CLOSING THE TALENT GAP

Addressing a big problem by shaping millions of little decisions

October 2015
• The US Economy has a talent problem: Many employers can’t find the talent they need, many job seekers can’t find the work they want, and many higher education institutions, government agencies, foundations, non-profits, and other groups have struggled to address this mismatch.

• To address the talent problem at the level of the US Economy, you have to shape millions of decisions: To solve a system-level problem like the mismatch between the demand and supply for talent in an economy, you have to shape millions of decisions, such as what topics students decide to study, what programs academic institutions decide to offer, how employer decide to engage with higher ed, how governments and foundations decide to invest in the talent ecosystem, and many more.

• To shape decisions, you need the right information, tools, and enablers: Many of the millions of decision makers in the economy are making uninformed decisions. The more accurate information we provide to decision makers, the more they will make decisions in their own best interest that will eventually close the gap between the supply and demand for talent. (e.g. the more job seekers know what skills are in demand, the more they will develop those skills, the more academic leaders know what skills matter for graduates and employers, the more they will focus on teaching those skills, etc.). However, just providing information isn’t enough. People must also have the tools they need to understand the information and the enablers (Training, guidance, leadership support, incentives, etc.) to ensure they use it.

• Rolling out real time job posting analytics tools is a powerful way to kick-off the process of creating more informed decisions throughout the talent ecosystem: Real time job posting analytics tools like Wanted Analytics address one of the missing links in the decision making process for a wide variety of decision makers. These tools allow decision makers to determine what skills, certificates, and occupations are in demand within any company, city, county, industry, or country as of today – this second. Students, job seekers, career counselors, deans, professors, employers, government leaders, foundations, and many more talent stakeholders all find this information valuable, so rolling out these tools can create a common fact base throughout the ecosystem while become a powerful lever for change. When decision makers see the data, they immediately want to use it, which leads to a transformation in their decision making process and begins the journey towards addressing the mismatch between the supply and demand for talent.

• These ideas have been successfully piloted and are being scaled up across Minnesota: Based on the results of piloting the use of real time data across 25 institutions in 2014, the Itasca Project partnered with several public and private institutions to co-fund and co-launch Real Time Talent, a new entity focused on creating more informed, market oriented decisions throughout the Minnesota workforce and education ecosystem to ensure the Minnesota economy has the talent it needs and to help Minnesotans prepare for and find careers they want. Real Time Talent (www.realtimetalentmn.org) is leading the roll out of real time data across 110 higher education, workforce, and employer association institutions across Minnesota.
WE HAVE A TALENT PROBLEM

Employers say they can’t find the talent they need and job seekers say they can’t find the work they want. Academic leaders say they can’t get employers to engage with students and professors, and employers say when they try to help higher education institutions, they don’t get the results they want. Everyone says the government should do more, and the government says they can’t get people to use the data and services they already provide. Everyone is doing their best to make a difference, however, the problems persist.

Of course, there are exceptions. There are employers that can find the talent they need, job seekers who have no trouble finding work, and academic leaders who do a great job engaging with employers. However, research from a wide variety of sources has been highlighting the challenges within the talent ecosystem for years:

“By 2020 there will be a global shortfall of 85 million high- and middle-skilled workers”
– The McKinsey Global Institute

“By 2020, 65 percent of all jobs in the [US] economy will require postsecondary education and training beyond high school.”
– Georgetown Center on Education & the Workforce

“The United States will fall short by 5 million workers with postsecondary education—at the current production rate—by 2020”
– Georgetown Center on Education & the Workforce

Other countries are “surpassing the U.S. in post-secondary educational attainment among 25-34 year olds by up to 40%”
– OECD database

“Almost 40% of employers say a lack of skills is the main reason for entry-level vacancies”
– McKinsey Global Education to Employment Survey

“Only half of youth believe that their post-secondary studies improved their employment opportunities”
– McKinsey Global Education to Employment Survey

The approach described within this paper is not silver bullet for addressing the issues raised above, it isn’t simple, and it isn’t easy. It involves finding ways to shape millions of micro-level decisions in order to move the needle on a macro-level problem. It involves leveraging technology tools, data, strong leadership and a heavy dose of change management to help millions of people and institutions become more externally focused and market-oriented. It’s a big idea, but it’s small enough for anyone to use in their organization tomorrow.
Before diving into the mechanics of the approach, it's important to take a step back and define what success will look like. If the US talent ecosystem was functioning at its best, what would be different?

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<th>We would be able to go from...</th>
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<tr>
<td>Students &amp; job seekers choosing educational programs without knowing what jobs and skills are in demand</td>
<td>All students &amp; job seekers making fully informed educational investment choices</td>
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<td>Time to fill open positions increasing</td>
<td>Time to fill open positions decreasing</td>
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<td>Employers leaving the US to find talent</td>
<td>Employers relocating to the US to leverage its talent</td>
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<td>Employers complaining that higher education programs don’t teach graduates required skills</td>
<td>Employers seeing so much value add from higher education programs that they pay to send more staff back to school for advanced training</td>
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<td>Ineffective or “networking focused” academic employer advisory meetings</td>
<td>Engaging, impactful, data-driven, strategic conversations within all academic employer advisory meetings</td>
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<td>Higher education institutions that are slow to adapt to the needs of students, employers, &amp; the economy</td>
<td>Higher education institutions that rapidly respond to the employer, market, and student demand</td>
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<td>Decisions made on opinion and old data</td>
<td>Decision made on real time data and cross-stakeholder insight</td>
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<td>A mismatch between talent supply and demand</td>
<td>Alignment between talent supply and demand</td>
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THERE IS A WAY TO MOVE THE NEEDLE

To achieve the vision outlined above and ensure the US economy has the talent it needs, we (People who care about the US economy and the talent ecosystem) need to shape millions, if not billions, of decisions.

• We need **employers** to decide to clearly and effectively communicate their short and long term talent needs. If employers don’t know how to generate long term talent demand forecasts (or don’t want to) we need them to decide to figure this out since it takes four years to mint an engineer with a baccalaureate degree and nine years to mint a Ph.D.

• We need **academic leaders** to decide to focus on understanding the needs of employers and the economy and then decide to offer courses and programs designed to meet those needs

• We need **students and job seekers** to decide to sign up for the courses and programs that are in demand by employers or that will help those students start their own firms to meet the needs of the economy

• We need **career counselors and academic advisors** to decide to use and share data on what skills and qualifications are in demand by employers and the economy, along with what kind of income and careers students and job seekers can expect.

• We need **government agencies, government leaders, and funding organizations** (Foundations, etc.) to decide to support students, job seekers, academic leaders, and employers with policies, funding, data, and other interventions to help the workforce ecosystem do what it’s supposed to do.

So, how do you do this? How do you shape millions of decisions? There are as many ways to shape decisions as there are decision makers in the world, however, the most proven approach starts by asking decision makers four questions:

1. What additional **data** do you need to make more informed decisions?.

2. What **tools** would make it easier to understand and apply that data?

3. What **enablers** would increase the chances you were able to use the data & tools to make more informed decisions? (e.g. incentives, leadership support, templates, etc.)

4. What **commitments** do the relevant actors (People, institutions, etc.) need to make to work together?
Although the answers to these questions vary based on the type of decision and the type of decision maker, there are several areas of overlap. Almost every stakeholder listed above is interested answering the following questions:

1. What jobs are in demand now and what jobs will be in demand in the future?
2. Where are the jobs now & where will they be in the future (What location, what industry, etc.)?
3. Which employers are hiring now and which employers will be hiring in the future?
4. What skills and certifications are in demand now and what skills & certifications will be in demand in the future?
5. Where is the best place to learn the skills that are in demand? (What school, which delivery method, etc.)
6. Where is the best place to find the talent for a specific role? (What school, what location, etc.)

Several different data sources can help answer these questions, however, emerging real time labor market tools can provide valuable, actionable insight into historical and current (real time) labor market supply and demand. No real time job posting analytics firms have developed the capability to forecast supply and demand yet, but they are working on it. In the meantime, government agencies generate 10 year occupational demand forecasts that can help paint a picture of where the market is heading.

The real time data provided these analytics firms is the missing link for many decision makers. For years it’s been relatively easy to understand job demand at a high level by leveraging government websites or simply Googling for “hot jobs”. However, most of the data available before real time labor market information emerged was outdated and not granular enough for many users. It was possible to get insight into high demand jobs based on government surveys, but the data was at least 3 to 6 months old by the time it was published and didn’t provide employer names or insight at small town or remote region level. That has now changed. Current real time data tools can provide users with “real time / current state” answer for any of the questions listed above at the most granular level, while allowing them to filter the job posting data by occupation, industry, experience level, education level, salary, skills, certifications, location, or keyword.
Although real time labor market information tools can help all stakeholders make more informed decisions, they only address 2 of the 3 critical parts of the improvement equation. Real time analytics vendors provide good data and good tools to help people use the data, however, the “enablers” are up to us – and anyone who wants these decisions to improve.

Fortunately, there are a wide variety of people and organizations with a vested interest in improving the talent ecosystem. The challenge is that many of them are tired of talking about talent shortages and want to see action. This is where real time labor market information tools can help. The data is immediate, relevant, and immediately actionable, so it’s possible to create excitement and openness to change just by showing them the real time data tool and using it to help them answer a question they have about the labor market.

For example, anyone using Wanted Analytics or a similar real time data tool can sit down with…

• …an employer association and show them the top 50 employers with the most job openings that aren’t in the association’s network.

• …the Dean of a regional technical school and show them the top 20 most in demand skills within any industry or geographic region they care about.

• …a student who is choosing a major and help them understand the most common occupations, pay levels, employers, and locations associated with each major they are considering

• …an unemployed First Line Supervisor with manufacturing experience and show them which employers are hiring people like them in their hometown, how many openings there were as of this morning, what skills and certifications are most in demand for those openings and those employers, which schools offer training in those skills, and the names of people who work at the targeted employers.

• …an economic developer to show them which industries currently have the most job openings, what the job posting trend has been over the last 4 years, what the pay rate has been by industry and by occupation, and which cities have the most jobs within each industry.

The list of use cases is almost infinite, but the main point is that a couple minutes with the right data and tools can lead to much more informed, market oriented decisions. This isn’t theory – it’s been proven across the US and around the world – and the more decisions we shape, the closer we get to a talent ecosystem that supplies the talent our employers and economies need. (See Appendix A for a sample job posting analysis of computer programming occupations in the Twin Cities for an example of what can be done with the data).

Having a tool that can add immediate value can open the door to change, but a robust change strategy and the right people and organizations involved are still required to ensure the change sticks. Any effort focused on shaping millions of decisions throughout the talent ecosystem must include the following players:
• **Employer Associations:** The level of individual employer interest in improving the talent ecosystem varies based on that employer’s talent needs at the moment. However, employer associations are focused on the serving the sector, and can provide a trusted, high leverage platform for reaching thousands of employers.

• **Higher Education Institutions:** 2 year, 4 year, for-profit, and non-profit higher education institutions all care about improving the speed and effectiveness of the way they serve student and employer needs. Interest in making more informed, market-oriented decisions may vary by leader and institution, but once they touch the tools and hear testimonials from peer institutions, buy in will increase.

• **Student & Job Seeker Advisors:** Reaching millions of students and job seekers is difficult and expensive, so it’s more impactful to work through those who are already advising these stakeholders. Workforce center counselors, community-based job placement organization counselors, high school and higher education academic advisors and career counselors and anyone else who can reach large numbers of students and job seekers should be at the table.

• **Government agencies:** US government agencies have some of the richest, highest quality, and most validated labor market information in the world. They are also directly responsible for serving the millions of taxpayers within the talent ecosystem. To strengthen the talent ecosystem at a state or nationwide scale, the government must be on the team.

• **Funding organizations:** Foundations have funded some of the most innovative efforts to strengthen the talent ecosystem in the last 20 years, and can provide valuable insight into what works, along with providing the resources to implement a rollout plan.

For a large scale effort like this to work, the groups listed above must show up, work together, collaborate, build trust, and use real time data tools to inform their own decisions and the decisions of their stakeholders. They have to practice what they’re preaching when it comes to decision making. For example:

• Higher education institutions need to share real time data best practices with each other.

• Employer associations need to share examples of how they used the tools and data to publish reports that benefited their members.

• All the groups need to leverage government data experts to spot data vulnerabilities and find new ways to combine real time data with existing government data.

• Student and job seeker advisors need to feed insight about job seeker preferences to schools and employers, while sharing insights from schools and employers directly with the job seekers.

• Everyone needs to use the same data and tools so they can move from analysis paralysis to action - from studying the data to acting on the data.
With the right tools, the right data, and right team, it’s time to move on to the kinds of enablers that will ensure the data and tools are actually used to create more informed decisions. The combination will vary by stakeholder, but some, if not all, of the following enablers must be in place to ensure behavior change actually happens.

- **Leadership support:** Leaders and influencers must promote the use of data to inform decisions and ideally use the data themselves. This may include allocating staff time, training resources and more to signal that using the data matters and to give those leading the rollout get what they need.

- **Local ownership:** Any organization looking to strengthen their decision making processes by leveraging real time data must have a “local” owner, champion, and/or superuser. People ask people for help using data – they have more trouble asking helplines. People also influence people much better than emails do.

- **Skill building:** Whether sponsors use online training, in-person training, video training, peer user groups, reference guides, 1 on 1 coaching or some combination, the investment in making sure people know how to use the data and tools is absolutely critical.

- **Reinforcing mechanisms:** With leadership support, local ownership, and high quality skill building in place, the last piece of the puzzle is a set of “reinforcing mechanisms” to celebrate those who use the data and help those who aren’t using the data. Sample reinforcing mechanisms include sharing usage data with local champions so they can follow up with those who aren’t using the tool, celebrating and recognizing those who are leveraging the data to make better decisions, building the data into standard processes as a requirement, adding mastery of real time data to job descriptions, and much more.
The findings documented within this paper are primarily based on the multi-year Workforce Alignment effort launched by the Itasca Project (www.theitascaproject.com) in late 2012. The Workforce Alignment Team steering committee consisted of the following members and started their work to close the talent gap by conducting a diagnostic of well over 600 stakeholders within the Minnesota talent ecosystem to understand what decisions they were making and what information could help them make more informed decisions.

THESE IDEAS WERE SUCCESSFULLY PILOWED AND ARE BEING SCALED UP ACROSS MINNESOTA

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<th>Category</th>
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<td>Chairs</td>
<td>Scott Peterson</td>
<td>Executive VP &amp; Chief HR Officer</td>
<td>The Schwan Food Company</td>
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<td>Steven Rosenstone</td>
<td>Chancellor</td>
<td>Minnesota State Colleges and Universities</td>
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<td>Private Sector</td>
<td>Amy Walstien</td>
<td>Director, Education &amp; Workforce Development Policy</td>
<td>Minnesota Chamber of Commerce</td>
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<td>Ann Gibson</td>
<td>VP, Federal Relations and Workforce</td>
<td>Minnesota Hospital Association</td>
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<td>Bill Blazar</td>
<td>Senior VP of Public Affairs and Business Development</td>
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<td>Coralea Cline</td>
<td>Vice President, Human Resources</td>
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<td>Judy Werthausen</td>
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<td>Kathy Schmidikofer</td>
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<td>Lynn Plaschko</td>
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<td>Jeanne Herrmann</td>
<td>Chief Operating Officer</td>
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<td>Mary Nichols</td>
<td>Dean, College of Continuing Ed</td>
<td>University of Minnesota</td>
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<td>Mary Rothchild</td>
<td>Director for Strategic Partnerships &amp; Workforce Dev.</td>
<td>Minnesota State Colleges and Universities</td>
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<td></td>
<td>Michelle Chevalier</td>
<td>Director Graduate Business Career Center</td>
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<td>Paul Pribbenow</td>
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<td>Public Sector &amp; Foundations</td>
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<td>Director of Income Strategies</td>
<td>Greater Twin Cities United Way</td>
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<td>Cynthia Bauerly</td>
<td>Deputy of Workforce Development</td>
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<td>Inez Wildwood</td>
<td>Chair</td>
<td>Governors Workforce Development Council</td>
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<td>Jeremy Hanson</td>
<td>Deputy Commissioner - Workforce Development</td>
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<td>Kathy Gaalswyk</td>
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<td>The Initiative Foundation</td>
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<td>Katie Clark Sieben</td>
<td>Commissioner</td>
<td>MN Dept. of Employment &amp; Economic Dev.</td>
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This process used by the steering committee highlighted the need for more current, granular, easy to use labor market information. A subsequent national scan of data best practices revealed Wanted Analytics, a real time job posting analytics tool that over 20 states were using to create more informed decisions. The Workforce Alignment team then piloted Wanted Analytics across 25 higher education and workforce center institutions during a six month period to determine its value. A 3rd party evaluation conducted by the Improve Group in late 2014 recommended scaling the Wanted Analytics to provide access to many more decision makers within the talent ecosystem.

Thanks to funding from the Minnesota Job Skills Partnership, the Workforce Alignment Team was able to roll out Wanted Analytics to 110 more institutions in Minnesota in early 2015. Although Wanted Analytics has proven useful in Minnesota, there are several other real time job posting analytics providers on the market (Burning Glass, etc.) that should be evaluated each time a large real time rollout is considered.

Finally, strong financial and leadership support from several private and public institutions led to the formal creation of Real Time Talent (www.realtimetalentmn.org), a funder’s collaborative focused on creating more informed, market-oriented decisions throughout the Minnesota workforce and education ecosystem to ensure the Minnesota economy has the talent it needs and to help Minnesotans prepare for and find careers they want. The current Real Time Talent funders and board-level institutions are as follows:

- AgriGrowth Council
- Department of Employment and Economic Development (DEED)
- Financial Services Collaborative
- LifeScience Alley (LSA)
- Minnesota Career Colleges Association (MCCA)
- Minnesota Chamber of Commerce
- Minnesota High Tech Association (MHTA)
- Minnesota Precision Manufacturers Association (MPMA)
- Minnesota Private Colleges Council (MPCC)
- Minnesota Society of Human Resource Management
- Minnesota State Colleges and Universities
- The Itasca Project
- University of Minnesota
As we’ve discussed throughout this paper, the United States has a talent problem, but there is hope. By leveraging emerging real time data tools and well-designed change strategy, it is possible to begin creating more informed decisions throughout the talent ecosystem. As more people make more informed decisions, we will see more people pursuing high demand occupations, more academic institutions offering programs to develop high demand skills, and more employers finding the talent they need to grow. It’s a big picture solution that can start in your office today.

There are four main steps any organization that cares about strengthening the talent ecosystem can take to test out the ideas contained within this paper:

1. **Identify what decisions matter for you and/or your stakeholders:** Determine what talent-related decisions make the most difference for your firm. For higher education, it may be choosing what programs to start or stop. For career counselors it may be choosing what information to share with job seekers to advance their search. For employers, it may be choosing where to recruit and how to create a compelling employee value proposition.

2. **Determine what information you need to make a great decision:** Map out what information you currently use and then brainstorm what additional information would strengthen your decisions.

3. **Test out some tools:** If real time insight into the labor market would help any of the decisions that matter to you, sign up for a free trial license for Wanted Analytics, Burning Glass, or any other vendor you like, go through their orientation and start playing with the data. We’ve had the best luck with Wanted Analytics, but technology changes so fast, it’s hard to tell which vendor will be best by the time you read this. We’ve posted some useful training videos and use cases at [www.realtimetalentmn.org](http://www.realtimetalentmn.org) if you’re looking for some inspiration.

4. **Share what you learned:** If you find real time labor market information useful, email Jess Niebuhr at [Jess.Niebuhr@state.mn.us](mailto:Jess.Niebuhr@state.mn.us) to tell her what you did. Jess will then make sure connect you to other people and organizations like you so we can all continue closing our nations talent gap together.
Sample analysis of computer programming jobs in the Twin Cities using data from Wanted Analytics

Context: A Minnesota institution was considering launching a new non-degree, multi-week training program focused on building computer programming skills. To understand the job prospect for their potential graduates, they were interested in determining how many computer programming jobs were open in the Twin Cities for candidates with a Bachelor’s Degree and candidates with a GED or Associates degree. They also wanted to focus only on job postings that required 0 to 2 years of relevant work experience. The one page analysis was created in Powerpoint using data pulled directly from Wanted Analytics, however, similar analysis could be created using other real time data tools. Businesses treat higher education as supplying inputs to production. As a group, businesses only infrequently interact directly with higher education, and when they do so, they interact in a one-off manner, rather than addressing higher education with the collective voice of regional businesses.

By filtering the job postings by function, a Wanted Analytics user is able to pull all the job postings that are IT-related. This allows the user to highlight all the IT-related jobs that would benefit from programming skills (See occupations highlighted in grey). This can be double-checked by filtering for what skills are listed as requirements or each occupation.

By separating out the job postings into two groups by education requirements, it’s clear that the overwhelming majority of computer programming-related jobs require a Bachelor’s degree. However, there are still hundreds of computer programming-related jobs that do not require one.

Wanted Analytics allows users to sort job postings by source. “Aggregator Free” job postings come primarily from employer websites and job boards like Monster.com. “Staffing Agency postings were posted by staffing agencies and “Anonymous” job postings don’t include the name of the employer and are primarily pulled from Craigslist.