BILT Meeting
February 14, 2017
https://nationalctc.webex.com/nationalctc/lsr.php?RCID=147ac6883d6ab6033f072d3b9890d7b6

Attendees:

Mercedes Adams, NetApp
Suzanne Ames, Lake Washington Institute of Technology
Pamela Betts, San Jacinto College – South
Nancy Cerritos, WITC
Michael Coffman, Collin College
Jason Huebner, Waukesha County Technical College
Tu Huynh, Comerica Bank
Chris Kadlec, Georgia Southern University
Dante Leon, Daytona State College
Xintao Liu, Herzing
Jim Meeks
Mark Miller, Milwaukee Area Technical College
Lynn Mortensen, Raytheon Retired
Brian Nelson, Lansing Community College
Susan Randall, Cleveland Community College
Bekah Sanchez
Brian Smith, NTT DATA Services
Susan Svane, North Central Texas College
Benjamin Taylor, Seminole State College
Tina Trainor, Gateway Technical College
Scott Viebell, CISCO
Greg Teets, Clark State
Bill Morgan, Avistas
Danis Heighton, Clark State
Ernie Friend, Florida State College
Steve Linthicum, Sierra College

Joselle Gatrell, AACC
Matthew Glover, Le-Vel Brands LLC
Richard Grotegut, Diablo Valley College
Jim Howe, Lake Washington Institute of Technology
Gary Vogt, Kirkwood Community College
Glenn Wintrich
Yang Lai
Candy Slocum
Belicia Miraval-Albornoz, EL Centro
Zak Cernoch, Northwest Vista
Solomon Zewde, Houston CC
Susan Coefield, VMware
Steven Stiles, Rhodes State
Cope Crisson, Collin College
Mike Harsh, Collin College
Santiago Guardiola, Lee College
Jimmie Joseph, Ferris State
Patrick Logue, South Plains
David Keathly, UNT
Judy Archer, North Central Texas
Trevor Chandler, Houston Community College

Stephen Lyford, Wharton County
Elizabeth Halweg, Fox Valley
Craig Cates, North Arkansas
Jimmy Crum, Gwinnett
Dwight Watt, Georgia NW

Welcome and Introductions / Roll Call

Trends – discussion led by Matt Glover

Matt Glover: I'm going to dive right in to the trends. We did a poll. And a couple of different things came up when Mark put out on the Tricider poll, "What's one emerging IT trend you'd like to see discussed at the February 14 BILT meeting?" The BILT community put five trends out there: IoT, Serverless architecture, AI & Advance Machine Learning, Virtual & Augmented Reality, and Cloud Data Protection. Those are pretty consistent with a lot of the research that I do as I go through process of understanding what the trends are so I can help pivot my company. As a Chief Technology Officer for my company, it's important that I stay on top of the trends.

The first thing that I would like to talk about is a new form of architecture. "Serverless architecture." I know it sounds weird to say "serverless;" of course you have to have a server. But there are capabilities that are out there now through Amazon Web Services and other similar types of companies that allow you to write code against services and not hardware. So where you'd normally have some type of architecture like a server, you don't. The reason it's going to be important is because this is a trend, I think, probably five years ahead of the industry. But as soon as others start to leverage it, they're going to have massive worldwide adoption very quickly. This gives your company elasticity more so than other type of technology in the past. What I mean by that - if you're just pulling services and you're not implementing server farms and having robots bring on new server farms, but you're just writing your code against services, then your company is as elastic as it needs to be. In my particular case, I'm building the business so it can be a billion dollar company. Now I can choose to build a business in the old three-tiered architecture way. There, I have to essentially build in advance so that I can handle the capacity as we move forward. So say my company is making $200 million today and by the end of this year I want the company to be making $750 million. I have to put in infrastructure today to support the $750 million, but that means the company is carrying the expense of the $750 million architecture for the whole year even though I'm not making that much money at the moment. So what's really fascinating about this Serverless Architecture view is now I can truly have elasticity. I only pay fractions of a penny per call that I make to a service to do some workload for me and it runs only as much as I need to run and then stops when I don't need it to run any more. So that means I can scale massively up. So if I make a billion dollars today, I'm paying for a billion dollar infrastructure because everything is supported through a service. And if I don't make it, say I only get to $450 million or $500 million today, then, I'm only paying for $450 or $500 million worth of infrastructure. It's really remarkable. This is truly going to impact not only our hardware engineering teams from a development perspective, but it's also going to hit a lot of "As-a-Services" that we've been talking about in most recent trends. These are all elements that are coming together that are going to be touched by this technology it. Are there any questions about that trend before I continue the review of the general strategic trends?

Christina Titus: Matt, we have a question regarding what skills will our students need to meet this trend.

Matt Glover: I think it's actually going to be easier for our students to learn this stuff, because the companies that provide the services post all that data online so you can go out to, say, an Amazon Web Services, as an example, and see all the different types of services that come up and be able to educate yourselves on the process. That would, in turn, help educate our students. This is a future trend to know about, but it has not hit wide circles. Down where you see "Cloud Data Protection," when you have services you also have to make sure each service has a security layer put into it when you make those calls. Otherwise, you open yourself up to security violations. So there's going to be elements of cyber security as well. So I do see it hitting our students probably in the next three years. Other questions?

Caller Question: Yes. Please tell me what you call that again.

Matt Glover: There are servers, three-tier server architecture, where you have a web tier, an application tier of servers, and then a backhand database tier server that's traditional three-tier architecture. And what I'm talking about is something called "Serverless Architecture," where there are no servers that you acquire to do your work, you just make function calls to services.

Ann Beheler: If I have someone that's normally taking a Cisco track or Cisco Network Infrastructure track do we need to change that track? Or is this more on the programing side?

Matt Glover: I'd like to open that up more to the BILT. It's fascinating because I see that as services kick off there are going to be massive data centers of people doing networking servers without the need for hands-on work. Right now we have a lot of these small companies that community colleges rely on for student jobs because they're typically 10 years behind the curve. So they're still putting out old Cisco gear that is been retired by larger companies, but they're still active and doing a great job for their businesses. So it just really depends on the adoption curve, and because community colleges in general target the smaller/medium businesses, I'm not sure that we're going to have a real need to implement all of this for probably 3 years. But it's something to be aware of, and we need to make sure that not only our faculty members understand it's coming, but how can we pivot.

Ann Beheler: We will talk about that in great detail in May at the KSA analysis.

Matt Glover: Other BILT members, what are your thoughts about Serverless Architecture?

Christina Titus: Matt there are a few more questions coming from the faculty. What about the hardware vendors? Are they going to disappear? So what's going to happen to the vendors for hardware? So students should learn about AWS is what you're saying?

Matt Glover: I think there's more of a trend of doing open source work today. So I'm not sure if there's going to be a formal certification process, but that might be something that we look at as university and college systems going forward for some type of services-related architecture. So we named Cisco, because it was the big boy on the block way back in the day. We got other players like Dell and Juniper, and a bunch of other really great network teams that pull things together. But way back, most of our network courses were all Cisco-approved Cisco certification courses. Right now, Amazon Web Services is the big boy on the block when it comes to this type of technology, and that means that the massive trends that we're seeing are really focused on that particular company at this moment. Give it six months in IT, it could completely change. But for now, am I telling our faculty that we need to run out and start training folks? No, this is future trends and this conversation is about awareness.

Ann Beheler: Matt, we have lots of questions coming in, but rather than spend the entire conversation on this, we may need to schedule another time to talk about it. I think if it's three years away, talking about it in May at the KSA Analysis is a very good time. And, I'm going to request that the faculty that are having lots of these questions go ahead and submit them to you and others on the BILT and try to get a written response. But at the KSA analysis, we'll really talk about it.

Matt Glover: If Mark can capture all those questions and put in a document or email to me.

Mark Dempsey: Yes, I will. I think they're very engaged with this idea.

> *To see this document:*
> *http://nationalctc.mobilectc.wikispaces.net/file/view/Serverless%20architecture%20questions%20w%20Matt%20G%20answers.pdf/612132659/Serverless%20architecture%20questions%20w%20Matt%20G%20answers.pdf*

Matt Glover: It's going to transform the way we do business in a very meaningful and tangible way. But there are still a lot of people not understanding what it is. I have a short presentation that I can give on the subject. It can make it a little clearer to use, simple examples how the services call each other and how code actually would float through that and transform the way we work.

To see Matt's presentation:
http://nationalctc.mobilectc.wikispaces.net/file/view/Serverless%20Architecture%20-%20M%20Glover.pdf/612132657/Serverless%20Architecture%20-%20M%20Glover.pdf

Mercedes Adams: I just wanted to add to Matt's talking about the importance of understanding AWS and the Serverless Architecture. Here at NetApp, our employees are actively seeking out information and doing things like taking the online AWS certification. So I think Matt's right talking about this is an area to watch and be very aware of. We're seeing our employees actively moving in the direction of self-education. I feel like in business today at a tech company this knowledge is really critical to the way that we work. So I think it's interesting in thinking about integrating it into curriculum. I can tell you from the employees in our organization, they're actively seeking out that information and self-teaching and learning.

Matt Glover: So the next item… we've had dialogue about this in the past, but it's "Advanced Machine Learning" and what I'm seeing is an interesting trend. I'm sure in the industry you've seen things like "smart" televisions, "smart" phones, "smart" this, "smart" that. Marketing now is transitioning, because "smart" doesn't tell you the whole picture. And so, a "smart" television or a "smart" capability is now giving way to a new concept called "cognitive." "Cognitive" is essentially the new "smart." So as you see technologies that are learning, even if they're learning simple things, but they're able to adapt and transform the way that technology interacts with humans. It's starting to become more cognitively aware or "context aware" in the environment that they're in. Pretty soon we're going to start running out of words to compare some type of technology to the human brain. But be aware that the new trend that's also hitting is that "cognitive" is the new "smart" moving forward.

I'm going to open it up to the other BILT members. Those who participated in the Tricider polls, please feel free to jump in.

Bill Morgan: I have a client right now; we're working with some fascinating technology being deployed around the world. It's a blend of your Advanced Machine Learning, a blend of the Serverless Architecture, and the Internet of Things. And essentially what he is doing in many industry sectors is he's putting beacons at a very high density about every four square feet, then he's using behavioral and predictive machine learning. So if you're in retail store, for example, they're using a mobile app and suggesting things to you and interacting with you as your "best friend in a pocket" before you've decided to even make a purchase. And they've statistically proven over the last two and half years that they're getting about a 23% boost per receipt in the stores or in casinos, hotels, and that kind of thing. And it's based on a Serverless Architecture platform. Your forecast of the trends is right on point with what's happening right now.

Tu Huynh: Can you comment on the self-driving cars? I think that's a trend that's going to be transforming the transportation industry.

Matt Glover: There's a lot of really interesting technologies that have had to come together to make self-driving cars possible. Years ago when the concept first came out, they were trying to use light rails, not like railroad light rails, but lighted posts next to the road that shot an infrared beam or some type of light beam to hold the car in that lane. Now the government has improved the ability for people to have better GPS capabilities and then onboard camera systems have now made it possible where true autonomous driving will start the process of impacting the roads around us. I'm certain at some point

there's going to be an identified lane for self-driving vehicles, but they may not even go that way. They may just figure the car can keep its own way around the world as we see it and people will just be able to sit there and text in their cars and not worry about driving. The car itself will drive there. I don't see that as being something that's going to hit mass market appeal right now. Only the people who can afford very high-end cars can achieve that. But I also see those high-end cars being something where companies like Uber will purchase a bunch of those types of cars; then, driverless cars will start getting people from point A to point B. Now just like electricity, there was massive resistance for putting electricity into people's homes. People were apprehensive. I'm sure there's going to be massive resistance with people getting into an automated type of car. So there's going be a lot of things that have to be overcome in that process.

Another big piece that I think is really important is 3-D printing, which is something that's going to hit the community college area and associate- level degrees. Digital printing is getting more and more complex, with greater and greater levels of materials. I actually see at some point where we're going to have to have a degree program or certification program around 3-D digital printing. Especially as these printers now have all kinds of incredible material that you can actually print with from nickel to all kinds of different types of metal. It's pretty incredible. I just recently visited the University of Texas at Arlington. They have an incubator kind of leading-edge group there. They have a whole bunch of different 3-D printers of all kinds of makes and models. They walk students through how to actually design and invent a product, build the parts with the 3-D printer, then assemble it right there in that room. It's pretty incredible. And as those materials start moving away from traditional plastics and rubbers and they start moving into harder materials, you can truly transform the way we operate in the world around us. Not only that, but then there's a different trend in 3-D printing where they're going to a softer materials like food. So you at some point could have a 3-D printer in your home and you want a cheeseburger, you can just dial up the ingredients hit the go button and it will blend all those ingredients, the nutrients together into a cheeseburger and then warm it up for you and then you have your meal. Now that's a little far-fetched at the moment, but that's some of the cool factors that you can do.

Ann Beheler: I actually spent the entire technology budget for the Engineering Emerging Technology area here at Collin several years ago to buy a 3-D printer. It was $30,000 then. We still have it, and it still works and it's fine. Obviously it was much more costly than they are now. They even sell a sort of 3-D printer at Michael's Craft store now.

Mercedes Adams: I just want to add a comment. My little sister for Christmas bought a 3-D printer. I'll say, a $300 dollar printer. So they're completely accessible to students, she's a community college student, but last summer when I visited I saw their multi-million dollar 3-D printers that they're using to print parts for the Falcon rocket going to the International Space Station. I think there's such a broad application for that technology, and I love that you talk about one day that "Star Trek" idea of walking up to a printer and asking it to make us food. But I also do think that that is important in businesses today. There are real job and businesses founded on being able to print their own materials. I just wanted to add that industry perspective.

Lynn Mortensen: I was going to say something similar. Raytheon embedded in their engineering team a way to look at how they can manufacture parts through 3-D printers versus traditional manufacturing. So there are aspects of manufacturing technology that's integrating with 3-D printing.

Candy Slocum: We're also looking at how 3-D printing is going to change the logistics industry. Because from point-to-point delivery, it's going to be a huge disruptor. I'm told that UPS is looking at the 3-D printers where they will have little stations that are doing the 3-D printing of the products and then delivering to the distribution center very nearby where they're making them. So that's going to set everything on its ears.

Matt Glover: I went to a bookstore the other day and I was looking for a new book for my son. I couldn't find any in the store so I went up to customer support little desk there and I asked them for their help. They said "We have that book. It's right here and it's a *print on demand* book." And I said, "Print on demand? Yes, please print that for me." They don't mass print it. They just print it as people want it. And I see that being essentially like the 3-D printing technology of the future, where if there are simple things that you need like a pot or a pan that is not highly complex you could actually buy and it could be printed locally and then handed to you. What it may end up being are lines and lines of different setups of 3-D printers so the logistics components are – this type of material goes to this 3-D printer and then, all material that come out of that line are in the plastic market. Very fascinating concept and that on-demand model is very disruptive as well.

Ann Beheler: That actually exists in the publishing model and has for a while, but it didn't take off too rapidly. The publishers, actually, even a few years ago, were probably ahead of the market. I don't know about you, but some of these textbooks are terribly, terribly expensive, and there are more chapters in some books than are ever covered in class. So it was supposed to be a play where the faculty member could choose which chapters he or she needed to cover and then print a smaller version of the textbook for the student. They got all messed up though, because it wasn't totally on-demand. It was going to be planned for the class.

Matt Glover: It's fascinating and we also have to look in our own lens of who we are and where we are in life. I prefer the feel of paper and turning the page of a book. But I tell you that too many times I have run into folks that are younger than I who would prefer to just download the book on their tablet and just read from there. I would never buy a home without reviewing all the mortgage fine print, and I don't know if you guys have purchased homes recently, but there's literally hundreds and hundreds of pages of stuff that you have to get through. And, what I found fascinating when I was working at Bank of America for the decade that I worked there, there are younger folks that will actually read through all that on their iPhone and fill out the documents on their iPhone. They literally went through everything on their phone instead of having a package sent to them reviewed and signed off from there. Very fascinating trend that I never in my life thought would ever happen, but they happened.

Ann Beheler: A lot to think about. It's going to be a wild time in May when we start talking about KSAs, because, once again, there are issues for us in having more than 60 semester hours or probably 90 quarter hours, if you're in a 90 quarter-hour state. And it's going to be interesting to figure out how we can address all these things and actually get ahead of these trends because we're not the fastest in implementing changes in our curriculum.

Diversity Summit Recap

Ann Beheler: We know that unemployment in IT is quite low nationally in general. We also know that IT enrollment across the nation is in general going down. I would posit that this is partially based on the fact that people can get jobs fairly readily and also based on the fact that the people that are working

are in some cases working lots of extra hours because there aren't enough workers and they don't have time to come back and get retooled. And what's going to happen is eventually there will be workers who fall behind and then we have to play the catch-up game. If women make up 50% of the general population, then we need to do something about the fact they only make of 10 to 15% of the population in IT. That's a ready population for recruiting. The businesses are saying they can't find enough workers; the colleges are saying enrollments are going down. So it makes sense to recruit women and minorities. Minorities are not represented in the IT population of workers at the same level as they are in the population of the region.

We held a summit last Thursday and Friday with some subject matter experts working with ten different colleges. Each college brought an administrator, a faculty member, and a career coach. The goal of the event was to learn enough to be able to create an action plan to go back and implement some recruitment or retention strategy over the next 12 months to then gather data based on the effectiveness of that plan for increasing enrollment, both recruitment and retention. It's like the old budget theme, I can either cut my budget, cut my spending, or I can raise the amount of money I'm making in order to balance things out. The idea is that we think we know, for the most part, what it takes to do the recruitment and retention. And we have funded a lot of efforts through grants over time, but once the grant money's gone, it goes away. So we want these teams to gather enough evidence that they can then go to their budget committee and say, "Regardless of the fact that recruiting women and retaining women or recruiting minorities and retaining minorities is a good thing to do for the nation, you need to grow your enrollment. So here's our proof that what we did grew enrollment." And based on that we are hopeful that the colleges will be able to fund part of what they had implemented for the year through hard money so that they can continue. We have full support from the National Science Foundation for this.

We are going to fund the colleges up to $10,000 each for the year, but it doesn't come without strings: they have to collect evidence; they have to have an action plan, exactly what they're going to spend their money on; and they have to meet with us monthly and then, as a group, meet quarterly to monitor progress. Each of the ten colleges applied to be a part of this. And the excitement was powerful in the room. They were really committed, really excited all the way up to the end on Friday at 3 p.m.

We had Serita Acker, who is an African-American young lady from Clemson in charge of diversity. We had Pam Silvers, who is a community college faculty member who has doubled her IT enrollment of females from something in the 30s to something in the 70s. We had Beth Quinn from the National Center for Women in Technology, a very interesting perspective. We also had Andres Diaz from Puerto Rico regarding recruiting and retaining Latinos. Then, we had Mercedes Adams from NetApp talking about the perspective from a business. We also had Matt here talking about why he wanted to have a more diverse staff. We had Laura Nicholas, who is a messaging and marketing specialist, help us with the messaging. We intend to still utilize these SMEs over the next year so that we can help people in formulating their plans and gathering data, and figuring out how to address challenges that come up.

Lynn Mortensen: It was a really interesting day. One of the observations that I took away was that the groups had to show progress or the ability to recruit and they really needed near-term actions. And so they shifted really from middle school/ninth-grader kind of activities to what can they do right now to those coming from high school from a recruitment perspective. But then they realized that that's an easier group to recruit from than those who are already in the workforce and need to retool. So I thought they reframed their thinking a little bit about who their customers are into those two groups. The second, NCWIT has lots of information about recruiting women, retaining women. If your company's

not a member of it, I would suggest looking into it. They have a wonderful scholarship program also, and the speaker was wonderful. The one thing I took from Serita from Clemson was this whole "party with a purpose" idea. Often times, we have activities to retain or recruit that they feel good, but they don't actually have a tangible result. And this is something, I think, we in business can also help all of the institutions here in trying to define what is that activity to retain and recruit students as well as employees. But you have to do that with a purpose so you have to really think through that.

Mercedes Adams: I was delighted to be invited to share a little perspective on being a woman in the tech industries over the last 20 years. I left thinking about your audience and how they could influence change in my workforce and hopefully in the near term. I like what Lynn shared about shifting the mindset and reframing to what we can do today. I hope I painted a picture that some companies are moving very rapidly and are very focus on metrics and driving diversity targets and other companies are not. But I think we have to be very focused and design for the outcomes that we want. I applaud the team for getting together and putting together those metrics to show real change in a short amount of time.

Ann Beheler: The reason it has to be a short amount of time is I know for sure that we are funded through February 28, 2018. We have not yet received word for sure about whether or not we are funded for our renewal. It's probably a really good thing, because it makes these teams really have a sense of urgency to get something done. Realistically, retaining a group you already have or recruiting new women is about all that can be done. You're probably not going to get completers in a year. I think it has the potential to make some systemic change that could be very, very beneficial.

Matt Glover: I thought it was wonderful. I really wanted to emphasize the fact that I thought in doing the research prior to the speaking event was fascinating to know that women make up just a little bit more than 50 percent of the nation, but 60 percent of all college graduates are women so they'll out trend men by nearly 10 percent. They have a massive presence in STEM degrees, but it's more psychology, sociology and those sciences versus technology. And then, of the degrees that are in technology, which is about 20 percent of the degrees are in some form of technology, finding out that 5 percent of the women drop off from the technology field. So they might have a technical degree, but they do not go into technology for whatever reason. So only 15 percent of college educated women are in the technology field, and it's a little disturbing, which makes it so difficult for me to find great help in that regard. The reason why diversity is so important to IT from my perspective is IT is not just for white men. And most IT shops are made up of two different demographics: traditional white men and Pakistani or Indian men in their 30s to 40s. So when you look into any IT shop you can see a propensity of those types of folks, and it's not very diverse. Technology, today, is more social than it's ever been, and having diverse views and functionality on your team to give a different perspective is critical for the success of the overall business. You need to have the eyes and the ideas of different viewpoints, both culturally and gender-related viewpoints so that you can be the best IT team you can be to serve the business. So, from my perspective, that's what my talk was about.

Ann Beheler: We're excited. We're in the process right now of them developing their action plans for what they're going to do, figuring out where they're going to spend money. One of the impetuses for this work is when we gathered the data on the effectiveness of the career coaches and the DOL grant, we learned that students who used career services were twice as likely to be retained from fall to spring. That was huge with our administration, and with the support of the BILT, we were able to get three positions in the Collin College budget based on just that evidence. So, I think right now with enrollment going down, having been a dean and having been a vice president, when enrollments going down, you're

trying to figure out how to make it not go down, because among other things, it affects who has a job as a faculty member on a go forward basis. It affects revenue for the whole college. Therefore, I think there's a lot of possibility here, and we're excited to help everybody.

Candy Slocum: Yesterday, I sent out a survey and some of your members may have received it, you certainly did. The Texas Education Agency has taken a list of what use to be 154 certifications and pared it down to 67 approved certifications for their Career and Technical Education programs. 70 percent of that 67 is in construction and automotive occupations, which is great, because we need them. However, it completely obliterated anything IT, unless you look at, maybe, some Microsoft programs. And so, I sent out a survey to all of you. Let me tell you why this is important. I called the Texas Education Agency and I said, "You are leaving out one of the largest groups – health care and IT." And students have no impetus to go into these career and technical programs if they're not going to get credit for them. So they have asked my organization Interlink to do a survey of all of the industry clusters. This is a very important survey, and if you could just participate in that, I'm going to compile it; you will not have your company listed; it will be reported all in aggregate. But it's looking for the entry-level certifications you will be needing or will recognize when employing someone who comes out of high school or a 2-year degree plan. I need a real quick turnaround on it.

Christina Titus: Richard Grotegut had a comment. He said that they have a diversity and technology workforce program project that will be kicking off next month. The lead college is Foothill College, and they would love to connect with our efforts and share. The diversity and tech project is in the San Francisco Bay area region and has 28 community colleges.

Ann Beheler: Thanks Richard! I'm going to have to put you on the list for everything. The San Francisco Bay area started to revitalize everything in IT about three or four years ago, and they're doing some great work out there.

Mark Dempsey: The next item… you want talk a little about the May 2nd KSA meeting. What we can expect from that.

Ann Beheler: Among other things, at the May 2 KSA meeting we have to consider all these trends and figure out what we do to the curriculum to handle the trends. We will also use WebEx for those who cannot attend. We ask you to come face to face if you possibly can and if you're a BILT member especially. We will go through discussing all of the KSAs that are listed – they're really knowledge areas at this point – but we'll discuss all that are there now and what needs to be added. The thing that was major last year was, "How do we integrate cybersecurity into everything?" and we ended up having a Tiger Team for that. That particular discussion came back with basic fundamental IT is still necessary, but all of the courses should have an awareness and integration of some amount of cybersecurity in them. We're also facing, with all of the TV shows, lots of young people want to go into cybersecurity, but they don't want to do the fundamental for IT, which doesn't work very well. We have a lot to talk about. We have it scheduled 8:30am until 2:00pm. However, this BILT team tends to stay longer than that, and I'm fine with that. I'm not going to schedule anything afterwards. This is going to be very, very important for all our colleges in our network, and we are at 60 now. Please put this on your calendar. It will be in the "J" building of Collin College, Preston Ridge campus.

LinkedIn page Tricider polls

Mark Dempsey: Just to circle back around to what Matt had used early in the trends talk, last November at the BILT meeting, the BILT asked if there was a way to organize an online platform to submit trends in advance for the meetings. We had a LinkedIn group page already built several years ago for the BILT, but it was never really used so we decided to relaunch that. We also found something called Tricider, a polling website where you submit your answers and also vote and rank others' answers. So, on the screen here you can see the BILT Linkedin page and down here there are the two polls that we used this morning in Matt's talk. Candy, there's that report you asked us to post on here as well. Candy did that big report a couple of years ago for IT Future Trends and it's there.

Candy Slocum: Great, thanks!

Mark Dempsey: Here's the Tricider poll. You can add an idea by clicking on the green button or you can go in here and talk about what things are already there. I can add an argument, pro or con about Internet of Things, I can put a vote on it like Ron Halbach did. So I think this is a very clever way to organize our thoughts in advance of these meetings. Once you go to this LinkedIn page, there'll be a button here that says "join" or "ask to join." You just click on that, and we'll approve you.

Now the question is, do we want BILT members only on this page or can it be open to everybody? Because right now, the BILT LinkedIn page is just for BILT members. You have to be a BILT group member even to see the post. So if you want to engage the educators, you have to allow them into the sandbox, obviously. And the same question goes for the Tricider polls, are we open to the educators also pitching in and voting and adding or do we want to just keep it limited to the BILT group?

Ann Beheler: I'm going to jump in on what I think. I would like to have educators involved in the LinkedIn group, but I really would like to keep the Tricider polls for the members of the BILT because our whole premise is that we of educators really need the co-leadership of businesses so that what we're teaching meets business needs not what we think our need is. Can we do that?

Mark Dempsey: We can't lock them out. We can tell educators that the poll is just for the BILT members, because the Tricider poll is open.

Ann Beheler: Okay.

Tricia Conner: But we can share the Tricider poll after the questions have been closed for future answers that way they could see what the results were, but not contribute.

Ann Beheler: I'd like them to see what's in the LinkedIn group. Does anybody agree with me?

Christina Titus: Brian Nelson agrees with you on the poll issue. And some of the faculty members have said they would at least be able to view the polls of the survey.

Ann Beheler: Do we know who's participating in the polls?

Mark Dempsey: It's a choice, I think. You can be anonymous or you can post your name.

Ann Beheler: We need to know because it's very, very easy for we faculty members, and I still consider myself a faculty member, to have an opinion that maybe does not align with businesses need. Ultimately if that goes too far, then, we produce graduates that are not employable. So I really think that's an

important thing that we don't go changing curriculum based on what we want, but based more on what the businesses want.

Also, I want to ask the BILT members a question. We have one college that wants very badly to do a 2-year software development curriculum. I've been looking into it a bit to try to help them because they're trying to figure out whether businesses are going to hire people that have a two-year degree in basically programing. The job postings say four-year for the most part.

Matt Glover: That's not true. There are some online capabilities, where if they start registering the code that they write, it goes into a bunch of groups who monitor the quality of the codes that's being posted, and it raises the level of awareness. There are people who are without high school degrees, who are expert coders, who have multiple six-figure a year jobs so it doesn't really matter. It's all about the quality of their code and as I've said before. I will give you 15 mediocre developers for every one good developer you give me, and I don't care what degree they have.

Ann Beheler: But I've done quite a bit of research on the postings and they're still saying absolutely that the requirement is a 4-year degree for the most part.

Matt Glover: It should say 4-year degree or equivalent experience.

Mercedes Adams: I think I agree with Matt, Ann, and I had lunch with our senior manager in IT yesterday. And he told me, one of his best employees is a software developer who has no degree, and he absolutely counts on him. And I think that I would expand to say that right now in our go to market in our sales team, the advice of most of management and our new hires is everybody should learn how to code.

Ann Beheler: Okay.

Mercedes Adams: I think with that software development curriculum would be broadly valuable, and I don't see a 4-year degree as a barrier to a job because the skills are so in demand.

Christina Titus: Richard Grotegut shared that there are two colleges in California that have a three year program called CS&3. A key component is secure coding.

Revisit: LinkedIn page Tricider polls

Matt Glover: I want to hear what other BILT members had to say regarding having the faculty members participate in the Tricider polls or in the LinkedIn profile. I'm going to give my opinion and by no means am I saying that this is the way it needs to be. But I think for business leaders in general and I'm guilty of this, is it's hard sometimes to think as a university professor or in the world of educators. So sometimes, even when I work on trends for this meeting, I have to take a concerted effort and think, "How is this trend going to impact educators? How is this trend going to impact defenseless students?" And I think having the ability for faculty members to ask questions and be able to participate is to me, valuable. And at no point am I concerned that a faculty member will be able to bend my will to do something that they wish to do. Because they don't have to run the business, I do. I think that interaction with that would be valuable in my opinion, I'd really like to get other people's opinion aside from Ann, yours, and mine.

Ann Beheler: I think as long we know who said what on Tricider that will be okay. And I do think faculty should be involved in the whole LinkedIn discussion, definitely.

Lynn Mortensen: If you have a poll or a question that you'd like the BILT members or business members to respond to, I think if you just categorize it that way and only BILT members will respond and vice versa if you wanted a poll forum from the educators.

Ann Beheler: Okay, that would work then. Anyone else have a comment?

Tina Trainor: Gateway Technical College thinks the forum could be useful with a two-way dialogue from the perspective that often times when a topic comes up from the educators perspective there's this immediate explosion of, "Okay, what if? How come? Where are we going to go?" that sort of thing. So potentially, maybe not in the actual survey, but potentially some allow some side-dialogue to be able to back up those conversations maybe as more supportive material rather than your definite survey choice. You see what I mean?

And I did have one other comment regarding the diversity factor. I'm the mother of three children, the youngest of whom just finished middle school. She had been very highly geared towards the pathways process and the career tracking and development. One of the things I really want to caution, though, is that when we move towards the schools often times with the focus of trying to encourage more girls and diverse members of population, we want to be careful to not deplete the pool of boys who are joining because if we just get a tradeoff of girls for boys, we're still going to be at that low level. We need to maintain our males, and we can't isolate the idea or create an environment where younger boys are not included. You sometimes hear a little bit of evidence that the world's not focused on the white male anyway. The idea that the white male is some sort of tainted tool and everyone's focusing elsewhere is not good. So, if we just shift our preference from one to the other we're really not becoming more diverse, we're just, I feel, continuing on in the same path, practices, if you will. I think it's very important to keep that focus balanced. Yes, we want more, not a tradeoff.

Ann Beheler: I totally agree with you. What was presented, especially from Beth Quinn from NCWIT, was to make the profession more inviting for all, making the comments be nonbiased, making use of problem-based learning a lot, which is effective for both males and females. I was expecting them to say more about how to work just with women or how to work just with ethnic minorities, but no, it was more general than that. I thought it was good. By the way, we recorded these presentations, and Tricia is working right now on getting them edited so they can be up on the web. We will let you know when they are because they were really, really good.

> *All "Diversity Summit" presentation videos can be found on the National CTC's YouTube channel:* *https://www.youtube.com/user/mobileCTC*

Christina Titus: We have a comment from the faculty, back on the LinkedIn question. She said, "I think once the poll is completed, there should be comments from the faculty on how this will impact curriculum and we're working together toward how to implement changes over time would lead to better design course content."

Ann Beheler: Good point. Good point.

Mark Dempsey: What I could do is do like a little LinkedIn post just recapping the closed poll and that way people can comment, right?

Tricia Conner: Right.

Mark Dempsey: We'll do that. That's easy.

Christina Titus: The faculty likes that they're going to be included.

Ann Beheler: Definitely.

Christina Titus: And they're okay with not voting. They just want to be able to see what's being said and want to dialogue afterwards.

Ann Beheler: FYI, the whole BILT process is becoming more and more recognized nationally. I learned that one of our program officers is pretty well telling all of their grants they need to implement it. A grant in California in welding was advised to connect with us to learn about the BILT, and they responded to the program officer that what they had done was look at our website, and they were going to implement it. But the program officer told them, "No! Contact the grant staff. Work with them; get their help; get this done." So they're getting to be really pushy about wanting people to do the BILT, and I think that's very, very good. It's a tribute to how our business people have performed over the last few years. And also, faculty members, how you have embraced this and how you have made concrete changes, based on what you've learned from the businesses. So, I think you're going to hear more and more about the BILT in different disciplines, and if you have the opportunity to spread what's going on with your college, it's beneficial for all. Ultimately, we want people to get a job.

Thank you!
Next BILT Meeting: Tuesday, May 2
8:30 a.m. -- 2:00 p.m. CST

KSA validation meeting
Face-to-face at Collin College
And also via WebEx webinar