

**National Convergence Technology Center
National BILT Meeting
February 13, 2018**

**Next BILT Meeting: Tuesday, May 8, 2018 (KSA validations)
8:30am – 2:00pm Central**

Nisheeth Agrawal, Calhoun CC	Dan Tuuri, Kirkwood
Pamela Betts, San Jacinto College	Greg Teets, Clark State
Ronda Black, Montana	Saad Yousef, Gateway Technical
Bruce Caraway, Lone Star College	Dan Heighton, Clark State
Stephen Dunnivant, Tallahassee CC	Michael Coffman, Collin
Mike Eilerman, Rhodes State College	Laura Berry, North Arkansas
Ernie Friend, Florida State College Jackson	Mike Harsh, Collin
Jessica Jones, Tallahassee CC	Belicia Miraval-Albornoz, El Centro
Kyle Jones, Sinclair CC	Greg Kepner, Indian Hills
Jimmie Joseph, Ferris CC	Rajiv Malkan, Lone Star College
David Keathly, UNT	Ray Koukari, Gateway Technical
Luann Keizer, Grand Rapids CC	Guhan Raghu, Tarrant CC
Manzurul Khan, Houston CC	Mercedes Adams, Net App
Dante Leon, Daytona State	Philip Andrews, Biz Smarter
Xintao Liu, Herzing University Atlanta	Amy Arnold, City of Lewisville
Stephen Lyford, Wharton County JC	Tom Boehmer, Juniper
CyndiKaye Medved, Waukesha County	David Chambers, Mitel
Jim Meeks, San Jacinto College	Susan Coefield, VMware Inc.
Brian Nelson, Lansing CC	Barbara Errickson, Dallas Social Venture Partners
Ryan Pierce, LA Delta CC	Lucas Figg, Dell
Lenny Portelli, Seminole State	Ivor Flannery, Redline
Susan Randall, Cleveland CC	Matt Glover, Le-Vel
Julie Salter, LA Delta CC	Tu Huynh, Comerica
William Sanderson, Renton	Lynn Mortensen, Wizziemort
Susan Svane, North Central Texas College	Kurtis Sampson, Philips
Benjamin Taylor, Seminole State	Candy Slocum, Interlink
Mike Vickers, Tallahassee CC	Scott Veibell, Cisco Systems
Mark Whigham, Calhoun CC	Kim Yohannan, Dell EMC
Hal Spiegel, El Centro	

Recording link:

<https://nationalctc.webex.com/nationalctc/onstage/playback.php?RCID=1a1e9b9d02ea76a8f76d1a690162c21d>

Agenda Overview, Welcome, and Roll Call

Trends

Matt Glover – I'm going to do a high level overview of some trends that I'm seeing. I put them in alphabetical order just because my brain is built that way. I'm only going to call out a couple of these and then I'll start passing it over to other business leaders. I'll begin with Artificial Intelligence, which

continues to permeate the industry. It's being used more and more, everywhere we go. Augmented reality is a giant trend that's happening with everybody's mobile devices. Huge companies, right now, are being formed for or transforming their current production lines to meet the demands of autonomous vehicles. Others on this list are blockchain, as we've discussed in the past; digital twins; drones and UAVs; edge computing; Internet of Things, which we previously discussed; machine learning; Nano technology; robotics; software defined security, which is a new paradigm shift in security; and virtual reality. Those are the big things that I'm seeing at the moment. So before I discuss some of these, do any of the business folks want to discuss the list that I've provided?

Mercedes Adams (NetApp) – Matt, this is Mercedes. One thing that I would like to make sure we address is the upcoming implementation of GDPR, the General Data Protection Regulation.

Matt – Okay, yes. I'll start with **augmented reality**. Augmented Reality is a kind of a distraction to what you see with your eyes. Different companies are doing different things. If you think about Google and your ability to search for restaurants around you, what they're using as Augmented Reality is for you to be able to pick up your smart phone, use the camera, and hold it up in the world around you. Then, from there you would see a label: "There's a restaurant 1.4 miles that way." You use your phone to look around and it will describe for you in words and graphics the area in which you are. That's augmented reality. If you're on a tour of a beautiful city like Chicago, Pittsburgh, or New York, and you wanted to know what each of those buildings were on the skyline you could download an application, hold up your phone, and your application would name the building and tell you who was in those buildings. We're seeing more and more of this. There is the Google glasses example as well. You wear the Google glasses and it displays for you things that are around you and gives you data points on whatever it is you're seeing.

Ann – How do you see this effecting basic infrastructure networking and cybersecurity? Can you give us some examples in that area or is it there yet?

Matt – There are a whole bunch of tie-ins. Previously, a couple of quarters back, I think I talked to you about sensors and the Internet of Things and how we're having all of these new sensor technologies everywhere. There are a thousand sensors in your engine, in buildings, in security platforms. There's sensors in trashcans to see if their full or empty. There are just literally tens of thousands, if not millions of sensors, around you all the time. We also talked about geolocation, where when you're driving by a specific place and your smart phone will tell you about a coupon in a nearby store. Those different sensors can tie in to the augmented reality experience. So, not only can you use the sensors and see the augmented reality within the devices that you're using, but that than transforms what we need to do in the education space. So, as this continues to push forward, that means a greater and greater market demand is going to happen for people who have the ability to do software engineering using digital sensors or using augmented overlays to the video programs. I see this trend as "leading edge" or "bleeding edge" at the moment. Will it impact our schools today? No, but will it impact our schools within the next two or three years? Absolutely. Having awareness that this is happening around us is critical. Does that help, Ann?

Ann – Yes, definitely.

Matt – The next topic is **autonomous vehicles**. I'm a big fan of cars. I went to a Tesla showroom in Honolulu recently and I was blown away. I was very impressed with the transformation of electric vehicles. I started doing a study of what's happening in the electrical vehicle space, which then led into

autonomous vehicles. For a \$25,000 upgrade with Tesla, you can have your Tesla become an autonomous vehicle. It's called "Auto Drive." For \$25,000, you can actually call your car, have your car drop you off, and it will park itself. It will drive you from point A to point B. But, the big thing that I thought was interesting is how this will transform itself into commercialization. Tesla right now – there's other companies out there, but Tesla at the moment is number one in this space – is working on a new semi-tractor trailer electric vehicle. If you were a truck driver, you can drive a load from one city to another city and maybe make a \$1000 on that load for expenses and everything. Maybe it takes you four hours to get there, but just imagine if you could buy three big rigs and have them daisy chained to the rig that you're driving. Now, you become a train driving down the freeway, but there aren't drivers in the other two vehicles. You can now earn \$3000 going from one city to the next city. This is now making it so that commercial trucking needs fewer people to do the driving. Drivers can still make a significant amount of money and move a lot of goods and materials around the world to help the economy. If that trend is coming in 2019 or 2020, then we also can say that the future of driving may be at risk. There are old school guys like me who say "I'm never going to let some weird vehicle drive me somewhere; I'm just going to drive myself." That will die with the older generation that has to have their hands on the wheel and their foot on a pedal. I see that in the future people may not even own cars any more. They'll just call up an app, the automated car will drive up, and they'll be taken to wherever they want to go. Be cautious and cognizant of these types of trends that are happening around us because it will actually transform the way we operate as a world. How does that impact educators? There are going to be transformational changes to the mechanics of our vehicles, to the software that drives those vehicles, to the detection systems that surrounds those vehicles, and to the sensors that help those vehicles stay in the lanes. I think is going to really change the makeup of how we operate in America today and around the world. Any questions on autonomous vehicles?

Ann – What about the jobs that go away versus the jobs that come? Are they going to even out?

Matt – Sadly, I have been seeing government resistance. I saw a lawsuit recently where a city was suing automated vehicles so that they couldn't take over cab companies and displace jobs. The city won. I thought that was very interesting because I didn't realize the government could seriously slow down progress, but, of course, they can. We will see how it all turns out. At a certain point, there is going to be a need for people to be displaced and to learn to do other things. For example, I'm a chief technology officer at my company and this job didn't exist when I was born. It's fascinating that the jobs most of us hold today may not exist 20 years from now. There will be different jobs. We're definitely going to need to figure out our path in life and how to get there. I think a big piece of that is the work that we do here at the CTC that helps us be cognizant of these trends moving forward.

Mark – We have a comment from the chat box.

Debbie Miller – This is from William Sanderson (Renton Technical College). He says that right now with the current economy there is a shortage of truck drivers. Autonomous-driving freight trucks help this issue. Adding demographics to the retiring boomers and you still have a potential shortage even in an economic downturn.

Matt – I would agree with that.

Tom Boehmer – Tom Boehmer from Juniper, if I could add a couple of comments here.

Matt – Yes, sure.

Tom – From an autonomous vehicle perspective, we see significant implication into the premise of autonomous networking. Juniper believes the same thing that’s happening from a vehicle perspective, we’ll see in networking. We’re already working towards a concept that we call a **self-driving network**. This is taking the advances from AI and machine learning and creating autonomous networks that self-configure, monitor, manage, correct, and defend themselves with very little human interaction. This is the kind of future that we see in networking. It’s not, obviously, here today, but we definitely see that’s how networking will be taking shape. Cybersecurity, for example, is currently leveraging that with AI and machine learning to be able to create anti-malware methods where machine learning is actually taking advantage of this technology. If anyone wants to learn more about where this is heading you can look up “self-driving network.” Obviously, it’s going to require open APIs and open formats from an ecosystem perspective. It’s definitely taking advantage of the technology trends Matt’s been covering here as well.

Matt – Okay, great. Tom, I appreciate that. I’d like to discuss now **digital twins**. “Digital twins” is an interesting concept. The easiest way I can think of it is having a digital version of the physical self. When NASA was sending people into outer space to solve problems in space, they created two physical entities. They created the spacecraft and things the astronauts needed in space to actually send into orbit. They also had a physical twin in the NASA Research Center. So, if the astronauts had a problem in space, the engineer on the ground could try and solve that problem with the equipment identical to what the astronauts had in space. Then, they could go back to the astronaut and say, “Okay, this is what you’re going to have to do.” Those were what you called physical twins in process. Because the digitization capability has grown more advanced than we ever thought it would, now they can take a physical object and essentially digitize it as a twin. Now, you can repair it in a computer simulation and instruct the person who has the physical device on how to repair it. Let me give you a quick example. Let’s say we take an MRI of somebody’s failing heart and it has significant damage to it. The doctors can experiment with the digital twin first without having to interact with the physical heart to do the procedure. That person only has one life to live. Now, it can do a number of attempts with a digital heart until they perfect their practice and then go in to fix the person’s physical heart that is damaged. These are examples of digital twins.

Candy Slocum – Matt, this is Candy. So how long are we looking out in the future for this to become ubiquitous? I noticed in the Olympics ceremony at the end when the young people turned into adults, they used that example.

Matt – I didn’t catch that, that’s neat. How long? It really depends on the industry. I think for things that are extremely expensive that you can only do once, digital twins will be prolific. The businesses that are operating in that space are going to want to invest the research dollars to make digital twins a reality. The heart example is a great example because that is an expensive procedure. Whereas, if I have a plastic toy and it breaks, I’m not going to be building a digital twin of it to try and solve it. I’m just going to melt down the plastic and start again. You see the difference? I would say that in the higher end industries where the things are extremely expensive to fix, digital twins are going to be a prolific transformational technology. I would say it will happen over the next three years.

Candy – Thank you, Matt.

Lynn Mortensen – This is Lynn Mortensen. One of the things related to that that I think might affect the program is I’m hearing the word “nano-mechanic.” That’s someone who will need to fix these small

devices. The nano-mechanics are going to have to understand all of the things we traditionally talk about from a networking perspective as they're fixing electronics in this kind of new nano environment. That might be something that's an offshoot and might ultimately become a new kind of degree that gets offered.

Matt – That's great, great feedback. For literally six or eight quarters now, we have been talking about **software defined networks**. Quarter after quarter, we've seen that move from an example of a future technology into the real world daily grind of today's software networks. I'm seeing a new trend and its call **software defined security**. We're living in a world where I can build a company, put my software in a cloud, and have that cloud in a hyper scale mode. That means it can serve 100 people or 100,000 people. As those 100,000 people log into the system, more and more front-end servers start to speed up to handle the new traffic. When that traffic dies down from 100,000 people back to 100 people, those servers will then scale or slow down until you get back down to whatever your normal state is. So, what's fascinating about software defined security is the same premise we were talking about in software defined networking: the ability for us to react not by using physical wiring and layouts, but with software. Software defined security covers each of your new spun up devices with the same security layers and protections that your originating devices had and can report all that information to you through a single pane of glass. I'm excited about that because that is, quite frankly, where my company sits. I see that impacting our education spaces in transforming how we educate our future students about the possibility of security. Now, did SDN impact the daily educational material of a community college curriculum? I would say it only augmented it because the basics in a community college, 2-year degree still need to be taught to the student before they can move on to these more advanced items. But, having knowledge that these more advanced items exist is a critical path to their education and their success once they enter the business market. Questions about software defined security?

Ann – Does this underscore that we need to have more emphasis on software development?

Matt – Yes, definitely. Most of what I'm seeing today – whether it's internet of things, machine learning, nano technology, robotics, virtual reality, augmented reality, blockchain, artificial intelligence – is software or has a significant burden to software versus the physical burden of physical systems and network space. Transforming the market into a software organization or a software-capable education space is a critical path for the success of any organization. In the Dallas/Fort Worth area, there are so many jobs that are out there for developers and software developers that we can't get enough people to fill them. When you look at the space around us, whether it's DFW or any large metropolitan area, these demands continue to change and drive how education needs to be brought to the public. So, software is here to stay and it's growing by leaps and bounds. These new technologies that I just highlighted for you are a great segue into saying, "If you don't have a good software program today, you probably need to get one quickly." There's another trend that I wanted to talk about which is for those rural colleges, the ones that aren't around major metropolitan areas. Don't think that you're going to be isolated from this because many organizations are moving more and more towards work from home roles. And with software defined networks and software defined security and "software this" and "software that," most people can do all their work from their PC. What I'm seeing is a lot of people moving away from the metropolitan area and moving out into rural areas because they don't have to be around a big cluster of people any more. I would say over the next 15 to 20 years we'll start seeing a huge ballooning of metropolitan areas where people just want to live on the very far outskirts because they don't need to get into the city any more.

Ann – We’re going to talk about a “Tiger Team” later in the agenda and that “Tiger Team” is focusing on the programming software development, scripting, and that sort of thing. Business people, please be thinking about your willingness to serve on that team. We need some guidance on how we need to incorporate this.

Matt – Any other business leaders need to talk about their trends?

Ann – Mercedes, how about GDPR?

Mercedes – Yes, I’d like to if now is a good time. It’s not specifically a technology trend, but I think it impacts us all and especially the IT organizations in a pretty powerful way. If you haven’t heard of GDPR, it’s the General Data Protection Regulation. That is a law that was passed in April 2016 in the European Union. Businesses were given a two-year grace period in order to understand the new regulations and they will be enforced starting on May 25, which is exactly 100 days from now. Why do we care about this regulation? I think will impact people globally, not just in the European Union. Let me tell you a little bit about what the law includes, and then I will talk about why I think we need to focus on that even here in the United States. The GDPR laws include mandatory breach notification processes; rights for individuals to access data that is owned by companies; and rights for individual’s to request that companies forget their data or the right to erasure. There are requirements around data portability that allow individuals to get the information on them by an organization and take that in a meaningful way into their own systems. There are also requirements that privacy be designed into business systems and processes. There’s a new term – “PII” – that you might have heard of: Personally Identifiable Information. That’s really what this is all about. Individual data is anything that includes personal identifiable information that a company owns about you as an individual. That’s your name, your email address, and your home address. There are a new set of regulations that will mandate how companies protect individual data. In fact, part of this regulation demands a new job title for companies to implement: the Data Protection Officer. These are sweeping laws meant to address a patchwork of data privacy laws in the European Union and also globally. I don’t think we have one organization even in the United States that dictates individual data privacy laws. There are certainly many different organizations and many regulations. Why I think the European law is really powerful is because of the penalties. Organizations who are not compliant with the new GDPR regulation could suffer up to 4% of their annual revenue in penalty if they’re noncompliant or 20 million Euros, whichever is greater. Those are some of the maximum fines. Imagine that you’re a healthcare business in Idaho and a German citizen comes in for treatment. Right there you have the case of a European Union citizen whose data needs to be protected under these laws. I think that’s why we all need to be considering GDPR and how this might impact us. Data processors and data controllers will be regulated with these new laws, so that means clouds are not exempted. If you store your data in Amazon or Azure certainly your data might be moving and going into different regions, so we all need to be thinking about how this new regulation could impact our business today. I wanted to share a few of the results and why it’s important for us all to be thinking about it right now with a 100 days to go until these laws actually go into effect. Yesterday, *Information Age* published an article about the “enterprise readiness” for GDPR. In their survey, only 6% of businesses in the UK said that they were even prepared for this regulation. I think that in the survey 68% of the respondents felt that the CIO was responsible to drive these processes, but it certainly has to be implemented at a business level. Organizations sound like they’re not ready and many are still in the discovery phase to understand how these regulations will impact their business processes. We’ve had two years to get prepared for these laws, and we’ve been talking to customers for at least a year about the impact this might have on their business. With all of these new regulations come into play, I wanted us to think about how that could impact our students and the businesses that they might be going to

work for because certainly there's a huge amount of responsibility. There is potential exposure, and oftentimes it comes back to an IT organization to design and implement these business processes. If you imagine the right to an erasure or the right to be forgotten, there certainly needs to be business policies in place and those would probably be implemented by people in your IT organizations. That's just a quick summary of GDPR. I wanted to mention it, because it sounds like something that maybe we don't need to think about in the U.S. but it could have a much more global impact.

Matt – Thanks for that. I think I would love the right to an erasure and get my name off a lot of these groups.

Mercedes – Could you imagine this at a greater scale? This is where there's an individual opportunity. Remember the Equifax hack that happened last year before GDPR went into effect. There was data lost for UK citizens. Just imagine the impact to Equifax as a business if they lose data after May 25 with that 4% revenue or 20 million Euros in tax. I think that's why businesses really need to be prepared.

Candy – Mercedes, I would imagine that this would have an effect on those companies doing business in the European Union, right?

Mercedes – Absolutely. Imagine that you wouldn't implement the best practices in one region in your business. You may adopt some globally because they are more stringent. European citizens coming to the United States would be covered by this regulation, and so even businesses in the U.S. who are just having people who are European citizens could be impacted.

Matt – Thank you, Mercedes. Any other business leaders want to cover a trend?

Mark – We probably should move on because I think there are other topics Ann would like to discuss.

Ann – This is fascinating. I guess it means that if we're in this business, we have a job forever. But, we're going to have to keep learning forever and keep changing our curriculum forever. That's good!

Ann – What's on the Tricider list were things that were requests from the poll. Over time we will try to work with folks and go little deeper on every one of these topics.

CTC Updates

Visiting Leadership Partners

Ann - We are kicking off the new grant. I spent most of last week in Houston with Lone Star College. Thank you, Rajiv Malkan, Bruce Caraway, and an entire host of administrators supporting them down there. We were talking about their regional hub, and we were also talking about their responsibilities under the grant. I was very pleased to see that they have great support down there.

Student Portfolio

Ann - One thing we will be implementing with the new grant is kind of a mini-research project on student portfolios. In essence, what you have been telling us is that the students that show up at a job interview and have completed projects that they can talk about typically fare better than those that show up and expect the interviewer to pull everything from them. We said we would have all of the main colleges that are partners with us – and we're welcoming anyone else that wants to try this – create student portfolio projects in at least two of the sophomore-level courses. Although freshmen and sophomore labels really don't mean much in our community colleges, we're looking toward what

happens to those students when they get out in the workplace. How soon do they get employed versus a control group that perhaps did not take student portfolios with them on the interview? That's going to start next fall. We will be working with our main partners in the grant, the ones that have a subaward to do that part.

Hybrid Cloud Capstone "Tiger Team"

Ann – We've also been working on a Hybrid Cloud capstone with the "Tiger Team," and we have several of our business people involved. Mercedes and Eric Fusilero from NetApp are involved; Tom Boehmer from Juniper is involved; Lucas Figg from Dell EMC has been involved. We welcome others. But the question is how do you teach cloud concepts in a hands-on fashion or in a real world lab-type fashion? That's what this group is working on. We met yesterday afternoon for the approximately the fourth time, and it was wonderful that Mercedes and Tom both brought information to the table that is shareable from their company. We can use that work with the faculty at Collin at least to initially put together this capstone. Once we've tried it out, we'll share it broadly.

"Tiger Team" for Programming and Scripting – Software Development

Ann – We really need some of you to help us out. We're not talking about huge amounts of time. I don't know how much time the hybrid cloud "Tiger Team" has taken, possibly eight or ten hours. You can be as involved as you want to be, but we need your expertise. Yes, software development is important, programming is important, and scripting is important, but where do we put this into our existing curriculum? Can we figure out a way to put it into the existing curriculum? Or is it an entirely new arena that we need to deal with? If you would, please, respond via the chatroom if you're a business person and let Mark know if you're willing to be on the "Tiger Team." We'll make the meetings convenient to you and we will also do them through WebEx.

Matt – There's probably a number of colleges on the phone that already have software development curriculums in place. Maybe we could leverage the learning of those schools to put together some basics of software development. I'm happy to participate in the "Tiger Team," but I think that we should approach this with what's already available out there. One of the big things that I love about the CTC is that we do so much sharing across our colleges to take the best of breed in everything that we do. Is there an opportunity where we can leverage the work of others?

Ann – Oh, sure. We can leverage work that we already have. The issue that I'm really bringing up is that we have a software development curriculum and we have a networking curriculum. They're both full. What are we going to do? How are you going to prepare the networking/cyber tech for the future with enough software development knowledge so that they can be at least literate? We're all trying to figure out how to place it all together. Which languages are important? Are we still working with C++ or Java, or are we in to other languages like Unity? What do we need to work with? That's where I would like to focus the discussion. But, yes, there are some really good software development programs already within the group. And, yes, we would appreciate if other educational institutions want to be involved in this let us know.

Texas Skills Standard Update

Ann – We have been asked to look at the 2003 document and to figure out whether or not we have identified the right skill clusters for a revision. Then, I'm going to possibly work with some of you to

receive more National Science Foundation money or state money to help us go after updating these skills standards. These standards in IT from 2003 are pretty general, but you can't really say that it recognizes even a fraction of the emerging technologies that have occurred in the time period since 2003.

Database Development and Administration

Ann – Are people still hiring database developers and database administrators? Maybe I should ask for a few comments on this and see what you think. Do we think this should still be considered?

Matt – Yes, it's foundational.

Amy Arnold – I agree. This is Amy with City of Lewisville. Yes, I would think that it's still foundational. We still need it.

Ann – Okay. We're going to have to go into details of how we update the area at least.

Digital Media

Ann – I don't think I really need to ask much. This has to stay, correct?

Amy – This is Amy again, I would go with yes.

Ann – Okay. If you disagree, speak up.

Enterprise Systems Analysis and Integration

Ann – In the age of robotics processes and such are we still doing this? I suspect so, but I'm not sure.

(BILT agreed "yes")

Technical Support

Ann – What about tech support jobs? Are they still here?

Matt – They are, and they're critical paths for entry-level, associate-degree individuals to get into the workforce. Will they still be there? I don't know. A lot of companies - at least in my paradigm - are shifting. As the CIO of my company, I don't have a tech support group. At all my previous companies where I was the head of IT, I always had a whole division of tech support staff. Today's software and hardware technology are at point where it's self-healing or you have YouTube. I think the challenge that we're coming into is that a lot of people are fixing these things on their own. A lot of people aren't calling for tech support. It's fascinating that with the new smartphone paradigm, technology has simplified itself to the point where tech support overtime will fade away. It isn't going to be fading away any time this year, next year, or the year after, but it will be fading away, or even transforming into something else.

Ann – So we need to prepare people in this area to do something else when it does fade away at least.

Matt – Yes.

Technical Writing

Ann – Tech writing?

Mercedes – I think this is important. I'm coming at this from a university perspective. We hire people who are doing the technical writing for our education in addition to our product documentation. But again, this is one of those roles that I've seen become more and more consolidated or outsourced.

Matt – I would say it's not going to be a big trend for the folks we're trying to educate. The reason is exactly what Mercedes is saying is that this is "big business." "Big business" doesn't employ the bulk of America or the world. "Big business" employs something like 30% of the world's population. So that means 70% of us are doing something different. If "big business" really needs technical writers, then how many jobs do you have out there that are like that? How easy is it to outsource to a consolidated company that just does this for a living? I'm not sure if this is going to be widespread. If Mercedes or anybody on the business team feels like pushing back, please do.

Mercedes – I think there's a general trend here. It's a nice field to have, but it is something we can outsource. This one I would think differently about maybe for a deeper discussion.

Ann – Okay.

Web Development and Administration/Mobile Access to Web

Ann – Yes?

Matt – Separating this from software development is interesting. Back in 2003, those were two different things. I don't have a web development team. They're just a software development team and web is one of the tools in their toolkit.

Ann – So, maybe put it together?

Matt – We probably need to modify some of these different standards to be more up to date with today's actual implementation.

Ann – Anybody disagree? Are you all okay with that?

(BILT agrees)

Susan Coefield – I think analytics is very important to see where your traffic is coming through and how. I think that could be part of this as well.

Ann – Okay. Well, we're going to have to go on a deep dive when we really get into this to fully define these areas. To think that nothing has changed in IT in 15 years is not realistic.

Matt – And I think the analytics piece is about four skills back right? I think we still captured that.

Ann – Possibly. I know if you're doing anything on web or mobile, the analytics are linked to it in terms of usage too.

Matt – What I was saying is if we have the analytics captured four skills back than we just need to put the web analysis as a smaller tagline.

Ann – Oh, sure.

Cybersecurity

Ann – Obviously cybersecurity. I'm not going to ask you whether that's included or not because it has to be. I'm sure what we put in there though is going to be very different from what was there in 2003.

Project Management/Problem Solving

Ann – Should we be considering project management? They're linking problem solving with it. What do you think? You have told us that you want our students to understand project management, understand problem solving, but as a special separate discipline or as integrated with everything else?

Scott Veibell – Project management remains important, but often I look at it a little bit differently. I use the term leadership. The people that are successful are the people that can take a project and lead it to a successful conclusion. Organizing the "go dos" is what people think about project management, but the person who's successful has to be able to lead. I guess

I'm not totally answering your question, but in my mind leadership is inherent in that skill. We're not just teaching people how to create a game chart.

Matt – I think soft skills also need to be piled in here. Project management isn't inherently problem solving. It is problem leading or resolution leading. Problem-solving pieces are really back to the earlier point that was made on business and system analysis. The identification of the problem, the analysis of that problem, and the decision of what needs to be done is the business and system analysis perspective. Project management then takes over to lead the teams through the resolution of those problems. Soft skills in project management are critical. Whether there is an official project manager doing that work or it's a developer, a quality assurance person, or an analyst that does that work, project management spans a number of technical disciplines.

Ann – What I'm hearing you say is that these job skill clusters actually would focus on just project management and problem solving as a separate entity. What you have just said: it's leadership, it's problem solving, it's soft skills, and it's every single one of the job skill clusters should cover those capabilities, right?

(BILT agrees)

Scott – I would agree. When I look at the technical leaders here at Cisco Tech, the ones who grow their career and continue to get promoted can also lead. There are a lot of people with strong technical skills and they can solve a person's problem, but the ones who grow in their career are the ones who can also lead.

Ann – Okay. I got it.

>>The question of "Do these IT jobs and skills clusters cover the right topics? Are we missing any?" will be discussed in another forum at a later date)

Look Ahead to May 8 KSA Meeting

Mark – Last May, when we did the big KSA validation meeting, there was discussion about how we should reorganize the list. The BILT has noticed more and more of an overlap between the KSAs. The suggestion was to take the KSA list back to the way it used to be like with more individual skills rather than these larger cluster categories. There was also talk that maybe the KSAs should be aligned to the 10 CISSP domains. Some suggested that in reorganizing the KSAs, we should maybe host a Tiger Team meeting in April before our big May 8 KSA meeting. That will allow us to discuss how to present the KSA reorganization.

Ann – We continue to evolve what we're evaluating in the KSA analysis. Just to remind some of you who are new, we started, believe or not, with 450 different line items that needed to be evaluated. Over time it's been consolidated. We have also consolidated some of the certifications because most colleges if they're teaching something toward a certification, they're going to teach the entire topic. They're not going to pick and choose a chapter. Right now, we're down to maybe 60 or 70 items, but there has been some concern that we've consolidated too much and now some of the items overlap. We will do whatever the BILT wants to do. I might suggest, Mark, that we send out what we have again to begin to remind people so they don't have to look it up. I would love it if some of you would be willing to work on that ahead of the time with us so that we could address whatever concerns you have. Matt, what do you think?

Matt – I like it. I also like the then. I think Mark is spot on when he was talking about the then disciplines. Mark, remind me again what that was?

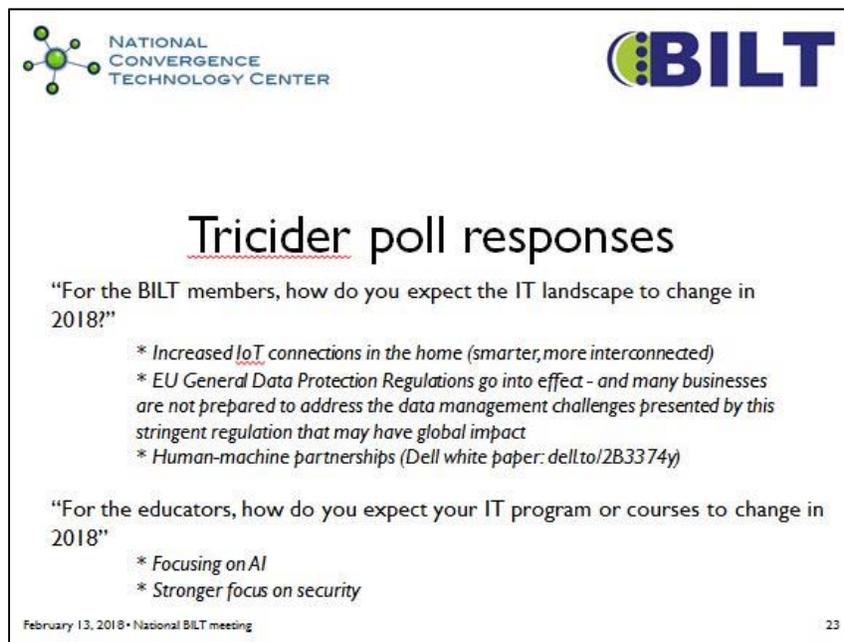
Mark – It's the CISSP domain, Vincente was talking about that there were 10 cluster categories.

Matt – Yes, those are industry standard kind of recognized. If we in the education space can reflect or emulate what the industry is already working with, I think that just puts us ahead of the game. Because if we try and invent something on our own that's not recognized, then it won't get wide adoption. Whereas, if we can tap into those things that are already recognized then I think we will get a much greater pull to the adoption mechanisms that will drive people to want these degrees.

Ann – Let's get those 10 domains and KSA list together and send them out. Maybe we could have at least a conference call before we spend the whole day in May. I don't think this is something we can solve with 24 people working on it, 12 on the line and 12 in the room. Usually, we have about a dozen or more physically in the room and a dozen or more that are on WebEx. I think we're going to have to have some pre-work because this is basically going to be a major switch. I'd also like to ask as we do this that we not only think about standards for now, but what we're looking at in the future in light of some of the things that were brought up even today.

Tricider Poll Update

Mark – We're doing these Tricider polls every month now. This was a request from over a year ago from the BILT to try and build some community and dialogue outside of these meetings. We're sending more reminders now and we're doing one poll every month. It seems to be working. The responses have picked up the last couple of months. The poll from last week delivered the biggest engagement yet.



The slide features the National Convergence Technology Center logo on the top left and the BILT logo on the top right. The main title is "Tricider poll responses" in a large, bold font. Below the title, there are two poll questions and their respective responses. The first question is "For the BILT members, how do you expect the IT landscape to change in 2018?" with three bullet points: "Increased IoT connections in the home (smarter, more interconnected)", "EU General Data Protection Regulations go into effect - and many businesses are not prepared to address the data management challenges presented by this stringent regulation that may have global impact", and "Human-machine partnerships (Dell white paper: dellto/2B3374y)". The second question is "For the educators, how do you expect your IT program or courses to change in 2018?" with two bullet points: "Focusing on AI" and "Stronger focus on security". At the bottom left, it says "February 13, 2018 • National BILT meeting" and at the bottom right, it says "23".

Hopefully everybody is getting those emails about the Tricider polls and you're going on there and engaging. We will try to do these kinds of recaps at every meeting to show the responses, but it seems to be working as of now. Any questions about the Tricider? What's great is you can post your own comment; you can vote on other people; and/or you can comment on other people "yes" or "no." There are a lot of ways you can interact.

Matt – Are there opportunities, Mark, where we put a request in to you for a Tricider poll to be run?

Mark – You could do that, sure, if you have an idea for a question.

Ann – If you have other colleagues at your company or know a different company that might bring some more information or a different expertise than what you think we have right now, we're welcoming additional members for our BILT team as well. Just let us know and we will talk to them. We have to be a little bit careful because, for example, we don't want every single person on the team to be only specialized in programming and not know anything about cybersecurity or infrastructure. We would definitely appreciate having more members on the team.

Mark – That's all I have on the agenda. The next meeting will be the longer one – Tuesday May 8, 8:30am-2:00pm Central. We have a room here at Collin College in Frisco. We'll also have a WebEx component so those who are out of town can call in and participate. May 8 is when we do our KSA (Knowledge, Skills and Abilities) job skills validation. For those who are here with us, we will provide lunch.

Ann - Some of you that have worked together for a very long time don't have to leave at 2:00pm. I am very pleased to say that we will have the room until later if you want to stay and talk about things of interest to you. I'd like to thank everybody. This was great participation today. Thank you so much.

Candy – I wanted to tell everyone that Interlink is doing our 31st Annual Labor Market survey. I wonder if I can invite everyone to participate with that if I send you the link, Ann.

Ann – Sure.

Candy – This year we're doing a lot of work on the impact of AI and robotics in the business community so that's really important for us this year.

Steve Dunnivant – I'm a dean of Business Industry and Tech in Tallahassee, Florida with the community college here. I just wanted to thank you for allowing me to listen in. I look forward to sharing some of the data initiatives we have in the state in particular a partnership looking at the creation of a parental dashboard to give degrees of confidence to parents in terms of employment by driving distance. So I will keep you guys posted on that.

Ann – Oh, that's terrific. Perhaps we can talk more about that next time. We will figure out a way for you to talk more about that to the group.

Steve – Great, thank you for letting me take part.

Ann – We want all of you to be a part. Don't hesitate to invite your chairs, your deans, and other people that want to be involved. So have a great week. We appreciate you more than you will ever know, and see you in May. Thank you.

Adjourned