a somewhat different teaching style, even as we keep a focus on rigor and high expectations.” CUNY and City Tech have provided professional development resources to lecturers to help them adapt, and most are positive about the experience. Students are also enthusiastic about the opportunity to work with college material. Those who are taking courses at the City Tech campus “really look up to the college students, who are just a few years older than they are,” says August. “They are excited about the chance to be on a college campus.”

New York City Department of Education: The New York City Department of Education operates the largest public school system in the United States, serving more than 1.1 million students in 1700 schools.²⁹⁰ According to IBM’s Stan Litow, the system, while politically complicated, is relatively flexible and highly open to innovation. “This is a system that routinely evaluates and closes failing schools and opens new ones. It creates special schools and experimental schools all the time. Moreover, it gives school Principals very substantial latitude in allocating budget resources, selecting staff, and designing programmes.” Litow also notes that New York City’s principal teachers’ union, the American Federation of Teachers, has been willing to engage on school reform and is a strong supporter of PTECH.²⁹¹

PTECH recruited its Principal, Rashid Davis, from the Bronx Engineering and Technical Academy, another specialized New York City public school with a 95 per cent black and Hispanic student population. Davis was seen as a charismatic leader with strong community relations skills who had raised curriculum standards, implemented Advanced Placement (AP) courses, and emphasized college achievement. His students exceeded the national average on standardized math tests and had high rates of persistence in college. Davis was enthusiastic about the opportunity to work with a new school that was formally aligned with an Associate’s Degree programme and explicitly aimed at creating career opportunities for its students. He hired staff with a strong commitment to working with disadvantaged young people, and included a mix of experienced teachers, relatively new teachers, and teachers with a background in the business community. Davis used his authority as PTECH Principal to simplify the 9th grade curriculum in order to focus on core preparation for college work, and to lengthen the school day, adding evening, weekend, and summer remedial and enrichment services.²⁹²

Steering Committee and Governance: PTECH builds on an emerging practice of improving links between business, higher education, and secondary schools, but is distinguished from other programmes by the extent to which the business and higher education partners provide leadership, resources, and a career and academic focus for the programme. While many schools create “advisory committees” to provide channels for partner input, PTECH has adopted a partner-based governance structure that requires direct collaboration on all elements of programme planning, design, and operation. The PTECH Steering

²⁹⁰ See: <http://schools.nyc.gov/AboutUs/default.htm>

²⁹¹ Author interview, Litow

²⁹² Ibid.

Committee for the Brooklyn school is made up of representatives from CUNY, the Early College Initiative, City Tech, the New York City Department of Education, IBM, and key PTECH school staff including Principal Davis. In addition, a School Leadership Team handles many day-to-day issues and includes parent representatives, union representatives, and other community stakeholders.²⁹³

This governance structure has helped generate real knowledge sharing among institutions with diverse experience and cultures. Rashid Davis suggests that an ordinary public school would not have the institutional knowledge or capacity or probably the sustained will to reach out on its own initiative and do everything that PTECH does. The role of an external partner like IBM is indispensable not just in adding resources and expertise but in shaking up thinking and in driving and focusing organizational change.²⁹⁴

The Chicago PTECH implementation, though a year younger than the New York implementation, is based on similar partnership principles. In Chicago, five PTECH schools are operating with a shared Steering Committee. The Chicago project involves collaboration between the Chicago Public Schools (CPS) and City Colleges of Chicago (CCC). The Mayor's Office is also represented on the Chicago PTECH Steering Committee. Corporate representatives include IBM, Microsoft, Cisco, Verizon Wireless, and Motorola Solutions.²⁹⁵

Policy context

In February 2011, the Harvard Graduate School of Education released a report entitled "Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century."²⁹⁶ Among the key findings of the report was that "our current system places far too much emphasis on a single pathway to success: attending and graduating from a four-year college after completing an academic programme of study in high school."

The Pathways to Prosperity study was well received by U.S. policymakers and has had a significant impact on the educational policy debate in the U.S. One of the most important pragmatic consequences has been renewed attention to the vocational, career and technical education resources available to the 70 per cent of U.S. young people who do not follow an academic track through a four-year college. The report calls for a new system of career and technical education that radically departs from traditional patterns of vocational education.

In acknowledgment of the Pathways report, U.S. Secretary of Education Arne Duncan has called for an end to the neglect of career and technical education in the U.S., calling CTE the "neglected stepchild of education reform". He urges replacement of the old model – "earning a diploma and landing a job after high school" – with a strong emphasis on helping students "earn a postsecondary degree or an industry-

²⁹³ See: <http://www.ptechnyc.org/Page/75> and links

²⁹⁴ Author interview, Rashid Davis

²⁹⁵ See: Press Release, Office of the Mayor, City of Chicago, February 28, 2012.

²⁹⁶ For the Pathways Report, see:

http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf

recognized certification, and land a job that leads to a successful career”.²⁹⁷ This in turn means that high school should not be considered an end in itself for any category of student – instead, the purpose of high school should be to ensure that students are equipped with the math, communication, and other fundamental skills to succeed in both work and postsecondary education, whether in vocational/technical subjects or in academic subjects. And high schools should take an active role in facilitating the transition to further education in each student’s chosen field, not just in placing university-bound students into four-year academic programmes.

The Pathways study also urges that the requirements of all major occupations be more “clearly delineated from the beginning of high school, so that young people and their families could clearly see the patterns of course-taking and other experiences that would best position them to gain access to that field”. This would help young people set goals, identify required study programmes and degree or certification objectives, and seek relevant work-based learning experiences such as internships and apprenticeships.

In particular, the study urges that “we need to elevate the critical importance of relevant work experience in a successful transition from adolescence to adulthood”. This is necessary partly because work experience helps young people understand and adjust to the requirements of the workplace and succeed in their careers, but also because for many young people, fundamental math, communication, and science skills are most effectively learned in the context of hands-on work activities.

To encourage implementation of the Pathways recommendations, the Pathways to Prosperity Network (PPN) was formed as collaboration between the Harvard Pathways to Prosperity Project, interested state governments, and the educational policy association Jobs for the Future (JFF).²⁹⁸ The PPN is encouraging states and educational systems to create career pathway programmes encompassing grades 9-14, based on the integration of high school and college-level work. It also calls for business engagement and partnerships to ensure that programmes include workplace-based learning opportunities, and to help ensure curriculum alignment with skills in demand among employers. New York and Illinois, two states hosting PTECH projects, are among the nine states participating in the PPN. PTECH itself is clearly well-aligned with the Pathways recommendations and the PPN initiative, and in fact PTECH incorporates an even stronger role for the employer partner.

²⁹⁷ For remarks by Duncan, see: <http://www.ed.gov/news/speeches/new-cte-secretary-duncans-remarks-career-and-technical-education>

²⁹⁸ See: <http://www.jff.org/projects/current/education/pathways-prosperity-network/1438>

Programme Description

Programme history and goals

According to Rashid Davis, the goal of PTECH is to ensure that all students graduate from the programme with an Associate's Degree in an information technology field, with substantial work experience in their portfolios, and with direct access to IT employment opportunities. All PTECH programme elements are aligned with this explicit goal.²⁹⁹

According to the "PTECH Playbook,"³⁰⁰ a document designed to explain the principles and lessons of the PTECH pilot and to aid in the dissemination and replication of the PTECH high school model, there are five core components to the PTECH model:

- 1. Focus on Early College.** Access to college-level courses and degree programmes is a key element of the PTECH model. At the Brooklyn implementation, through its partnership with the New York City College of Technology, the PTECH curriculum integrates coursework that will result in an Associate in Applied Science Degree in either computer science or electromechanical engineering. University-level courses that are part of the Brooklyn PTECH programme include Logic and Problem Solving, Technical Graphics, Computer Systems Technology, Programming Fundamentals, Digital Control, and Web Programming. College courses in Calculus complete the programme's mathematics track, and courses in physics and economics, as well as certain elective courses, are also available.
- 2. Focus on Careers.** Course requirements and content have been aligned with skills standards for entry-level IT jobs, as defined by IBM and other IT employers. PTECH features a multi-year Workplace Learning curriculum intended to strongly motivate students by giving them a clear understanding of their career potential, and to overcome cultural and experience barriers to workplace success. Early stages of the Workplace Learning curriculum focus on understanding the IT industry, identifying key workplace behaviours and problem-solving strategies, and understanding the nature of a competitive business through a gaming model. Later stages involve on-the-job internships (to gain general workplace experience) and apprenticeships (to apply newly acquired IT skills) and a "capstone" project to enhance each student's professional portfolio. At all stages, students have access to developmentally-appropriate mentoring, worksite visits, and guest lectures, involving IBM staff or the staff of other employer partners.
- 3. Focus on Personal Pathways.** Because PTECH is an "open admissions" programme, each student will move through the programme at his or her own pace. This approach requires highly individualized support services for students. Teachers and advisors provide personalized guidance about academic plans and progress. Each PTECH teacher or staff member also maintains special advisory responsibility for a small group of students, in order to make sure that each student's personal needs and challenges are understood and addressed.

²⁹⁹ Author Interview, Rashid Davis

³⁰⁰ IBM: STEM Pathways to College and Careers Schools: A Development Guide. February 2012. Downloadable at: http://citizenibm.com/wp-content/uploads/STEM-Pathways-Playbook_Feb-2012.pdf

- 4. Extended Learning Time.** In order to provide supplemental and remedial support for students who are struggling with challenging academic requirements, PTECH makes use of a significantly extended school day and expanded instructional time. In Brooklyn, instructional time increased more than 25 per cent, from a New York City average of 64,800 minutes per school year to 81,180 minutes at PTECH. Remedial, enrichment, and supplemental instruction is available after hours, on weekends, and in the summer. In Chicago, weekend and summer instruction is discretionary, based on individual needs. In both Brooklyn and Chicago, PTECH cleared additional instructional time for 9th grade (first year) students by simplifying the 9th grade curriculum to focus only on core elements – English, math, technology, and workplace learning – in order to invest maximum effort in establishing the foundational skills required for taking college-level courses by 10th grade. Chicago organizes academic classes into longer blocks than the Brooklyn school, and sets aside “colloquium days” every two weeks for the Workplace Learning curriculum and for remedial and enrichment activities.
- 5. Specialized Staffing.** To ensure effective programme monitoring and day to day coordination among partners, in Brooklyn the higher education partner and the employment partner each provide a full-time liaison person to the PTECH school.

Programme operations and funding

Brooklyn

PTECH Brooklyn is physically housed on the third floor of the former Paul Robeson Technical High School in Crown Heights, Brooklyn. The Robeson school itself is being phased out and the building now houses three new specialized high schools. Although the physical facility is shared, PTECH is a separate high school within the New York City school system, and as an institution it is part of both the Early College Initiative and the CUNY school support network.

The school employs 17 teachers and six central office staff (including the Principal).

The school currently enrolls 226 students – 101 from the first annual cohort, who began 9th grade in the fall of 2011, and 125 from the second annual cohort, who began 9th grade in fall, 2012. The school will admit its third class of 9th graders in fall, 2013, and at that time the oldest cohort will begin 11th grade (or year 3 of the PTECH programme).³⁰¹

New York City operates several elite high schools with selective admissions standards, but PTECH is not one of them. Any middle school student who expresses an interest is eligible to enroll in PTECH, though some preference is given to applicants who live in Brooklyn and who attend PTECH outreach events. As a result, PTECH must serve students with a highly diverse range of skills and motivations, including some entering with very low literacy, numeracy, and English language skills, and some with other special

³⁰¹ Descriptive data is from PTECH: “Pathways in Technology Early College High Schools: A Grades 9-14 School Model”

needs.³⁰² PTECH generally serves a relatively disadvantaged student body: 80 per cent of students are on need-based free or reduced lunch programmes because of family poverty, and black and Hispanic males make up more than 60 per cent of the student population.

PTECH in Brooklyn is funded in the same way as any other New York City public school, without special subsidy. In New York City, individual school budgets are allocated based on a per-pupil formula, with some weighting for students with special needs. As noted above, New York City school principals have great flexibility in allocating these funds to meet specific programme priorities. Modest special grant funding was accessed to help in the PTECH startup, mostly in order to support City Tech in sending lecturers to the PTECH facility and to devise appropriate professional development support to help them be effective in a high school environment.

In developing the PTECH model, IBM advocated a strong emphasis on programme sustainability from ordinary public funds, in order to enhance the replicability of the model. IBM does not contribute operating funds to PTECH schools, but in addition to its in-kind contribution does provide modest funding in support of student work site visits and other Workplace Learning activities. IBM and other employer partners will also fund paid internships and apprenticeships at appropriate stages of the programme.

Chicago

In Chicago, five PTECH schools were opened simultaneously in the fall of 2012. They are all on the South Side of Chicago – a large and diverse section of the city that includes some of its poorest and most disadvantaged neighborhoods. The five schools are: Lake View High School, Corliss High School, the Sarah E. Goode STEM Academy, Michele Clark High School, and Chicago Vocational Career Academy. The first three schools are local neighborhood schools, while the latter two are open to students citywide. The Sarah E. Goode STEM Academy is a new school, while the others represent the conversion of existing schools to the PTECH model.³⁰³

IBM is the employer partner for the Sarah E. Goode STEM Academy. As in the case of PTECH Brooklyn, IBM in Chicago provides a mentor for each student and it has also contributed technology to ensure that each student of the Academy has access to his or her own desktop computer, notebook computer, or tablet.³⁰⁴ Because IBM has fewer facilities in Chicago than in New York, it has partnered with Argonne National Laboratory and other technology firms for elements of its Workplace Learning programme.³⁰⁵

The Sarah E. Goode STEM Academy employs 17 teachers and eight administrative staff, including a Principal and Assistant Principal, a Dean of Student Development, and student development staff. Two liaisons from the employer partner (IBM) and the education partner (Daley College within the Chicago Community College system) facilitate collaboration between this PTECH school and its partners.

³⁰² Author interview, Litow for this and following 2 paragraphs

³⁰³ Press Release, Office of the Mayor, City of Chicago, February 28, 2012.

³⁰⁴ PTECH: “Pathways in Technology Early College High Schools: A Grades 9-14 School Model”

³⁰⁵ Author Interview, Charlotte Johnson

Sarah E. Goode has a larger student body than the Brooklyn PTECH facility: the inaugural class of 9th graders in fall, 2012 included 238 students, and the upcoming class beginning fall, 2013 will include 250 students. The socioeconomic profile of the school is similar to Brooklyn PTECH: 80 per cent of students receive free or reduced-price lunch; 90 per cent are black or Hispanic. However the gender balance at Sarah E. Goode is 1:1 while in Brooklyn the ratio of male to female students is 3:1.³⁰⁶

Summer and weekend classes are discretionary at Sarah E. Goode Academy, but in the summer of 2013, 90 students are taking geometry classes to ensure their readiness for calculus classes in the next school year.³⁰⁷

Daley College will collaborate with the Sarah E. Goode Academy to provide students with coursework and access to Associates' Degrees in Computer Science or in Information Technology.³⁰⁸

Like Brooklyn PTECH, the Sarah E. Goode Academy is substantially funded from regular allocations for each public school in Chicago. Some supplemental first-year funding was provided by a federal "Race to the Top" grant for innovative educational programmes. Chicago's public school funding formula assumes a four year programme for students and it is not yet clear how PTECH's additional two years will be funded, but the programme enjoys strong political support and the problem has not yet become urgent.³⁰⁹

Programme Results and impact

Brooklyn

Brooklyn PTECH's combination of open admission and very high academic standards is unique in the New York City school system. Consequently, it is challenging to find an appropriate baseline for evaluating PTECH student outcomes. However, the model is specifically aimed at expanding aspirations, opportunity, and achievement for all students, not just elite students.³¹⁰ According to Claire Riccardi, PTECH seeks to ensure successful academic progress and degree completion for every one of its students, and to do its best to devise support systems and remedial programmes to allow this to happen.³¹¹ According to Rashid Davis, PTECH explicitly recognizes that students entering with different skill levels will proceed at different paces. Since access to college-level IT courses requires a specified level of foundational skills in English and Mathematics, PTECH does not expect all students to move through the programme in year-by-year cohorts – some will be ready for "10th year" introductory college courses immediately, while others may not be ready until their nominal 11th year. Some students will take the full six years to complete the programme, while other students may graduate in four or five years.

³⁰⁶ PTECH: "Pathways in Technology Early College High Schools: A Grades 9-14 School Model"

³⁰⁷ Author Interview, Charlotte Johnson

³⁰⁸ Press Release, Office of the Mayor, City of Chicago, February 28, 2012

³⁰⁹ Author Interview, Charlotte Johnson

³¹⁰ Author interview, Rashid Davis

³¹¹ Author Interview, Claire Riccardi

According to Davis, “failure” in the programme is defined only as “quitting or dropping out.” Students are encouraged to attempt ambitious goals without fear of failure and are eligible to retake courses and qualifying exams as often as needed.³¹²

Against this background, PTECH monitors several sets of statistics to document student progress and programme impact.

- 1. Attendance:** Attendance data is a key indicator of student morale and programme commitment. In 2012 PTECH documented a 94.2 per cent attendance rate for its first year, fifth highest among 13 “new high schools” that had opened in 2011. In 2013, at the completion of its second programme year, and its first year with both 9th and 10th grade cohorts, PTECH reported average attendance to date at 93 per cent. According to Stan Litow, “if students don’t attend, it’s basically because they are sick. They aren’t skipping out.”³¹³ Will Ehrenfeld, Community Coordinator for PTECH Brooklyn (who also serves as a social sciences teacher and soccer coach there) acknowledges that a small number of individual students have been flagged as dropout risks based on poor attendance patterns. Consistent with the school’s focus on community and personal relationships, the school staff are doing “everything they can” to re-engage these students.

Between the first and second programme year, 97 per cent of students elected to return to PTECH. According to Litow, most of the three per cent loss is “inevitable turnover as people move out of the city, for example.”³¹⁴

- 2. Academic Standards:** At the conclusion of the 2012 academic year, 89 per cent of 9th graders were promoted to 10th grade, and 94 per cent of 10th graders were promoted to 11th grade. The Preliminary Scholastic Achievement Test (PSAT) provides comparative data on critical reading and math competencies for students across the U.S. Twenty-five per cent of PTECH students exceeded the national average in critical reading, but this score was higher than the mean score for New York City schools as a whole. Forty-eight per cent of PTECH students exceeded the national mean for math scores.³¹⁵

New York State uses a system of “Regents Examinations” to certify subject-matter knowledge acquired by all high-school students. The CUNY system considers a Regents English score of at least 75 per cent, and a Regents math score of at least 80 per cent, as minimum indicators of college readiness. Since a key goal of PTECH is early exposure to college coursework, the timely achievement of minimum Regents scores by all students is a key objective in the earliest years of the PTECH curriculum. Although 52 per cent of PTECH’s first-year applicants had scored “below proficiency” in English and Math in eighth grade, before admission to PTECH,³¹⁶ about two-thirds of 10th graders had achieved the Regent’s standard by

³¹² Author interview, Rashid Davis

³¹³ Author interview with Stan Litow

³¹⁴ Author interview, Stan Litow

³¹⁵ Data is from PTECH: “Pathways in Technology Early College High Schools: A Grades 9-14 School Model”

³¹⁶ At Technology High School, Goal Isn’t to Finish in 4 years,” New York Times, October 21, 2012, http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?_r=1&adxnnl=1&hwpw=&adxnnlx=1374841004-dPR0ugSg3bVxLbE6sgRt1g

the middle of their second year. By the spring of 2013, 62 out of 101 10th graders, and 12 of 125 9th graders, were enrolled in at least one college course. By the fall of 2013, based on anticipated results from June and August Regents exams, PTECH expects to enroll a total of 115 students in college-level courses.³¹⁷

Chicago

Data is more limited for Chicago, but some information is available for first-year outcomes at the Sarah E. Goode STEM Academy:

- The school uses the ACT Explore exam³¹⁸ to measure student growth in terms of grade levels. On average, in one year Sarah E. Goode students gained an average of 1.5 years academic growth. In math and English, average gains were even higher: 1.8 years in English, and 1.9 years in math. 96 per cent of 9th graders were promoted to 10th grade. First year attendance rates were 95 per cent.
- The Compass Exam is the college-readiness exam administered by City Colleges of Chicago; it will be used in a way similar to PTECH Brooklyn's use of the New York State Regents' exam. However, no 9th graders have yet taken the exam. The first Compass Exam will be administered, for the majority of students, in spring, 2014.³¹⁹

Programme Evaluation

Programme Effectiveness

In September of 2013, PTECH in Brooklyn enrolled its third class of 9th graders – and its oldest students began 11th grade, traditionally their third year of secondary school. The Chicago PTECH implementations are a year younger.

Clearly, it will take several more years for evidence and experience to accumulate in order to document the programme's success in achieving its longer term goals. According to Bonne August at City Tech, "we can measure attendance and course completion now; in the longer run we are going to want to measure rates of progress and credit accumulation, state examination results, time to degree completion, graduation rates, and job placement rates". In New York, CUNY tracks longer term employment outcomes for its alumni "to the extent possible". CUNY can also compare performance metrics for students across its system, measuring the relative effectiveness of different programmes.³²⁰

However limited, the interim metrics available to date are indicative of significant early programme accomplishments and appear to have given public and private partners enhanced confidence about long-term outcomes. These metrics provide:

³¹⁷ Data is from PTECH: "Pathways in Technology Early College High Schools: A Grades 9-14 School Model"

³¹⁸ See: <http://www.act.org/products/k-12-act-explore/>

³¹⁹ Data is from PTECH: "Pathways in Technology Early College High Schools: A Grades 9-14 School Model"

³²⁰ Author interview, Bonne August

- Evidence of transformative impacts on student engagement, as measured by attendance, academic performance, and subjective/qualitative reports.
- Evidence of accelerated academic progress by many students, based on standardized test outcomes and enrollment in college-level courses.

We can consider evidence of programme effectiveness under several broad additional headings:

- 1. Successful operational rollout of the PTECH model.** The initial decision to give a green light to PTECH in Brooklyn was made in January, 2011. The first academic year began only eight months later, in September, 2011. Within that brief time period, the programme partners successfully identified and converted an appropriate school facility; hired a strong and charismatic Principal with highly relevant prior school management and community relations experience; selected and hired appropriate faculty and staff who were committed to the PTECH model and to furthering aspiration among disadvantaged students; designed and implemented an appropriate first-year (9th grade) curriculum, and publicized and promoted the new school city-wide for prospective students and their parents within New York City's choice-based public high school system.³²¹ The successful implementation of a highly accelerated rollout points to clarity of goals, strong relationships, and practical expertise among PTECH's founding partners.
- 2. Willingness of business partners to rapidly replicate the model.** Experienced corporate leaders, not only at IBM but at Microsoft, Cisco, Motorola Solutions, and Verizon Wireless, have been sufficiently impressed by early PTECH outcomes in Brooklyn to invest in replication of the model. Moreover, when Chicago decided to start a PTECH programme, it elected to create not just one school but five at the same time. In September, 2012, just one year after the opening of Brooklyn PTECH, all five new PTECH schools opened on the South Side of Chicago. Early indicators from Chicago are at least as encouraging as those from New York.
- 3. Demonstrated institutional effectiveness.** The early history of PTECH suggests a promising pattern of effective governance and problem resolution. PTECH built credibility among parents and communities who tend to be skeptical about programmes that seem to "track" disadvantaged young people into vocational and technical careers. It gained the support of local, city-wide, and state-wide political leaders. It made tough decisions about simplifying the 9th grade curriculum.³²²
- 4. Creation of an effective and motivating school culture.** At PTECH Brooklyn, the late start on city-wide enrollment in 2011 meant that many students in the first cohort had incomplete knowledge and limited motivation for undertaking a technology based programme, and drifted into PTECH almost by default. "Middle school students in New York City can generally list up to 12 choices when they select a high school," said Will Ehrenfeld, Community Coordinator at PTECH Brooklyn. "For most of our first year students, PTECH was their 13th choice."³²³ Yet the interim achievement statistics show that PTECH was able to generate student motivation and significant academic accomplishments among a student body that had a very diverse level of

³²¹ Author interview, Bonne August

³²² Author interview, Davis

³²³ Author interview, Ehrenfeld

fundamental skills, education focus, and academic preparation. And for PTECH's second year, 600 middle school students applied for 125 openings. PTECH also retained all but one of its initial group of teachers for its second year of operations, despite the professional impact of longer school days and enhanced responsibility for counseling and supporting students.³²⁴ These indicators point to successful creation of a positive school culture and to student and staff commitment to PTECH's mission.

- 5. Subjective/Qualitative impact on students.** While evidence here is more anecdotal, students have expressed considerable enthusiasm for the PTECH programme. Students often report that the programme makes them feel "special" because of the school's unusual commitment to their future. Media accounts indicate that PTECH students recognize the value of getting an Associate's degree "without having to pay for it."³²⁵ Staff report that students are excited about opportunities to spend time on college campuses and take college courses, and to see technology workplaces in action.

Programme cost/benefits analysis to each partner

Employer partners: According to Stan Litow, IBM and other PTECH corporate partners envision their investment in PTECH as comparable to investment in research and development: they see it as essential for generating long-term benefits but not subject to a short-term bottom line calculation. The costs of talent shortage, and the impacts of recruitment challenges, are evident to all major technology companies. Litow asks, "What would it be worth to a firm to be able to 'grow' its own skilled talent pipeline wherever and whenever it needed to do so?". He concludes that the time and effort invested in PTECH are clearly worthwhile to IBM from a business perspective.³²⁶ It is difficult to quantify the corporate return on investment more precisely, but the evidence of interest among other companies that have made comparable PTECH investments in Chicago strongly suggests that experienced leaders of several major corporations see significant positive benefits over the long-term.

Higher Education Partners: In New York City, the PTECH partnership is well within the charter and mission of the CUNY system and City Tech college. CUNY's formal roles in the public school system include serving as a "support network" for designated public schools, and CUNY's commitment to partnering with early-college high-schools has already been discussed. CUNY's unique contribution for PTECH involves enhanced collaboration with IBM on the selection of relevant coursework and increased staff commitment to delivering college-level courses at high-school facilities, especially for the benefit of the youngest students who may not be ready to travel on their own to college campuses. Relatively modest costs to the CUNY system include the additional teaching load (generally met by lecturers rather than full professors) and some additional professional development resources to help college lecturers adapt to the learning style and environment of younger and less mature students.³²⁷ The return on this

³²⁴ Author interview, Davis

³²⁵ "At Technology High School, Goal Isn't to Finish in 4 years," New York Times, October 21, 2012, http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?_r=1&adxnnl=1&hpw=&adxnnlx=1374841004-dPR0ugSg3bVxLbE6sgRt1g

³²⁶ Author interview, Litow

³²⁷ Author interview, Bonne August

investment includes the advancement of CUNY's well established mission to improve access to higher education for all New York City communities.

In Chicago, there is not a comparable tradition of higher education partnership with the public school system, and no equivalent to CUNY's Early College Initiative.³²⁸ In general, however, community colleges across the U.S. are concerned about poor student preparation and low degree completion rates, and programmes that provide a supply of motivated and college-ready students make a positive contribution to their mission.

School Partners: Neither the New York City Department of Education nor the Chicago Public Schools have made, or anticipate making, an extraordinary fiscal commitment to PTECH. In fact, a New York State grant programme to replicate PTECH at 16 additional locations is funded at US\$4 million. That amounts to US\$250,000 per project – not remotely enough for significant operational impact but intended to facilitate special management and planning initiatives for the startup of PTECH style programmes.

While the investment by the school system is mostly in intangibles such as management, expertise, and creativity, the leaders we interviewed see substantial benefits from project participation. An obvious systemic benefit comes from increasing student access to college-level courses. But the crucial value added by the PTECH partnership is in extending the vision of the programme into the workplace, providing students and programme staff with a clarifying set of goals and incentives that motivate their hard work in each of the programme's academic components. The partnership structure itself also provides fresh thinking and incentives for organizational change.

Students: Students themselves are asked to make unusually intense investments of time and effort in their education. Instead of leaving for home at 3 pm they may attend school-based enrichment programmes until 6 pm, on weekends, and even in the summer time. They are asked to prepare for relatively advanced academic material on an accelerated schedule. They are asked to step outside their social comfort zone in mentoring relationships with corporate staff, in time spent on college campuses, and in workplace-based experiences at employer sites. A key factor in keeping them motivated and focused, according to Rashid Davis and Will Ehrenfeld, is the fact that the PTECH programme provides them with powerful exposure to the payoff from this investment, in terms of academic success leading to sustainable employment.

Key success factors and lessons learned

- 1. Motivational impact of work experience components.** Rashid Davis strongly believes that incorporating a strong employer partner and its resources can unleash the potential of a career-focused early college programme model. By giving students direct experience of what their future can look like, and the promise of a path to success, the career and workplace components of PTECH provide them with a sense that hard work will be rewarded, offer a clear rationale for all of the coursework they undertake throughout the programme, and give them

³²⁸ Author interview, Charlotte Johnson

strong incentives to stay in the programme and be successful. The results are reflected in higher attendance, more ambitious efforts, and higher academic achievement.³²⁹

- 2. Partnership approach.** The PTECH model is innovative and has presented a host of unique challenges, in part related to forging effective relationships among very diverse institutions. But in interviews, PTECH staff and leadership rejected the notion that these challenges were unusually difficult or formidable. IBM's Litow compared them to the challenges of any negotiation, sale, or partnership between different business entities. "You take the time to listen to people from the other organization, understand their culture and their needs, and come to some kind of mutually beneficial arrangement." According to Rashid Davis, this sort of experience should not be unfamiliar to educators, either: "elementary school is different from middle school, which is different from high school, which is different from college. We learn how to work together all the time." A major factor in the success of the PTECH collaboration may, therefore, lie in the expectation, among all partners, that they will have to work hard and in good faith to learn from each other and accomplish something new together. "This would not be the same project without the outside stimulus from the business community," said Davis. This expectation – and processes of collaboration – are reflected in PTECH's inclusive and collaborative structures for project governance and planning.
- 3. Strong institutional support.** IBM's CEO, Virginia Rometty, has provided executive leadership in making PTECH a high priority for IBM. She emphasizes the value of the project in internal meetings as well as Board of Directors meetings, underscoring IBM's institutional commitment to corporate responsibility initiatives, and advocates for further replication of PTECH in her meetings with other corporate CEOs.³³⁰ Both the New York City Department of Education and the CUNY system have made high school innovation and early college access key institutional goals, and they have acquired substantial experience in implementing creative programmes. PTECH Principal Rashid Davis has a track record of developing early college high schools and working effectively with disadvantaged students. The principal teachers' union in New York City is a strong supporter of PTECH. PTECH has effectively reached out for political support at the community level, within the borough of Brooklyn, from the Mayor's office, and from the Governor's office. U.S. President Obama recognized and praised PTECH in his 2013 State of the Union address and visited the school in October, 2013. PTECH has assembled a formidable network of institutional commitments and professional expertise in support of its model.

Sustainability, replicability and scalability

In multiple interviews PTECH staff and leadership articulated an acute awareness of the factors that had contributed to PTECH's success; they distinguished between some factors that were readily replicable at any new site and others that reflected the distinct character of the New York City educational system.

Interviewees acknowledged that New York City provided almost ideal infrastructure for creating the initial PTECH pilot – including a tradition of innovative secondary education and early college

³²⁹ Author interview, Davis

³³⁰ Author interview, Litow

programmes, excellent supporting institutions, flexible school budgets, a teacher’s union that welcomed school redesign pilots, and excellent public transportation between home, school, and university campuses.

Even in Chicago, however, some of these factors – such as a well-developed tradition of institutional partnerships between schools and colleges – were absent. And the model will likely require additional modification and pragmatic problem-solving as it expands to smaller cities or even rural areas.

Both Rashid Davis and Stan Litow agree that if PTECH is to serve as a general model for secondary school reform, it must meet two basic criteria – it must be sustainable from ordinary school funding, and admission must not be restricted by any eligibility criteria for students.³³¹

Charlotte Johnson, the IBM Project Manager for PTECH at the Sarah E. Goode Academy, believes that PTECH has already demonstrated such a model, and that it is replicable, but that successful further replication will depend on the quality of the partners involved.³³²

More widespread adoption of the PTECH model may therefore require the education of potential partners and hands-on knowledge sharing from more experienced developers of PTECH projects. Stan Litow, for example, envisions “PTECH Technical Assistance” grants and programmes,³³³ perhaps on the model of some of IBM’s other Corporate Responsibility initiatives.

IBM’s Smarter Cities programme has already become an advocate for PTECH – in fact, PTECH in Chicago emerged from a Smarter Cities consultation on how to better link education and employment in Chicago.³³⁴ It was this consultative process that also led to the creation of what PTECH calls its “Playbook,” a report entitled “STEM Pathways to College and Careers Schools: A Development Guide,”³³⁵ which documents the lessons and experience of the Brooklyn PTECH implementation, precisely in order to help other potential partners successfully replicate PTECH. The Playbook lays out elements of the model, key design principles, and pragmatic advice to partners on implementing those principles, including:

1. Building an effective partnership
2. Leading with a clear vision and shared decision making
3. Designing a rigorous and focused curriculum
4. Creating an integrated college experience
5. Creating an integrated workplace experience
6. Building a strong and collaborative teaching faculty
7. Fostering family and community engagement
8. Using resources purposefully

³³¹ Author interviews

³³² Author interview, Johnson

³³³ Author interview, Litow

³³⁴ Author interview, Johnson

³³⁵ IBM: STEM Pathways to College and Careers Schools: A Development Guide. February 2012. Downloadable at: http://citizenibm.com/wp-content/uploads/STEM-Pathways-Playbook_Feb-2012.pdf

The Playbook strongly emphasizes that from the outset, PTECH was intended “not as a single or charter school . . . [but] to apply the knowledge and experiences developed in this pilot school to serve as a model for use by other traditional high schools.”

Future plans

It is evident that in the next few years, the current pilot programmes in New York and Chicago will be maturing and adding more demanding coursework as well as internship and apprenticeship elements. This will likely require PTECH to develop additional models of employer engagement and practical guidance for effective workplace learning experiences. It will likely also lead to the refinement of tools and strategies for supporting students as they encounter more demanding elements of the programme.

At the same time, additional pilots will be coming on line under New York State’s PTECH grant programme, and possibly in Idaho and other locations as well. In New York State, 36 partnership proposals competed for 16 startup grants awarded in August, 2013. Awards were distributed across major regions of the State, including suburban, small town, and rural areas, and winning partnerships included businesses of diverse sizes (including consortia of smaller and medium-sized businesses) and a more diverse range of industries (including health care and pharmaceuticals, manufacturing, and clean technologies).³³⁶ The New York State projects will demonstrate adaptations of the PTECH model that will expand the range of industries, communities, and student career pathways that can be served.

In interviews, key PTECH leaders expressed a hope that several additional components could be added to the PTECH model in the future. Rashid Davis would like to add a boarding school component to PTECH, in order to help insulate students from the “distractions” of dangerous and difficult home neighborhoods. Bonne August and Will Ehrenfeld both regret that the programme needed to sacrifice so much of liberal arts and the humanities in order to concentrate on intensive student support for IT foundational skills, and hope that these subjects may be added back as the programme evolves.

Stan Litow sees a long-term global future for PTECH: “let’s get it right in the U.S. and replicate it, develop a set of skills and tools to offer to potential partners, and then we can take it to Africa, India, Western Europe . . .”³³⁷

As PTECH continues to define itself in terms of a learning partnership aimed at ambitious goals, and as it remains committed to disseminating lessons and operational models, it should remain a source of substantial interest and insights for policymakers and practitioners.

³³⁶ Author interview, Litow. See also: <http://www.p12.nysed.gov/funding/2013-20-nys-p-tech/> and <http://www.governor.ny.gov/press/08282013Students-for-High-Skill-Jobs>

³³⁷ Author interview, Davis

Conclusion

Why is this programme important/relevant/unique/good to replicate in other locations/sectors?

PTECH's key innovations lie in the areas of:

- Raising the standards for public-private educational partnerships, by defining more engaged and impactful roles for the private partner while providing clear models and lessons for collaboration between institutions.
- Using these partnership resources to help re-conceptualize the transition from school to work, not only for students but for educational institutions themselves: providing a stronger career vision, integrating more sophisticated education and training resources, and creating clearer career channels for young people.

In addressing the global challenge of creating better school-to-work transitions, one of PTECH's most important contributions may be to demonstrate the ways that deep employer engagement in secondary education programmes can transform how both students and institutions envision and prepare for the transition to work. This sort of engagement not only improves the ability of students to make good career choices; it also helps communities and public education systems define clearer, more ambitious, and more economically impactful goals for secondary education and then mobilize resources and strategies to meet those goals.

In U.S., the current secondary school model means that structured universal education ends at a point before students have acquired a competitive set of workplace skills. Stages on the path from school to work are represented by separate institutions -- secondary schools, vocational trainers, colleges and universities, and employers themselves -- that have different cultures and objectives, do not always understand each other, and are not always effective in helping young people transition from one stage to the next. Too often, secondary students are expected to draw on their own social resources and information networks, either to find motivation for high academic achievement as a gateway to professional education, or for the sustained pursuit of vocational training as a gateway to a technical career. As a result, students face critical career-choice points -- such as selecting a vocational or academic track, entering a training programme, selecting a college, or simply graduating and entering the job market -- without fully understanding, in advance, the consequences of their choices or fully preparing for their next step toward a career.

By contrast, the PTECH model provides a more strongly guided and more seamless transition between secondary school, postsecondary credentials, and work. Arguably the PTECH approach is more prescriptive for students and less choice-based than more traditional models. But while empowerment and choice are generally excellent things, they can be empty and alienating concepts for young people who lack social capital and experience to understand their choices or even to visualize the available, possible stages of their further education and early career development. PTECH may be a superior model precisely for those students who lack this capital: those who are most at risk for not "seeing the

point” of early educational success and who are likely to approach critical transitions with poor information, poor motivation, and poor prior credentials.

But while the PTECH path is more structured than some other paths from education to work, it is not intended to limit or constrain long-run career choices. In particular, it is definitely not intended to direct young people into any sort of second-class vocational track. This point was made especially strongly by Rashid Davis, who sees it as a key fact to stress in developing support for PTECH among those communities it can most strongly benefit – communities that are historically highly skeptical about tracking and vocationally oriented programmes that channel young people into inferior careers.

The IT and technical competencies gained in PTECH are themselves broadly relevant to a wide range of careers. The programme’s exit point – a two year associates’ degree – leaves graduates well positioned both to seek sustainable work and to pursue further education. These graduates approach future employers or educational institutions with credentials that clearly establish their ability to function effectively in the workplace and/or successfully perform university-level academic work. Some current PTECH students are already thinking about ways to use IT knowledge as a point of entry into other fields: one student wants to be an attorney focusing on technology issues; another wants to be a surgeon using advanced medical technology; a third wants to use robotics in creating medical devices.³³⁸

The PTECH model also directly attacks the notion that secondary completion, at least as defined in the United States, is the most relevant “choice point” for making career decisions – or even that secondary completion represents a market-relevant skills credential. Rashid Davis firmly believes that “the two-year degree is the new high-school degree,” and represents the minimum skills standard for effective entry into the workplace.³³⁹

The proof of the model, and the clear establishment of its potential benefits, will need to wait upon further experience and the graduation of the first PTECH students two to four years from now. But the approach appears powerful and well-conceived, and is directly aligned with some of the key challenges that plague existing school to work transitions: high disengagement rates, especially among disadvantaged young people; poor information for making career and training decisions; limited availability of training support; and limited access to career-oriented jobs. In addition to its potential global relevance, PTECH also directly engages several of the leading challenges facing the U.S. community college (two-year-degree) system, namely: significant out-of-pocket costs to students, expensive and time-consuming remedial coursework for students who are not college-ready, very low degree completion rates, limited incorporation of work-readiness and work-experience components, and limited alignment of curricula with immediate employment demand.

³³⁸ “At Technology High School, Goal Isn’t to Finish in 4 years,” New York Times, October 21, 2012, http://www.nytimes.com/2012/10/22/nyregion/pathways-in-technology-early-college-high-school-takes-a-new-approach-to-vocational-education.html?_r=1&adxnnl=1&hpw=&adxnnlx=1374841004-dPR0ugSg3bVxLbE6sgRt1g

³³⁹ Author interview, Davis

How does this programme compare to ILO's standards for high quality apprenticeships?

ILO's standards for high-quality apprenticeships are intended to ensure that young people receive market-relevant skills training in leading, in-demand occupations, as well as structured, hands-on work experience in a safe and non-exploitative environment, so that they are well-prepared for a career in their chosen field and gain effective access to sustainable, skilled jobs.

- 1. Sector-based, public private partnerships.** Like high-quality apprenticeship programmes, the PTECH model is based on a collaboration between employers, young people, and educators; it is designed to provide young people with a body of skills and work experience that are recognized and relevant to a broad sector of the economy, that ensure a ready transition to the workplace, and that lay a foundation for further career success.
- 2. Combination of classroom and workplace-based learning.** While traditional apprenticeship tends to be workplace-based with a significant classroom component, PTECH is envisioned as mainly classroom-based with a significant workplace component – including developmentally appropriate internships, apprenticeships, mentoring, and “capstone” projects closely aligned with the programme’s classroom-based components. From a functional perspective the programme is intended to serve many of the same ends as a traditional formal apprenticeship: while the classroom element provides for a solid foundation of technical, academic, and workplace skills training, programme design and the employer partner’s major role permit flexible integration of immediately relevant work experience, access to entry-level jobs requiring mid-level technical skills, and further skills training aligned with rapidly evolving economic demand. It will be possible to further evaluate the internship and apprenticeship components of PTECH in two to four years as students advance to those elements of the programme.
- 3. Quality skills acquisition for quality jobs.** The collaboration with industry – in this case with IBM and other leading technology firms – means that the specific, emerging skills requirements of the IT industry are carefully integrated into all levels of the PTECH curriculum. The resources of CUNY’s leading technical college, City Tech, and of the Chicago Community Colleges are available for the development, selection, and delivery of curriculum elements for PTECH participants in their respective cities, and the traditional high-school curriculum is structured and accelerated to make these more advanced courses available to PTECH students as early in their school careers as possible.
- 4. Career information component.** The curriculum content “comes alive” for PTECH students because of the programme’s commitment to helping students progressively visualize, understand, and participate effectively in real, cutting-edge IT workplaces. Just as a traditional “dual apprenticeship” combines workplace and classroom learning so that each of the two components reinforces the other, PTECH combines secondary and early tertiary education with a deep, extended, experience-based introduction to the modern high-tech workplace so that this experience can inform the academic motivation, performance, and choices of young people throughout their educational careers. It leaves them with both the skills and attitudes necessary for ready and effective entry into the work force. And the door to jobs is opened, in particular, by IBM’s promise that PTECH graduates will be “first in line” for available IBM job openings.

- 5. Earnings, labour rights, and social protection.** PTECH is committed to developing quality internship and apprenticeship slots with leading-edge companies. The current set of PTECH partners all have strong reputations for social responsibility and for investments in their workforce, including generous employee benefits. All internships and apprenticeships will be paid.

Areas for improvement

In our interviews with PTECH leaders and staff, it was clear that they saw PTECH as a complex initiative, a “work in progress,” that was advancing well but whose culture of problem solving faced a very definite agenda of current and future challenges. To a significant extent, according to Stan Litow, the PTECH rollout represents a business-based, “fast prototyping” approach to programme development and replication, where commitments are made based on promising initial impressions and sound business judgment, with confidence that challenges can be addressed as they emerge.³⁴⁰

- 1. Adequate support for low-performing, special needs, and other at-risk students.** PTECH addresses the special needs of these students through a strategy based on expanded class time, strong personal connection and support, and an environment where students are encouraged to “try, and try again” without fear of short-term failure.³⁴¹ Nevertheless, it seems likely that as project experience grows, some students will not make adequate progress and patterns of dropout and failure may emerge. PTECH is committed to doing “all it can” to try to develop solutions that work for all students, but this will clearly be an emerging challenge as students advance to more challenging elements of the programme.³⁴²
- 2. Improvement of gender balance.** In New York City, about 75 per cent of PTECH students are male, and only 25 per cent are female. This reflects a decision to reach out to young black males as a social priority in the New York City community, and programme leaders acknowledge that gender balance was not an initial priority in New York³⁴³. As PTECH in Brooklyn refines its outreach and marketing to new potential candidates, special initiatives for young women may be added. In Chicago, the Sarah E. Goode STEM Academy is equally divided between male and female students.
- 3. Maintenance of an individualized programme model.** PTECH is committed to allowing each student to proceed at his or her own pace, but as students reach higher grades and engagement intensifies with university systems and with corporate work experience programmes, there may be pragmatic pressures, from a planning and administrative perspective, to move toward a more structured, cohort-based model. PTECH leaders have identified this as an issue that will require more consideration in the future.³⁴⁴
- 4. Creation of internship programmes.** Work experience is an essential component of the PTECH model. An issue that PTECH has not yet engaged is the creation of internship and apprenticeship

³⁴⁰ Author interview, Litow

³⁴¹ Author interview, Davis

³⁴² Author interview, Riccardi

³⁴³ Author interview, Litow

³⁴⁴ Author interview, Bonne August

programmes that will provide significant and realistic work experience for its older participants. The PTECH model envisions internships beginning in the summer after 3rd year and “apprenticeships” during the final programme years. Marketing the programme to employers to ensure that a sufficient number of positions are available may be a significant administrative and economic challenge. Stan Litow believes, based on his own experience with IBM’s global internship programmes, that the challenge will be manageable, but he acknowledges that it has not yet been addressed.³⁴⁵

Looking Forward

PTECH’s potential relevance includes its innovative and promising approaches to bridging school to work transitions, to improving the economic relevance of education, to connecting disadvantaged young people to the workforce, to developing skilled talent pipelines for expanding industries, and to modeling effective public-private and business-education partnerships. These factors, and early indicators of positive student impacts, make PTECH a project that deserves continued close attention as it matures and as its longer-term impacts begin to be observed and documented. The commitment of project leaders and IBM to documentation and replicability means that PTECH will likely continue to be a source of important thought leadership in these areas.

List of Author Interviews (July 2013)

Bonne August, Provost and Vice President for Academic Affairs, New York City College of Technology
Claire Riccardi, Programme Manager, CUNY Early College Initiative
Stanley S. Litow, Vice President of Corporate Citizenship and Corporate Affairs, IBM
Rashid Davis, Principal, PTECH Brooklyn
Will Ehrenfeld, Community Coordinator, PTECH Brooklyn
Charlotte Johnson, IBM Project Manager, PTECH at Sarah E. Goode STEM Academy, Chicago

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