

Tech Talent Fund

Strategic Planning Session Notes

November 8, 2016

What trends have you noticed in relation to skills, education, and industry?

- Higher education:
 - Tendency towards shorter, targeted programs (certifications and apprenticeships)
 - HR wants Bachelor degrees, but there is a mismatch in messages
 - Needs to be education to employers for what they actually need (don't necessarily need someone with a 4-year degree)
 - Are Bachelor degrees necessary?
 - Lack of qualified computer science teachers/professors
 - Distance learning for advanced degrees
 - Number of CS applications are increasing at UConn
- What companies want:
 - Companies want developers, not computer scientists
 - Trends towards data scientists, platform engineers, and data operations
 - Data analytics, software engineers, cybersecurity, and web design
 - Soft skills, too
 - Companies need to buy into the idea of junior talent (and then train them)
- Agile development
- Companies can't find talent and young people can't find jobs → obvious disconnects
- Communication:
 - Lack of awareness for small companies (students don't know to go looking for the small firms)
 - Need to promote collaboration and access
 - Lack of a common tongue
- General trends:
 - Not enough women
 - Not enough people of color
 - Bigger companies get first dibs on students
 - **3 buckets: attracting, retaining, producing**

What data could we be looking at to help us better understand these trends? What data could we be gathering or analyzing to improve the tech landscape of the state?

- Targeted survey to employers
 - What levels of experience do employers want?
 - What other skills do computer science employees need?
- Best practices and lessons learned from previous failures (from companies)
- Root cause of supply shortage – perhaps a higher ed survey: capacity → other programs and plans to grow degrees
- K-8 education:
 - What do schools have in CT?
 - What programs are available?
 - Teacher prep programs available
- Speaking with VPs of Engineering at companies:
 - What do you need?
 - What projects and skills are important to you?
- Higher education:
 - What programs are available at each school?
 - What are their plans for growth?
 - What are employment rates per program?
- What are the right pathways to these jobs?

How do we define “tech talent?”

- Source: Help Wanted OnLine (HWOL) – came to us from CT DOL
 - Computer system analysts
 - Computer User Support Specialists
 - Web Developers
 - IT Project Managers
 - Network and Computer Systems Administrators
 - Computer Systems Engineers/Architects
 - Software Quality Assurance Engineers and Testers
 - Computer Programmers
 - Information Security Analysts
 - Data Analytics
 - All other computer science and math occupations

Legislation says that the Tech Talent Advisory Committee may develop programs for:

1. Student loan deferral or forgiveness for students starting businesses in the state
2. Training, apprenticeship and gap year programs
3. Marketing/publicity for recruitment

Are there any other program categories that should be considered? Out of the box ideas are welcome. Where do we get the most bang for our buck?

Jen Widness, Mark Stankiewicz, Mike Silvestrini:

1. Market career opportunities, pathways in technology to the state's K-12 system
2. Offer college loan forgiveness for those receiving A.S./B.S. degrees (from state colleges and universities) in technology-based disciplines
3. Establish grants to incentivize students to remain in Connecticut following graduation (see #2)
4. Offer tuition assistance to students from other states to study technology in Connecticut
5. Identify better, clearer pathways for two-year students to enter four-year degree opportunities
6. Financial assistance to colleges/universities to accept more students taking studies in technology
7. Develop a post-bachelor's degree technology certificate program for professionals and those looking for a career change (e.g.; alternate routes to technology careers)
8. Review state regulations that are restricting the private colleges and universities from being innovative with program development

Note: need to examine the applicability of responses #2 and #4 to the state's private colleges and universities

Group 1

1. K-12 education:
 - a. Earlier education
 - b. More girls need to stay with STEM/tech
 - c. Who is teaching these programs?
 - i. What about volunteers from corporations?
 - d. Needs to be room in the curriculum
2. Ambassador program
3. Clone A100 to provide more scale
4. More capacity at UConn (innovation district)
 - a. Making sure teachers/professors are up to date
 - i. Getting industry to help
 1. Tax breaks?
 - ii. Adjunct professors
 - b. Attract more faculty to CT
 - i. Price is becoming an issue
 - ii. Should our fund "top off" hiring offers?
5. Getting jobs in front of grads ASAP

- a. Talent Bridge for internships – senior design with local companies
- b. New portal (CTC)
- c. Resume database
 - i. From cutting room floor to other companies
6. Scholarships for young women
7. Apprenticeship programs
 - a. Transition
 - b. High school
8. Making towns and cities cooler (innovation)

Group 2

1. There are many pathways to each type of tech position. We should map multiple pathways including baccalaureate degrees, 2 year degree programs, and shorter certificate/training programs.
2. We should explore training programs to certify people in systems integration software that are widely used by CT companies such as Salesforce, Oracle, etc.
3. We should make use of the CSU system to expand training/credentialing programs.
4. Our educational institutions should partner with corporations to design programs that specifically address their workforce needs. The corporations should have a direct voice in curricula.
5. We should review the NECA program and see if it merits expansion throughout the state.

Group 3

1. Internships
2. Inroads to target diverse talent
 - a. Skill development
3. Tech Trail of companies (like the pizza trail on tourism website)
4. Tech crawl
5. Opportunity for companies to engage with senior design teams
 - a. Rent-to-own opportunities
6. Out of the box:
 - a. K-8 job shadows, contest hosting, tech clubs, mentorships
 - b. How can smaller companies become players...?

Turning the above ideas into priorities

- Speeding up the certification/education process for computer science teachers in grades 9-12
 - Need to be able to teach students problem solving (algorithmic thinking)
 - Grades 4-8: build motivation and stimulate interest in the field
- Scale up A100 or something very similar (boot camp style)
- Better connecting emerging talent to jobs in the field and making sure they stay
- Badging/credentialing for post-grads
 - Perhaps with an industry sponsorship component

- Credentialing for cross-endorsement instructors (teachers that can teach multiple subjects)
- Mapping pathways to different careers in IT industry
- Adjunct instructors
 - Either teachers can teach at more than one school OR
 - Industry professionals teach
- Stackable programs
 - Regional higher ed/industry partnerships that are designed to increase CS grads
- State-supported student-centered internships
 - Housing component to keep CT college students in-state during summer
 - “If you stay in Connecticut, we will provide X, Y, Z”
 - Matching programs
- Curriculum: what is actually going to be taught in classrooms?
- Survey of employers
 - A100, CTC, CBIA all may be useful in gathering data

Next Steps:

Survey – once we know what employers need, we can gain a better sense of which programming needs are most pertinent