ONLINE LABOR EXCHANGES
AND
ADVANCED JOB MATCHING

An Evaluation of Vendors and Opportunities

August 2016
About RealTime Talent

RealTime Talent is a collaboration between public agencies, private industry, higher education, and workforce developers. We are focused on helping decision-makers better align our workforce with our growing economy. Since August 2015, we have trained more than 900 leaders across Minnesota to use real-time job posting data to help find solutions to our state’s greatest workforce challenges. We are proud to be considered a “hub” for data innovation and exploration. Our four main areas of work for FY2017 will include:

- Identify and evaluate new tools which bring efficiency to the “education to employment / re-employment” process
- Foster data use innovation through access to new data, development of reports and templates, and engaging users in best practices for comparing multiple data sources
- Provide customized, customer-centered research and reports upon request, each designed to support local or industry needs
- Provide training and technical assistance to ensure professionals across Minnesota have the capacity to use and share data and other resources.

RealTime Talent received $500,000 from the Minnesota Legislature in July 2016 to begin implementation of a pilot project exploring innovative matching technology within an online labor exchange. This report summarizes the findings of our targeted evaluation of the leading providers of job banks, web-based job matching tools, and labor exchange platforms. We currently seek regional, education, and industry partners to build, use, and launch this new platform for the benefit of Minnesota employers and job-seekers.

Prepared By

Erin Olson, Research Strategist  
with assistance from  
Jess Niebuhr, Executive Director and  
Marian Rengel, User Engagement Project Manager
About This Report

This report, prepared by RealTime Talent, was funded as part of a pilot project by the Minnesota Legislature under R3, Article 1, Senate language (UEH2749-1) in May 2016. The intent is to summarize the qualities of each platform evaluated for use in this pilot project and provide a final recommendation of the platform to be selected. The views expressed here are those of the authors and should not be attributed to the Minnesota Legislature, RealTime Talent partners, Department of Labor, or the Department of Employment and Economic Development. The mention of trade names, commercial products, or organizations does not imply endorsement of same by RealTime Talent or the U.S. government.

For more information on this report, please contact Erin Olson, RealTime Talent Research Strategist, at erin@realtimetalentmn.org.

Acknowledgements

RealTime Talent is grateful for the engagement and guidance received from the Minnesota Department of Employment and Economic Development in understanding the landscape of state labor exchanges and best practices nationwide. Critical to this work was the support of Senator Terri Bonoff, her staff, the Higher Education and Workforce Development Committee, and the Office of Higher Education. We also thank the representatives of online labor exchanges, job matching sites, job banks, app-based job search platforms, recruitment technology, and applicant tracking systems (ATS) that provided information for inclusion in this report. These include Anthology, CareerBuilder, Digerati, Jobr, JobVite, Monster, RealMatch, TalentSolutions, Vettery, WhiteTruffle, and Workday. Further, we extend our thanks to organizations that shared their experiences building a site with the top-ranking platforms listed above, including Mark Birnbrich of the Ohio Department of Job and Family Service’s Office of Workforce Development, Shawn M. Brown, Ed.D. of the Northeast Ohio Council on Higher Education, and Carlos Kemeny, Ph.D. M.B.A. of the University of Texas System. We also thank Benjamin Pepin of Accenture for his support during the elaboration of this report.
# Table of Contents

Introduction ...........................................................................................................6

Types of Online Labor Exchanges .................................................................8
   Job Boards .........................................................................................................8
   Job Search Engines ..........................................................................................8
   Classic Online Labor Exchanges .....................................................................9
   Advanced Job Matching Platforms ..................................................................9
   Application and Social Media Technology ......................................................10
   Recruitment Technology ..................................................................................10

Other Definitions and Abbreviations..............................................................11

About this Targeted Scan ..................................................................................11

Description of Online Labor Exchange Providers ..........................................12

Scoring of Essential Features and Functionality ..............................................16

Customer Value ...............................................................................................18
   Advantages and Limitations of Selected Online Labor Exchanges ...............20

Recommendation ..............................................................................................21

Summary ............................................................................................................21

Appendix: Evaluation Guide for Labor Exchange Providers .........................22
   A: Introductory Messages .................................................................................24
   B: Primary Evaluation .......................................................................................25
   C: Final Evaluation ............................................................................................29
   D: Invitation .......................................................................................................31
   E: Citations .........................................................................................................32
   F: Summary Presentation ...................................................................................33
Online Labor Exchanges and Advanced Job Matching
An Evaluation of Vendors and Opportunities
Introduction

Over the last 20 years, the United States has witnessed several dramatic shifts in how the labor force finds work. The most important was the movement online. Job boards were born in the early 1990s with job listings appearing on sites like CareerMosaic, Monster, and Usenet. Job volumes increased throughout the decade with some large newspaper listings moving online, and major changes occurring in 1998 and 1999, leading into a time of modifications and developments to the existing platforms in the early 2000s. Job boards grew steadily through 2007, slowing their innovation during the recession and leaping into a new era of intense innovation and broadening of product types from 2011 until today. Several studies focusing on job boards and anonymous posting sites like Craigslist show that the shift to online job searches significantly lowered the number classified job advertisements in newspapers, but does not seem to have any effect on the unemployment rate (Kroft & Pope 2014; Kuhn & Skuterud 2004).

Disparities in labor market outcomes are not only the result of individual skills and characteristics of workers or the jobs they seek, but also the result of the broken process of matching workers to job opportunities (Granovetter 1981; Sorensen & Kalleberg 1981). This match relies on the availability of information of employers and job-seekers, which is often imperfect and incomplete, relying heavily on social networks which are fraught with bias (Fountain 2005). Innovation in online job postings are responding to this shortcoming. Since 2011, we have observed greater niching of the online job search process by industry, sector, and approach. Job-seekers have long been frustrated with the low 1-4% average response rate on large job boards, and employers consistently express dissatisfaction with the high volume of low quality applicants that apply through online searches. Both job-seekers and employers are turning to networking sites like LinkedIn to filter and scan profiles for desired skills and certifications,
thereby reducing the “noise” in the market and honing in on a more targeted candidate pool. Since 2011, new platforms have surfaced that use complex algorithms to match job-seekers with new work, thinning the pool further and creating opportunities to break beyond time-consuming resume and cover letter standards and identify promising candidates in a more objective manner.

This report presents an evaluation of web-based labor exchange platforms with advanced matching technology to connect candidates with opportunities, with the intent of selecting a finalist platform to be piloted in Minnesota with RealTime Talent partners. This report summarizes the traits and functionality of 11 platforms for posting jobs online, focusing on their matching capabilities, innovative approaches, and respective costs. Eight companies agreed to participate in a full interview and rubric-based evaluation, which included a function test of each live site and a guided demo from job-seeker and employer perspectives.

The report begins with an overview of different mechanisms for distributing job postings online, followed by an overview of the evaluation process and each individual online labor exchange platform. The report includes a note on the needs of regional and state-level labor exchanges. We end with a summary of the findings and a recommendation for the pilot project.
Types of Online Labor Exchanges

**Job Boards**

An online job board (or job bank) is a site on which an employer may post a job opening directly to be seen by active job-seekers. The exchange occurs as jobs are advertised (jobs go out) and candidates apply for openings (applications come in). These sites may require payment per job post, by subscription, or access to a candidate database, although some are free of charge to employers (in many cases obtaining revenue from the sale of advertisements). Some companies are experimenting with fully app-based job boards that operate on a swipe left-right basis.

Some job boards are password protected and hidden from public view, as is the case with many professional associations, colleges, universities, and unions. By restricting access to a membership group that pays for the service in the form of tuition or membership fees, these organizations focus on providing a high value to their job-seeking constituents. Although this exclusivity can be a drawback to employers who wish to reach a large audience, value can be demonstrated if the quality of candidates is consistently higher than from the general population.

Examples: CareerBuilder, Craigslist, Jobr, University of Minnesota Student Job Portal

**Job Search Engines**

Also called aggregators, job search engines have many of the same visual and functional characteristics as job boards, but instead of receiving direct postings from employers they “scrape” jobs from multiple job boards, corporate sites, and other sources. Job search engines are more likely than job boards to sell ads through a pay-per-click model rather than requiring employers to subscribe or pay for job posts, although some do follow this model. Job search engines were first developed in 2005 and although they are in one sense competitors to job boards, they are also another means of attracting high traffic to job boards and corporate sites. A large proportion of jobs on search engines come from job boards, meaning that the two overlapping systems have become somewhat symbiotic.

In 2011, Indeed surpassed the job board Monster as the most visited job site online, although consumer studies suggest that job-seekers are often frustrated by the user experience of bouncing between different sites. Standard search engines, such as Google are now providing similar services. This report does not include research done on job search engines.

Examples: Indeed, SimplyHired
**Online Labor Exchanges and Advanced Job Matching**  
An Evaluation of Vendors and Opportunities

---

**Classic Online Labor Exchanges**

RealTime Talent has identified “classic online labor exchanges” as job boards that have added functionality to match talent to opportunities going beyond keyword searches. For example, these systems may scan candidate profiles or resumes for education, skills, and experience and pull job postings that make reference to the same. They almost always offer other services to employers such as applicant tracking systems (ATS) or “push out” postings to job aggregators. They may also offer career planning tools for job-seekers, back-end access for career counselors and workforce centers, or data dashboards that can be used in labor force analysis. Like job boards, most sites require payment from employers, however statewide labor exchanges, customized and launched by government bodies, often establish a no-fee system to encourage employers to use their site.

Examples: MinnesotaWorks, Monster

---

**Advanced Matching Platforms**

A new brand of online labor exchange has surfaced in the past five years that uses complex algorithms to customize the job search results to individual candidates. Catering to passive candidates and those working on developing a long-term career goal, these platforms reduce the noise in the job market by filtering for only those candidates that have the optimal match of interests, hard skills, soft skills, experience, and educational background for a position. Their algorithms go far beyond the resume or keyword searches to understand subtle differences between candidates that make for stronger matches and more valuable employees. In some cases, they factor in preferred work environments, office culture, and schedule. Advanced matching platforms level the playing field between job seekers and employers, allowing either party to initiate the selection process once a match has been determined by the platform. This approach is successful in overcoming common hiring biases, removing from the process the candidate’s name, gender, address, or other traits that can be deduced from a resume or cover letter. It is for this primary reason that advanced matching platforms are the focus of this study.

However, this unique approach may be frustrating to some active job-seekers accustomed to sifting through traditional job boards. Most advanced matching platforms require the completion of a questionnaire to match to positions, ranging in time commitments from 5 minutes to 45 minutes to complete - depending on the platform. Upon completion, few or even no matches may be presented if the answers do not match a currently open position.

Examples: Anthology, Elevated Careers, WhiteTruffle, WorkFountain
Applications and Social Media Technology

Social networking and app-based labor exchanges function as job boards, classic exchanges, or include some degree of advanced matching. However, they are typically highly simplified for a mobile environment and often do not operate well on desktop systems. Not a discreet category in and of themselves, and because functionality in both a desktop and mobile environment is critical for this pilot, sites that solely operate in a mobile environment were excluded from this study. LinkedIn Talent Solutions was reviewed, however, as it operates like a classic labor exchange that is able to leverage the data and connectivity of professional networks in the job search.

Examples: Jobr, JobandTalent, LinkedIn Talent Solutions

Recruitment Technology

Recruitment technology assists employers with passive recruitment of top candidates, sometimes serving the role that staffing firms and temporary agencies fulfill in larger companies. These technologies use marketing and communications as a means for “selling” positions to candidates directly. There is almost always a subscription fee for service paid by employers. The platforms are almost always candidate-facing, with recruitment companies performing all of the recruitment needs for a company including advertising jobs, researching passive candidates, reviewing applications, and screening potential hires. These systems feature large candidate databases with advanced capacities for searching, evaluating, and contacting them directly. They may connect to an ATS, or provide tracking services themselves. As these are not true labor exchanges and did not fit the functional needs of this pilot, recruitment technology were not evaluated beyond Phase 1.

Examples: Vettery, JobVite

Other Definitions and Abbreviations

ATS - Applicant Tracking System
LMI - Labor Market Information
OLX - Online Labor Exchange
R&D - Research and Development
SEM - Search Engine Marketing
SEO - Search Engine Optimization
WIOA - Workforce Innovation and Opportunity Act
Online Labor Exchanges and Advanced Job Matching

An Evaluation of Vendors and Opportunities

About this Targeted Scan

RealTime Talent performed targeted research on labor exchange platforms in July 2016, reviewing 25 providers in the initial phase and subsequently focusing this study to:

1) classic labor exchanges that demonstrate some advanced matching capacities, and

2) advanced matching platforms.

Starting in mid-July 2016, RealTime Talent evaluated 11 online labor exchange platforms (Phase 1), with eight of these functioning in both mobile and desktop environments and agreeing to participate in a full interview and evaluation process (Phase 2). The evaluation included a functional testing of each live site, responses to a series of standardized questions, and a guided demo of the site from the perspectives of both the job seeker and the employer. The sites were evaluated on a 108-point scale that included questions on legal compliance, branding, interface customization, innovation, data access and cost. Each company was presented with the goal of the legislative funding and the scope of the talent matching platform sought by RealTime Talent and our partners. RealTime Talent asked them if they felt the company was capable of meeting those needs and interested in being considered as a platform. Three companies explicitly expressed interest, and two of these – WorkFountain and Monster – were also the highest scoring platforms based on the guidelines. Monster and WorkFountain responded to RealTime Talent’s inquiry by traveling to Minnesota to provide in-person demonstrations and orientation to their sites, which were opened to close partners and collaborating agencies. The third and final phase included contacting of references associated with the two top-scoring interested parties.

Advanced Matching

Anthology;

whitetruffle

WorkFountain

ELEVATED

Did not respond to interview

Classic Labor Exchanges

The Job Network

MONSTER

Government Solutions

LinkedIn® Talent Solutions

Matchpoint Careers

Did not respond to interview

Job Boards

CareerBuilder

jobAndTalent

Did not respond to interview

Note: Online labor exchanges are listed in random order, which varies throughout the report.
## Description of Online Labor Exchange Providers

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digerati</td>
<td><a href="http://www.workfountain.com">www.workfountain.com</a></td>
<td>2011</td>
<td>Michigan, Ohio</td>
<td>Both</td>
</tr>
</tbody>
</table>

### Approach

Blind correlated matching from occupation-specific surveys of 25-50 questions each highlighting skills, interests and job requirements tied to specific occupations. Top 7 matches revealed to employer with percent rank (shows name and score only). Candidate sees matches above 80% or may apply directly. Employers must sign up to be matched, see name and score alone in first match.

### Opportunity

Small, nimble organization with extensive startup funding effectively connects candidates to current job openings based on occupation-specific skills. Low volume of jobs, but high flexibility and customization of site. Effectively reduced noise in job market. Academic and workforce portals possible. Includes support documents.

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHarmony</td>
<td><a href="http://www.elevatedcareers.com">www.elevatedcareers.com</a></td>
<td>April 1, 2016</td>
<td>None (nationwide)</td>
<td>Both (only aggregates from SimplyHired)</td>
</tr>
</tbody>
</table>

### Approach

High fatigue 200-question standard survey based on skills, work culture, and personality. Candidate sees matches with % score. Employers need not sign up to be matched to candidates, but must sign up to receive matches themselves. May view all information.

### Opportunity

Large company in the midst of the first release of their secondary product. Extensive resources but no capacity for customer support or customization.

Note: Based on website and evaluation alone. EHarmony was unavailable for comment. Labor exchanges are listed in no particular order.
Online Labor Exchanges and Advanced Job Matching
An Evaluation of Vendors and Opportunities

### Anthology

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthology</td>
<td><a href="http://www.anthology.co">www.anthology.co</a></td>
<td>July 2014</td>
<td>None (city-based)</td>
<td>Direct only</td>
</tr>
</tbody>
</table>

**Approach**
Profile keyword-based match founded in specializations, skills, work experience, expertise, education, relocation need. Anthology agent reviews potential matches manually. Candidate remains anonymous to employers until both parties express interest. Can pull from LinkedIn profile.

**Opportunity**
Small organization with a user-friendly and pleasing platform with a limited matching algorithm tied to skills and education. San Francisco, Seattle, and New York only. No capacity for scaling up at this time.

### WhiteTruffle

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>WhiteTruffle</td>
<td><a href="http://www.whitetruffle.com">www.whitetruffle.com</a></td>
<td>2011</td>
<td>None (industry-based)</td>
<td>Direct only</td>
</tr>
</tbody>
</table>

**Approach**
Profile keyword-based match founded in specializations, skills, work experience, expertise, education, preferences, and desired locations. Can pull from LinkedIn profile and link to external portfolios.

**Opportunity**
Tech-smart startup with robust platform and an effective matching algorithm. Information Technology only. Preference for small startups. No capacity for scaling up at this time.
## Description of Online Labor Exchange Providers

### Monster

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
</table>

**Approach**

Keyword algorithm-based match made between candidate profile and job posts. Alerts job seekers to relevant job opportunities as they appear. Apply with Monster technology in platform or embed on corporate site. Includes embedded ATS, scheduling, LMI/WA data integration.

**Opportunity**

Large company with extensive knowledge and experience working with government to develop state and local online labor exchanges. Innovative matching algorithm to ensure high relevancy of matches. Guides process from initial search to hire.

### CareerBuilder

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>CareerBuilder, owned by TEGNA Inc., Tribune Media, McClatchy Co</td>
<td><a href="http://www.careerbuilder.com">www.careerbuilder.com</a></td>
<td>1995</td>
<td>None (Community Colleges)</td>
<td>Both</td>
</tr>
</tbody>
</table>

**Approach**

Keyword-based match made by job title and matching text in resume/profile and job posting. Can tell job seekers who is looking at their resumes and who they’re up against for the job. Link provided to apply on company website.

**Opportunity**

Large company comfortable with employer-oriented job board platform. High pay-by-post cost to employers. Little to no experience working with state agencies.
### RealMatch

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>RealMatch</td>
<td><a href="http://www.realmatch.com">www.realmatch.com</a></td>
<td>2007</td>
<td>None (Chambers of Commerce &amp; Publishers)</td>
<td>Direct</td>
</tr>
</tbody>
</table>

#### Approach

Simple searches of job titles. Matches profile to postings with optional skill search, leading to less exact matches. Can factor in years of experience. Emphasis remains on the resume, which is available to employers for viewing.

#### Opportunity

Advertisement-driven online job board with a simple algorithm and low relevancy matches.

### LinkedIn Talent Solutions

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Direct Posts / Outside Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>LinkedIn</td>
<td><a href="http://www.business.linkedin.com/talent-solutions">www.business.linkedin.com/talent-solutions</a></td>
<td>2003</td>
<td>None (nationwide employer-based)</td>
<td>Direct</td>
</tr>
</tbody>
</table>

#### Approach

Keyword algorithm-based match of LinkedIn profiles to listings posted on LinkedIn. Smart targeting puts job listing in front of passive candidates with the right skills and experience.

#### Opportunity

Large company focused on passive job seekers and the creation of a network of talent. No experience with state agencies or federal requirements.
Customer Value

In addition to the demo and evaluation, each company was asked to describe what customers value most about its platform.

Governments
- Reduces implicit bias in the hiring process by blind matching candidates to jobs

Employers
- Tailored to small and mid-sized businesses: placed on equal footing with large companies; more likely to get strong applicants
- Cost savings: Less time spent on recruitment
- Provides access to a national pool of candidates and targeted matches

Job-seekers
- Levels the playing field between employers and job seekers, allowing job-seekers to initiate contact more effectively

Unavailable for comment

Employers
- “Thinning of the herd:” only top matches are revealed

Job-seekers
- Smooth, clean interface
- Eliminates the need to be constantly searching for a job; “the job comes to you”

Employers
- Small companies are placed on equal footing with large companies and strong brands

Job-seekers
- Customized matches: based on keywords and machine learning algorithm that is able to identify and send similar matches
- Can “like” certain employers to be notified of new positions when they arise
- Speed of match: 25% met new employer within their first week on the platform
Governments
- Experience with WIOA requirements
- Monthly Governor’s Report of critical user data
- Customizability: Interface and add-ons like Woofound for soft skills and career pathways, features for veterans, individuals receiving unemployment insurance, and the incarcerated, multiple entrypoints for service providers

Employers
- Intuitive, familiar user experience means time savings for more intensive work in other aspects of the recruitment process and overall increased productivity

Job-seekers
- Quality of matches made with 6Sense, an embedded technology which “reads” context, concepts, and timeline

Employers
- Variety of products that operate together seamlessly, including job board, candidate database, and recruitment, onboarding and analytics software

Job-seekers
- High level of transparency and personalization: can view up-to-the-minute information on the number of resume views they have or search results they appear in

Employers
- Digital publishing support with ad distribution algorithms for employers, applying search engine optimization (SEO) and search engine marketing (SEM) to push ads out

Job-seekers
- Matching capability based on skills detailed in the candidate profile and job post

Employers
- Largest database of potential candidates available
- Finds best possible matches (mainly passive candidates), not just those in the market

Job-seekers
- High integration with professional networking site LinkedIn
- No need to complete a questionnaire or new profile: scan job postings that match experience
Scoring of Essential Features and Functionality

In this chart, we summarize the ratings of each platform that is functional in both mobile and desktop environments. The chart indicates only the essential 21 features and functionality that we required for consideration as the platform for this regional pilot. The final percent rank incorporates is calculated form results of a 108-point scale based on 54 features of the platform, interview responses, a thorough demonstration of the site, and user testing of the site. In all, each company was asked to respond to 80 qualitative questions about site features, compliance, data use, and innovation. A full list of questions can be found in the Appendix.

<table>
<thead>
<tr>
<th>Essential Features and Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIOA Compliant</td>
</tr>
<tr>
<td>Public Posting Requirements Met</td>
</tr>
<tr>
<td>Data Privacy Requirements Met</td>
</tr>
<tr>
<td>ADA Compliant</td>
</tr>
<tr>
<td>Compatible with both mobile devices and desktop</td>
</tr>
<tr>
<td>Branding by multiple agencies possible</td>
</tr>
<tr>
<td>Customizable to search by special groups (StepUP, etc), certifications, or dual training programs</td>
</tr>
<tr>
<td>Increases access by job seekers to job listings, with evidence of effectiveness</td>
</tr>
<tr>
<td>Moves beyond resumes and job postings to advanced matching</td>
</tr>
<tr>
<td>Works to eliminate hiring bias based on race, gender, ethnicity, national origin, disability</td>
</tr>
<tr>
<td>Provides feedback to job seekers to improve their resume/profile/search/matches</td>
</tr>
<tr>
<td>Back-end data on hiring/posting practices by company, industry, demographics is available</td>
</tr>
<tr>
<td>Data for skills gap analysis</td>
</tr>
<tr>
<td>Data for alignment of programs with employer demand</td>
</tr>
<tr>
<td>Data for profiling major industries and occupations</td>
</tr>
<tr>
<td>Data for assessing current supply and demand dynamics</td>
</tr>
<tr>
<td>Data for supplementing traditional LMI</td>
</tr>
<tr>
<td>No cost to employers</td>
</tr>
<tr>
<td>No cost to job seekers</td>
</tr>
<tr>
<td>No cost to students</td>
</tr>
<tr>
<td>No cost to post internships or apprenticeships</td>
</tr>
<tr>
<td>Overall score</td>
</tr>
<tr>
<td><strong>Interest and capacity to participate in pilot</strong></td>
</tr>
<tr>
<td><strong>Reason not to participate, or reason not selected</strong></td>
</tr>
</tbody>
</table>

Note that in cases where features are still “to be determined” by the provider or the implementing agency, the score incorporated into the rubric and final evaluation was zero, the same as a “no” response. Therefore, platforms with significant flexibility in their R&D to provide additional features may appear to rank lower than what their actual performance could be upon finalization of a contract agreement.
<table>
<thead>
<tr>
<th>ADVANCED JOB MATCHING</th>
<th>CLASSIC LABOR EXCHANGES AND JOB BOARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Fountain</td>
<td>Monster</td>
</tr>
<tr>
<td>Elevated Careers</td>
<td>Career Builder</td>
</tr>
<tr>
<td>Anthology</td>
<td>TheJob Network</td>
</tr>
<tr>
<td>White Truffle</td>
<td>LinkedIn Talent Solutions</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>79%</strong></td>
<td><strong>82%</strong></td>
</tr>
<tr>
<td>Insufficient information, did not respond to inquiries</td>
<td>Job board does not have capacity to provide necessary back-end data, other critical functions require R&amp;D</td>
</tr>
<tr>
<td>Outside of scope, city-specific</td>
<td>Outside of scope, unable to move beyond ad-based revenue or modify features</td>
</tr>
<tr>
<td>Outside of scope, IT-specific</td>
<td>Outside of scope, not scalable for state or regional use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No cost to employers</th>
<th>No cost to job seekers</th>
<th>No cost to students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No cost to post internships or apprenticeships</td>
</tr>
</tbody>
</table>

**Overall score**: 79%
Advantages and Limitations of Selected Online Labor Exchanges

One classic labor exchange (Monster) and one advanced matching platform (WorkFountain) met the necessary requirements and scored significantly higher than other platforms reviewed. The advantages and limitations of each are outlined in this chart.

### Advantages

<table>
<thead>
<tr>
<th>Monster Government Solutions</th>
<th>WorkFountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Most effective for active job-seekers</td>
<td>• Most effective for passive job-seekers</td>
</tr>
<tr>
<td>• Familiar “job board” approach</td>
<td>• Partially brandable (logo only, retains WorkFountain colors and feel), multiple entrypoints possible</td>
</tr>
<tr>
<td>• Longstanding company with experience as state labor exchange</td>
<td>• More highly customized matches</td>
</tr>
<tr>
<td>• Established, positive reputation with state and regional governments</td>
<td>• Fewer candidates to review (reduces noise)</td>
</tr>
<tr>
<td>• Variety of products and services, can opt in or out of many (Woofound, etc)</td>
<td>• Greater innovation in integration of work culture, soft skills, and tasks</td>
</tr>
<tr>
<td>• Built-in career pathways mapping</td>
<td>• Custom surveys for each job title</td>
</tr>
<tr>
<td>• Innovates with the market</td>
<td>• Employer and job seeker more equal parties in the search</td>
</tr>
<tr>
<td>• Connects with numerous ATS</td>
<td>• Employers rely less on company branding, giving small businesses a better chance of finding candidates</td>
</tr>
</tbody>
</table>

### Limitations

<table>
<thead>
<tr>
<th>Monster Government Solutions</th>
<th>WorkFountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High volumes of applicants continue, only limited “quality control”</td>
<td>• Does not resemble familiar “job board”</td>
</tr>
<tr>
<td>• Process remains employer-driven</td>
<td>• Candidates not guaranteed a match after survey completion</td>
</tr>
<tr>
<td>• No solution to hiring bias or employment disparities, as name, resume, and profile are immediately visible</td>
<td>• Difficult to validate quality of algorithm</td>
</tr>
<tr>
<td>• Data is not available to measure the impacts of hiring bias</td>
<td>• Rapid market change - small companies at risk</td>
</tr>
<tr>
<td>• Limited algorithms and market pressure to innovate</td>
<td>• Connects to only a few ATS</td>
</tr>
<tr>
<td></td>
<td>• R&amp;D required to build in career pathways and other products</td>
</tr>
</tbody>
</table>
Recommendation

RealTime Talent recommends pursuit of WorkFountain for the implementation of this pilot project. Digerati’s platform is specifically built with the goal of reducing hiring bias and economic inequalities through blind-correlated matching of candidates to job opportunities. WorkFountain effectively reduces noise in the job market by requiring both the employer and job-seeker to complete occupation-specific questionnaires that are then connected immediately with the top seven best matches. The scale, scope, and cost of the platform matches the needs of this pilot project; referring organizations from Texas and Ohio speak to its ability to bring small and mid-sized businesses more matches, decrease job search time, and specifically meet the needs of higher education and regional projects. Referring organizations also highlight the flexibility of Digerati in the design of each site and their ability to modify their product to customer needs.

Monster is a classic labor exchange that has impressive matching capabilities and has created an exceptional product for statewide labor exchanges. They have successfully created statewide labor exchanges in Ohio and Washington that connect seamlessly with their workforce system and offer matching technology beyond a typical job board. This product is highly recommended for any large, statewide government site that would require an immediate and full statewide rollout. There is evidence that the platform could work in harmony with WorkFountain, as they offer different kinds of services to job-seekers and employers that are not necessarily competing, but rather complimentary.

Summary

At the culmination of this review of online labor exchanges, one classic labor exchange (Monster) and one advanced matching platform (WorkFountain) meet the goals of this pilot project. These systems meet data privacy, legal, WIOA, and ADA requirements, and allow for branding and interface customization. Further, they demonstrate unique innovations to increase efficiency and reduce bias in the online job market. They also offer new and promising opportunities for aligning the job search process to job-seeker career planning and pathway development, not only offering better matches to individual candidates but the opportunity to obtain more complete data on the way that job seekers look for jobs, how employers advertise their positions, tracking the traits that lead to a successful hire, and the time it takes from starting the job search to recruiting a new hire. WorkFountain and Monster each expressed with confidence that they can meet and even exceed the goals and intentions of this pilot project with their platforms. Although both platforms scored highly on the evaluation, Digerati’s robust approach to advanced matching, focus on small and mid-sized businesses, commitment to reducing hiring bias and economic inequalities, and accessible pricing make WorkFountain the platform we recommend for this pilot project.
WorkFountain is a strong example of the new wave of advanced talent matching that many companies around the world are developing to reach passive candidates. Organizations that have implemented this technology share that they see faster, higher quality matches, reducing the noise in the job market by filtering for only those candidates that have the optimal match of interests, hard skills, soft skills, experience, and educational background for a position. Their algorithms go far beyond resumes or keyword searches to understand subtle differences between candidates that make for stronger matches. With the exception of Elevated Careers, advanced talent matching sites tend to be built by small, nimble companies that offer high levels of customization at lower costs than large companies. Most matches are made based on either the completion of a survey (WorkFountain and Elevated Careers) or an advanced algorithm analysis of a candidate profile (Anthology and WhiteTruffle), and many focus on a particular industry or region. The process places employers and job seekers on a more level playing field, providing more opportunity for candidates to demonstrate the quality of their matches for a position. As an emerging technology, a number of systems have been built and sold in the past five years, and it is very likely that more will be developed before the end of 2016.

Monster is a robust example of a classic online labor exchange that has incorporated some advanced matching technology into the familiar job board framework, which typically focuses on active job seekers. The three traditional sites that rose to the top of the evaluation process are all part of large, long standing companies with significant funding, and two have experience implementing statewide labor exchanges. These sites have innovated with the online labor market itself and do not need to be constantly “upgraded” to avoid the risk of disappearing. However, these sites continue to rely heavily on traditional job search tools, such as the resume, position description, cover letter, and review by an HR professional. Little change has been made to the job search process itself, and there is no evidence found to date that this approach results in lower unemployment rates, increased access to jobs, or reduced hiring and employment disparities. Pricing tends to be significantly higher than for services with advanced job matching platforms, and employers remain the drivers of the job search process.

WorkFountain and Monster represent some of the most promising platforms for the online job market. Although this pilot recommends WorkFountain as the foundation on which to build a more fair and equitable online job market in Minnesota, the most effective solutions will draw on the strengths of both platforms in cross-sector collaborative initiatives. We seek partners in this work moving forward.
Appendix

A: Introductory Messages

RealTime Talent is a public-private collaboration committed to ensuring MN’s workforce has the skills and abilities that our labor force needs. We support state and regional research, investment, and use of real-time labor market information (RT LMI) products and tools, and support local, regional, and statewide agencies in finding new technology that can be used to better match skilled workers with relevant career opportunities.

The objectives of RealTime Talent are to:
• help employer associations and chambers of commerce support Minnesota employers in meeting talent needs;
• help academic leaders choose which programs to start, stop, scale up or scale down to meet the needs of students and the economy;
• help academic, nonprofit and workforce center counselors support students and job seekers in choosing educational investments and securing employment;
• help government agencies, foundations and policy makers understand and be increasingly agile in the current job market.

I am contacting you because we are evaluating web-based labor exchange and job-seeking support systems for potential use in Minnesota. Your organization has been selected based on your company’s experience providing a statewide labor exchange website that has matching capabilities between job seekers and open positions based on skills, experience, and education. A third requirement of review is that existing labor exchange tools created by your company have the added functionality of designating internship and apprenticeship positions. We hope that you will provide us with some additional information on your web-based labor exchange products so that we can gain a more complete understanding of what your tool has to offer in Minnesota.

Thank you, and we hope to hear from you soon.

I am contacting you because [referrer name] of [refering company] named you as a reference customer for their product [refering labor exchange]. We have been reviewing their platform for use in a pilot project here in Minnesota. Our goal is to create a site that facilitates more effective matches between job seekers and job openings, while at the same time reducing hiring bias. We are working in collaboration with the Office of Higher Education, the Department of Labor and Industry, and our Department of Employment and Economic Development.

I’m wondering if you would be willing to respond to a few questions related to your experiences with the [name of organization]. I’m hoping to learn about your perception of the quality of the product, how smoothly the migration from your previous site was, and what additional customizations you made to the site (or wish you had made). If you have time for a brief 20 minute conversation, please respond to this e-mail with your availability. Or, if you prefer, respond to your own selection of questions from the attached sheet.

Thank you, and I hope to hear from you soon.
B: Primary Evaluation

RealTime Talent is a public-private collaboration committed to ensuring MN's workforce has the skills and abilities that our labor force needs. We support state and regional research, investment, and use of real-time labor market information (RT LMI) products and tools, and support local, regional, and statewide agencies in finding new technology that can be used to better match skilled workers with relevant career opportunities.

The objectives of RealTime Talent are to:

- help employer associations and chambers of commerce support Minnesota employers in meeting talent needs;
- help academic leaders choose which programs to start, stop, scale up or scale down to meet the needs of students and the economy;
- help academic, nonprofit and workforce center counselors support students and job seekers in choosing educational investments and securing employment;
- help government agencies, foundations and policy makers understand and be increasingly agile in the current job market.

I am contacting you because we are evaluating web-based labor exchanges and job-seeking support systems for potential use in Minnesota. Your organization has been selected based on your company’s experience providing a statewide labor exchange website that has matching capabilities between job seekers and open positions based on skills, experience, and education. A third requirement of review is that existing labor exchange tools created by your company have the added functionality of designating internship and apprenticeship positions. We hope that you will provide us with some additional information on your web-based labor exchange products so that we can gain a more complete understanding of what your tool has to offer in Minnesota.

Thank you, and we hope to hear from you soon.

All systems to be evaluated. Turquoise questions are considered essential information, features and functions.

Questions answered on a scale of No = 0, Some = 1, Yes = 3. TBD by provider or RealTime Talent were also recorded and scored as 0. Comments and screenshots of each product were also analyzed.

BASIC COMPANY INFORMATION

1. Company Name:
2. Mission and Purpose:
3. Years in Business:
4. Name of the online labor exchange:
5. Site URL:
6. Other Products/Services:
BRANDING, INTERFACE & CUSTOMIZATION

15. Does it have a user-friendly interface?

16. Is the site compatible with mobile devices?

17. Can the site be branded by a state or regional agency, and if so, how many separate brandings are available in the case of a statewide tool?

18. Can the site be customized to search by special groups ("alumni" of the StepUP program), certifications, or dual training programs?

19. Can the site be customized for K-12 and higher education to use to educate young student job seekers in career readiness and explore careers?

20. Does the site incorporate other jobs that were posted outside of the site (on Craigslist, USJobs, Monster, etc)?

21. Can job-seekers be offered or recommended positions that match their skill level but may be outside of their current field of exploration (i.e. transferrable skills)?

22. Does the system leverage referrals, automate the referral process, or allow for employers to discover talent through the connections of successful candidates (linking to social media or profiles)?

23. Can career pathways be integrated into the system to show current opportunities along designated tracks?

EFFICIENCY & INNOVATION

24. Can the site be used to increase access by job seekers to job listings? Do you have evidence of effectiveness?

25. Can the site be used to better align training and education offerings with employer demand?

26. Please indicate which of the following (if any) are included in the functionality of your online labor exchange product.

   a. Automates the job seeker experience
   b. Automates the job posting process (for employers)
   c. Automates the candidate review process (for employers)
   d. Automates the interview scheduling process
   e. Automates the interview process
f. Moves beyond resumes and job postings to an advanced matching process

g. Works to eliminate hiring bias based on race, gender, ethnicity, national origin, disability

h. Provides feedback to job seekers to improve their resume/profile/search process/matches

i. Provides pressure on employers to post accurate information and avoid credential inflation

j. Provides the ability for job seekers to directly contact employers

k. Provides the ability for employers to directly contact job seekers

l. Provides links to social media and other systems (US Jobs.net, employer sites, LinkedIn, CareerWise)

m. Provides links to education, training, and dual-training programs

n. Provides links to career planning resources

o. Pushes out e-mails to candidates when matching opportunities are posted

p. Pushes out e-mails to employers when matching candidates are posted

27. Is the tool adaptable to changing technology? Explain.

DATA POTENTIAL

28. Is back-end data on hiring practices by company, industry, or demographics available? If so, is this public, licensed, or proprietary?

29. Could resulting data be used in any of the following ways:

   a. Perform a skills gap analysis

   b. Better align training and education offerings with employer demand

   c. Profile major industries and occupations with current job listings

   d. Assess current supply and demand dynamics statewide or regionally

   e. Supplement information available from traditional LMI sources

30. Please indicate which of the following (if any) are currently included in data collection on candidates and employers or are being considered as future enhancements, and indicate their source (i.e. input by user, automatic download from social media, etc)
a. Hard Skills  
b. Soft Skills  
c. Certifications & licenses  
d. Education & diplomas  
e. De-duplication of listings  
f. Ability to post multiple positions under a single listing  
g. Coding of occupational data  
h. Coding of industry data  
i. Coding of staffing/direct data  
j. Representativeness of data across industries and occupations (any that are difficult to collect)  
k. Integration with Real-Time LMI data, BLS, DEED, or other data sources (i.e. wage comparisons, demand pressure, competitive intensity, etc)  

COST  
31. What would be the annual cost to a state agency looking to build a statewide labor exchange with regional branding?  
32. Does your labor exchange product require a license or subscription to have access to the data?  
33. Is there a public component to any job or candidate information, and if so, what information?  
34. What is the cost to employers posting jobs (if any) and how is this billed?  
35. What is the cost (if any) to job seekers to use the site and how is this billed?  
36. What is the cost (if any) to students to use the site and how is this billed?  
37. What is the cost (if any) of posting an internship or apprenticeship on the site, and how is this billed?  
38. What is the lifetime cost of the tool, including development and maintenance?  
39. Is there the potential for state agencies or large employers to receive revenue from posting volume, candidate interest, or other functionality?
UNIQUE QUALITIES (narrative responses)

40. What do you believe your customers value most in your online labor exchange?

41. What about your labor exchange stands out in the marketplace?

42. Of your current statewide labor exchange customers, can you recommend any that we may contact directly in order to understand their opinions and experiences?

43. Is there anything else you would like to add that I have not asked you about?

GENERAL NOTES

44. Please describe the job search process.

45. Please describe the job posting process.

46. Pros/Cons

47. Other Notes

C: Final Evaluation
Additional questions for advanced review to identify companies to invite

SUPPORT AND SERVICES

1. Will the system have a dedicated account manager?

2. Does the system have a built-in live chat, or other on-demand support?

3. How comprehensive is the online knowledge base?

4. Is there a forum where we can connect with a community of other users/clients?

5. Does the company offer local support or services?

6. Does it have an app, or is it able to share an XML feed of positions with an outside app?
DEPLOYMENT

7. What are some typical challenges that organizations experience with set-up?

8. How long does the on-boarding or system build process take?

9. At what level will our IT department need to be involved in the design and deployment? Hours/week?

10. What kind of training is offered?

11. How does the product integrate with ATS? For employers looking to integrate, what training and support is provided?

12. How does the product integrate with social media?

13. How does the product integrate with other job board systems?

14. Does the product integrate with interview, background check, or scheduling systems/products?

DATA & SECURITY

15. Can we create different levels of data access for employers, job seekers, and our organization/the state agency?

16. How is private user data secured?

17. Who at the company has access to the data?

18. Who owns the data?

19. Do you have built-in redundancy in case of server outage?

20. What’s your uptime?

21. Are there fees for searching, reviewing, or pulling additional existing data?
D: Invitation

Final contributions of top-scoring, interested companies

· Provide a demo of the full site (in-person preferred)

· Provide at least three references of past or current clients (preferably running state or regional labor exchanges) to be asked the following questions:

1. What is the geography or population served with your online labor exchange product?
2. How smooth was the process of migrating your past labor exchange over to a new platform, and how long did this process take?
3. What outside investments did your organization need to undertake in addition to contracting with XX?
4. What back-end data is available to you in this system and how is it received?
5. What add-ons or customizations did you include in the build-out, if any, and what are their benefits to the population your site is built for?
6. Are you satisfied with your online labor exchange product?
7. Do you feel that this online labor exchange provides job seekers with greater access to job opportunities?
8. Do you feel that this online labor exchange actively reduces hiring bias in the job market?
9. Do you feel that the quality of matches in your online labor exchange are higher than those made in other systems? Please provide an example if possible.
10. What do you value most in your online labor exchange product?
11. What shortcomings does the online labor exchange product have, or what additional features do you wish it had?
12. How much did the full site cost, and where did this funding come from?
E: Citations


Online Labor Exchanges and Advanced Job Matching Tools

Summary

August 2016
## Labor Exchange Overview

**Goal:** Evaluate web-based labor exchange platforms with advanced matching technology to connect candidates with opportunities.

<table>
<thead>
<tr>
<th>Labor Exchange</th>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Approach</th>
<th>Direct Posts / Outside Posts</th>
<th>Opportunity</th>
<th>Interest &amp; Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>WorkFountain</td>
<td>Digerati</td>
<td><a href="http://www.workfountain.com">www.workfountain.com</a></td>
<td>2011</td>
<td>Michigan, Ohio</td>
<td>Blind correlated matching from occupation-specific surveys of 25-50 questions each highlighting skills, interests and job requirements tied to specific occupations. Top 7 matches revealed to employer with percent rank (shows name and score only). Candidate sees matches above 80% or may apply directly. Employers must sign up to be matched, see name and score alone in first match.</td>
<td>Both</td>
<td>Small, nimble organization with extensive startup funding effectively connects candidates to current job openings based on occupation-specific skills. Low volume of jobs, but high flexibility and customization of site. Effectively reduced noise in job market. Academic and workforce portals possible. Includes support documents.</td>
<td>Yes</td>
</tr>
<tr>
<td>Elevated Careers</td>
<td>e-Harmony</td>
<td><a href="http://www.elevatedcareers.com">www.elevatedcareers.com</a></td>
<td>April 1, 2016</td>
<td>None (nationwide)</td>
<td>High fatigue 200-question standard survey based on skills, work culture, and personality. Candidate sees matches with % score. Employers need not sign up to be matched to candidates, but must sign up to receive matches themselves. May view all information.</td>
<td>Both (only aggregates from SimplyHired)</td>
<td>Large company in the midst of the first release of their secondary product. Extensive resources but no capacity for customer support or customization.</td>
<td>No</td>
</tr>
<tr>
<td>Anthology</td>
<td>Anthology</td>
<td><a href="http://www.anthology.co">www.anthology.co</a></td>
<td>July 2014</td>
<td>None (city-based)</td>
<td>Profile keyword-based match founded in specializations, skills, work experience, expertise, education, relocation need. Anthology agent reviews potential matches manually. Candidate remains anonymous to employers until both parties express interest. Can pull from LinkedIn profile.</td>
<td>Direct only</td>
<td>Small organization with a user-friendly and pleasing platform with a limited matching algorithm tied to skills and education. San Francisco, Seattle, and New York only. No capacity for scaling up at this time.</td>
<td>No</td>
</tr>
<tr>
<td>WhiteTruffle</td>
<td>WhiteTruffle</td>
<td><a href="http://www.whitetruffle.com">www.whitetruffle.com</a></td>
<td>2011</td>
<td>None (industry-based)</td>
<td>Profile keyword-based match founded in specializations, skills, work experience, expertise, education, preferences, and desired locations. Can pull from LinkedIn profile and link to external portfolios.</td>
<td>Direct only</td>
<td>Tech-savvy startup with robust platform and an effective matching algorithm. Information Technology only. Preference for small startups. No capacity for scaling up at this time.</td>
<td>No</td>
</tr>
</tbody>
</table>
**Labor Exchange Overview**

**Goal:** Evaluate web-based labor exchange platforms with advanced matching technology to connect candidates with opportunities.

<table>
<thead>
<tr>
<th>Labor Exchange</th>
<th>Company</th>
<th>Website</th>
<th>Launch Date</th>
<th>States with Site</th>
<th>Approach</th>
<th>Direct Posts / Outside Posts</th>
<th>Opportunity</th>
<th>Interest &amp; Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monster.com</td>
<td>Monster</td>
<td><a href="http://www.monster.com">www.monster.com</a></td>
<td>1994</td>
<td>Ohio, Washington</td>
<td>Keyword algorithm-based match made between candidate profile and job posts. Alerts job seekers to relevant job opportunities as they appear. Apply with Monster technology in platform or embed on corporate site. Includes embedded ATS, scheduling, LMI/WA data integration.</td>
<td>Both</td>
<td>Large company with extensive knowledge and experience working with government to develop state and local online labor exchanges. Innovative matching algorithm to ensure high relevancy of matches. Guides process from initial search to hire.</td>
<td>Yes</td>
</tr>
<tr>
<td>CareerBuilder</td>
<td>CareerBuilder, owned by TEGNA Inc., Tribune Media, McClatchy Co</td>
<td><a href="http://www.careerbuilder.com">www.careerbuilder.com</a></td>
<td>1995</td>
<td>None (Community Colleges)</td>
<td>Keyword-based match made by job title and matching text in resume/profile and job posting. Can tell job seekers who is looking at their resumes and based keywords, and who they’re up against for the job. Link to apply on company website.</td>
<td>Both</td>
<td>Large company comfortable with employer-oriented job board platform. High pay-by-post cost to employers. Little to no experience working with state agencies.</td>
<td>Yes</td>
</tr>
<tr>
<td>The Job Network</td>
<td>RealMatch</td>
<td><a href="http://www.realmatch.com">www.realmatch.com</a></td>
<td>2007</td>
<td>None (Chambers of Commerce &amp; Publishers)</td>
<td>Simple searches of job titles. Matches profile to postings with optional skill search, leading to less exact matches. Can factor in years of experience. Emphasis remains on the resume, which is available to employers for viewing.</td>
<td>Direct</td>
<td>Advertisement-driven online job board with a simple algorithm and low relevancy matches.</td>
<td>No</td>
</tr>
<tr>
<td>LinkedIn Talent Solutions</td>
<td>LinkedIn</td>
<td><a href="http://www.business.linkedin.com/talent-solutions">www.business.linkedin.com/talent-solutions</a></td>
<td>2003</td>
<td>None (nationwide employer-based)</td>
<td>Keyword algorithm-based match of LinkedIn profiles to listings posted on LinkedIn. Smart targeting puts job listing in front of passive candidates with the right skills and experience.</td>
<td>Direct</td>
<td>Large company focused on passive job seekers and the creation of a network of talent. No experience with state agencies or federal requirements.</td>
<td>No</td>
</tr>
</tbody>
</table>
Essential Scores

```
<table>
<thead>
<tr>
<th>ADVANCED JOB MATCHING</th>
<th>Compliance</th>
<th>Branding, Interface, Customization</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WorkFountain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevated Careers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WhiteTruffle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLASSIC JOB MATCHING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monster.com</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CareerBuilder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TheJobNetwork</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LinkedIn Talent Solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Legend:
- Yes
- Some
- No
- TBD by Provider
- TBD by MN

RealTime Talent
Using data to build the world's best workforce
Essential Scores

<table>
<thead>
<tr>
<th>ADVANCED JOB MATCHING</th>
<th>Data Potential</th>
<th>Cost</th>
<th>Score</th>
<th>Interest and Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>WorkFountain</td>
<td></td>
<td></td>
<td>79%</td>
<td>Yes</td>
</tr>
<tr>
<td>Elevated Careers</td>
<td></td>
<td></td>
<td>26%</td>
<td>Yes</td>
</tr>
<tr>
<td>Anthology</td>
<td></td>
<td></td>
<td>12%</td>
<td>Yes</td>
</tr>
<tr>
<td>WhiteTruffle</td>
<td></td>
<td></td>
<td>57%</td>
<td>Yes</td>
</tr>
<tr>
<td>CLASSIC JOB MATCHING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monster.com</td>
<td></td>
<td></td>
<td>82%</td>
<td>Yes</td>
</tr>
<tr>
<td>CareerBuilder</td>
<td></td>
<td></td>
<td>36%</td>
<td>Yes</td>
</tr>
<tr>
<td>TheJobNetwork</td>
<td></td>
<td></td>
<td>41%</td>
<td>Yes</td>
</tr>
<tr>
<td>LinkedIn Talent Solutions</td>
<td></td>
<td></td>
<td>28%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legend:
- Yes: Data potential and cost are both available.
- Some: Data potential is available, but cost is TBD.
- No: Both data potential and cost are not available.
- TBD by Provider: Data potential is available, but cost is TBD by provider.
- TBD by MN: Cost is TBD by Minnesota.
ADVANCED JOB MATCHING TOOLS – ORIENTED TO THE PASSIVE JOB SEEKER

Pros
- Higher quality matches, fewer candidates to review (Reduces noise in the job market)
- Greater innovation in integration of work culture, soft skills, and tasks
- Employer and job seeker become more equal parties in the search
- Use of automated/blind matching to overcome hiring bias (WorkFountain and Anthology)
- Small, flexible, nimble companies can highly customize. Lowers cost

Cons
- Do not resemble familiar “job board”
- Can be frustrating to active job seekers who have to answer many questions for a single match
- Difficult to validate quality of a proprietary algorithm
- Rapid market change means companies may be bought, sold, or disappear
Job Matching Tools Overview

CLASSIC JOB MATCHING LABOR EXCHANGES – ORIENTED TO THE ACTIVE JOB SEEKER

Pros
- Familiar “job board” approach
- Longstanding companies with suitable funding and history in state labor exchange space
- Highly customizable
- Innovation with the market, does not need to be constantly “upgraded” or at risk of disappearing

Cons
- Noise in the market is not reduced
- Employers remain in charge of guiding the job search process
- No solutions to hiring bias or employment disparities, as name, resume, and profile are immediately visible
- Demographic data is not collected, so measuring potential bias not possible
- Less flexibility on products provided
- Largely based on resume/profile and a keyword search to job postings
- Limited algorithms and limited market pressure to become more sophisticated (exception: LinkedIn)