WCET Summit

The 21st Century Workforce Data Challenges and Solutions
SENDING THE RIGHT SIGNALS: HOW HIGHER EDUCATION CAN BRIDGE THE SKILLS GAP

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BURNING GLASS TECHNOLOGIES
June 9, 2016

WCET Leadership Summit
THE JOB MARKET IS BROKEN AND THAT HAS ENORMOUS COSTS

- Attrition costs colleges $16B
- Bad hiring costs employers $150B

19.5% of U.S. workers are unemployed or underemployed

Employers, workers, and schools all bear the burden.
THE LABOR MARKET IS RIFE WITH MISSED SIGNALS

**Missed Connections**
- No Common Language
- No Clear Supply Chain
- No Reliable Toolset

**Job Seekers**
- Signaling Skills
- Seeking Jobs
- Planning Careers

**Employers**
- Signaling Needs
- Broadcasting Jobs

- 250 million resumes/year
- 500 million current/historical job postings
THE SKILLS GAP IS AN INFORMATION GAP
THE CHALLENGE TO HIGHER EDUCATION

- Students need better ways of signaling their skills
- Credentials can help, but we need to understand where they work and where they don’t

Listening to employers is important, but only part of the answer
PROGRAMS BUILT AROUND DEMAND: NORTHEASTERN UNIVERSITY
CREATING TARGETED PROGRAMS FOR LOCAL JOB MARKET DEMAND

Job postings related to master's programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Boston-area postings in the last 12 months</th>
<th>US-wide postings in the last 12 months</th>
<th>Concentration of jobs in Boston relative to the nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytics</td>
<td>10,071</td>
<td>186,137</td>
<td>Higher</td>
</tr>
<tr>
<td>Regulatory Affairs</td>
<td>3,097</td>
<td>23,555</td>
<td>Much higher</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>1,939</td>
<td>62,658</td>
<td>About the same</td>
</tr>
<tr>
<td>Health Informatics</td>
<td>1,905</td>
<td>63,904</td>
<td>About the same</td>
</tr>
<tr>
<td>User Interface Design</td>
<td>1,506</td>
<td>22,079</td>
<td>Much higher</td>
</tr>
<tr>
<td>Engineering Management</td>
<td>1,162</td>
<td>29,671</td>
<td>Higher</td>
</tr>
<tr>
<td>E-Learning</td>
<td>218</td>
<td>8,160</td>
<td>About the same</td>
</tr>
</tbody>
</table>

Job-posting counts in the table are derived from Burning Glass's database of online classifieds. For each program of study, analysts identified the number of postings with relevant job titles and skills and education requirements.
CAN CERTS BE THE SIGNAL?
HOW CERTIFICATION CAN VALIDATE SKILLS: HR

**PAYROLL SPECIALIST**
- Fundamental Payroll Certifications
- Certified Payroll Professional ($)
- $35 Payroll Manager

**TALENT ACQUISITION**
- Professional in Human Resources ($)
- Sr. Professional in Human Resources ($)
- $36 Talent Acquisition Manager

**COMPENSATION & BENEFITS**
- Certified Compensation Professional ($$)
- Certified Employee Benefit Specialist (CEBS) ($$$)
- Certified Benefits Professional ($$$)
- $39 Compensation Benefits Manager

**HUMAN RESOURCES MANAGEMENT**
- Professional in Human Resources ($)
- Sr. Professional in Human Resources ($)
- $40 H/R Labor Relations Manager

**CERTIFICATIONS IN DEMAND**
- Global Professional in Human Resources ($$$)

**PAYROLL MANAGER**
- $35

**TALENT ACQUISITION MANAGER**
- $36

**COMPENSATION BENEFITS MANAGER**
- $39

**H/R LABOR RELATIONS MANAGER**
- $40

**PAYROLL SPECIALISTS**
- $28

**RECRUITER**
- $21

**COMPENSATION BENEFITS ANALYST**
- $28

**H/R LABOR RELATIONS SPECIALIST**
- $30
THE KEY IS UNDERSTANDING
HOW & WHERE CERTS WORK: A TYPOLOGY

DOOR OPENERS
ASW (Welding)
A+ (help desk)
+8% salary premium

CAREER ADVANCERS
CISSP
+10% salary premium
PMP
+21% salary premium

BADGES
Android
Hadoop
+22% salary premium
A HYBRID JOB ECONOMY CAN BENEFIT FROM CERTIFICATIONS

- **WEB DEVELOPMENT AND DESIGN**
  - Job Count Last 12 Months: 67,250
  - Change Since 2011: 3%
  - Average Salary: $87,217

- **DIGITAL MARKETING & MARKETING AUTOMATION**
  - Job Count Last 12 Months: 45,991
  - Change Since 2011: 145%
  - Average Salary: $76,783

- **PROJECT MANAGEMENT**
  - Job Count Last 12 Months: 40,752
  - Change Since 2011: 7%
  - Average Salary: $106,471

- **USER EXPERIENCE / USER INTERFACE (UI/UX)**
  - Job Count Last 12 Months: 29,825
  - Change Since 2011: 15%
  - Average Salary: $99,177

- **MOBILE DEVELOPMENT**
  - Job Count Last 12 Months: 41,032
  - Change Since 2011: 135%
  - Average Salary: $111,380

- **DATA ANALYTICS**
  - Job Count Last 12 Months: 41,000
  - Change Since 2011: 372%
  - Average Salary: $105,540

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CODING IS BECOMING CRUCIAL TO HIGH PAYING CAREERS – NOT JUST IN TECH

Jobs and Coding Skills by Income Level

- Bottom Quartile: 100% Jobs
- 2nd Quartile: 96% Jobs Frequently Requiring Coding Skills, 4% Jobs Not Requiring Coding Skills
- 3rd Quartile: 90% Jobs Frequently Requiring Coding Skills, 10% Jobs Not Requiring Coding Skills
- Top Quartile: 51% Jobs Frequently Requiring Coding Skills, 49% Jobs Not Requiring Coding Skills

CODING IS BECOMING CRUCIAL
CASE STUDY: GENERAL ASSEMBLY

TARGETED PROGRAMS AIMED AT REAL-TIME TRANSITION TO HIGH DEMAND OPPORTUNITIES

- Data Science Immersive
- SQL Bootcamp
- Data Analytics
- Python for Data Science

Entry Level Database / Programming Roles
SPECIFIC SKILLS MAKE LIBERAL ARTS GRADS MORE MARKETABLE

We identified eight skill sets that Liberal Arts graduates can develop through a modest amount of coursework, such as a minor or online training or internships, that **double their job prospects**:

<table>
<thead>
<tr>
<th>Skill Set</th>
<th>Additional Value</th>
<th>Postings</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Networking &amp; Support</td>
<td>+ $1,058 premium</td>
<td>66,429</td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td>567,855</td>
</tr>
<tr>
<td>General Business</td>
<td>+ $11,144 premium</td>
<td>577,787</td>
</tr>
<tr>
<td>Social Media</td>
<td>+ $3,424 premium</td>
<td>399,577</td>
</tr>
<tr>
<td>Data Analysis &amp; Management</td>
<td>+ $12,703 premium</td>
<td>136,757</td>
</tr>
<tr>
<td>Marketing</td>
<td>+ $336 premium</td>
<td>359,916</td>
</tr>
<tr>
<td>Graphic Design</td>
<td>+ $9,188 premium</td>
<td>134,090</td>
</tr>
<tr>
<td>Computer Programming</td>
<td>+ $17,753 premium</td>
<td>52,822</td>
</tr>
</tbody>
</table>

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SOFT SKILLS DON’T STAND ALONE
EMPLOYERS NEED THE FULL PACKAGE

Top Skills Employers Demand in Jobs Emphasizing Creativity

PROGRAMMING & SOFTWARE DEVELOPMENT SKILLS
- SQL
- JavaScript, JAVA
- Software Engineering
- Web Site Development
- Technical Writing & Editing

MARKETING & SALES SKILLS
- Social Media
- Sales
- Marketing
- Merchandising
- Market Strategy

PRODUCT DEVELOPMENT & MANAGEMENT SKILLS
- Concept Development
- Product Development
- Product Management
- Product Marketing
- Product Design

DESIGN SKILLS
- Adobe Photoshop
- Graphic Design
- Adobe Acrobat
- Web Site Design
- InDesign

BUSINESS SKILLS
- Business Development
- Accounting
- Business Process
- Store Management
- E-Commerce

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SIGNPOSTING COURSE CLUSTERS FOR STUDENTS & EMPLOYERS

How do I make my degree look relevant?

Does this candidate have relevant skills?

LIBERAL ARTS DEGREE

• SOC 224 Org Theory
• POL 312 Survey Research
• HIS 247 Hist. of Labor Relations
• ECO 131 Intro to Statistics

LIBERAL ARTS DEGREE

HUMAN RESOURCE MANAGEMENT CERTIFICATE

INCREASED JOB OPPORTUNITIES
### A CAUTIONARY NOTE
ONLY A FEW CERTIFICATIONS HAVE CURRENCY WITH EMPLOYERS

<table>
<thead>
<tr>
<th>Time Range: Last 12 months</th>
<th>Number of Job Postings</th>
<th>Cumulative Percentage of Job Postings Requesting Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job postings requesting a Top 50 Certification</td>
<td>1,912,496</td>
<td>67%</td>
</tr>
<tr>
<td>Job postings requesting a Top 100 Certification</td>
<td>2,231,460</td>
<td>78%</td>
</tr>
<tr>
<td>Job postings requesting a Top 200 Certification</td>
<td>2,499,844</td>
<td>88%</td>
</tr>
</tbody>
</table>
THE PATH FORWARD

We need to ensure that signals are both sent and received.

Students need a road map of what to learn—and when.

And provide signposts that are clear to employers.
WCET Leadership Summit

21st Century Workforce Data Challenges and Solutions

Presented by Adam Markowitz, Founder & CEO
adam@portfolium.com
@markowitzadam
2016 Skills Gap: 2M students graduating this year, but 60% of employers can’t find the skills they need.
Student’s Perspective:

“I don’t have professional work experience to put on my LinkedIn or resume.”

<13% of millennials actively use LinkedIn.

Average age of a user on LinkedIn is 46 years old.
85 years of research proves **work samples** to be the **#1 indicator** of job performance.

**Projects**
**Presentations**
**Writing Samples**
**Labs & Experiments**
**Research**
**Clubs & Extracurriculars**

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**“Talent Currency” of Modern Era**

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**“Talent Currency” of Previous Era**
A competency marketplace empowers students...

Direct

• To see how other students are showcasing their skills
• To easily aggregate and showcase evidence of their skills
• To see what opportunities are available for their given skills
• To see what opportunities exist beyond the skills they currently have (their own personal skills gap)
• To see ways of developing and proving the skills they need to secure an opportunity

Indirect

• To take ownership of their learning journey
• To focus on the end goal sooner than later
• To be inspired and encouraged to reach their full potential
A competency marketplace empowers employers...

Direct

- To post job opportunities with an ideal competency profile for potential candidates
- To immediately see candidates who match the ideal competency profile
- To engage with these candidates and ultimately invite them to apply
- To create multiple competency profiles and see newly matched candidates each day

Indirect

- To identify a talent pool of qualified candidates
- To extend their reach beyond the current limits (geographical, “core schools”, etc.)
- To “cut through the noise” of job boards
- To market their company to prospective candidates
A competency marketplace empowers universities...

Direct

- To easily assess and track the skills and competencies of their students and alumni
- To see trends in the data across various departments and courses
- To arm their partner employers with a tool to better identify the talent they’re looking for
- To understand the skills and competencies their employers care about most
- To identify potential gaps that exist in what skills are required and what their students possess

Indirect

- To prove student learning outcomes
- To track job placement outcomes
- To potentially identify new curriculum opportunities
How do we prove learning and match it to opportunity?

**Students**

Students complete work and projects inside and outside of the classroom

**Display these work samples in students’ portfolios with skills tagged + indexed**

**Employers**

Matching students appears when employer searches for relevant skills
Employers: Competency-Based Hiring

portfolium.com/employers
Recruiting tech stack (experienced-level)

Outbound Recruiting
LinkedIn
Search/Find, Match, Engage

Inbound Recruiting
Indeed
Post, Attract

Candidate Relationship Management (CRM)
Avature CRM
Contact Management, Microsites/Landing Pages, Event Management

Applicant Tracking Systems (ATS)
Oracle Taleo iCims
Applicant Tracking, Screening/Assessment, Compliance, Reporting
Recruiting tech stack (college/entry-level)

- Outbound Recruiting
- University-Friendly Competency Marketplace
- Inbound Recruiting
- Post, Attract
- Candidate Relationship Management (CRM)
  - Contact Management, Email Nurture, Career Fair Event Mgmt.
  - SympliCity
  - Handshake
- Applicant Tracking Systems (ATS)
  - Oracle Taleo Icims
  - Applicant Tracking, Screening/Assessment, Compliance, Reporting.
Competency Profile: Analytical Reasoning & Problem Solving
Competency Profile: Leadership & Teamwork

Sara Kramer
"University of San Diego student, Delta Sigma Pi, and Marketing Intern at Portfolio."  
University of San Diego - Business and Communication Studies - 2017

Intra: A business and communication studies major at the University of San Diego, originally from Colorado. Passionate about Delta Sigma Pi and volleyball; player of beach volleyball and cat lover.

Affiliations: Vice President of the Student Association...#IntraDinner; #Delta, a club where we put on several events, including a dinner party in the school's coffee shop and pumpkin painting to bring students together and create a better sense of community... Delta Sigma Pi, Lambda Pi Chapter... Vice President of Philanthropic Education for Delta Sigma Pi, professional business fraternity at USD.

Mirenda Taylor
"Define success on your own terms, achieve it by your own rules, and build a life you’re prou..."  
California State University, Northridge - Pre Accountancy - 2017

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Which employers are doing competency-based hiring?

30,000 employers across all major industries