Next BILT Meeting: Tuesday, November 13, 2018
8:30am – 10:00am Central

Abdelshakour Abuzneid, Univ of Bridgeport
Nisheeth Agrawal, Calhoun
Garfield Anderson, Gwinnett
Patty Anderson, Vol State
Laura Berry, North Ark
Pamela Betts, San Jacinto
Ronda Black, Gallatin
Bruce Caraway, Lone Star
Nancy Cerritos, Wisc Indianhead
Michael Coffman, Collin
Mike Eilerman, Rhodes State
Kathy Fant, Collin
Ernest Friend, Florida State College
Hector Garza, Houston
Stephanie Gray, Gallatin
Richard Grotegut
Santiago Guardiola, Lee College
Mike Harsh, Collin
Danis Heighton, Clark State
Susan Hoggard, Tulsa
Debbie Huffman, NCTC
Chenchutta Jackson, Vol State
Kyle Jones, Sinclair
Glen Jones, Tulsa
Chris Kadlec, Georgia Southern
David Keathly, UNT
Luann Keizer, Grand Rapids
CyndiKaye Lambach, Waukesha
Dante Leon, Daytona State
Steve Linthicum
Xintao Liu, Herzing
Patrick Logue South Plains
Rajiv Malkan, Lone Star
Rebecca Marschner, Gateway Tech
Jim Meeks, San Jacinto
Mike Miller, Wisc Indianhead
Belicia Miraval Albornoz, El Centro
Ryan Murphy, Sinclair
Brian Nelson, Lansing
Sean Otmishi, Houston
Anindya Paul, Daytona State
Tom Pensabene, Metropolitan
Lenny Portelli, Seminole State
Susan Randall, Cleveland
Adam Rocke, Seminole State
Pete Selden, Tulsa
Marwan Shaban, Seminole State
Gordon Snyder
Gary Sparks, Metropolitan
Leon Squire, Wake Tech
Eduardo Suniga, Lansing
Susan Svane, NCTC
Dan Tuuri, Kirkwood
Mike Vickers, Tallahassee
Dwight Watt, Georgia NW
Mark Whigham, Calhoun
Mercedes Adams, NetApp
Phillip Andrews
Vincente D'Ingianni, Binary Systems
Ivor Flannery, Redline Networks
Eric Fusilero, NetApp
Matt Glover, Le-Vel
Tu Huynh, Comerica
Yang Lai, The IS Group
Bill Morgan, Avistas
Kurtis Sampson, Philips Healthcare
Candy Slocum, InterLink
Scott Veibell, Cisco
Glenn Wintrich, InterLink
Kim Yohannan, Palo Alto Networks

Recording link:
https://nationalctc.webex.com/nationalctc/onstage/playback.php?RCID=37663880ccdfe0bc8f50509b669f87da
Trends

Matt - Why don’t we go ahead and open it up for the BILT members? If there are any trends out there that you guys really like, I need your very active brains to be thinking about that. I’m going to go ahead and kick off with two. Then, I’m going to pause so that you can chime in with your trends as well.

I’d like to open with something simple and probably everybody is seeing the impact of it today. The very first trend I would like to talk about is the explosion of 5G. A couple of the major telcom providers just announced that they’re going to go out with 5G. And, 5G is going to require massive distribution networks to make that possible with its high bandwidth capabilities. Right now, when you talk about cell towers, they can handle hundreds of people on those towers doing smartphone transactions and talking. But 5G is actually going to explode to thousands. You’ll also have distribution nodes that are integrated throughout the infrastructure of the cities. For example, you may have a distribution node for your 5G network in a lightpole or many lightpoles along the street or fire hydrants. There is any number of things that these large 5G networks are going to be pulling data from. That way, they can break up the work. Instead of having large towers doing all the work, they can break the work up so maybe only 40 people are connecting into that node that’s on the fire hydrant or 40 on to that lightpole. The reason I bring that up is that infrastructure isn’t going to get put in place by itself. We’re going to have really skilled technicians to run the fiber across the cities to make that happen. 5G is a big trend that’s happening. Couple that with the fact that more and more things are going online, and more and more things are being tied to your smart phone. It’s driving towards the interesting new future.

The other thing is that as 5G explodes, you’re going to start to see a catalyst for new emerging areas that are not necessarily in the urban areas, but in the suburban areas where more and more folks are not being required to work at an office and can work remotely. That’s going to drive a couple of things. It’s going to drive up the cost of properties in the outlying areas around urban areas. It’s also going to increase the demands of the networks that are already out there. I see that happening over the next three to five years as the cities build out this emerging infrastructure to compete with the new 5G technologies. You know what’s going to happen right after 5G: 6G and 7G. We will probably change the name at some point to keep it exciting and confusing for everyone. That’s one thing I see happening quickly.

Ann – Before we go on, what do you see this doing to our curriculum needs?

Matt – For all the technical colleges on the line right now that have a networking engineer program at the associate degree level, there’s going to be a demand pulling on those areas to get more and more of those folks out in the field. Interestingly enough, as they run the nodes, they’re also going to have to set those things up. It’s not going to be a simple fiber puller; it’s going to be people who can run the cables and connect the nodes and get them tied into the massive networks. I think is a really cool trend and that the infrastructure isn’t going to happen overnight. That’s one of the demands for all of those network engineering-style technical colleges that are on the call right now.

Glenn – One of the things that I’ve been reading about recently is a couple of things that will tie to 5G. As you mentioned, the nodes will go into the street lights. That’s going to become common. Chicago is probably going to be doing that in their upgrade to LED lighting and infrastructure. The other thing is putting nodes into buildings. One of the things they’ve discovered with the wavelength of 5G is that it doesn’t penetrate walls well and it really doesn’t penetrate some of the windows that have been designed to be very low UV light transfer. A lot of companies are going to start doing two things that tie together: one is putting a node into their major buildings. And then also, eliminating the need for Wi-Fi upgrades and augmenting their existing Wi-Fi with 5G within the building until they decide to go 5G throughout. They can add that extra capacity in the building. The other thing
that ties to that is people are starting to look at Li-Fi, where you actually use lighting fixtures as part of your transfer mechanism instead of a node in a Wi-Fi network that could also be tied into 5G. Both would have direct impact on the convergence technology students going out into the market place. It may be just a new protocol or it may be a new box you bolt on the wall. But, it needs to be looked at at this point probably to monitor the products coming to market because they’re not there yet. The people who teach in the Wi-Fi space need to monitor and research those changes to see when they are going to be impactful enough to be built into the curriculum.

Matt – I agree.

Ann – Thank you.

Matt – The next trend that I’d like to talk about is Artificial Intelligence. We’ve talked about this before. An explosion happened last year and the year prior where voice-activated assistant technologies were put in the marketplace. I know everyone on this phone has had an interesting experience with Siri or Alexa, where you’ve asked for something like “Where is the nearest restaurant?” and they say, “The weather in Argentina is...” and you’re, like, “That is not what I said.” There’s this interesting thing where AI or these assistants are trying to be everything for everyone, but what we’re seeing in the world are narrow assistants being built. For example, Bank of America just came out with its own assistants for banking. Each of these different companies are coming out with very specific assistants so that when you do have your voice-activated commands or requests, the assistance will come from that expert or that narrowly-defined “assister” in the process. My guess is that trend will continue and larger assisters like the Alexas of the world or the Siris of the world will tie directly into those folks. That trend, as it continues to mature, will be an interesting thing to watch and see how it impacts the learning pathways and what we do here at the college.

We also have autonomous vehicles as a trend that’s really kicking off. There are actually companies today being built to be autonomous taxis. There is an interesting company called EHang in China that already has contracts to supply AAVs to different cities. AAVs are “Autonomous Aerial Vehicles.” Yes, we’re having a conversation about flying cars. They developed a flying car. Basically, it looks like a large drone that two people can get into. And it can fly 67 miles from point A to point B and stay in flight for 25 minutes on its battery. It’s a fascinating world that is transforming before our very eyes. We will see how that impacts us.

Glenn – To add some relevance to what Matt was saying, the city of Frisco, which is where our college is located, has started construction on terminal ports for Air Uber. That’s the air taxi. The construction company has been picked. One of my peers was actually on a panel with them in McKinney just recently. That construction is underway; it’s not just a pipe dream. You don’t start building if you don’t have a product. In addition to that, self-driving taxis are here in Frisco between Headquarters Parkway and the entertainment area. In that little two-mile stretch, there’s driver-less taxis that have been doing that stretch for two weeks.

Matt – There’s another interesting trend that’s dealing with energy that I thought was pretty relevant. As the demands for the networks grow and it enters the areas of rural America or rural world in general, there’s a new solar energy technology that just hit the market. It’s in its infancy, but I thought this trend is pretty incredible and it’s called Hot Solar Panels. Essentially what it does is that as the solar panel heats up, it consolidates the rays of sun into these microtubes, heating those microtubes up to a thousand degrees Fahrenheit. It then shoots that heated tube into the solar panel for additional energy capability. Not only does it provide energy as electricity, but the because of the heated tubes and the existing one-thousand-degree temperature variance, you can use that variance to do other work from the solar panel itself. It’s a very fascinating trend that’s kicking off. You can see how efficiencies of things like these solar panels are being put into more rural projects that you don’t want to spend the hundreds of thousands – or millions – of dollars to get the copper out there to give them traditional energy.
Ann – How do you see this affecting our curriculum or do you?

Matt – I don’t know yet, but I will tell you if those demands do pick up and that technology does start to drive that demand out to the rural areas, it will – in my opinion – impact a lot of our colleges that are not necessarily in major cities. It will drive up demand for those kinds of technologists to help integrate not only the solar panels, but what the solar panels will connect to. That’s going to be a driver for many of the digital nodes that come with 5G, which was my opening technology that I talked about. That’s part of that emerging or convergence of technologies we’re seeing in the field around us.

There are a couple of interesting technologies that are coming together. One of those technologies is called blockchain. We’ve talked about it on this call before. Just to refresh everybody on blockchain, Bitcoin uses blockchain so that you can have a secure transaction with your cyber currency. They’re using blockchain for health records, so if you have your X-ray or your MRI, those kinds of things, health companies are using that technology to protect your data from potential hackers. But think about blockchain as an ability to have an encrypted way of communicating. They’re coming out with surgical robots in secured networks. Think about this for a moment. You’re on the operating table and you want the very best doctor in the world to work on you. We’re not very far away from having that very best doctor being able to work on you remotely using digital surgical robots. It’s very fascinating. They already use robots in the operating room today for those micro sutures and things where the doctor’s hands aren’t steady enough to do the work. Now, they can use a doctor’s mind at the controls to mend you from afar.

There’s a huge explosion of different technologies in the healthcare industry today. It will be really interesting to see for all the colleges that are on the line that are serving medical fields in their respective areas what the impact is on those more advanced networks and the demands of technicians that they’re going to need to help fulfill those types of criteria for the future. I don’t know what that looks like at the moment, but it is an interesting trend to watch.

Tu – You mentioned earlier, Matt, automation. In the financial world, particularly Comerica, we are implementing RPAs a lot more now for our automated processes and that’s one of the trends we’re continuing to build our new platforms. Second is cloud services. Cloud services is on the rise because of so many legacy applications – as you know, in banking financial institutions, we have had to keep legacy applications for 30 to 40 years. So we are making that significant transformation as we speak. And I believe that within the next few years talents like cloud services, AWS, Azure will be needed to fulfill the new DevOps model.

Ann – RPA is “Robotic Process Automation” correct?

Tu – Yes. When you call credit card services you hear an automated attendant. You do not hear a live person anymore. They are able to answer most of your questions. That’s just amazing.

Bill – I’m seeing a lot of 3D-printed housing starting to really take off. People are getting very innovative and creative, not just with the fact that you can print a house, but with the technology behind mobilizing the little printheads to deliver cement, plastic, and other materials. Just like the science behind the robot, it will be interesting to see how much of that goes wireless. A lot of people are playing with suspended gantries versus robotic arms. It may be a matter of time before they discover other innovative ways to deliver the 3D printing capabilities. That’s something to watch out for.

Matt – I agree. I think there are fascinating building opportunities for us. I don’t know if you guys have seen those videos where they’re building towns with 3D printers, but it’s pretty amazing.
Glenn – I wanted to go back to the cloud that Tu brought up. I was asked to attend the security session last week that was about five hours long to help set the curriculum, or at least the KSAs, for a security bachelor’s degree. It was a very big and interesting point around the cloud. Many of us who have been in large companies, we think that’s already happened. But, when you get to the small and mid-size businesses, they’re still moving to the cloud. A lot of larger companies are still hybrid, where they’re doing a lot of work at the premise and some of the work in the cloud. That sets up a security concern when you start bringing a hybrid environment together. If we all remember with IPv4 and IPv6, there was a transition period - which of course is still going on - when things like tunneling were done and the mixing of those two environments. When you start mixing environments and doing these unique things, you’re opening up new doors for security violations both from the user at the access level and from holes in the systems that are developed. That’s another area for students to really be looking at when they start looking at the cloud technologies and integrating with the cloud. You really do need to apply good cybersecurity management in those spaces. The same would hold true for blockchain. Blockchain is a distributed database that is highly secured because of the way it’s laid out, but there are still flaws at the access point. Someone in the room brought up the fact that 70 or 80 percent of security problems start at the access point where passwords are not secured, or log-in locations aren’t secured, like the air conditioning issue at Target where they got into the systems through air conditioning. We still forget that the guy who’s got to manage that and gets to see it first hand is going to be the technician. The IT technician is the guy with feet on the street who goes in and says, “Wow, there’s an ethernet port here that’s not even secured in our air conditioning room.” A talk with our students might be valuable now as we’re getting to the point where with IoT and air conditioning and plumbing and all these different things are being tied in via sensors back into our systems. They really need to make sure they either cordon off the facilities infrastructure short-term or long-term while they insure that they have done all the testing they need to do; white hat testing, penetration testing, looking at architectures that they have really secured those spaces. It isn’t necessarily going to be a cybersecurity expert that’s first on the ground. It’s going to be the converged technicians. That’s probably worth a little bit of discussion: how we can build that maybe into some labs in the current course load. It’s not a new course; it’s just building a little more awareness of the different areas into the current course work.

Matt – I think that ties in very well into the IoT. As IoT marches on, it’s so big and so vast. In 2018 we have 11.2 billion devices in IoT right now. That’s crazy. Since it’s so wide and so vast, I see that there’s going to be narrowing of different fields within the IoT space and one of those transcending fields that will cross all those areas is security. What is it that we’re doing for these very light, dumb devices that are in the IoT field to protect them? And how do we do that at the edge in the world around us? There’s a lot of big thinkers in that space that are trying to work through those issues. Interestingly enough, IoT is one of the biggest demands for hackers to leverage so that they can use your IoT home device and hack it easily because it doesn’t have the security protocols that other systems do have. They’re using it to do denial-of-service attacks on companies around the world.

These are very fascinating trends that we’re seeing. It ties in directly to security capabilities and how we manage that. In putting together a lab, Glenn, to your point, to put that into a real-world scenario we should have students go through the process of figuring out how to A) protect their end device and B) how to stop an attack from happening once it does occur.

Glenn – It would be a very interesting scenario to have the converged network students do a project where they have to interview and talk with another student in the cybersecurity space. “Hey, we’re putting in an IoT that’s going to tie into our elevators, our water heating systems, and our escalators. What do we need to work on together to make sure we get it right on day one?” That would be a great experiment for them to put together. As an example, I was out at the [Horton] Grand Hotel, which is a historic hotel in San Diego, meeting with the general manager and their security, CTO, and CIO staff. When we started talking about tying the facility into their system, the first thing they said was, “We don’t want to run a pilot unless you can run it off our network. We do not want it tied to our network because we don’t believe it will be secure.” You have to prove it first and then move it on to
the network. That’s probably a good learning tool for a pretty smart CIO. You **don’t experiment on a live network** even with IoT. “Oh, it’s just the water heater, why can’t we tie it in? “ No, you run it in the sandbox, you test it, you validate it’s secure, and then you put it on the network.

Gary Sparks (Metropolitan) – You look at the technological aspect by **segregating IoT devices** off of the production network completely. That was the problem at Target: Target didn’t segregate their POS systems off their production network and that’s how the third party gained access to it. The first type of an attack that is going to be leveraged against a company is going to be a social engineering phishing attack. That’s what happened at Target. That’s what happened last fall with Best Buy, Delta, and some of the other companies. I just did an hour training with a marketing company in Omaha, and one of their clients is the largest banks in the city of Omaha. I strongly believe that over the past two years they’ve been phished. An attacker is trying to gain access to First National’s network so they can do damage. But, of course, the bank has domain separation. They have their personal banking in one area, they have business in another, and then wealth management in a completely different area so if there’s a breach then there’s a smaller impact and it wouldn’t be the whole.

One of the things that I would advocate is in those business programs that teach general business that they talk about cybersecurity there, as well as for retailers. At most retailers, the manager couldn’t spell security to save their life.

Vincente – I want to point out a trend that I’ve been seeing from some major customers where I work. Software defined networking is becoming less and less of an issue. It’s basically just a buzz word that people use, but more importantly is the ability to **transition off of the cloud**. There are situations we’re seeing where people have spent lots and lots of money implementing services in the cloud. Then, all of a sudden, they realize that their usage has been extremely underestimated. They are realizing that all that implementing things in the cloud means is using someone else’s data center. They realize that they have a data center already that they can start utilizing. Figuring out how to get back off of that cloud becomes a very costly endeavor. I would like to give a thumbs-up to all of the cybersecurity initiatives that have been discussed, but also keep in mind, being able to move your services back off of the cloud is often a very important thing.

Matt – Most of us around my age or a little older watched Wang way back in the day be the dominant technology company in the world. They had their Wang systems and everybody had dumb terminals. And then, you fast forward to Microsoft’s push into the 70s and 80s. We moved from centralized capabilities into distributed at the desktop use, so everybody had their own systems to do the work and then it would only tie back into a back end data center. Now, we have this cloud opportunity as we move forward and everybody’s moved to really light, nimble smart devices and all the storage is up in the cloud and all the connections are really API-driven. It’s now centralized in the cloud and then we’re in this kind of hybrid environment where we have this distributed capability. People are on-prem in their own data centers and also have cloud capability. I think you are exactly right. In my organization today we are writing new architecture. Our software architecture is transcending cloud, or what I call bare metal, so I can move my applications. If I don’t like running Amazon anymore, I can move to Azure. If I don’t like Azure anymore, I can move to a bare metal of my own data center. The architecture itself – the software architecture – is incumbent in making that a success. It’s very fascinating as we see these trends and whoever is the wisest of that moment can really leverage those trends for all that it’s worth. If you’re doing what I think your friends are doing, which is they’re tying themselves to, say, an Azure stack of technology--

Vincente – Exactly!

Matt – Then, you cannot move back out without it costing a ton of money. That’s one of the things where the big companies like Azure and AWS are all focusing on trying to give you all these “sticky” technologies to make you stay with them.
Vincente – Throw in Hitachi also. All the cloud data store providers who are giving you these APIs into their large storage array systems. Once you start designing around that, then you’ve basically stuck yourself. It is becoming a very large pain point for the large customers that I am working with. I can’t stress this enough. We’ve been using this term around the office – the cloud just means you’re using someone else’s data center. Most people already have some data centers. What people are forgetting now is that hardware has gotten smaller and faster, so you can move all of that technology that you just implemented out in the cloud back into your own data center using a fraction of the space and electricity. Voila, you are back at home again. That type of budgeting is always something we have to keep in mind.

Ann – We had a hybrid cloud tiger team (Mercedes Adams - NetApp, Tom Boehner - Juniper, Lucas Figg – Dell EMC) and we were working on addressing hybrid cloud case studies and hybrid cloud projects. Mercedes, would you like to comment on that in light of what has been brought up today?

Mercedes - Thank you for asking. It is very interesting to talk to customers who desire the flexibility and scalability offered in a cloud environment and think it is very simple, but organizational cultures actually have to change. Often times we find people trying to recreate their on-prem environment in the cloud and that can cost you millions of dollars more than it should. It’s important to recognize an architect to design when you should be running workloads in the cloud, what should be in the cloud, whether you are using it for primary or secondary or back up. There’s a really interesting conversation to have around “architecting.” I think that most technologists foresee a hybrid cloud future for the next dozen years or so. It’s really getting people smart enough to figure out what’s going to work in the cloud. I’m listening to this conversation with a lot of interest because clearly I’m passionate about it. At Summer Working Connections, we talked about cloud as being a huge focus area in industry. Of course, doing it well is really the challenge. With that hybrid cloud workstream, I’d love to pick that back up again, Ann, as we have more intelligence how we might want to approach that and build some of those capstone projects we were talking about. That would allow people to design what works well, what should the cloud be used for, and how to help make informed decisions around that technology.

Ann – So those of you that have been speaking can expect an email from me or maybe a phone call for you to join our team. We got overcome by events: faculty out for the summer, the business people crazy busy, and me writing another $3.75 million grant. We sidelined it but I would like to pick it up again this fall.

Ivor – What’s also interesting now is a certain very large cellular equipment provider has recognized the problem of backhauling 5G on such a mass scale that they are now building clouds on the edge. This will be able to satisfy cloud needs right at the very edge of the network and not have to backhaul them all the way over to either Amazon or Microsoft. There is even another hybrid version that’s starting to exist and, given that they don’t see the 5G trend slowing down, they feel there is a very strong reason why you may need to build clouds literally on the edge of your network because the data volumes we are talking about will be astronomical if they don’t. So, there is even more divergence in the cloud story as every year goes on.

Matt – I agree. It’s fascinating to watch the trends: everybody goes one direction for a period of time, say ten years, and then they start ripping out from that direction and going a different direction. Talk about history repeating itself.

Speaking on the data points, another trend that I would like to wrap up with is the fact that data - the “I” in IT - is the quintessential gem of everything that we do. That has transcended a drive and a need to understand what is in that data. Transitioning that data into information and that information to wisdom is important so that we can make decisions - good business decisions - based on the information we are gathering. With the onslaught of IoT and all these different data elements penetrating our databases it’s really driven a huge need for new technology careers like data scientists and things of that nature. For every data scientist out there, there is also a data engineer that needs to support that scientist. I think from a convergence of technology perspective in a
community college, having data degree programs that can help students get the certifications necessary to assist in the “regularization” of data. That is, make that information into something that is wisdom or turning that data into something that can spark wisdom in the decision-making of business people around the world. So it’s super important for those colleges that have a generalized IT degree, or they are looking into moving into that space, that is a trend that I think we really need to seriously look at within convergence technology as well as all these new insights. I went through about twenty different things today. Just keep that in mind as they all push together; it’s all for one thing and that one thing is the data that is captured. I will now turn it back over to Mark or Ann.

Ann – Thank you. Just a comment: we’ve been focusing on big data pretty heavily, at least on the side of making sure we can visualize the data, which is kind of in the middle of being able to make the data usable. Rajiv Malkan from Lone Star, one of our new partners in the new grant, is in fact leading that charge. He had a workshop at Hi-TEC and he taught a whole track at Summer Working Connections that received raves. It was very good. So we’re going to drill deeper into that and also secure coding. We’ve heard you and know that we can’t be just infrastructure people without some bit of coding knowledge in there, too.

**Update on May 8 KSAs**

Mark – There are two elements from that May 8 meeting. There are the minutes of everything that was said because the discussion is important – not just what you said and how you voted, but also what your opinions were. There is also the revised KSA Excel spreadsheet grid. We are reviewing those one more time here and I think the plan is in the next week or so to send those out to the BILT for final comments and approval. Once the BILT is happy, we will send those out to all the CCN primes because we have already had people asking about those. They are very eager to receive those for their fall local BILT meetings. Any questions?

I can tell you sort of briefly broad strokes or things that were changed in that meeting:

* Added CISSP/SSCP alignment column to show which Ks aligned with which CISSP/SSCP domains
* Further refinement of “Enterprise Mobility and Collaboration” (K5) description
  o Now split between “Collaboration Infrastructure and Architectural Awareness” (formerly “Collaboration Technologies”) and “Endpoint and Applications” (formerly “Enterprise Mobility”). They changed what they were called and the definitions within that.
* “Network Security” (K11) now “Cybersecurity Awareness” – aligns with the eight CISSP/SSCP domains
* “Virtualization Technologies” (K12) now “Network Devices/Connectivity Components”
* “Data Management” (K13) now “Information and Storage Management”
* Added CWMP and CWNA to certifications to consider

Ann – How many of you have a wireless program or a wireless certificate? You don’t need to respond verbally, just put it in the chat box for Debbie. At Collin we are putting in a wireless program here. It’s not quite all together yet, but it’s happening. We have such high demand. That goes with some of the things you talked about today, Matt.

**CTC Updates**

Ann - The “IT Skill Standards 2020 and Beyond” project grant proposal has been submitted. It has been reviewed and we got questions. I answered the questions, and it has now been recommended. The Program Officers at NSF review the grants and decide it they want to recommend it and then they recommend it for funding. At that point, it goes to the Division of Grants and Awards, which is essentially the accounting people who review and make sure we did the math correctly and that it makes sense structurally. Last I heard, the DGA people had something like 900 items that they had deal with so they are behind. We were recommended on July 21. It is my understanding that they have to fund us or not fund us by the end of August. What I’ve been told is that if you get
recommended, it typically happens. That’s $3.75 million to identify and come up with the skill standards for the future for the top eight to ten job clusters in the IT arena including cyber. This may also potentially include AI and IoT; however, those areas may not yet be at the point today that we can standardize them because it is still a bit of the Wild West out there. Any questions? I am going to be talking with you for other business people connections because there is going to be around 400 business employers involved in this whole thing. But again, it is national and covering a whole different piece that what we are prime in.

Mark reviewed the two Summer Working Connections events:

- **Florida (South), June 18-22 – 16 attendees**
  Two tracks: Windows Server, Python

- **Texas, July 16-20 – 93 attendees**
  Six tracks: Big Data, CySA+, Internet of Things, Firewall Essentials (Palo Alto), vSphere 6.5 ICM, Integrating Hybrid Cloud (NetApp)

A big thank you to...

- NetApp, sponsored Monday evening happy hour and provided registration gifts
- Palo Alto, provided raffle prizes

Ann – It’s really great to have businesses helping to fund whole tracks of this event. That just means we can last longer with the grant money that we have. So thank you Mercedes from NetApp and Kim from Palo Alto.

Mark – A fun thing happened on Tuesday during lunch. We had some folks from Collin present on the College’s Mobile Go Center. It’s a big trailer with a bunch of laptop stations inside that they can take to high schools or wherever they want to go for outreach. They can do registration and financial aid advising on the spot. They also got to take tours.

Ann – They have room for 16 to 20 laptop stations. Some of the rural colleges are beginning to get these sorts of trailers. We are talking huge long trailers that you would hook to the back of a pickup truck. These trailers are giving the rural colleges a lot of access to the service area, which is some cases is thousands of miles. When I worked for a college in California the service area was 26,000 square miles. Now granted, many of those miles were desert and cactus. The trailers are working out very nicely not only for recruitment but also for training.

Mark – Bill Saichek from Orange Coast College taught a track on “Preparing to Teach the Internet of Things.” We spent some grant money buying some supplies for him and he created an elaborate set up. So, one evening we held an open house for those that were not in his track and he gave a brief presentation and tour of the setup. This was a big hit. Everyone was very interested to see what Bill was doing with IoT.
Mark - We also tried something different with a photo booth in the breakroom. We were surprised how everyone really embraced it. You can see a few of the pictures we took. We had a competition for Best Selfie, Most Posts, Most Creative Posts, and Track Spirit - the track with the most spirited social media posts. It was a huge success. We had about 11 unique individuals posting and over 300 mentions on social media that week. It was a success for us.

Mark - The next week we went to the HI-TEC conference (July 25-26, Miami) and supported 19 faculty members and partners from the CCN. Ten of them gave presentations. We also helped send one student poster. We had a big presence at HI-TEC.

We had 18 attend the IT/security virtual lab workshop run by Ernie Friend for Windows Server and Bill Saichek for IoT.
Ann - Ernie has a grant, InovateX, that is creating more NetLab-based labs for the Microsoft environment. This is an environment that has not been well addressed, so we thought it was important to share that information with a lot of our tech people. It went over very well. And, of course, IoT is always a success.

Mark - Ernie Friend also won “Educator of the Year” at HI TEC. It was an honor for him and for us to be a part of what he is doing.

We also had our regular BILT panel with 50+ attending. The room was packed. We talked about ways to energize your business group and the BILT model. (Ann mentioned that someone later said the room held about 100 and she felt we had more like 70.)

Mark - The Friday after we had the CCTA convening with about 33 attending.

Ann – CCTA was the supplemental given to CTC to, in essence, provide technical assistance to people that have DOL TAACCT Grants. The last round of the TAACCT Grants expires on September 30. We have switched our focus because we still have a little money. We are trying to help others who perhaps have not had grants through the ATE programs put together competitive proposals. There is a big push for that because we find that smaller colleges and rural colleges very often don’t think they can go after this money, and that is definitely not true. Heather Watson was the Program Officer who helped lead (Celeste was not able to join). It was not quite as big as it had been in previous years, but I think we made a pretty big impact.

Mark – We talked already briefly about the Hybrid Cloud Capstone. We got derailed on the project in the spring and are planning to pick it back up in the fall to develop some sort of group project here at Collin College. If it works, we will roll out to the rest of the CCN. Any comments or questions?

Ann – I know, Glenn, you asked us to look at the Google IT Support Professional. Collin is actually participating in a pilot, as are some other colleges. That is moving along and it looks like right now we are going to take the five Google courses and layer them on as supplemental material to existing credit classes. Google was insistent 100%
that students had to get credit for taking the Google classes. They want it to start this fall. We cannot get a whole new course through quickly enough and get figured out in terms of hours and all that sort of thing. So, what we decided to do was to provide it as supplemental instruction for three courses: A+, Net+, and Security+. We are piloting that this fall and will keep you informed on how it goes.

**Regional hubs discussion**

Ann - For each of the regional hubs, we would like to have one BILT member take the point for being mentoring hub. If you are willing to do it, I don’t think it will be huge amounts of time. In trying to start up a BILT, there is a lot more to it than people necessarily realize. It takes getting the right people on the list, getting all the logistics set up. We will take care of that part, but basically we need you to mentor perhaps their co-chair for their new regional BILT. If you are interested, let us know. If we don’t hear from you, guess what – we know your number! We are starting first with Lone Star in Houston. They, in fact, are pretty far along. They are calling people together September 12, I believe. We’ve done all the preliminary work. Sinclair is next and then we are going to go one by one through the partners. Questions or comments?

Mercedes - Is the Bay Area the same as what Richard Grotegut is running?

Ann - Yes. They have funding for California. We are not necessarily funding them, but we are going to treat them just as though they are one of our subaward partners. What we have not figured out yet is there is a way we can fund them. Bottom line of it is, yes; they already have folks together. I think it is 20 colleges there working in a consortium. I have already been out and I did a BILT meeting for them. It’s been a couple of years ago and I am probably going to go back out there. We would appreciate your help with that if and when that occurs since you are relatively local.

**Tricider poll responses**

Mark - I want to remind everyone of the Tricider polls we are doing. I am trying to do those once a month and send a reminder between the months. We got sidetracked in July. I went back the last couple of months to find some questions and answers that I thought were kind of interesting.

“For the BILT members, what’s the most challenging part of working with schools and educators?”
* Slow curriculum adoption lifecycle

“For the educators, what’s the most challenging part of working with your business council?”
* Convincing administration to move from an advisory committee to an active BILT model
* Finding a good time for everyone to meet
* Pleasing everyone in what needs to be covered in the courses

“Educators and BILT members, what strategies would you suggest to recruit more student prospects into IT programs?”
* Problem is curriculum taught in MS and HS – students need to get excited about technology from a young age, which isn’t happening

“For the educators, how do you prepare your students for job interviews?”
* Mock interviews
* Professional photo booth for headshots (LinkedIn profile)
* All students required to take a non-credit employment success class
We are sending these out once a month, so if you get it please chime in because it really doesn’t work unless everybody participates and comments on each other. With Tricider, you can give your own answer, vote on someone else’s answer, or comment on someone else’s answer. There are lots of different ways to engage and comment.

That’s all I have for the agenda. Anyone have any more comments/questions?

Educators, if you joined late please send your name and school to Debbie in the chat box. We want to make sure everyone gets credit.

**Adjourned**

*Next meeting is Tuesday November 13, 8:30am – 10:00am Central.*