The Credentialing Economy and What It Means for Cybersecurity Skills

January 19, 2021
CLAIRA
Story

Digital Economy - Summit Recap  Labor Market
Competency Project
Hiring - BASIC
Summit on the Credentialing Economy

April 2018

Purpose and goals? Themes, attendees, energy.

Trust and Verify: Aligning Supply and Demand

Credentials as Currency: The New Language in the Labor Market

Innovation/Disruption: Empowering Learners and Disrupting the Status Quo

Cyber?
The Process

SET UP
- Set up Human Centered Design Exercise
- Create a shared vision of 2025 ecosystem
- At tables, choose one of five future jobs
- Answer questions to shape future ecosystem

SYNTHESIS
- Process findings
- Similarities/differences across occupations
- Overall themes
- How do we prepare now?

FUTURING WORKSHOP
- Designing the supply/demand ecosystem of 2025.

CONNECT THE PIECES
- Connect components
- Human at the center
- Define transition lines
- Capture whole picture

CHOOSE JOB
- Robotics/Human Ethicist
- Space Tour Guide
- Vertical Farmer
- Classroom Avatar Manager
- Waste Data Handler

5 QUESTIONS
- Find job?
- Acquire competencies?
- Secure employment/talent?
- Evolution? Obsolescence?
- Compensation?
Technology will create jobs we can't even conceive of yet. 60% of occupations in 2025 will be new. The five examples chosen for the exercise are already emerging and/or very likely to be in high demand in the next 2-3 years.

ROBOT/HUMAN ETHICIST
With the rise of cloning and other ethically dubious practices, ethicists will be needed to ensure humane progress.

SPACE TOUR GUIDE
Space tourism will be a rising industry where tour guides work to help people live in lunar outposts.

VERTICAL FARMER
In the future, 80% of the earth will be urban, resulting in the necessity to farm straight up to maintain biological balance, optimize space and increase food supply.

WASTE DATA HANDLER
Data is the new commodity and currency. Think of an IT ax person for information. Waste data handlers will destroy data.

CLASSROOM AVATAR MANAGER
Intelligent avatars replacing classroom teachers, but the human touch will be needed to properly match teacher to student.
The Competency Project

Purpose and goals  Dashboard

Trends  Drivers
BASIC Grant

What we did  How?

IT/OT

Manufacturing  Energy

Cyber v cyber
Connecting people to work is slow, expensive, biased and imprecise.
Workers select what they can do.

Employers select what they need. Claire does the rest.
Only Claire

**PRECISION**
Clairea competencies > skills
Skill = teamwork
Competency = demonstrates the ability to work in a diverse team

Industries share 70% of the same competencies. This allows Clairea to shift rapidly to keep up with demand.

**SPEED**
Clairea cuts 65% off sourcing time by matching instantly.
Starting with what people can actually do cuts out the guessing and reviewing time.
This rapid, increased feedback drives engagement and network effects.

**DIVERSITY**
The way to increase diversity is to hire it. Clairea gets them to the interview.
Removing degree screens and resumes increases diversity by 21%
Clairea's 1000 workers are unemployed, veterans, parents, immigrants.
• 76M people without a college degree in the American workforce

• 58M workers with no resume, not on a job site

• 52% of American jobs are middle-skill = HS diploma < @ < 4 year degree

• 69% of HR executives say their inability to attract this group negatively affects firm performance

• 87% of employers interviewed said 'big job sites' are frustrating and ineffective
Lexi

- She has two years of college
- Certified Nursing Assistant
- Instacart shopper
- No LinkedIn, no resume
- Has a long list of valuable competencies that are generating economic and societal value
- Just like 44% of the American workforce

Chris

- HR small logistics company
- Surge capacity since March
- He can't fill jobs fast enough
- He doesn't have time to write job descriptions, sift through resumes and interview
- His drivers need a handful of very specific competencies and not a college degree
- Just like 20M other American companies
Use Case 1

Talent: Unemployed servers (hospitality)  Employer: Logistics

Grand Rapids, Michigan

Common competencies

Strives for efficiency in completing daily tasks.
Thrives in a fast-paced, outcome-oriented environment.
Appreciates flexible scheduling and overtime opportunities.
Prioritizes safety and teamwork in all aspects of daily duties
Manages point of sale software
Adapts quickly to stressful and unexpected situations

27/35 interviewed  Company requested 30 more
Katie Hall
Claira.ai
katie@claira.ai
Corporation for a Skilled Workforce
skilledwork.org
Q & A
The Credentialing Economy and What it Means for Cybersecurity Skills

Karen Elzey, Associate Executive Director, Workcred
Mission: To strengthen workforce quality by improving the credentialing system, ensuring its ongoing relevance, and preparing employers, workers, educators, and governments to use it effectively.

Vision: A labor market which relies on the relevance, quality, and value of workforce credentials for opportunities, growth, and development.
Workcred’s Areas of Research Interest

- Examining the relationship between quality, labor market value, and effectiveness of credentials
- Exploring the relationship among different types of credentials (e.g., certifications, degrees, certificates) to improve credential holders’ labor-market outcomes
- Mapping and integrating the credentialing landscape to create more defined credential pathways
- Using data to identify credential values and outcomes
THE CREDENTIALING SYSTEM
The credentialing system is a confusing maze. Understanding how to navigate it can be difficult. **Workcred is here to help.**

**CREDENTIALING SYSTEM IN THE UNITED STATES**

- **Federal Government**
- **State System**
  - Governor, State Legislature
  - State Regulation/Licensure
- **Employers**
- **Apprenticeships**
- **Bootcamps**
- **Higher Education**
- **Federations of State Boards**
- **Professional/Trade Associations**
  - Accreditation: Certificates & Certifications
  - Training/Education Providers
- **Certification Bodies**
  - Specialized Academic Accreditation
- **Regional & National Academic Accreditation**

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# How Do Credentials Differ?

<table>
<thead>
<tr>
<th>CERTIFICATE*</th>
<th>CERTIFICATION</th>
<th>DEGREE</th>
<th>LICENSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awarded by</strong></td>
<td>Industry certification bodies</td>
<td>Education institutions</td>
<td>Government agencies</td>
</tr>
<tr>
<td>Education and training providers, employers, labor unions, and industry associations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Awarded for</strong></td>
<td>An exam at the end of a training or education course or a one-time assessment</td>
<td>Third-party, independent competency assessment</td>
<td>Course of study</td>
</tr>
<tr>
<td><strong>Indicates</strong></td>
<td>Education/knowledge/skills</td>
<td>Skill mastery/competencies</td>
<td>Education, successfully passed courses</td>
</tr>
<tr>
<td><strong>Time to complete</strong></td>
<td>Variable, generally less than 2 years</td>
<td>Variable</td>
<td>Variable, generally 2 years or more</td>
</tr>
<tr>
<td><strong>Time and renewal requirements</strong></td>
<td>Often no time limit, no renewal requirement</td>
<td>Time-limited, includes recertification</td>
<td>No time limit, no renewal requirement</td>
</tr>
<tr>
<td><strong>Revocation process</strong></td>
<td>Cannot be revoked</td>
<td>Can be revoked for incompetence or unethical behavior</td>
<td>Cannot be revoked</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>CNC Machinist, Zurich Insurance Apprenticeship</td>
<td>CompTIA Cybersecurity Analyst, Certified Energy Auditor, Medical Laboratory Scientist, MLS(ASCP)SM</td>
<td>Bachelor of Science in Engineering, Associate of Arts in Business Administration</td>
</tr>
</tbody>
</table>

* There are many types of certificates. Some examples include: certificates of participation, certificates of achievement, certificates of completion for apprenticeship, and assessment-based certificates. © 2018, Workcred Inc., All Rights Reserved
EMBEDDING CERTIFICATIONS INTO BACHELOR’S DEGREE PROGRAMS
Certification-Degree Pathways Project

April 23-24, 2019
Healthcare convening in Washington, District of Columbia
Hosted by APLU
40+ stakeholders participated

October 10-11, 2019
Liberal arts convening in Indianapolis, Indiana
Hosted by Lumina Foundation
35+ stakeholders participated

March 26-27, 2020*
Hospitality convening in Miami, Florida
To be hosted by Florida International University
*Canceled due to the pandemic and replaced with individual interviews.

July 9-10, 2019
Cybersecurity convening in San Jose, California
Hosted by San Jose State University
40+ stakeholders participated

December 10-11, 2019
Manufacturing convening in Atlanta, Georgia
Hosted by Georgia Tech University
40+ stakeholders participated
Opportunities for Cooperation

• Deepening an understanding of certification bodies and how they do their work will help faculty to tighten the alignment between curricula and the job market

• There exists real possibilities for working with credentialing bodies to provide certification opportunities for undergraduates still in school to benefit from more employment opportunities

• Faculty know how to teach and are at the cutting edge of their discipline; certification bodies know knowledge, skills, and abilities (KSAs) and perform job task analyses (JTAs) to stay on top of employer needs; neither party is well-equipped to replace the other, yet their marriage can be incredibly fruitful

Perceived Barriers

• The challenge of identifying which certifications matter to employers in order to prepare students for employment

• Clarity on return on investment of certifications are needed by universities, government, and students (e.g., will financial aid cover the cost of certifications?)

• Universities and certification bodies use different languages
WORKCRED’S GOVERNMENT CREDENTIALING NETWORK
Government Credentialing Network

Participants: Represent government agencies with active or developing credential programs

Some of the objectives of the network are to identify:

• Where, how, and why the federal government uses credentialing
• The various roles of industry and professional organizations in the creation of workforce credentials and the working relationships between industry and the federal government
• Federal credentialing models and share best practices to build more consistency among federal agencies
• Legislation and regulation affecting credentialing, and provide input to ensure consistency in credentialing terminology and concepts
• Trends and practices through the analysis of big data and new statistics from federal surveys
• The need for and create workshops/conferences focusing on federal agencies and credentialing
• Metrics for evaluating program effectiveness

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Karen Elzey
Associate Executive Director
kelzey@workcred.org
202.331.3632

Workcred Headquarters
1899 L Street, NW
Washington, DC 20036
www.workcred.org
Q & A
Thank You for Joining Us!

Upcoming Webinar: “Top Ten Ways to Discover a Cybersecurity Career That Is Right for You”

When: Wednesday, February 17, 2021, 2:00-3:00PM

Register: https://nist-nice.adobeconnect.com/webinarfeb2021/event/registration.html

nist.gov/nice/webinars