

County Wide CTC Development to Bridge the Digital Divide
Suggestion to the Lt. Governor for the Creation of State Wide Model
Prepared by the McHenry County CTC Network

Background:

For a number of years, an ad-hoc group of curriculum developers, business mentors and youth focused after school program directors, had been operating a number of years from a home base in Chicago under the name of **Focus On NASA (FON)**. This group developed a series of STEM (STEM= science, technology, engineering and math) programs, including what became arguably the most successful series of **Pre-Engineering** STEM focused programs in the history of Chicago. The programs were heralded with a number of rewards, including being the 2006 recipient of the **LEADER Award** for High School Curriculum Development.

Because of frustration with the politics of Chicago in general, and CPS as a school district in specific; in the spring of 2007 the FON team made the decision to move from Chicago. They redirected their efforts to their rural suburban roots of McHenry County. Along with their senior development team, FON brought with them a library of successful youth STEM programs and a wealth of experience. In addition to the experiences working with youth, the FON team was directly responsible for the growth and development a couple of the most successful **Community Technology Centers (CTCs)** in the entire state of Illinois. The "actual" track record of our team at running CTCs is a record equaled by few.

As we have been moving into McHenry County, we became aware of the simple fact that not a single CTC existed in the entire county. As a part of our basic model for delivering youth STEM programs, we require facilities that we have access to on a literal 24x7 basis. Partnering with schools is a valuable part of our basic equation, but few schools can give us access to facilities, as we need them. The development of CTCs in the county therefore becomes mission critical to our overall plan of creating STEM facilities from which to deliver our youth programs. A difficult roadblock when you consider not a single such center exists in the county.

Project Goals:

It is more than likely that because of the original focus of a need for Digital Divide Assets, our view of initial goals is somewhat different from other Broadband Deployment related projects. Therefore, the actual promotion of broadband development takes on what we view is a unique and tertiary role. The following are our list of sequential goals for the project:

- 1) Creation of Organizational Structures
- 2) Development of Stakeholder Peers
- 3) Building the Economic Model of the Project
- 4) Creation of CTC/STEM Centers
- 5) Delivery of Educational Programs
- 6) Placement of Technology in the hands of those in need
- 7) Creation of locally owned and operated network infrastructure

First Steps:

Looking toward the success of Connect SI, in the early months of 2007 we began the process of building relationships to leverage assets within the greater McHenry County Area. We do anticipate that in the near future, as in the case of Connect SI, we will begin to build additional bridges to adjacent counties. Unlike Connect SI, our project has as of yet to include health professionals. We do see that happening soon as the project moves forward. However, the major lesson learned from Connect SI is ITS ALL ABOUT LEVERAGING!

In addressing Creation of Organizational Structures, we have done two things within McHenry County. The first is the creation of an oversight organization called the **McHenry County CTC Network**. Presently the McCTCNet is an ad-hoc organization. We will eventually constitute this organization as a 501c4 (not a c3) corporation. This organization has as its chief role, asset management and leveraging across partnering CTCs in the county. For the short-term, the **McHenry County Cooperative for Employment Education (MCCEE)** is acting as the fiscal agent for the McHenry County CTC Network. Only by creating this kind of mechanism are we able to get all the stakeholders to agree to allow their assets to be leveraged as parts of the seven project goals.

The second organizational structure needed, is a push to create locally originated CDC organizations. We do have a McHenry County Economic Development Corporation, but the development of local Community Development Corporations is essential in creating peer connections across the county. This is essential as each community on the County has unique goals and needs.

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As our initial group of **Stakeholder Peers**, we invited a number of agencies/organizations that have as a core goal either the development of STEM programs in our schools or a focus of addressing Digital Divide issues.

We have since assembled a group of school district administrators, representatives from some of the counties largest employers, the McHenry County Cooperative for Employment Education (also acting in the capacity of representing the Economic Development Corporation), McHenry Community College and the McHenry County Office of the Workforce Investment Board. On the localized level, the **Wonder Lake Community Development Council** was incorporated to act as the first of the new local CDC organizations.

Network Wide Economic Model:

The experiences we have had at creating and running CTCs in Chicago has shown us that the single most important early issue is that of building a long-term sustainable economic model. In approaching the needs of a CTC in McHenry County we reviewed failed as well as successful models as a starting point. After much discussion of the goals and needs of the entire stakeholder group, a logical solution was identified.

At present federal funding directives for WIB offices have changed requiring less emphasis on the counseling part of the role and more on the training role. This allows for those counties that have both NO CTC facilities nor a local WIA (Workforce Investment Act) funded training vendor network to accomplish BOTH goals with a single infrastructure development.

In the example of McHenry County, there are approximately 500 people per year that are found to qualify for WIA funded workforce training. Of those 75 % qualify for nominal job training programs and 25 % would qualify for ITA (Individual Training Account) level funding. In the example of McHenry County, this generates a POTENTIAL funding channel of nearly \$600,000.00 every year. In our estimation, this will provide a solid ongoing sustainable funding channel for at least FIVE CTC's if managed as a unit.

Grant monies are presently being investigated for the purposes of specific infrastructure or programmatic development. NO GRANTS will be used for ongoing funding of the core operation of WIA and digital divide training; presuming that WIA funding is not radically reduced.

We have since developed this model and submitted a proposal to DCEO for seed funding for a countywide CTC initiative for \$140,000 in development funds.

Creation of CTC/STEM Centers:

Because of the potential of mining \$600,000 from WIA funding. The McHenry County CTC Network has set as a development goal the creation of no less than six CTCs across the county. These CTC's will have several ongoing roles including:

- 1) Act as the primary Digital Divide Training Facility
- 2) Act as the primary FREE access points for high-speed Internet Access
- 3) Act as the delivery mechanism for the WIA funded training needs of the local office of the WIB
- 4) Act as localized STEM facilities for the use of surrounding k-12 STEM program needs
- 5) Act as delivery points for technology distribution system
- 6) Act as primary nodes for a future locally owned private/public network infrastructure.

The issue now becomes how do we fund the actual development of the local centers without grant funding. What happens if the \$140,000 DCEO or some other Digital Divide grant does not come through. Again, the answer is leveraging of local assets. We actually doubt we will be funded as our county only has 25% poor county wide.

The Wonder Lake CTC is the first of these six CTCs. The Wonder Lake CDC, stepped forward to develop the basic funding model for the construction of the facility itself. This was done with the assurance that the other stakeholder members of the McHenry County CTC Network, and in particular the local WIB, would use the facility as defined in the "Network Wide Economic Model". Doing so creates a long-term sustainable model that justifies the local community joining the process and investing in a local community center project focused on the creation of a CTC. Even though programs run in that facility may benefit people from other communities, the CRITICAL MASS FUNDING provided would underwrite many locally funded programs. ITS ALL ABOUT LEVERAGING!

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The next target location is in Harvard and the third in Huntley. Future sites are being studied. Local communities will also have the ability to use the facilities as an infrastructure resource.

As an example in the case of Wonder Lake, from 9:00am until 1:00pm a significant percentage of the facility will be used to deliver a series of locally funded Senior Programs. Further, in the afternoon and evenings approximately 30% of the facility will be used for locally funded (and grant funded) after school youth programs.

Delivery of Educational Programs:

Training and educational programs are developed and ready to deliver. These programs are split into three general categories:

- 1) Community Level Program (CLP)
- 2) Workforce Training Program (WTP)
- 3) Youth STEM Program

"Community Level Programming" are classes that are designed for the general needs of the people in the community whether those programs are computer classes or not. Many classes, such as our Income Tax filing support program for seniors and non native English speakers will use the computers if the person is previously trained, otherwise they will be helped using paper forms. Many of the classes are computer use specific and follow a general track of long term preparing participant stakeholders for MOUS or IC3 certifications.

"Workforce Training Programs" will either be focused on a specific job skill or a specific certification track, or both. An example would be the WIA funded computer office skills classes (which may also have as an end goal an IC3 cert). Another example would be WIA/ITA programs that would provide individually designed long term training toward multiple professional IT certifications such as A+, Net+, Linux +, CCNA, MCSE, CNA, CNE and others. These programs may also include industry-funded training such as training for CNC multi-axis mill programmers and operators.

"Youth STEM Programs" are programs developed by the Focus On NASA curriculum development team and include a dozen potential programs that can be run at the CTCs in partnership with locals school districts.

Technology Placement:

Thanks to the overwhelming acceptance of Open Technologies by American youth, as well as major projects such as the Lt. Governors Laptop project that embraces these technologies, it is no longer considered as a "radical" concept to offer training in CTCs using Linux and Open Source software. The simple truth is that it does NO GOOD to refurbish computers with Microsoft Windows if the people you give that refurbished computer too, can not afford to put software on the computer. You are in essence putting people in the position of feeling they have to steal software through the use of pirated software to make their children competitive in school. We much prefer the idea of enabling people with 100% legal solutions.

Therefore, not only will we be using Open Technologies as a part of the training we offer, but we will use Linux and Open Source software as a key element of our Technology Distribution program. This is important as it allows key-partnering stakeholders, corporations and schools, to hand off to the CTC's large numbers of computers. These computers can then be refurbished by the students in the Workforce Training programs, and then distributed free or near free to the public. In Wonder Lake alone we estimate the need for near 1000 PCs to be placed into senior or low-income households.

There are literally thousands of fast 386 and first generation 486 computers that are being removed from schools and businesses because they can not run the current over-bloated versions of Windows. Linux and Open Source software run far more efficiently on computers with less power, giving a computer a significantly extended life span. This is essential as **we estimate that we will need a minimum of 15,000 computers** to put into the hands of our low income and very low-income citizenry. After describing the plan to local school administrators we have already had several hundred computers pledged to the project.

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Creation of locally owned and operated network infrastructure:

For those of you who may have forgotten, the commercial phase of the development of the Internet was founded upon a series of basic principles. These basic principles expanded on the original academic foundation. These included:

1) Peering

The Internet was created to be a "PEER" Network. This "peering" is not in the sense of a network authentication, but in the organization of the network infrastructure itself. Networks are joined together at Peering points and all that is required to provide service at a certain level is to have facilities equal to your Peers. This structure provides entry points for private and public network development that prevents domination of the Internet by either a corporation or a country.

2) The Commons

The Commons AS A SHARED RESOURCE is a very American and entrepreneurial concept that has been with America since its founding. Low cost raw materials has always been one of the driving forces in the American economy, and the Internet as a commons is an extension of this concept as a modern information delivery asset. The Internet commons is what has created the explosion of technologies, services and networks (including social networks) as these new technologies grow out of existing ubiquitous and pervasive technologies of the past. IRC (Internet Relay Chat) as an example is a free service that originated in the 1980s that is still widely used in a number of permutations (instant Messenger services). That also includes a "for fee" variation, text messaging on phones. However, the only reason why "texting" (the word text as a verb) has a cost at all, is because it travels over a CLOSED network. Once IP becomes fully pervasive in the wireless world, more and more users will text over open nets like WIFI and texting will become a 100% free service. Indeed, on an IP Broadband Network, the network overhead of a local to local phone call is so trivial LOCAL PHONE SERVICE SHOULD BE NEAR FREE.

3) Network Neutrality

Network Neutrality has two attributes to remember. The first is the simple principal that even though the phone companies call it "a notion of the Lunatic Fringe", Network Neutrality simply states that the Internet is an OPEN and Bottom Up network. The phone companies and the major broadcast networks have been working hard to transform the Internet into a TOP DOWN network as are required by the the phone and broadcasting business model. However, what made the Internet popular is the fact that it is a bottom up network and it is NOT, **TV Version #2**. This extrapolates into the second attribute of Network Neutrality, and that is no one is supposed to determine what content is allowed on the Internet and what content has preference over the networks.

As the major phone companies continue to fail in their obligations to the public trust, and in particular they have worked to destroy these basic foundation blocks of the Internet, it is simply time for an alternative to the Status Quo.

Therefore as the logical next step in the project as an enhancement to the use of the Internet and the use of the Internet through FAST Internet segments, the obvious solution is the promotion of locally owned high-speed networks to offer service alternative to our communities. The technology exists for such networks to be built, and the simple fact is that with modern IP based networks, as much as the giant telecommunications companies would like you to think, they are no longer required. The notion that local technologists can not "do it" without the phone giants is ridiculous. We are suggesting the investment by local county, township and municipal governments in a mixed fiber and high capacity wireless (Loea technology) backbone across the counties in Illinois.

Opening the network and building locally owned infrastructure will offer significant benefits to our counties:

- 1) Local Communities can take control of their telecommunications future and offer service contracts to locally business.
- 2) Locally owned and maintained infrastructure means jobs in the local community
- 3) Local Business means locally developed income and taxes retained by the community
- 4) Local income provides dollars that churn over within the community rather than heading down to Texas.

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State Funding Considerations:

As a note to DCEO and other future funding programs for either Digital Divide or rural broadband deployment. We respectfully disagree with the model used by DCEO for the awarding of Digital Divide Monies. Too much emphasis is placed on unique applications or solutions as a part of competitive grant allocation. The idea for this is to come up with creative solutions for a complex and difficult to resolve set of issues. These make for great PR, but are not based in sustainability. We highly suggest that DCEO and other state agencies look at our countywide approach as a benchmark consideration. We have seen far too many marginal CTCs funded.

Summary:

We feel the steps we have gone through to develop a series of CTCs and STEM facilities across McHenry County is an outline that should be easy for communities and counties to duplicate across Illinois. The plan in place is simple, and easily sustainable as long as WIA funds are not significantly reduced. Counties like Cook County that already have a network of CTCs and several WIA programs will have to look elsewhere. But this is a good launching point for rural counties that are struggling with the complex issues of Bridging the Digital Divide, Technology related training and how this could impact REAL broadband deployment (not 200K excuses) for people in the state of Illinois.

We are presently putting together a task force to develop a generic feasibility study for fiber and high capacity wireless deployment for rural counties. We hope to have an initial white paper ready within the next month or two. The projected model in McHenry county is looking very good at the moment, with remarkable economic justification.