

**National BILT Meeting Minutes**  
**“Mega-BILT” Employability Skills Vote and Trends Discussion**

<b>MEETING DATE:</b> Tuesday, August 27, 2024	<b>MEETING TIME:</b> 10:30am-11:30am Eastern	<b>MEETING PLACE:</b> Zoom
RECORDER: Mark Dempsey	RECORDING: Available upon request	PREVIOUS MEETING: Infrastructure KSA vote meeting – May 7, 2024

**MEMBERS PRESENT**

<b>BILT:</b>		
Scott Andersen	Dan Huff	Mark Richter, Hitachi Digital Services
Philip Andrews, SMU	IGS Energy	Rick Ritzler, G20
David Appleby	Dr. Bradley Jensen	Lee Rosenfeld, McGraw Hill
Stacy Brandenburg, Hye Tech Networking and Security Solutions	Pat Keeney, McGraw Hill	Sriram Sabesan, Saashvata
Craig Cocciola, TrainOnQ	Corey Kirkendoll, 5K Technical Services	Skillspire
Brian Cunningham, J Strategies	Denis Kosar, DAMA NY	Dr. Shane D. Stailey, Idaho National Laboratory
Viggo Forde, Snohomish County	Bob Mayes, Columbus Zoo and Aquarium	Jeffrey Sweet, Resolute Cybersecurity Strategies
Matthew Glover, Global-CIO LLC	Susan Morris, COGENT Cyber Range	Dan Tuuri
Brad Griffith, Buckeye Innovation	Anjelo Pina, Buckeye Innovation	Charles Wentzel, Grange Insurance
Joseph Horowitz, Stetson Cybergroup	Lynne Reynolds, Operations Management	Glenn Wintrich
NITIC staff: Ann Beheler, Mark Dempsey, Christina Titus, Stephanie Schuler, Larry McWherter, Leah Palmer, Diane Meza, Deb Hecht, Rajiv Malkan		

NOTE: This meeting was hosted by **NITIC (the National IT Innovation Center)**, which is funded by a \$7.5 million, five-year grant from the National Science Foundation. NITIC a collaborative community of educators, industry leaders, government agencies, and other IT stakeholders working together to prepare tomorrow’s workforce for jobs in emerging technologies. Learn more at <https://www.nitic.org/>.

Agenda items	Discussion
Introductions and BILT overview	<p>Because of the high turnout, BILT members were asked to type their name, company, and IT area of expertise into the Zoom chat box.</p> <p>Ann provided an overview of the BILT. BILTs (Business and Industry Leadership Teams) are traditional business advisory councils improved and strengthened by a structured and repeatable process based on a system developed by the U.S. Air Force. The BILT puts employers in a more active co-leadership role rather than a passive advisory role. Once a year, BILT members are asked to prioritize entry-level job skills for a specific discipline. The NITIC grant is a national IT center responsible for supporting educators across a wide variety of IT disciplines and technologies.</p> <p>BILTs have two goals – building relationships between educators and employers and aligning curriculum with workforce needs. Ann noted her long relationships with several IT employers, proof that they found the BILT process beneficial.</p>

	<p>Ann asked BILT members to learn more about NITIC’s BILT by visiting the new website – <a href="https://www.nitic.org/industry/national-bilt/bilt-overview/">https://www.nitic.org/industry/national-bilt/bilt-overview/</a>.</p>
<p>Introducing the Employability Skills Vote</p>	<p>Ann explained that the BILT members will be prioritizing via vote 31 employability skills. When voting, BILT members are to consider entry-level workers. Consensus is not the goal and abstention on certain skills is okay. A “four” vote means that skill is essential to be taught, while a “one” vote means students don’t need to learn it. After the vote, the BILT members will discuss the results.</p> <p>BILT members took eight minutes to vote.</p> <p>One employer noted that while these are intended to be considered as entry-level skills, all would be equally valuable for senior level workers as well.</p> <p>Ann also noted that “abilities” are often considered innate skills that people “just have,” but many of these are more traditional skills that can be taught. She further explained that this list came from research conducted by an NSF project grant called Necessary Skills Now (<a href="https://www.necessaryskillsnow.org/">https://www.necessaryskillsnow.org/</a>).</p>
<p>Employability Skills Vote Results Discussion</p>	<p>Ann explained that, typically, an item with an average rank of 2.6 or less will be eliminated from curriculum. On NITIC’s spreadsheet, items with an average of 2.6 or less turn pink.</p> <p><u><i>A24 – Business Fundamentals, 2.48 average (pink, below the cutoff)</i></u>  An employer who voted low explained that he would never expect an entry-level worker to walk in and understand his business. “I will teach them what they need to know.” He would expect some degree of strategic thinking but noted that was covered in another part of the voting list.</p> <p>Ann suggested that the intent of A24 may have been more about understanding that IT isn’t just about the technology. Entry-level workers also have to think about the business. Another employer agreed: he read A24 as focusing on the fact that they’re working for a business with a purpose. He said that he’s seeing high schools do a better job of teaching this. Students are learning that rather than simply solve a problem, they’re thinking more strategically about how a solution might relate to the overall business. He noted that he’s worked with data scientists who are good technically, but had trouble applying their results to the business needs.</p> <p>From the chatbox: Keeping current on industry trends, even seeing a big picture is a 4 for me.</p> <p>From the chatbox: Coupling strategy and economics makes this feel more senior than entry level which is why I scored lower.</p> <p><u><i>A8 – Reading, 3.41 average</i></u>  <u><i>A9 – Writing, 3.26 average</i></u>  One employer ranked these lower than he might have in the past because there are so many tools now that can bridge that gap.</p> <p>Separate from a specific A item, one employer noted that many of the items on the list you simply have to learn by working on the job.</p>

A22 – Scheduling and Coordinating, 2.70 average

One employer noted that an entry-level person isn't going to be handling this sort of thing. They'll be working in teams or with supervisors. Another employer agreed that an entry-level worker will be directed and managed. Ann asked the BILT if this is something students should be learning.

In reply, an employer explained that every company runs projects differently. He explained that the problem with entry-level workers often isn't what they know, but the inherent components of who they are. Are they ethical? Do they have a native, natural curiosity? Do they have a lot of things that need to be "untaught"? To him, unteaching costs more than teaching. What he cannot teach someone, for example, is how to be ethical or curious.

Another employer agreed that if an entry-level worker is willing to collaborate and learn and operate with integrity, then "you're 50% of the way there."

An employer suggested that time management is the part of A22 that he'd be more interested in seeing from an entry-level worker.

Another employer agreed. He sees entry-level people spending a lot of time complaining about the schedule and feeling overworked. He thinks this goes back to A24 Business Fundamentals. If you don't understand a business' purpose and function, you might not fully understand how and why the schedule runs the way it runs. He'd like students to understand the realities of workplace scheduling. Supervisors aren't out to get them or pick on them. He suggested a classroom discussion of how and why IT workflows might unfold.

Separate from the As, an employer clarified that he was voting on the items in terms of "what do you want?" rather than "what are you going to settle for?" That is, how would you design the perfect program to boost these employability skills and make employees (and their employers) more successful? He told the story of an entry-level person given a large project because he excelled at all of these employability skills the BILT is discussing. Raising the bar on all of this and expecting higher performance will make it easier for entry-level workers to thrive and contribute to their companies.

Another employer suggested that some of the A items are things you can learn, while others are things that need influence and mentoring to improve over time. For example, ethical behavior and problem solving can be strengthened with help.

A31 – Equity and Inclusion, 2.96 average

One employer voted high for A31. This is "incredibly important" for his company, but recognizes other companies may not prioritize it similarly. To him, they need diverse teams that can think creatively from different perspectives and backgrounds. Another employer disagreed; to him, they look for the best person for the job and leave the other considerations to the recruiters. His teams have too many other things to worry about. Another employer suggested this is something he would expect to be important at a higher level. It's a critical skill, but maybe not for entry-level. Students should be aware of equity and inclusion and not discriminate, but he would expect that from anyone. How can an entry-level worker "remove barriers"? Another employer agreed and thought A31 should be split into two As: the need to be just and fair-minded and then need to be aware of equity and inclusion. Another employer suggested school is the perfect place to raise awareness of this topic because so many new hires will encounter DEI activities at their organization.

<p>Trends Discussion</p>	<p>Ann posed an open-ended discussion question the BILT group: “What keeps you up at night when you plan for the future?”</p> <p>One employer said he can find new hires with broad skill sets, but when it comes down to more niche knowledge there are sometimes limits. “Their knowledge stops, so their initiative stops.” He needs entry-level workers who know how to keep going and keep thinking. If he has to do the thinking for them, it wastes everyone’s time and energy. He believes new hires are often held back because they feel like “they’re in a box and don’t want to step out of it.”</p> <p>Another employer agreed. Students need to consider the skills they need to advance. How are they going to be a valuable contributor moving forward? How can he better empower people to be effective at making good choices in an ethical framework? He very much liked the employability skills vote list items.</p> <p>From the chatbox: My biggest challenge is finding talent in various geographies for an affordable price. We are so cost conscious and are leveraging more junior resources more often. And landing a good hire that will "stick" is at times tough. And this is in the software configuration and development and delivery space.</p> <p>Another employer explained that what keeps him awake at night is the “merger between what AI is, can be, should be and the people that still have to stay involved.” His company still conducts person-to-person transactions. That human connection won’t go away and it’s a bad idea to focus solely at AI to the exclusion of everything else.</p> <p>One employer spoke at length about “intentional learning.” One common thread among people who are successful is that they do everything with intent. How can we create more intentional learners? He didn’t want to go down the “rabbit hole” talking about generational differences, but he has noted fewer and fewer intentional workers and intentional learners. New hires are working for money only. It’s a means to an end. And that means workers lose a connection to the company, to the organization, and to their future. He recognizes that companies do this too; it’s always easier to hire a new worker than it is to develop the workers you have. He’s concerned about this trend.</p> <p>Another employer discussed the trend of “integrated sensing and communications.” This trend was exciting when it first introduced several years ago. He cited the example of an accident on the Autobahn automatically triggering warning signs farther up the highway to warn other drivers. Similar uses were developed for smart cities. But that same integration can be used for “ill” such as China’s social score system that penalizes citizens (e.g., limits financial choices) who don’t follow rules or behave in a certain way. An ethical understanding of technology is important. Technology can be used for good or for bad.</p> <p>Stanford University’s overview of China’s social credit system:  <a href="https://sccei.fsi.stanford.edu/china-briefs/chinas-corporate-social-credit-system-and-its-implications">https://sccei.fsi.stanford.edu/china-briefs/chinas-corporate-social-credit-system-and-its-implications</a></p> <p>ISAC article via Ericsson: <a href="https://www.ericsson.com/en/blog/2024/6/integrated-sensing-and-communication">https://www.ericsson.com/en/blog/2024/6/integrated-sensing-and-communication</a></p> <p>One employer noted the need to find entry-level workers able to collaborate across disciplines. He finds himself spending a lot of time “translating” for those disciplines. He wished students would come out of design and development programs with more experience and understanding of other disciplines. Likewise was his concern about communication. They have data engineers and analysts from different schools who are very good at “slicing and dicing” data but in the consulting field the real value comes from interpreting all that data and</p>
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clearly attaching it to business outcomes. They have to be able to tell a story. Can students get real world opportunities to practice this sort thing?

Ann noted that the reason the BILT was developed was to deal with this “translation” problem. Educators talk student learning outcomes, businesses talk knowledge and skills. Those are the same things but using different terminology.

One employer who works with many companies explained that CIOs are hiring graduates from IT programs that are “not job ready.” Schools are failing the industry if companies have to take the time to train their new hires, who then get hired away as soon as they’re good. More needs to be done to get students “job ready.” Students need to have application experience, not just knowledge.

From the chatbox: After CrowdStrike, will MSP and hosted SOC models shift? Are organizations going to call back more IT work in-house? Will we see more emphasis on RTO and SLA measurements? Conversations I'm hearing are that orgs are rethinking what does and does not work when crisis hits everyone at once.

One employer told the story of how he engaged younger employees. He would ask new hires to do trends research and give them a specific list of elements to explore (defining the trend, understanding the underlying technologies, identifying the impact of the trend, how the trend is changing, etc.). Once they provided him with a one-page overview of that trend, he’d tell them that they “own it” so that at a meeting they would be the SME on that trend. Even employees he called “borderline” would perk up and be excited to become a trend SME. He found this approach successful with more than 40 employees over 15 years and it worked with senior-level workers as well. He cautioned against blaming all employee motivation issues on generations. Give employees “something to work on and grasp.”

He added additional thoughts to the previous discussion of “integrated sensing and communications” which combined software and hardware into a single autonomous device. The challenge with ISAC systems is that unless you have a big problem with a big budget, the ROI doesn’t make sense. He noted that in 2023, over \$10 billion in grant money was awarded to ISAC projects which he believes illustrates how big this trend will become. He further said that right now carriers are too busy trying to make 5G profitable that they’re not able to research and develop other technologies like ISAC. When he looked at 15 trends for 2024, ISAC was one of only with a positive forecast for job growth. ISAC is reaching a tipping point because they’re no longer looking for engineers; now they’re looking for technicians. He suggested that faculty teaching network management courses should add lessons about troubleshooting integrated devices that covers both hardware and software. (See below for links to two industry research reports referenced by this BILT member.)

From the chatbox: I think the technician level has much MORE knowledge these days. AND many of the degreed engineers that I have trained recently do not have the technician level abilities.

Another employer mentioned the “lack of expectations” set for entry-level workers moving into new roles that involve higher levels of commitment and time. Different roles have different requirements and jobs (like in a SOC) that involves responding to emergencies will require some personal life adjustments. Sometimes a ten-hour shift lasts longer if there’s an attack. People complain about the workload even though the

	<p>workload is standard to that job and aligns with what was advertised and discussed. Expectations are not being set.</p> <p>AI concerns another employer. How do I bring AI tools into my company and my team and adopt to stay competitive in a world where the rate of innovation and development in AI is “outpacing our conversations about ethics and governance to set guard rails?” He would like more conversations and discussions about the ethics of AI.</p> <p>From the chatbox: I agree. I think all these companies are wanting to be first out to get biggest recognition or most money...ethics and morals seems to be a distant side note.</p> <p>Ann noted the term “responsible AI.” From IBM: <a href="https://www.ibm.com/topics/responsible-ai">https://www.ibm.com/topics/responsible-ai</a></p>
Conclusion	<p>No dates are set yet, but NITIC plans to host a BILT meeting in the fall to prioritize data analytics job skills in the fall and a similar meeting in the spring to prioritize AI job skills.</p> <p>Mark announced that NITIC is seeking a container SME for a short educator presentation on Friday, November 1.</p>
<p><b>Next Meeting:</b> Tuesday, November 19 (10:30am-12:30pm Central/11:30am-1:30pm Eastern) – job skills vote and discussion on data analytics</p>	

McKinsey’s 2024 trends: <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-top-trends-in-tech?stcr=6025C6CA33D84B4FACD59ADC2A05E538&cid=other-eml-nsl-mip-mck&hlkid=2d28214a6b2a46b5842d36a8322e3a2b&hctky=3073141&hdpid=7168a89b-3b02-450f-9ba3-5ceaef6f3881>

World Economic Forum’s 2024 trends: [https://www.weforum.org/publications/top-10-emerging-technologies-2024/?utm\\_source=sfmc&utm\\_medium=email&utm\\_campaign=2834410\\_Si-public-users-top-10-emerging-tech-content&utm\\_term=&emailType=Strategic%20Intelligence%20Event%20Invitations&ske=MDAxMFgwMDAwNEhXdjRnUUFE](https://www.weforum.org/publications/top-10-emerging-technologies-2024/?utm_source=sfmc&utm_medium=email&utm_campaign=2834410_Si-public-users-top-10-emerging-tech-content&utm_term=&emailType=Strategic%20Intelligence%20Event%20Invitations&ske=MDAxMFgwMDAwNEhXdjRnUUFE)