Creating a Marketplace for Upskilling the Nation's Workforce: Regional Data on Digital Tech Skills
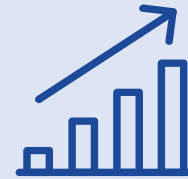
2020 Virtual Annual Conference and Forum

OBJECTIVES

Provide background and context

Share research goals and key findings

Discuss Upskilling Solution

BHEF — BUSINESS-HIGHER EDUCATION FORUM®

The Business-Higher Education Forum (BHEF) is a membership organization of business executives and higher education leaders focused on expanding the diversity of talent and fostering economic mobility through the development of high-value, industry-endorsed credentials and creation of accessible ecosystems for learners.

BHEF Impact

BHEF:

- Supports educational institutions and businesses in forming and sustaining regional business-higher education partnerships.

- Serves as an international thought leader in market intelligence, leading-edge credential design and regional talent ecosystem development.

BHEF Members:

- Serve as leaders in their regions where they drive the development of regional talent ecosystems aligned with the region's high demand workforce needs.

- Serve in leadership roles in national organizations and encourage these organizations to partner with BHEF to endorse and replicate its credentials and expand its impact on talent development.

- Encourage peer organizations to engage in regional talent development, signal skill needs, provide incentives for credential acquisition, and change hiring practices to recognize skills/credentials.

NSF CONVERGENCE ACCELERATOR (C-Accel)

The National Science Foundation's Convergence Accelerator (C-Accel) initiative supported BHEF's research to understand the challenges and opportunities related to:

➢ Employer-provided upskilling and reskilling opportunities

➢ Higher education's adaptation to meeting the skill needs of employers

➢ Ways machine learning tools and automation can support business and higher education in delivering high-quality, affordable, and timely training opportunities

NSF C-ACCEL PHASE I RESEARCH DELIVERABLES

Digital Skills Regional Needs Analysis

Higher Education Landscape Analysis
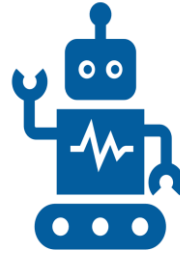
Employer Survey

Employer, University, and Student Focus Groups and Interviews
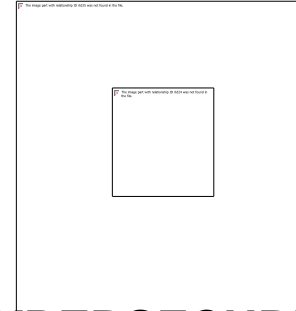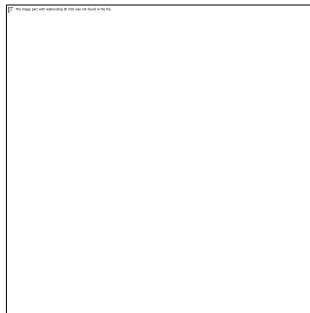
Research:
Digital Tech Skill Focus Areas

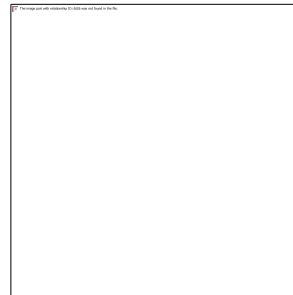**DATA ANALYTICS**

AI/MACHINE LEARNING

CYBERSECURITY

CLOUD

IT/NETWORKING

SOFTWARE PROGRAMMING

REGIONAL HIRING DATA

35,000+   **DT-oriented jobs in region that companies are unable to fill**
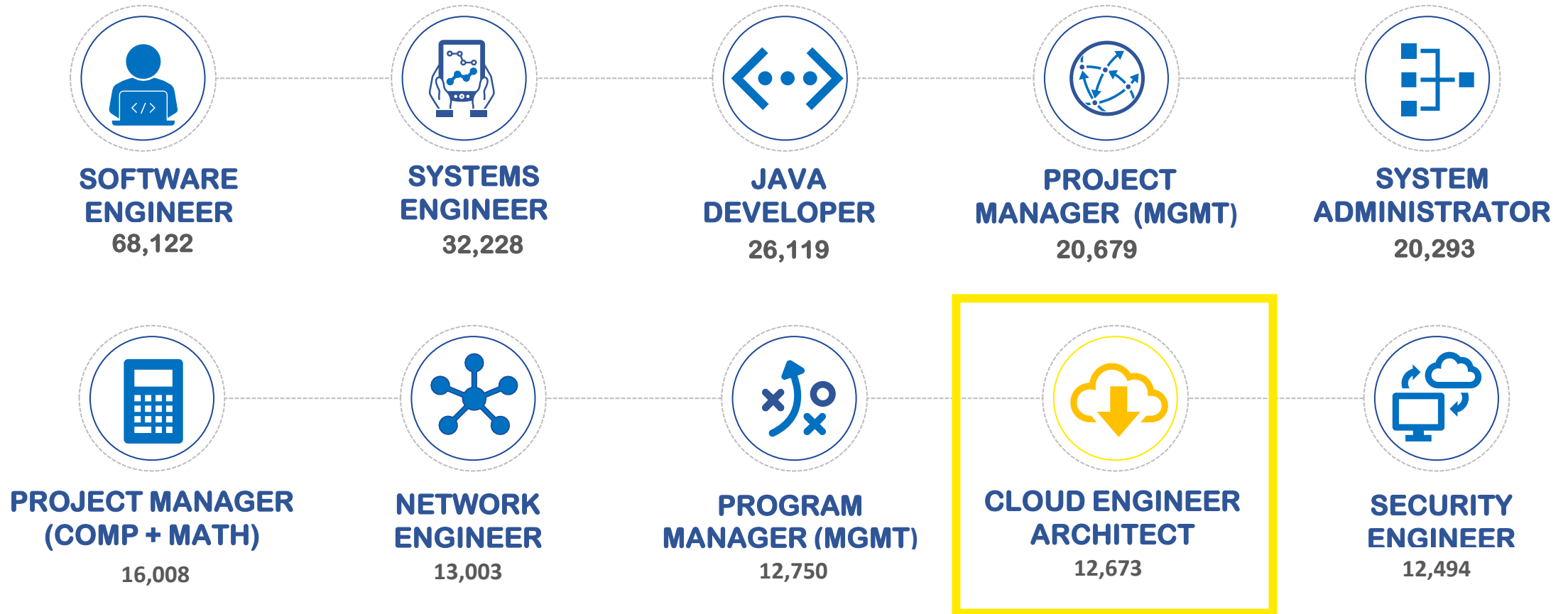
Source: Aberman, J. (2017) "Our Region Needs Tech Workers. So Why Do So Many Of Our Skilled Graduates Look Elsewhere For Jobs?" Washington Post.

227,000+   **New jobs requiring at least high or medium digital skills to be added between 2017 and 2027**

Source: Greater Washington Partnership. (2019) "Capital CoLAB Expansion Areas: Fact Base"

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REGIONAL HIRING DATA

TECH JOBS IN DEMAND IN TERMS OF UNIQUE POSTINGS

SOFTWARE ENGINEER
68,122

SYSTEMS ENGINEER
32,228

JAVA DEVELOPER
26,119

PROJECT MANAGER (MGMT)
20,679

SYSTEM ADMINISTRATOR
20,293

PROJECT MANAGER (COMP + MATH)
16,008

NETWORK ENGINEER
13,003

PROGRAM MANAGER (MGMT)
12,750

CLOUD ENGINEER ARCHITECT
12,673

SECURITY ENGINEER
12,494

AGGREGATE: **Unique Postings Dec 2018 – Nov 2019: 234,369**

BHEF BUSINESS-HIGHER EDUCATION FORUM®

REGIONAL TALENT SUPPLY & DEMAND FOR CLOUD

CLOUD SKILL GAPS

Demand (Postings)

Supply (Profiles)
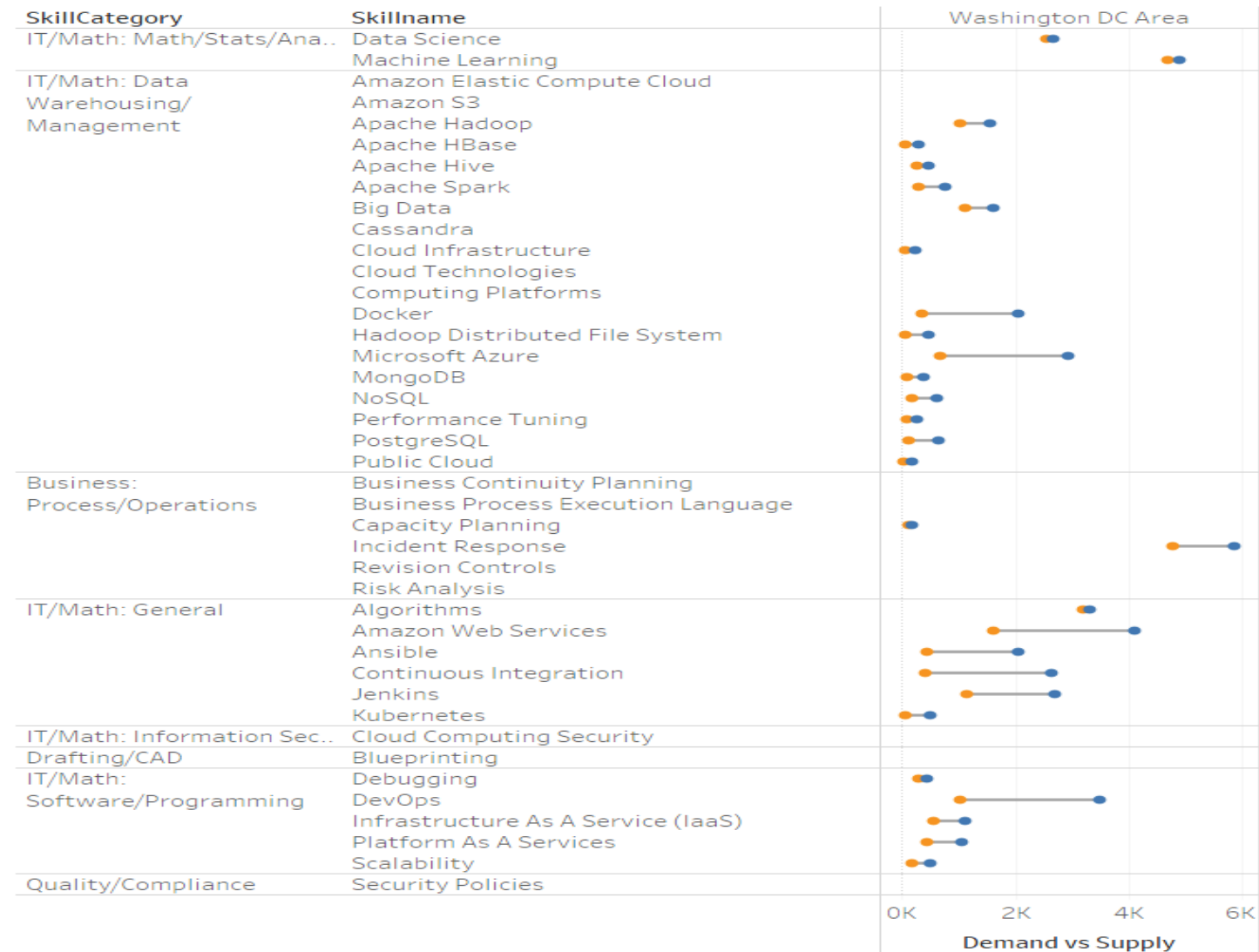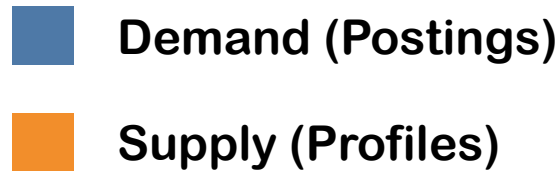
CLOUD SKILL TRENDS

CLOUD ROLE PATHWAYS

DIGITAL TECH LANDSCAPE

19 DT offerings are specific to **Cloud Computing**

5 Master's Degrees offered by DMV universities contain **Cloud Computing** content

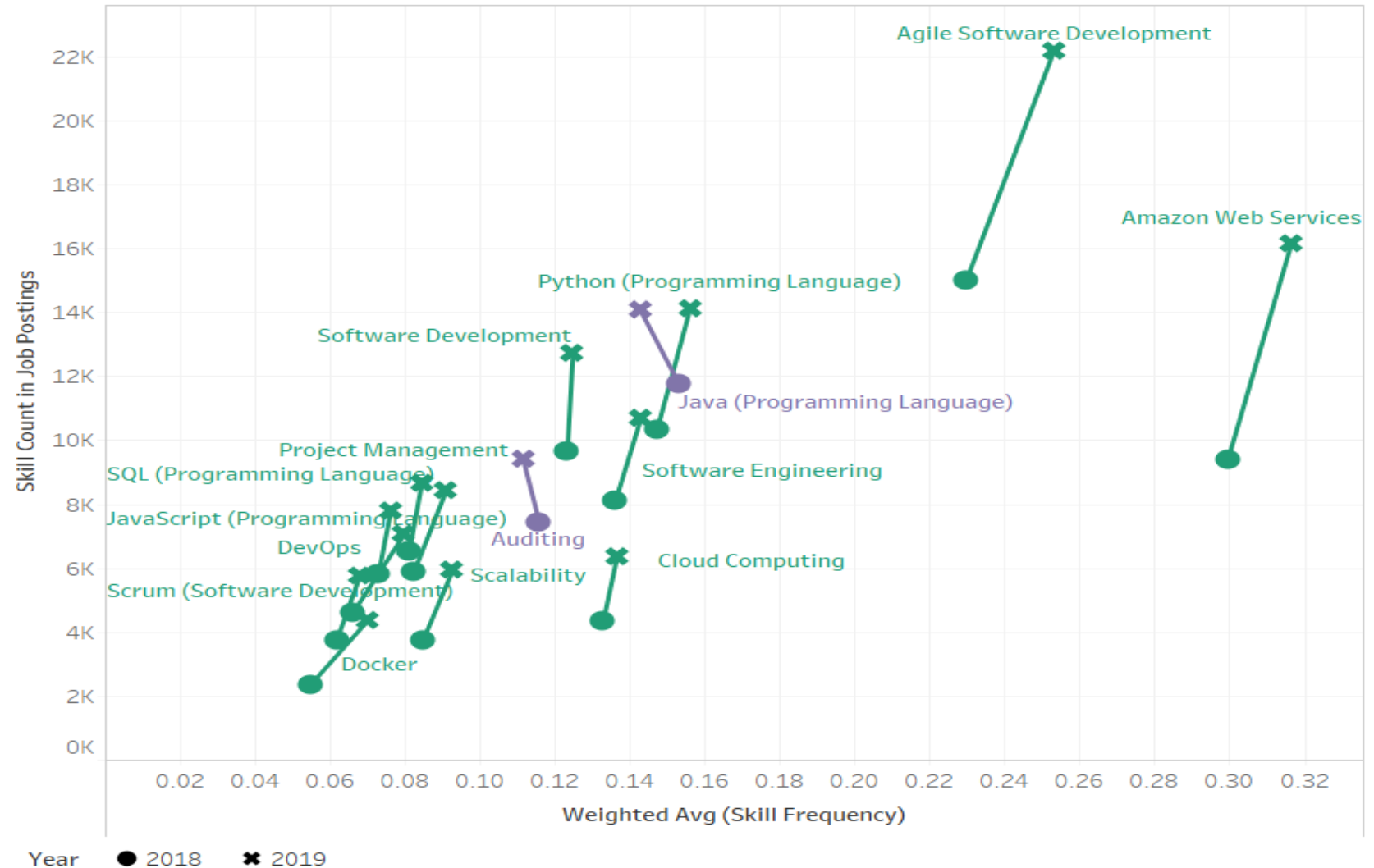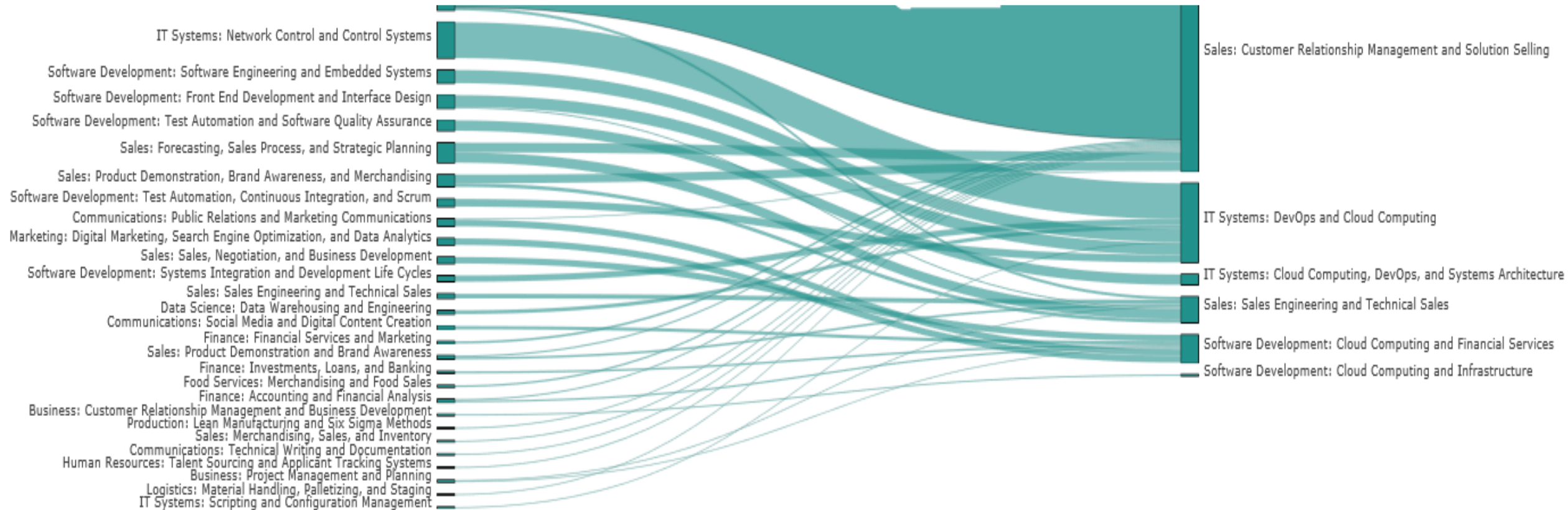**856 out of 938** of students who completed a cloud program are in **Non-Credit Programs**

DT CREDENTIALS AT DMV UNIVERSITES

298 RELEVANT DIGITAL TECH PROGRAMS ARE OFFERED

114 Master's Programs

- **36%** are accessible via online, weekends, and/or evenings
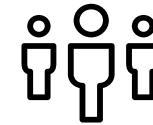
89 For-Credit Graduate Certificate Program

- **39%** are accessible via online, weekends, and/or evenings

95 Non-Credit Programs

- **39%** are accessible via online, weekends, and/or evenings

298 Digital Tech Programs

EMPLOYER INSIGHTS
SURVEYS, FOCUS GROUPS, AND INTERVIEWS

NEEDS

- o Want affordable, short, flexible, and virtual trainings
    - ▪ Value private training providers (e.g. Metis, Trilogy Ed) responsive to their needs
- o Think their employees want recognizable and relevant credentials, ideally from universities

CURRENT STATE

- o Companies find university partnerships very valuable for sourcing and recruiting talent
    - ▪ Not seen as valuable for upskilling and reskilling
- o Companies are often reactive and don't know what they need early enough
- o Companies are increasing their capability to identify upskilling and reskilling opportunities
    - ▪ Key advancement in centralized platforms for tracking skills gained
    - ▪ Few allow time to learn digital skills at work
- o 75% of companies offer tuition reimbursement benefits
    - ▪ $5,000/year median benefit
    - ▪ 51-60% of employees are eligible; median participation rate of 31-40%

OPPORTUNITIES

- o Interest in relying less on credentials and more on demonstrated skills to expand talent pools
- o Believe there is a positive ROI to upskilling but have trouble implementing ROI measures
- o Believe tuition benefits could be more effectively leveraged

UNIVERSITY INSIGHTS

FOCUS GROUPS AND INTERVIEWS

NEEDS

- Have no systemic way to engage employers
- Want to collaborate, but need:
    - Executive-level buy-in
    - Time and resources

CURRENT STATE

- Faculty are not incentivized or supported in building relationships with companies
- Program development is time and resource intensive:
    - New degree program = 3 years development
    - Certificates/other programs = 6 months development
- Faculty have limited time to develop courses and update their own digital skills
- Companies are not aware of programs and courses offered by area universities and have difficulty judging quality
- Many faculty learn about in-demand skills from working students

OPPORTUNITIES

- Interested in expanding their capabilities to better serve working students
- Would like employers to provide better access to tools and impart real-time applied knowledge to faculty and students
- Can capitalize on strong reputations and are open to transfer partnerships, ideas and content from non-credit experiences to for-credit programs
- Value faculty and staff with industry experience

STUDENT INSIGHTS

FOCUS GROUPS AND INTERVIEWS

NEEDS

- o Need more technical skills or an advanced degree to advance in their careers
- o Chose their current programs for a variety of reasons including:
  - o university or program reputation
  - o proximity to the workplace
  - o tuition assistance
  - o in-person delivery
  - o flexible, hands-on, and short
  - o networking opportunities

CURRENT STATE

- o Students working and attending school full-time face difficulties balancing work, life, and school
- o Educational programs are too costly and long
- o Difficult to determine quality programs in advance

OPPORTUNITIES

- o Universities can help students by:
  - o Increasing the transferability of credits from community colleges
  - o Providing a more guided learning experience
  - o Bringing in real-world content and experts
- o Employers can assist students by:
  - o Increasing financial assistance
  - o Providing time and flexibility to attend classes and complete schoolwork
- o Universities and employers could work together to:
  - o Place students in work opportunities
  - o Demonstrate what credentials and skills are needed for a particular career path

BHEF BUSINESS-HIGHER EDUCATION FORUM®

C-ACCEL PHASE II:
UPSKILLING SOLUTIONS MARKETPLACE
Employer driven, labor market aligned, and built for scale

KEY PHASE I FINDINGS

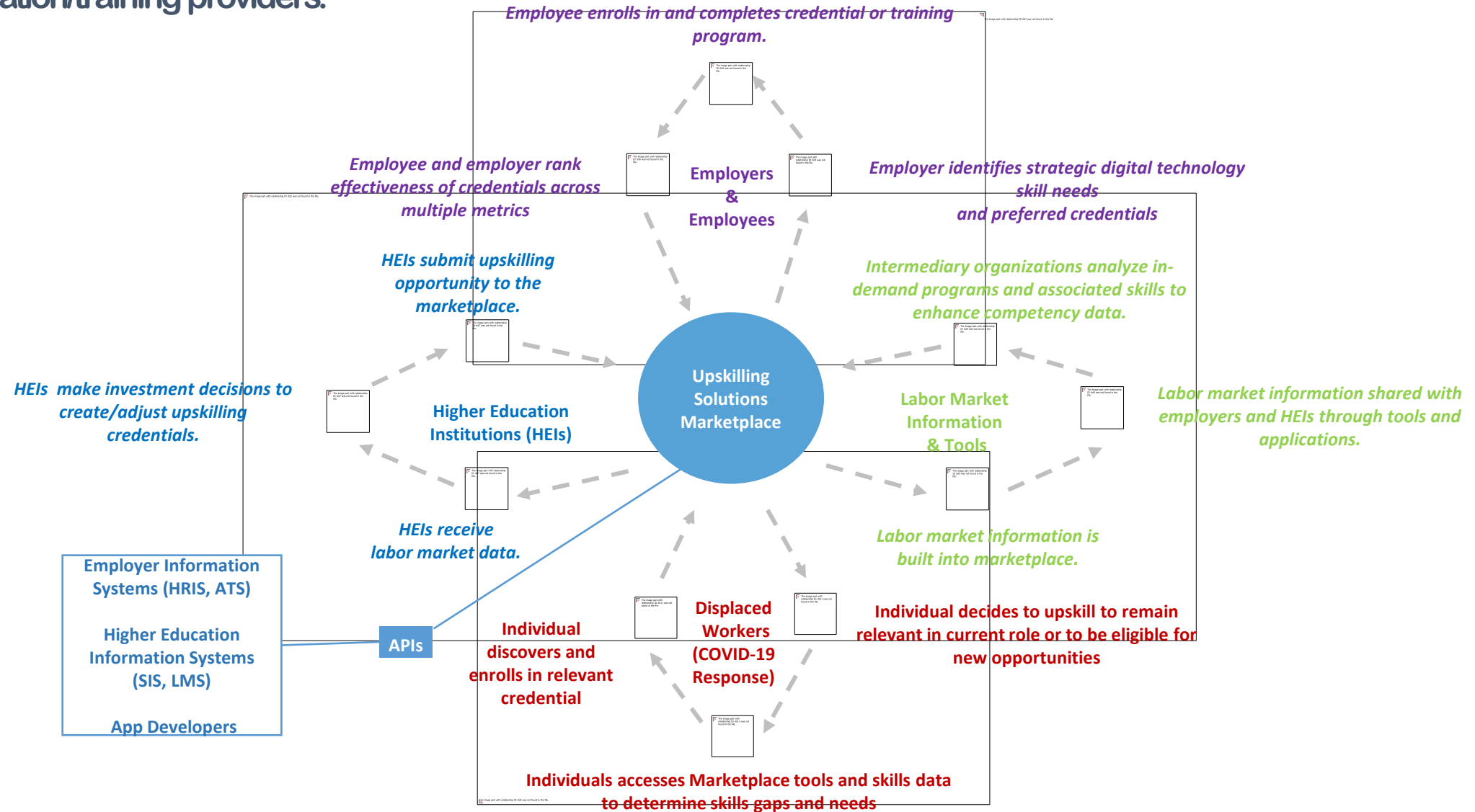Our research revealed specific employer needs to be met to dramatically increase upskilling, including:

➢ Better information on employees' current digital tech skills, the skills they need the most to improve performance/maximize productivity, and pathways to:

- ▪ Grow their careers; or

- ▪ Transition smoothly into another role (adjacencies)

➢ Easily identifiable upskilling opportunities that are trusted, affordable, short-term, and largely online or asynchronous.

PHASE II SOLUTION – THE UPSKILLING SOLUTIONS MARKETPLACE

➢ A digital platform that connects employers/employees, education providers, labor market data, and apps developers to generate clearer skills-demand signaling and build a transparent ecosystem of upskilling credentials that increase ROI for employers and employees.

➢ A process that accelerates the development of modular upskilling credentials delivered by universities in response to employer needs.

UPSKILLING SOLUTIONS MARKETPLACE

An employer-focused technology platform efficiently connecting employers/employees, app developers, LMI data feeds and education/training providers.

Employee enrolls in and completes credential or training program.

Employee and employer rank effectiveness of credentials across multiple metrics

Employer identifies strategic digital technology skill needs and preferred credentials

Employers & Employees

HEIs submit upskilling opportunity to the marketplace.

Intermediary organizations analyze in-demand programs and associated skills to enhance competency data.

HEIs make investment decisions to create/adjust upskilling credentials.

Upskilling Solutions Marketplace

Higher Education Institutions (HEIs)

Labor Market Information & Tools

Labor market information shared with employers and HEIs through tools and applications.

HEIs receive labor market data.

Labor market information is built into marketplace.

Employer Information Systems (HRIS, ATS)

Higher Education Information Systems (SIS, LMS)

App Developers

APIs

Individual discovers and enrolls in relevant credential

Displaced Workers (COVID-19 Response)

Individual decides to upskill to remain relevant in current role or to be eligible for new opportunities

Individuals accesses Marketplace tools and skills data to determine skills gaps and needs

View BHEF's Market Intelligence and Thought Leadership Publications at:

www.bhef.com

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