



Bridging the Divide: Linking business workforce needs to work- based learning opportunities

April 2019

entangled



As the U.S. transitions to a knowledge economy, our education, workforce development, and employment systems have not kept pace.

A high school diploma now offers a 50% fewer opportunities for finding family sustaining careers versus 30 years ago.

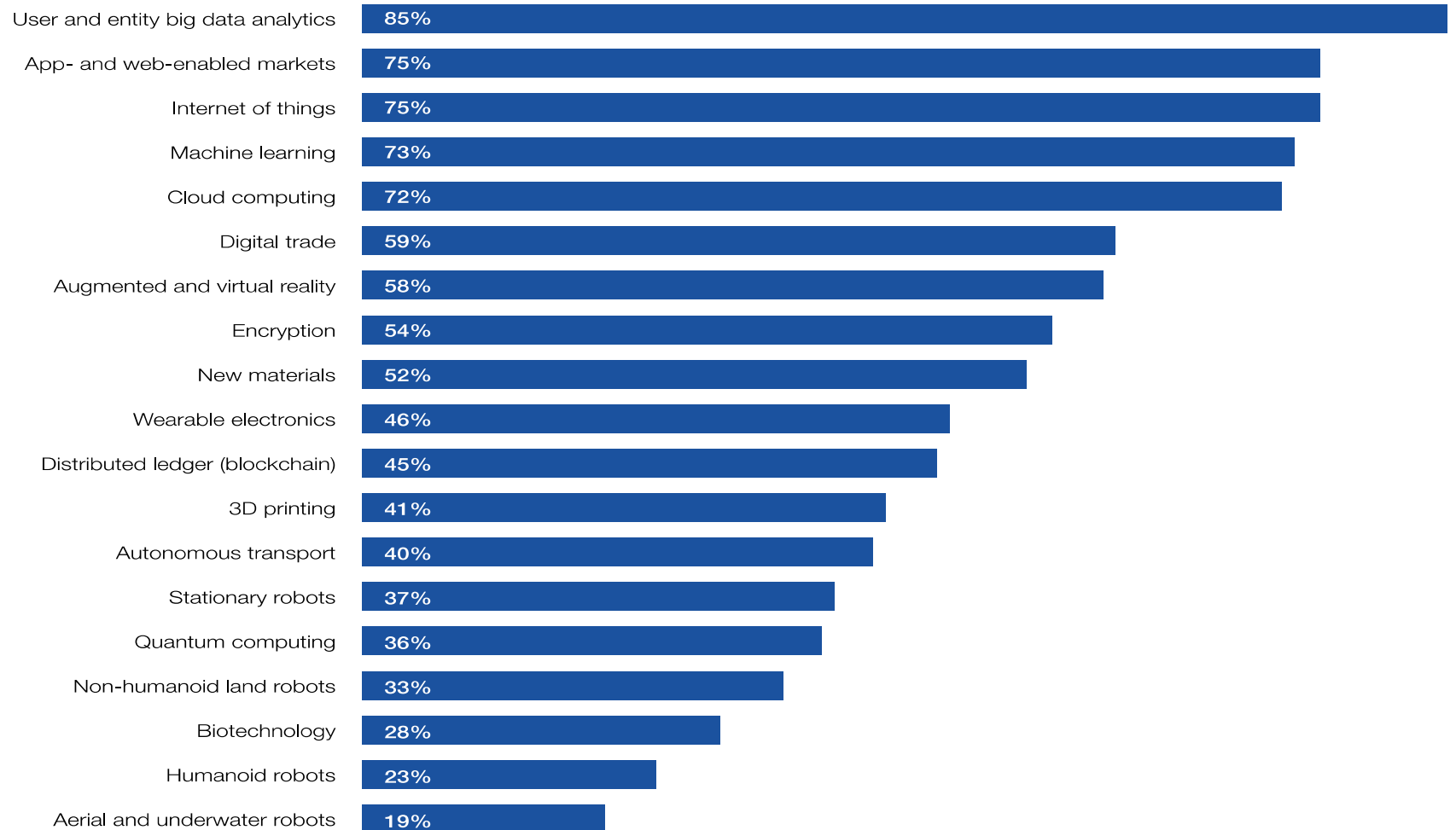
Postsecondary graduation rates have remained stagnant over the same period, with over half of attendees dropping out. For those who manage to complete, **40 percent of graduates will be underemployed**, working in jobs that do not require their level of training.

Eighty-nine percent of employers report having difficulty finding people with the requisite skills for job openings and are desperately seeking new ways to fill those gaps.

Unprecedented disconnect in labor market with record high **6.1M open postings, 6.8M currently unemployed and 6.7M more underemployed**

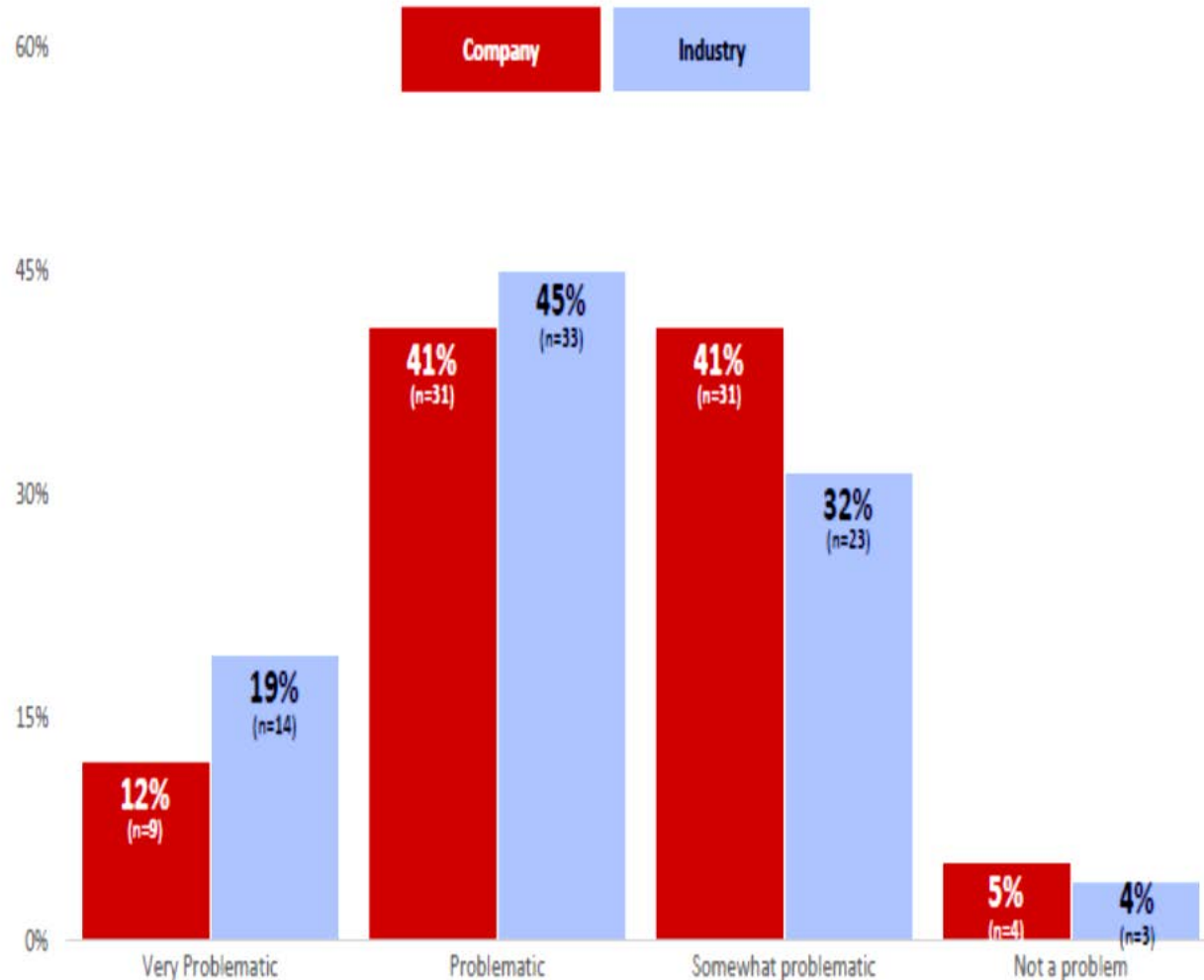
Companies are undergoing rapid transformation

“
There are still
a number of
challenges to
becoming digital”



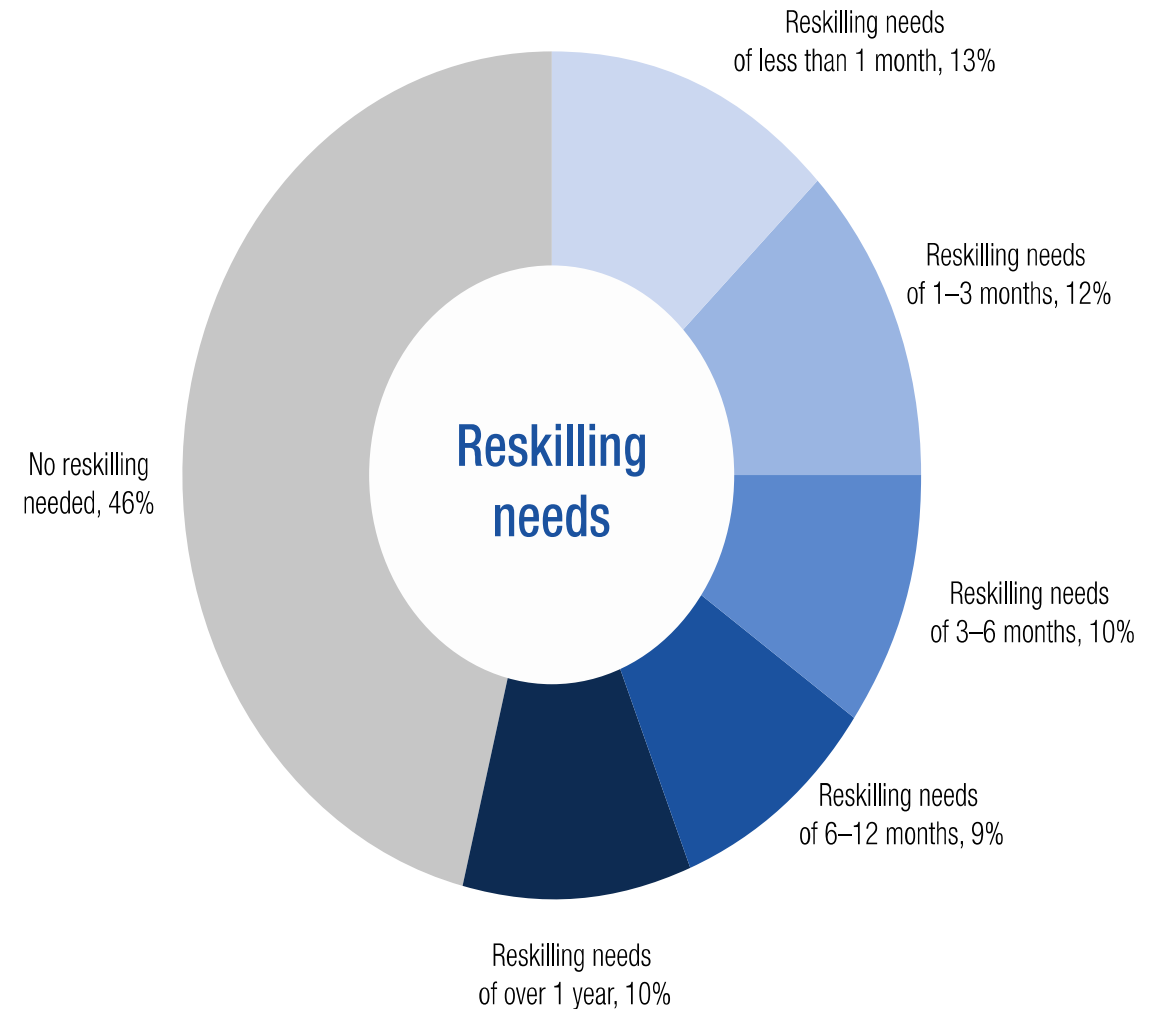
Source: Future of Jobs Survey 2018, World Economic Forum.

Employers need to reskill at scale

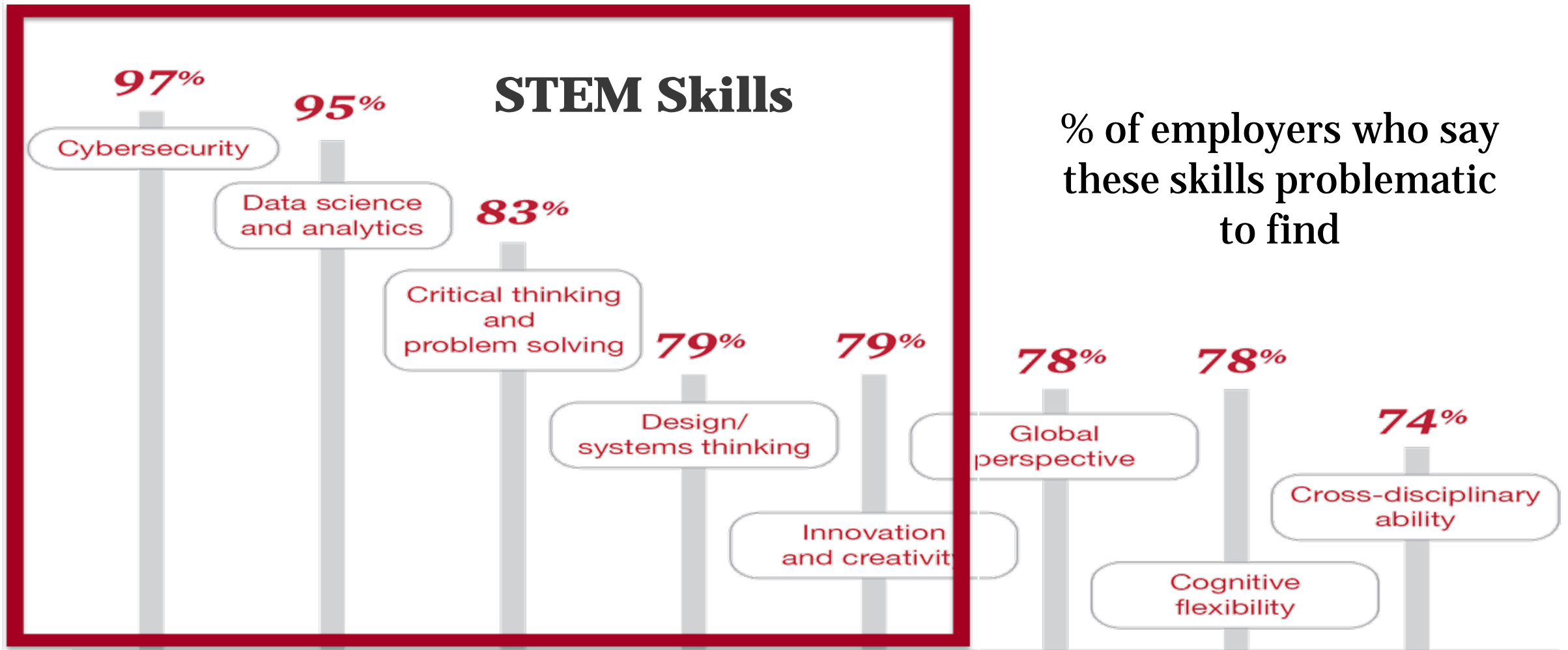


Skills shortages are a problem for companies and industry in the U.S.

Expected reskilling needs across companies (2018 – 2022)



Employers' Hardest to Hire Skills

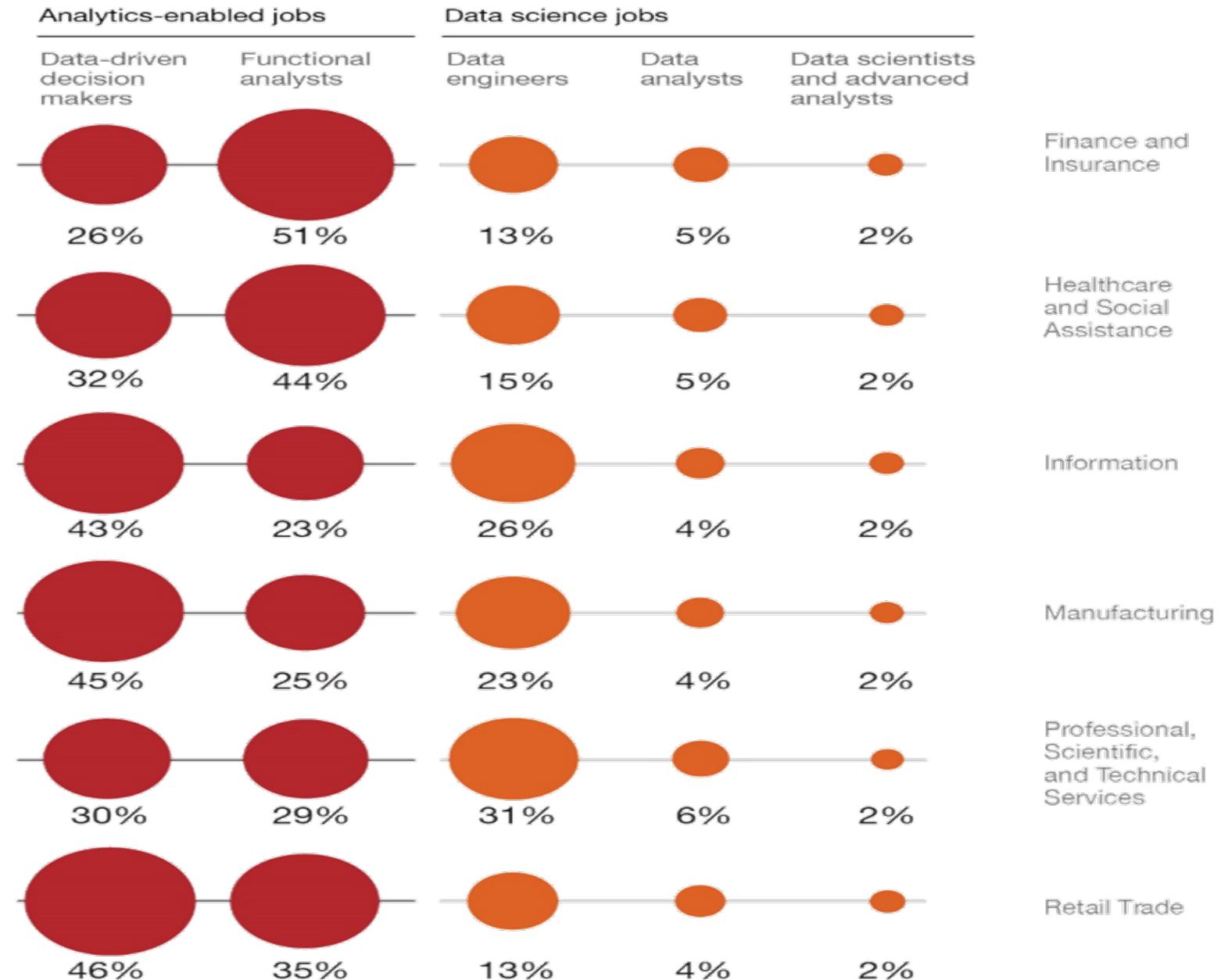


Source: Business Roundtable (2017).

The rise of the Data-Driven Decision Makers

**Explosive
growth in
demand
for
analytics
skills**

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Today's changing
landscape is demanding
business people with new
skills, **not just digital experts
or data scientists**

23%

Of educators say all graduates will
have data science and analytics skills

69%

Of employers say they will prefer
job candidates with these skills
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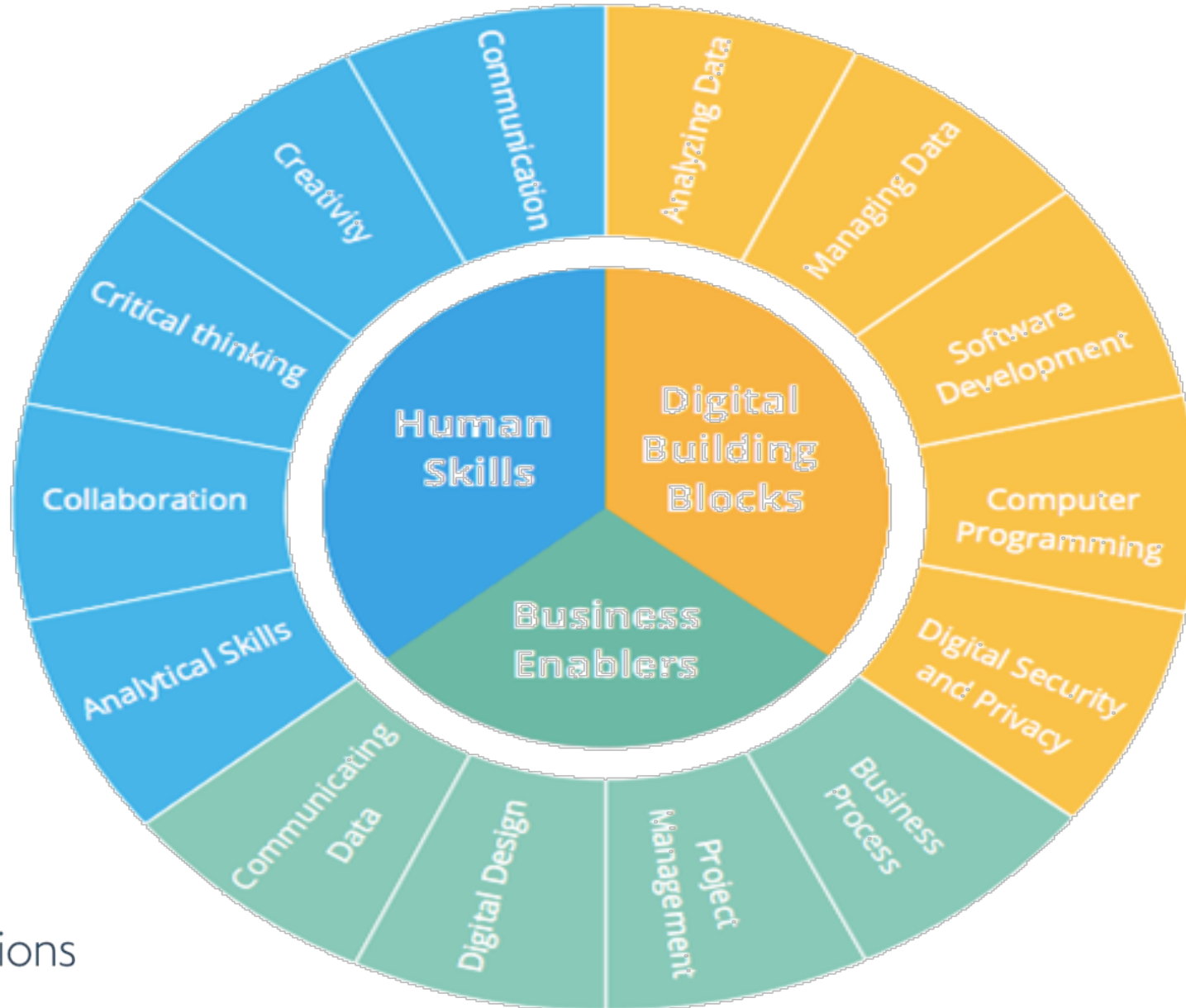
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Foundational skills for the digital economy

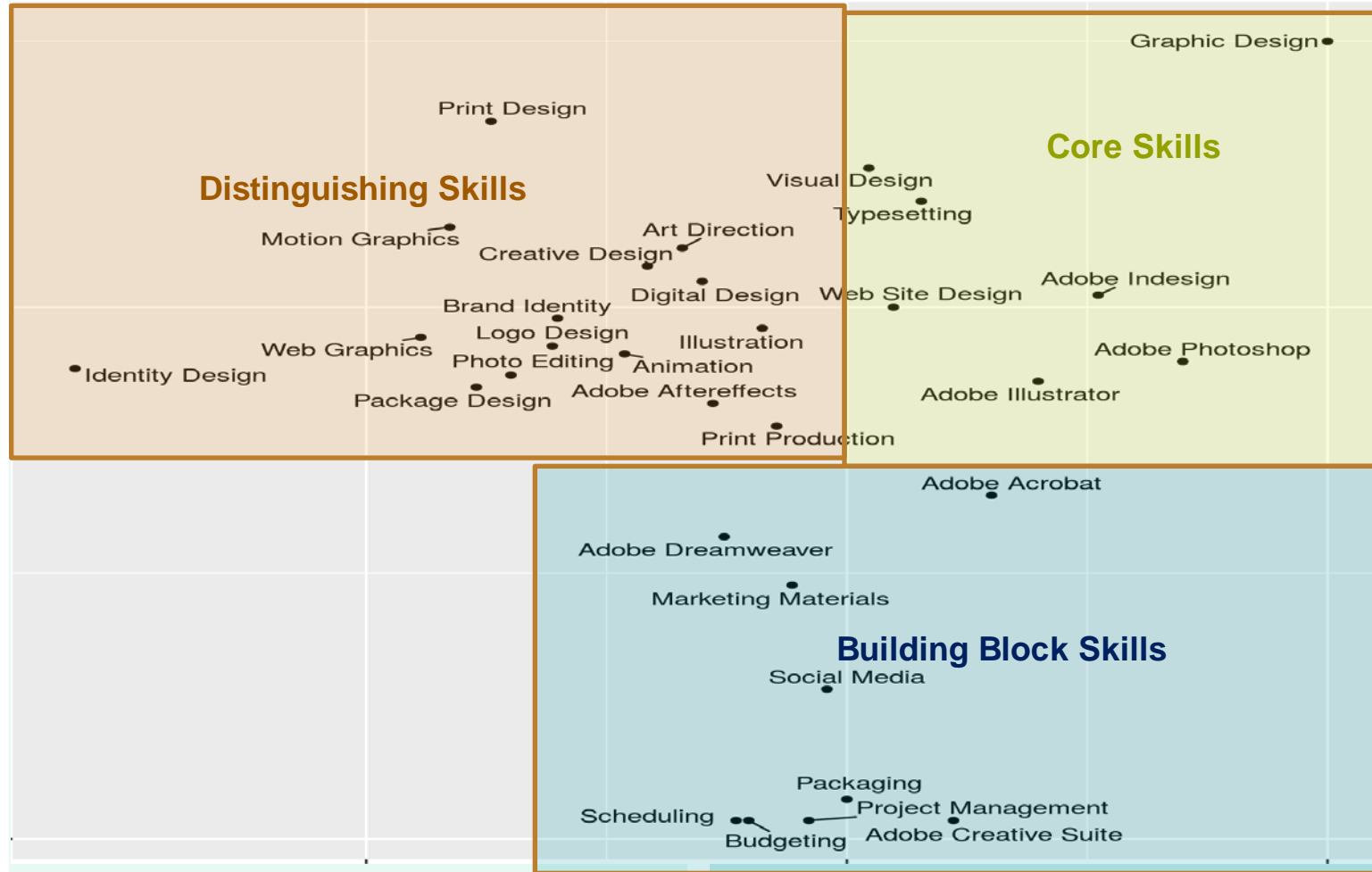
Digital Building Blocks		Business Enablers		Human Skills
Foundation Skill Area	Total Openings: 2017	Growth: 2012-2017	Share of Openings Outside IT and Analysis Job Families	Average Salary Premium
Managing data	 3,527,740	 24%	 29%	14%
Software development	 3,326,192	 44%	 21%	34%
Computer programming	 2,571,728	 35%	 15%	38%
Analyzing data	 1,320,678	 68%	 58%	7%
Digital security & privacy	 895,547	 75%	 28%	17%
Business process	 3,215,648	 18%	 70%	19%
Project management	 2,354,230	 21%	 68%	21%
Digital design	 1,427,981	 2%	 54%	2%
Communicating data	 147,219	 323%	 32%	17%
Communication	 5 million 9,185,978	 27%	 85%	-
Critical thinking	 3,666,249	 31%	 73%	-
Collaboration	 3,480,175	 46%	 82%	-
Analytical skills	 2,395,145	 24%	 78%	-
Creativity	 1,217,062	 23%	 80%	-

A new blended digital professional is emerging



Skills best learned at work

Graphic Designer / Desktop Publisher (BGTOcc)



Core Skills: Definitional skills to each occupation which job seekers need in order to contribute. Best addresses in academic/training settings.

Building Block Skills: Required and relevant across many roles and represent foundational, but not unique skills. Typically best developed on-the-job.

Distinguishing Skills: Allow a job seeker to highlight his or her technical proficiency in the role. Typically best developed through a hybrid of training and on the job.

Both credentials and internships/co-ops

Employers want graduates with work-ready technical skills, critical thinking, problems solving and additional baseline skills developed through traditional academic coursework.

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**:

IT NETWORKING & SUPPORT

+ \$1,058 premium
66,429 postings

SALES

567,855 postings

GENERAL BUSINESS

+ \$11,144 premium
577,787 postings



SOCIAL MEDIA

+ \$3,424 premium
399,577 postings

DATA ANALYSIS & MANAGEMENT

+ \$12,703 premium
136,757 postings

MARKETING

+ \$336 premium
359,916 postings

GRAPHIC DESIGN

+ \$9,188 premium
134,090 postings

COMPUTER PROGRAMMING

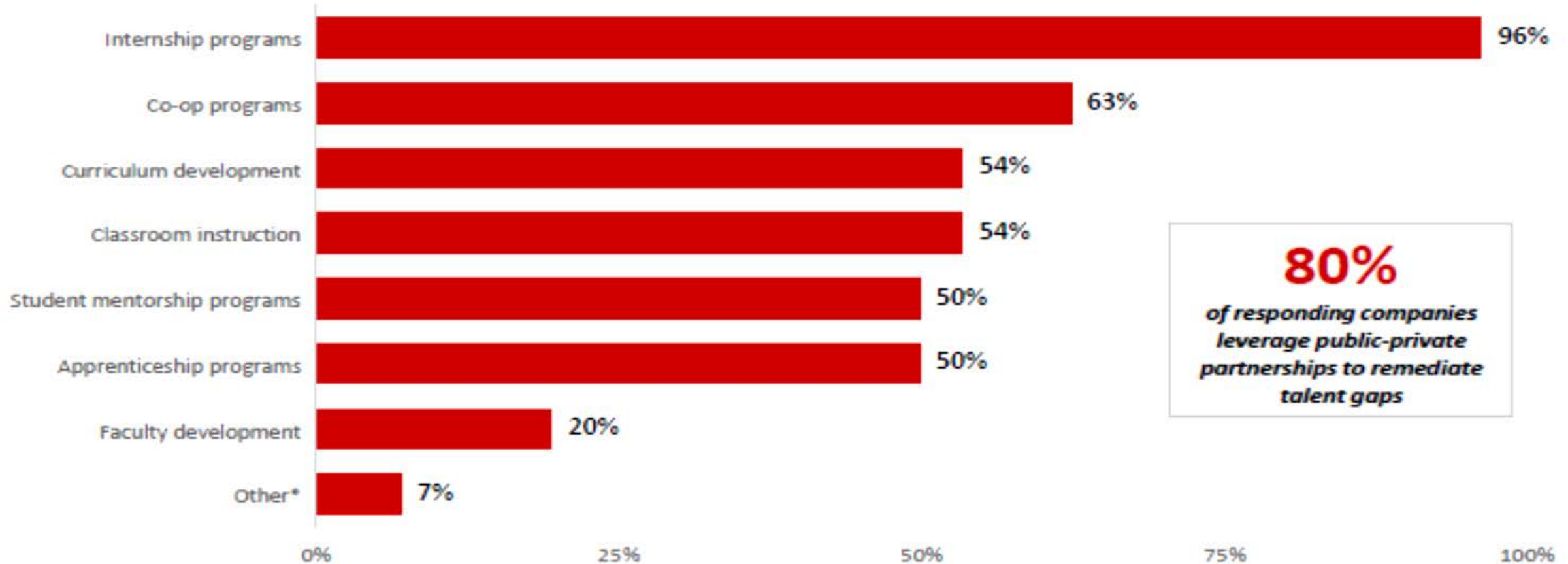
+ \$17,753 premium
52,822 postings



Skilling up has significant returns



Work-Based Learning used to remediate talent gaps

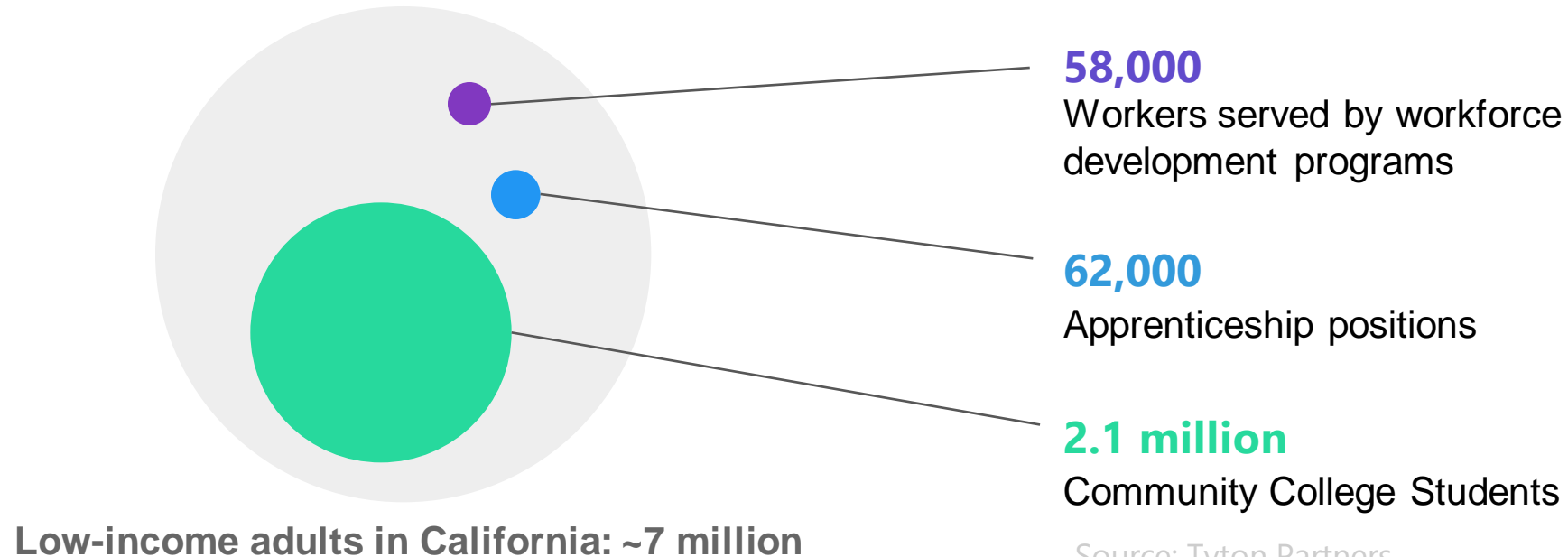


Responses: n = 56;

*Note: For a complete list of "Other" specifications, refer to Appendix III.

Inequity remains a primary challenge

California low-income adults are underserved by traditional education and training programs



Source: Tyton Partners

Further, just 6% of graduates strongly agree they had an internship or job that allowed them to apply what they were learning, worked on a long-term project, and were actively involved in extra-curricular activities.

The odds of being engaged at work are:

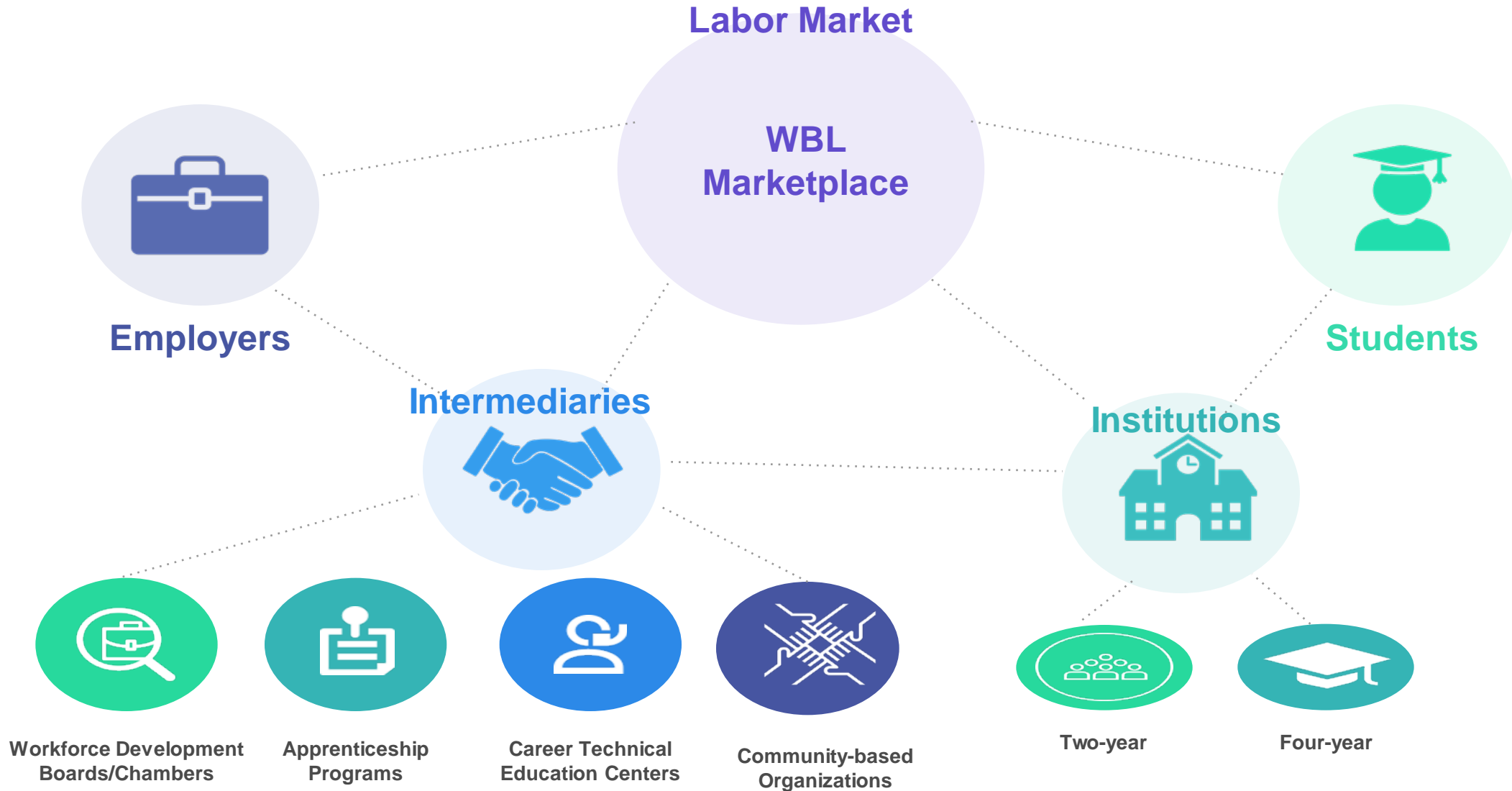


The Undergraduate Experience: Support and Experiential and Deep Learning

	% Strongly agree
Experiential	
I worked on a project that took a semester or more to complete.	32%
I had an internship or job that allowed me to apply what I was learning in the classroom.	29%
I was extremely active in extracurricular activities and organizations while attending [College].	20%
Strongly agree with all three experiential statements	6%

Based on Web surveys of nearly 30,000 college graduates with Internet access from Feb. 4-March 7, 2014.
Gallup-Purdue Index

Work-based learning has four key stakeholders



Work-based learning benefits both learners and employers

Benefits of WBL for learners

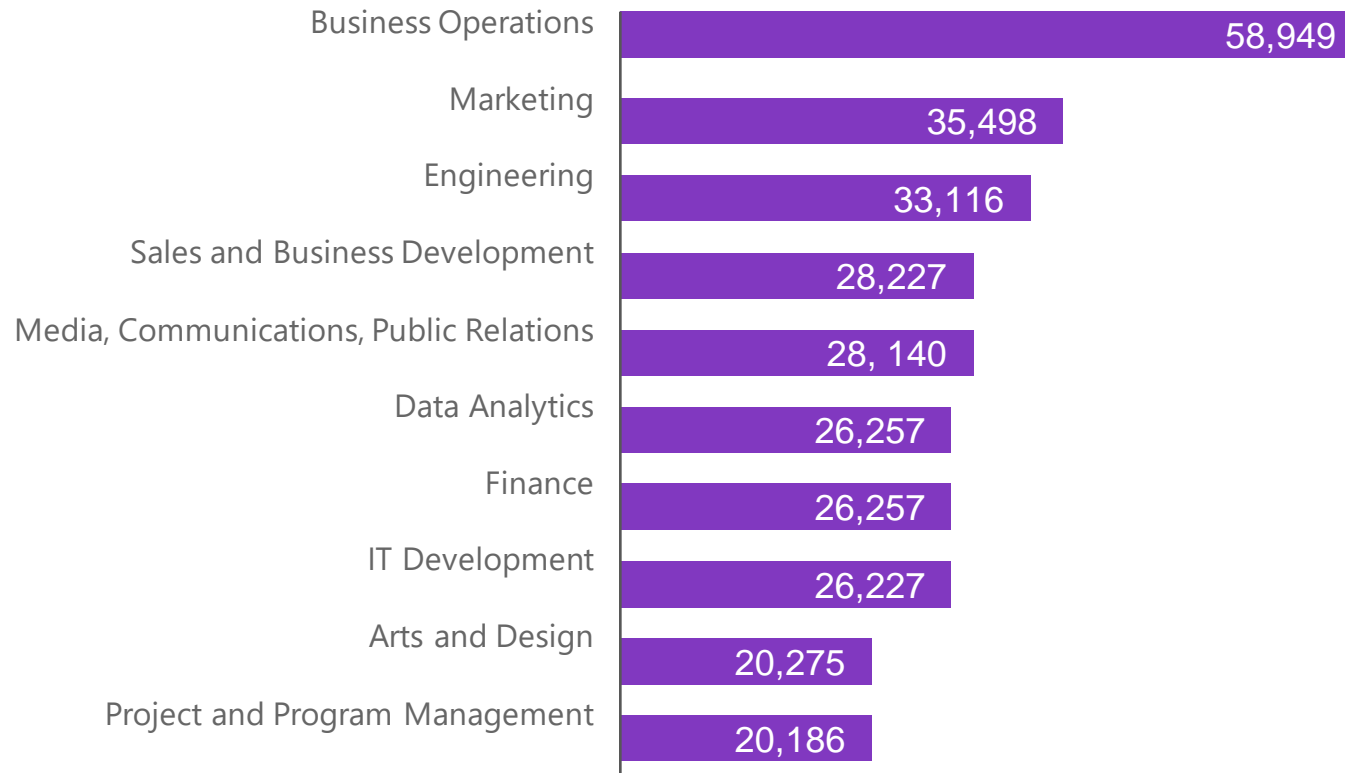
1. Fosters self and career exploration
2. Develops positive work habits and attitudes
3. Assesses abilities and strengths
4. Expands professional networks
5. Promotes informed decisions when considering job offers
6. Increases income potential

Benefits of WBL for employers

1. Extends recruiting pipelines
2. Provides access to skilled and motivated talent in accordance with their needs
3. Improves employee retention
4. Reduces training/recruitment costs

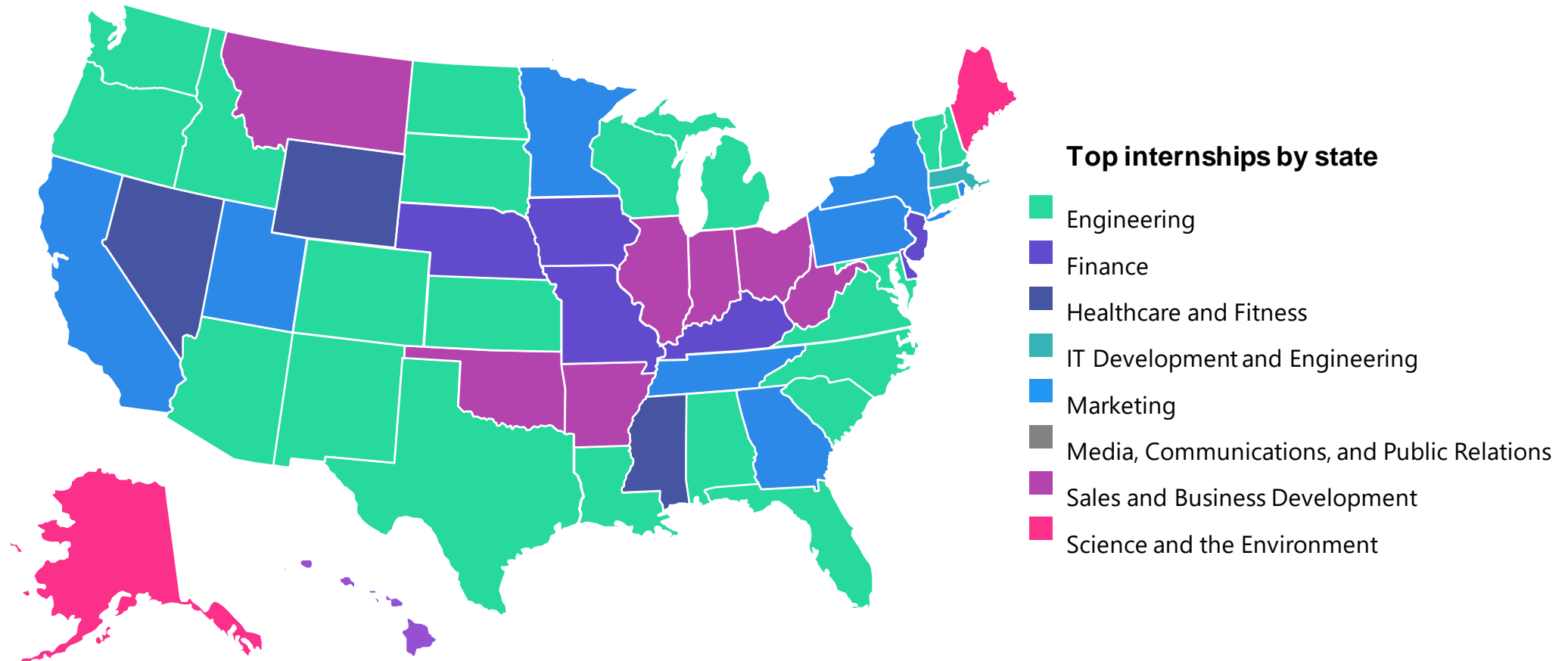
Work-based learning is leveraged across industries

Occupational fields with the largest number of internship postings in the United States from September 2015 to October 2016



Work-based learning is most common in fields that require highly technical professional skills that typically are not taught directly in traditional education.

Work-based learning opportunities vary regionally

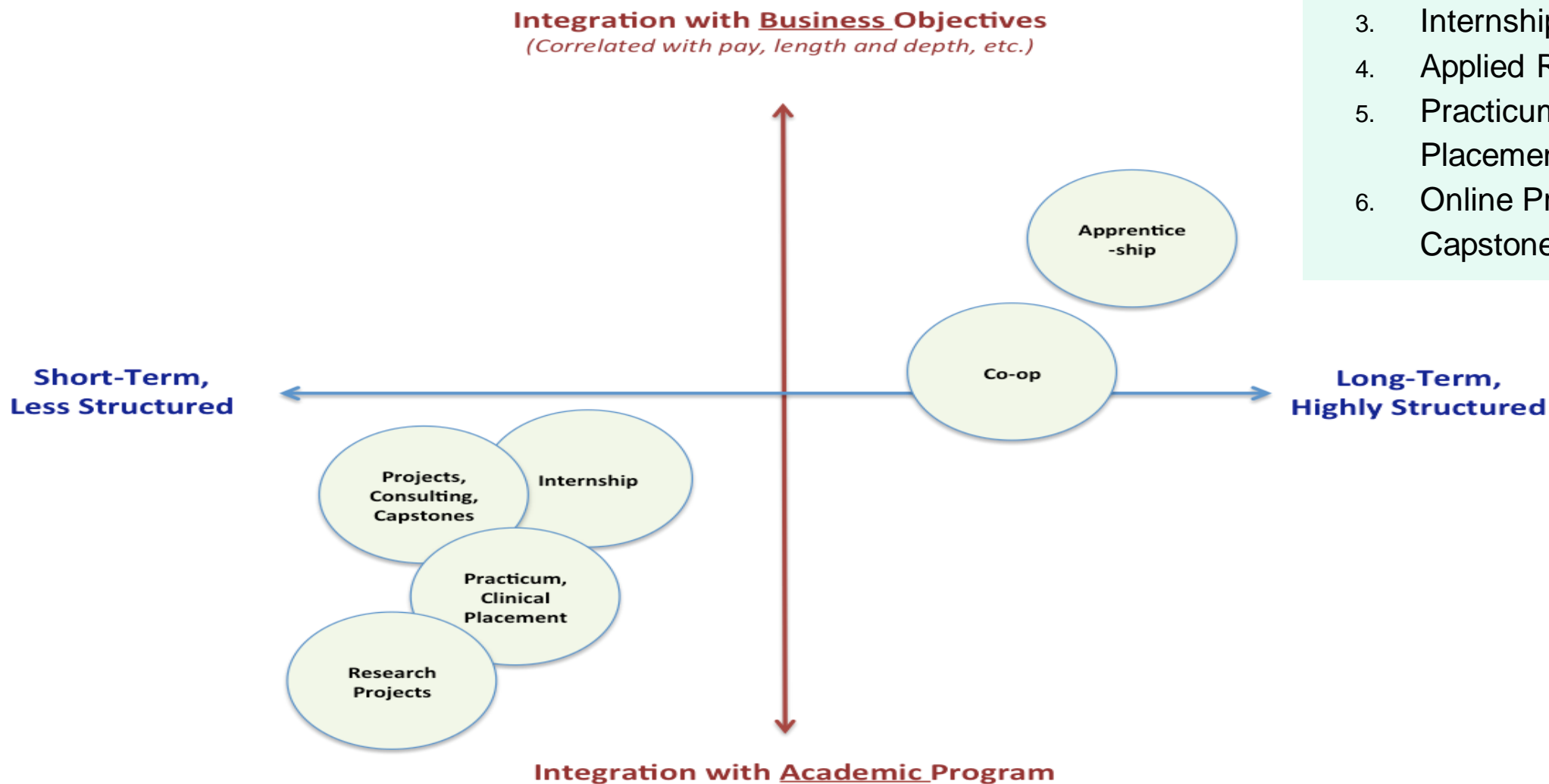


Source: Burning Glass Technologies

Comparing the models

Models for WBL

1. Apprenticeships
2. Co-ops
3. Internships
4. Applied Research Projects
5. Practicums & Clinical Placements
6. Online Projects, Consulting, Capstones



Practice-based learning

The integration of real-world learning experiences and projects into the classroom.



The University of Chicago's Booth School of Business created a practice-based learning program for pre-MBA students called Startup Summer

Students noted a wish to have done more with their pre-MBA summer—particularly if it meant a chance to explore entrepreneurial opportunities. In response, in 2016 Chicago Booth developed a Startup Summer program, which allows incoming students to work with Booth-led startups for 6-7 weeks before they begin their MBA studies.



Virginia Tech's Innovation Campus is meant to provide experiential learning to business and technology students

Virginia Tech's new Innovation Campus is 2 miles from Amazon's new HQ in Arlington and aims to produce 25,000-35,000 new graduates in computer science and related fields over the next 20 years. The campus will bring together graduate students, faculty, and numerous industry partners in an experiential learning environment.



Lehigh University's Enterprise Systems Center (part of its college of engineering) integrates academic with experiential learning

Students participate in mentored projects with ESC partners from industry and government, allowing students to "interact with all levels of workforce personnel from shop floor to corner office." Mentors focus on a systems approach, innovative problem solving, integrative thinking, and competitiveness differentiators such as sustainability and analytics. Lehigh alumni are recruited to serve as guest leaders and mentors.

Job skill development

Unbundled learning programs lead to valued workplace credentials



EASTERN
WASHINGTON UNIVERSITY



Northeastern
University



woz **U**

accenture



Unique engagement models:

Eastern Washington partners with EdX for a custom Microsoft request

Microsoft needed to hire new employees specialized in data analytics. Microsoft partnered with EdX to offer a “micro-degree” that could be agile in churning out prospective employees. Eastern Washington approved the new major in a year, the fastest approval ever on its campus.

IBM and Northeastern University blur the line between school and work

IBM and Northeastern University announced a partnership in three graduate programs, where IBM badges for employees can count for credit toward a graduate degree.

Apple co-founder’s founding of Woz U to train technology professionals

Apple co-founder Steve Wozniak is helping the for-profit university Southern Careers Institute create Woz U, an online education program to produce tech workers

Internet of Learning Consortium, founded by Accenture, Boeing, and Microsoft

Companies including Accenture, Boeing, and Microsoft have created the Internet of Learning Consortium to speed up the development of job-ready workers by using the internet to teach them what they need to know.

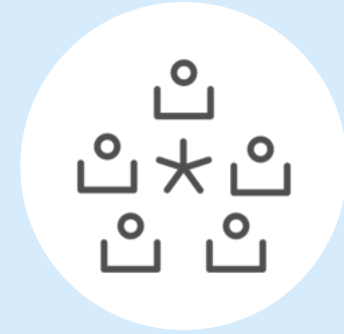
Three strategies to improve education and work interoperability



**EMPOWER
OPPORTUNITY
SEEKERS AND HIRING
MANAGERS WITH
OUTCOMES-BASED
DATA**



**ENCOURAGE
DISRUPTIVE
INNOVATION WITHIN
TRADITIONAL
EDUCATION SYSTEMS**



**CREATE INDUSTRY-
ALIGNED TALENT
ECOSYSTEMS**

Our collective mission

- Recognize the ecosystem of WBL opportunities zooming in on **alignment to employer talent and skill needs** tied to talent strategies
- Take the **onus off the learner** to draw **connections of relevancy**, particularly working learners
- Leverage **intermediaries and institutional partners** to facilitate multi-corporation programs with explicit learning outcomes and recognition
- Deepen **rigor, recognition, expectations** around non-apprenticeship WBL programs, particularly ones already deployed
- Mobilize strategic employer engagement across **states and regions**

Thank You
...now let's get to work!



Debbie Hughes
Senior Strategist
Head of Talent and Workforce Solutions
Debbie@entangled.solutions

About the Entangled Group

Our mission is to equitably support the transition from an industrial economy to a knowledge economy. Unlike traditional venture capital, professional services firms, or accelerators, Entangled operates as a company builder, where great ideas become reality with the right support and network.

