BOSTON: HUB OF INNOVATION

SUMMARY OF SURVEY RESULTS
December 2020
How important is it for your company to be at the forefront of leveraging emerging technologies (such as Blockchain, AI, XR, and Quantum Computing), cloud, and cybersecurity?

Emerging technologies: 56% Extremely important + 42% Very important + 2% Moderately important = 98%

Cloud: 67% Extremely important + 29% Very important + 3%1% Moderately important = 96%

Cybersecurity: 66% Extremely important + 32% Very important + 2% Moderately important = 98%

- Extremely important – it will be a game changer
- Very important – companies will need to keep up with peers on adoption
- Moderately important – not an imperative, but will help the business
- Not important at all – we do not need it to succeed
INVESTMENT IN EMERGING TECHNOLOGIES, CLOUD, AND CYBERSECURITY ARE ON THE RISE.

How much of your IT budget will be set aside in 2020 to adopt and scale new and emerging technologies, cloud and cybersecurity? Averages.

- Emerging technologies: 8.7
- Cloud: 9.3
- Cybersecurity: 8.7

How much of your IT budget do you anticipate will be budgeted in 2021 to adopt and scale new and emerging technologies, cloud and cybersecurity? Averages.

- Emerging technologies: 10.8 (24% increase over 2020)
- Cloud: 11.6 (25% increase over 2020)
- Cybersecurity: 11.1 (28% increase over 2020)

Base = Total sample; n=100
### POTENTIAL REVENUE IMPACTS

**What is your estimation of the potential revenue impact over the next year from applying emerging technologies, cloud and cybersecurity to your business?**

<table>
<thead>
<tr>
<th>Technology</th>
<th>No impact</th>
<th>1% - 10% increase</th>
<th>11% - 20% increase</th>
<th>21% - 30% increase</th>
<th>More than 30% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>16%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Blockchain</td>
<td>6%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>XR</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Quantum</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cloud</td>
<td>12%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>12%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**What is your estimation of the potential revenue impact over the next 3 years from applying emerging technologies, cloud and cybersecurity to your business?**

<table>
<thead>
<tr>
<th>Technology</th>
<th>No impact</th>
<th>1% - 10% increase</th>
<th>11% - 20% increase</th>
<th>21% - 30% increase</th>
<th>More than 30% increase</th>
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</thead>
<tbody>
<tr>
<td>AI</td>
<td>45%</td>
<td>2%</td>
<td>2%</td>
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<tr>
<td>Blockchain</td>
<td>26%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>XR</td>
<td>16%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Quantum</td>
<td>11%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cloud</td>
<td>35%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>31%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Differences: Next year vs. Next 3 years**

<table>
<thead>
<tr>
<th>Category</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next year</td>
<td>+29%</td>
</tr>
<tr>
<td>Next 3 years</td>
<td>+6%</td>
</tr>
<tr>
<td>Total</td>
<td>+35%</td>
</tr>
</tbody>
</table>
How confident are you that your company will be able to secure the tech skills needed in the next year from the talent pool in the Boston area?

- **Emerging technologies**:
  - Very confident: 48%
  - Confident: 45%
  - Not confident: 7%
  - Total: 93%

- **Cloud**:
  - Very confident: 52%
  - Confident: 42%
  - Not confident: 6%
  - Total: 94%

- **Cybersecurity**:
  - Very confident: 49%
  - Confident: 40%
  - Not confident: 9%
  - Uncertain: 2%
  - Total: 89%

Base = Total sample; n=100
In which of the following areas does Boston have a particularly deep talent pool regarding emerging technology compared to other US cities?

Multiple responses.

- Cloud: 65%
- AI: 55%
- Cybersecurity: 43%
- Blockchain: 37%
- Quantum Computing: 26%
- XR: 15%
From which of the following cities are you recruiting tech talent for emerging technologies, cloud and cybersecurity outside of the Boston area?

Rank top three.

- Chicago, IL: 14% (Within Top Three), 26% (Most Hiring From)
- New York, NY: 13% (Within Top Three), 34% (Most Hiring From)
- Los Angeles, CA: 12% (Within Top Three), 24% (Most Hiring From)
- Austin, TX: 8% (Within Top Three), 41% (Most Hiring From)
- Seattle, WA: 3% (Within Top Three), 17% (Most Hiring From)
- Silicon Valley: 3% (Within Top Three), 10% (Most Hiring From)
- Atlanta, GA: 1% (Within Top Three), 10% (Most Hiring From)

Not applicable, we are not recruiting tech talent outside of Boston: 46% (Within Top Three), 46% (Most Hiring From)

Base = Total sample; n=100
BOSTON IS AN IMPORTANT HUB FOR TECH TALENT

Just considering emerging technologies, how are you meeting your emerging technology capability needs in Boston this year, and how do you anticipate meeting your emerging technology capability needs in 2021?

Multiple responses.

- **Hire new talent**: 31% (2020), 44% (2021)
- **Reskill/train existing talent**: 31% (2020), 41% (2021)
- **Apprenticeship programs**: 32% (2020), 30% (2021)
- **Leverage/create ecosystem alliances (external partners)**: 33% (2020), 25% (2021)
- **Partner with organizations who have the expertise needed**: 21% (2020), 34% (2021)
- **Acquire companies to secure specialized skills**: 20% (2020), 32% (2021)

2020 focus on hiring and training

2021 focus shifts to external resources

Base = Total sample; n=100
What advantages does Boston have, over other U.S. cities, to attract talent?

Multiple responses.

- Access to the most advanced innovations in new technologies: 42%
- Access to technology talent and skills: 37%
- Access to leading academic institutions: 36%
- Access to leading thinkers in advanced technologies: 32%
- Existence of innovation ecosystem of incubators/labs: 30%
- Access to cultural institutions, entertainment, restaurants and sports: 27%
- Diversity of tech ecosystem: 26%
- Diversity of industries: 21%
- Government investment: 20%

Base = Total sample; n=100
If you are unable to recruit the talent you need by the end of 2021, how will that impact your future business?

*Multiple responses.*

- We would not be able to innovate at the same pace: 45%
- We would not be able to reach our growth objectives: 24%
- We would not be as competitive: 21%
- We would face a reduction in market share: 19%
- No impact at all: 27%
Most recruits stay in Boston for 4 years or more, but only one in four stay more than 8 years.

How long does the talent you recruit from the Boston area, typically stay in Boston?

- 8 or more years: 25%
- 4-7 years: 47%
- 1-3 years: 26%
- Less than one year: 2%

72% of the talent recruited from the Boston area typically stays in Boston for 4 years or more; 25% stay for 8 years or more.
Please rank the following in terms of which would help attract tech talent to Boston.

Rank top three.

- More educational institutions offering tech training
- Lower state and city taxes
- Increase the number of incubators
- Increased efforts around diversity
- Availability of affordable office space
- Affordable housing
- Better public transportation
- More city/state grants for startups and businesses looking to relocate

Most helpful
Within Top Three
Close partnerships with companies and universities to redesign courses to match their tech needs.

- Extremely important: 30%
- Very important: 41%
- Somewhat important: 28%
- Not important: 1%

Extremely + Very Important: 71%

Develop an apprenticeship program to open the doors for more people to get access to tech jobs.

- Extremely important: 23%
- Very important: 39%
- Somewhat important: 37%
- Not important: 1%

Extremely + Very Important: 62%

Host coding events and hackathons for citizens to skill up in tech.

- Extremely important: 28%
- Very important: 36%
- Somewhat important: 33%
- Not important: 3%

Extremely + Very Important: 64%

Start new tech education programs in early education, including primary, middle and high school.

- Extremely important: 29%
- Very important: 47%
- Somewhat important: 24%

Extremely + Very Important: 76%

How important are each of the following actions to helping Boston fill its pipeline of emerging technology talent?
Close partnerships with companies and universities to redesign courses to match their tech needs.

Develop an apprenticeship program to open the doors for more people to get access to tech jobs.

Host coding events and hackathons for citizens to skill up in tech.

Start new tech education programs in early education, including primary, middle and high school.

How important are each of the following actions to helping Boston fill its pipeline of cloud talent?

- Close partnerships with companies and universities to redesign courses to match their tech needs: 35% Extremely important, 45% Very important, 20% Somewhat important, 3% Not important
- Develop an apprenticeship program to open the doors for more people to get access to tech jobs: 32% Extremely important, 37% Very important, 28% Somewhat important, 3% Not important
- Host coding events and hackathons for citizens to skill up in tech: 23% Extremely important, 56% Very important, 20% Somewhat important, 1% Not important
- Start new tech education programs in early education, including primary, middle and high school: 23% Extremely important, 51% Very important, 25% Somewhat important, 1% Not important

Base = Total sample; n=100
Close partnerships with companies and universities to redesign courses to match their tech needs.

Develop an apprenticeship program to open the doors for more people to get access to tech jobs.

Host coding events and hackathons for citizens to skill up in tech.

Start new tech education programs in early education, including primary, middle and high school.

How important are each of the following actions to helping Boston fill its pipeline of cybersecurity talent

- Close partnerships with companies and universities to redesign courses to match their tech needs: 25% Extremely important, 50% Very important, 25% Somewhat important.
- Develop an apprenticeship program to open the doors for more people to get access to tech jobs: 33% Extremely important, 38% Very important, 26% Somewhat important, 3% Not important.
- Host coding events and hackathons for citizens to skill up in tech: 26% Extremely important, 54% Very important, 18% Somewhat important, 2% Not important.
- Start new tech education programs in early education, including primary, middle and high school: 32% Extremely important, 40% Very important, 24% Somewhat important, 4% Not important.

Extremely + Very Important: Close partnerships with companies and universities to redesign courses to match their tech needs - 75%
Develop an apprenticeship program to open the doors for more people to get access to tech jobs - 71%
Host coding events and hackathons for citizens to skill up in tech - 80%
Start new tech education programs in early education, including primary, middle and high school - 72%
### Number of Employees in the Boston Area

<table>
<thead>
<tr>
<th>Industry</th>
<th>n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>292</td>
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### Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>2</td>
</tr>
<tr>
<td>Banking</td>
<td>11</td>
</tr>
<tr>
<td>Biotech</td>
<td>4</td>
</tr>
<tr>
<td>Capital Markets</td>
<td>12</td>
</tr>
<tr>
<td>Chemicals</td>
<td>8</td>
</tr>
<tr>
<td>Communications</td>
<td>6</td>
</tr>
<tr>
<td>Consumer Goods &amp; Services</td>
<td>2</td>
</tr>
<tr>
<td>Higher Education</td>
<td>2</td>
</tr>
<tr>
<td>Freight &amp; Logistics</td>
<td>1</td>
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<tr>
<td>Healthcare Payer</td>
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</tr>
<tr>
<td>Healthcare Provider</td>
<td>5</td>
</tr>
<tr>
<td>High Tech</td>
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</tr>
<tr>
<td>Industrial Equipment</td>
<td>1</td>
</tr>
<tr>
<td>Insurance</td>
<td>1</td>
</tr>
<tr>
<td>Metals &amp; Mining</td>
<td>0</td>
</tr>
</tbody>
</table>

### Industry (Continued)

<table>
<thead>
<tr>
<th>Industry</th>
<th>n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (Oil &amp; Gas)</td>
<td>2</td>
</tr>
<tr>
<td>Media &amp; Entertainment</td>
<td>3</td>
</tr>
<tr>
<td>Medical devices</td>
<td>4</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>6</td>
</tr>
<tr>
<td>Retail</td>
<td>1</td>
</tr>
<tr>
<td>Semiconductors</td>
<td>0</td>
</tr>
<tr>
<td>Software and Platforms (including software, internet, social media platforms)</td>
<td>3</td>
</tr>
<tr>
<td>Transportation (passenger)</td>
<td>2</td>
</tr>
<tr>
<td>Travel (including Airlines, Cruises, Hospitality)</td>
<td>3</td>
</tr>
<tr>
<td>Utilities</td>
<td>4</td>
</tr>
</tbody>
</table>

### Title

<table>
<thead>
<tr>
<th>Title</th>
<th>n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Financial Officer/CFO</td>
<td>18</td>
</tr>
<tr>
<td>Chief Information Officer/CIO</td>
<td>15</td>
</tr>
<tr>
<td>Chief Innovation Officer</td>
<td>11</td>
</tr>
<tr>
<td>Chief Strategy Officer/CSO</td>
<td>11</td>
</tr>
<tr>
<td>Chief Technology Officer/CTO</td>
<td>20</td>
</tr>
<tr>
<td>SVP/VP (or equivalent) Technology</td>
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<tr>
<td>Director (or equivalent) Technology</td>
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</tr>
<tr>
<td>Chief Marketing Officer/CMO</td>
<td>0</td>
</tr>
<tr>
<td>Chief Human Resources Officer/CHRO</td>
<td>4</td>
</tr>
</tbody>
</table>