Technology Reuse Initiative

of KOSCIUSKO COUNTY

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Table of Contents

Executive Summary

The mission of the *Technology Reuse Initiative (TRI) of Kosciusko County* is to collect used technology, such as computers, from organizations and individuals in the community. The technology will be refurbished and then be provided to those within the community including charitable organizations, schools and individuals in need.

Problem

Many organizations in our community recycle or even dispose of computers that are just a few years old. These computers are often in working condition and could easily be used for basic computing tasks such as internet browsing or desktop applications. The Environmental Protection Agency (EPA) estimates that only 40% of retired computers end up recycled into other materials, resulting in these machines becoming part of the waste management crisis that is currently impacting communities across the United States.

Based on the most recent United Way ALICE Project study, 11% of households in Kosciusko county are considered poverty households. An additional 17% only have enough money for basic necessities. Poor households are less likely to own computers (56% vs 87%) resulting in a continuation of the *digital divide.*

Vision

The vision for the initiative comprises four clearly defined segments, with each part being complementary to the other within the broader mission. The initiative design is based on the following key roles:

1. **Supplier**
   a. The companies and/or individuals within the community who contribute out-of-use technology hardware.

2. **Refurbisher**
   a. Will make sure the technology is ready for the beneficiaries.
   b. This includes testing, repairing, installing the operating system and cleaning the technology.

3. **Torchbearer**
   a. The organization that will take the lead in directing the initiative.
   b. Represents the legacy of this Whitepaper proposal.

4. **Beneficiaries**
   a. Include charitable organizations, schools and individuals in need.
   b. The primary recipients of computers within our initiative design would be 501c3 nonprofit organizations.

Together these parts create the foundation for the Technology Reuse Initiative (TRI) which was conceived to provide usable technology to Kosciusko County residents in need**.**

The Problem and the Need

Kosciusko County features tremendous wealth in the form of natural resources such as lakes, and as the leading producer of orthopedic devices constituting approximately 50% of US market share (Bishop, 2011). As a manufacturing center and/or base of operations for several Fortune 500 companies, including Zimmer-Biomet ($7.7B, 2017) and RR Donnelley ($6.9B, 2017), it is likely that the full wealth and resources of Kosciusko County remain untapped (DeCarlo, 2017). Perhaps one overlooked "gem" within Kosciusko county is the number of technology devices being retired by local corporations that end up leaving the county destined for recycling programs, but still retain several years of service life and usability. Our Kosciusko Leadership Academy (KLA) whitepaper team nucleated around the idea that some of these discarded computers could be transferred to individuals or entities with great technology need, including poor households, schools and/or charitable organizations. The founding member of our KLA whitepaper team has identified a Warsaw-based orthopedic corporation that recycles retired computers at the conclusion of their 3-4 year lifecycle. Our team explored the creation of an initiative that would redirect retired corporate computers from recycling destinations to a refurbishing program. Refurbished computers would then be distributed to Kosciusko County residents and/or organizations as part of the broader initiative.

Despite the significant financial impact that orthopedic (and other) profitable corporations have on the local economy, Kosciusko County's 11% poverty rate (United Association of United Ways, 2016) nears the national average of 12.7% (Semega, Fontenot, & Kollar, 2017). Poor households are less likely to own computers (56% vs 87%) resulting in a continuation of the *digital divide*, a term popularized by social scientists in the 1990s which describes how a certain subset of society lacks access to technology and its benefits (Eamon, 2004). Lack of technology access and training reduces the employability of some of the county's most vulnerable residents. This gap in technology does not negatively impact only adult populations.

Evidence suggests that lack of computer ownership for youth reduces testing scores in both reading and math subject matter (Vigdor, Ladd, & Martinez, 2014). Our KLA whitepaper team sought to bridge the digital divide for the neediest populations within Kosciusko County by exploring the creation and impact of a computer refurbishing program referred to hereafter as the **Technology Reuse Initiative** (TRI) **of Kosciusko County**.

Current Options Available

In his article, titled "Avoiding a Computer Wasteland," John Tozzi writes that companies and consumers replace personal computers, on average, once every 3-4 years resulting in 50-75 million machines being discarded (Tozzi, 2007). The Environmental Protection Agency (EPA) estimates that only 40% of retired computers end up recycled into other materials, resulting in these machines becoming part of the waste management crisis that is currently impacting communities across the United States. Because electronic waste (e-waste) has the potential for producing pools of toxic heavy metals and hazardous hydrocarbon compounds, producer responsibility laws were enacted to curb the volume of e-waste entering into municipal waste sites. Computer and technology recycling programs are further incentivized through grant awards offered by state and/or local governments in an effort to encourage local e-waste recycling efforts through the offset of costs associated with administering large recycling programs. According to the *National Conference of State Legislatures* (NCSL), twenty-five states have enacted some form of e-waste recycling law (Schultz, 2018), including Indiana, which specifically prohibits the discarding of computers, monitors and peripheral devices as ordinary refuse (Assembly).

Evidence seems to show that many retired computers retain functionality for such basic computing tasks like word processing and email exchange. In fact, of the estimated 80,000

machines received by *Per Scholas* – a computer recycling organization – approximately 35,000 had expanded lifespan through donations to both schools and families (Fried, 2006).

Early attempts to provide non-profit organizations with technologies included an initiative to partner charitable organizations with website designers (Carroll, 2011). It was quickly discovered that website services alone would be insufficient when faced with glaring deficiencies in computing hardware. Typical donors include companies and individuals who might be replacing older equipment with newer and faster computers.

There are numerous news reports of organizations refurbishing computing equipment for charitable purposes ranging from one-time donation drives, to sustained efforts culminating in the formation of 501c3 organizations. The purpose for any entity involved in refurbishing computers is consistent, however, in that they all hope to provide serviceable computers to charitable organizations and/or schools. Coleman College (San Diego), for example, launched a one-time only computer collection drive in 1999 as part of their *Coleman Cares* campaign to collect used computers from local businesses. As a result, 486 computers were collected and donated to San Diego-area charitable organizations (Siedsma, 1999). Sustained computer refurbishing/donation efforts have led to the formation of several nationally recognizable 501c3 organizations, including InterConnection (Seattle, WA), Tech for Troops (Richmond, VA) (Company, 2015) and the National Cristina Foundation (West Chester, PA).

Some organizations, such as InterConnection (Seattle, WA) both recycle *and* refurbish computers, depending on the condition of the equipment received (Carroll, 2011). Combining these two environmentally-sensitive activities creates a computer donation ecosystem in which the profits generated from recycling activities can be applied to costs associated with refurbishing computing equipment. Incidental costs associated with refurbishment can include hard drive replacement, notebook monitor repair and/or replacement of cords. Refurbisher *Per*

Scholas (Cincinnati, OH) – which translates to "for schools" - also adopts a combined approach that has resulted in the creation of a recycling center based in Bronx, NY. This center employees 55 individuals who use special machinery to separate metal, plastic and other materials that is then sent to recycling companies for reuse and/or disposal (Fried, 2006).

The Vision

The vision for the initiative is composed of four parts, each of which is clearly defined and with all parts being complementary to one another within the broader mission. Without each other, the initiative cannot be successful. The four parts of the initiative are outlined in the figure below.
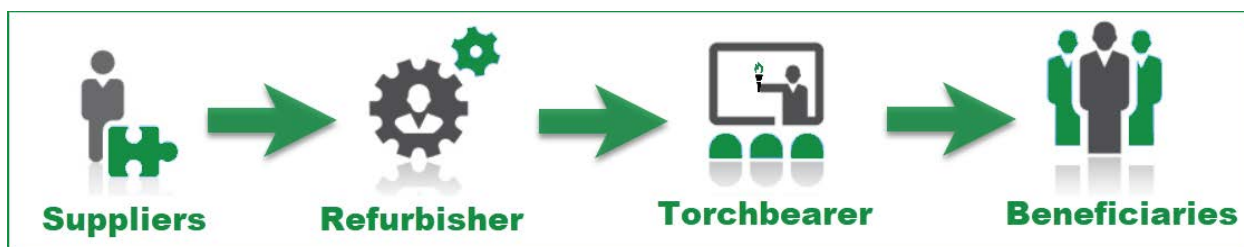
Suppliers

Within the initiative, suppliers are defined as the companies and/or individuals within the community who contribute out-of-use technology hardware. This is the most important part because without the technology, the initiative will not be successful. Kosciusko County is fortunate enough to have very large companies in the community. Through a carefully designed survey instrument (Appendix B), our group learned that few corporations within the county have means to donate older technology equipment.

One such supplier was identified as a community-based behavioral health company based in Kosciusko County which was looking to donate approximately 100 LCD monitors to a charitable cause. As an example of how serviceable equipment donations can be, these square monitors

were completely functional but had fallen out of favor after upgrades to operating systems which were designed to be used in a widescreen format. Additional suppliers include orthopedic companies such as one identified by our group which recycles, on average, 50 computers per month. Although this company currently employs 3rd party recyclers to dispatch retired technology equipment, they have in the past donated computer equipment to 501c3 organizations. This particular company represents the best candidate as a supplier partner within our proposed initiative.

There are many other large companies in the community that could fulfill the supplier role within the initiative design. Within Kosciusko County, there are undoubtedly additional companies that could also serve as suppliers to the initiative that would help benefit members of the community. One of the goals of the Technology Reuse Initiative is to provide a way for companies to give to the community with limited work on the part of the company

Refurbisher

The computers that are provided by suppliers will most likely be several years old and need attention. The refurbisher's responsibility is to make sure the technology is ready for the beneficiaries. This includes testing, repairing, installing the operating system and cleaning the technology. In addition, ensuring the privacy of any personal data and being good custodians of any company intellectual property on the computers is a requirement.

There are two primary options to use as a refurbisher. Our preference was to utilize an entity (or organization) that couples education with any refurbishing activities. For example, Eric Lane, founder of Fellowship Missions homeless shelter, thought that a possible option could be using those staying at the homeless shelter as refurbishers. There would be some limits, but they could easily use instructions to test, install and clean the technology. An additional benefit

is that this could help those staying at the shelter learn technical skills to make them more employable.

The second option is partnering with the Alliance for Technology Refurbishment & Reuse (AFTRR). AFTRR consists of nonprofit technology refurbishers seeking to enhance the awareness of the contributions of their organizations. (Alliance for Technology Refurbishing and Reuse, n.d.)(Appendix A) The benefit of using one of these organizations is that they already have experience refurbishing computers; we would just supply them with computers to refurbish.

Torchbearer

The torchbearer organization will take the lead in directing the initiative thus representing the legacy of this Whitepaper proposal. The Torchbearer would also be the primary custodians of the computers that have been refurbished. They will work with the suppliers to ensure computers are getting to the refurbisher. They would also work with the refurbisher to coordinate the delivery of computers.   Most importantly, those in need of computers will coordinate with this organization so that the beneficiaries can be vetted if necessary. The Torchbearer organization could also be the same organization handling the refurbishing. Fellowship Missions homeless shelter represents the most suitable candidate organization to serve in the role of Torchbearer within the initiative design, particularly given their charitable mission and history serving Kosciusko County residents

Beneficiaries

Beneficiaries include charitable organizations, schools and individuals in need. The primary recipients of computers within our initiative design would be 501c3 nonprofit organizations. This is due to these organizations being able to use the computers to benefit the largest number of

people. These include nonprofits such as Fellowship Missions homeless shelter, which uses donated computers for those staying at the shelter. In addition, places like Baker Youth Club can use computers for the youth in after-school programs.

The secondary beneficiaries are the individuals in need. Based on the most recent United Way ALICE Project study (United Association of United Ways, 2016), 11% of households in Kosciusko county are considered poverty households. An additional 17% only have enough money for basic necessities. Having technology available at greatly reduced cost would be a big benefit to these individuals.

Feasibility and Sustainability

The primary costs incurred will be based on the refurbishment of the computers. Our recommendation is to charge a small price for all computers. Charging for the computers will provide a small amount of income to help cover the refurbishment costs. It also ensures the beneficiary is more vested in the computer and has a sense of ownership.

In a voice conference with Dr. Bud Rizer, CEO of the Cristina Foundation, it was suggested to our group that we make use of already-established refurbishers such as those in the AFTRR program. Dr. Rizer suggested that it was common practice across the AFTRR landscape that whomever performs the refurbishing service is often permitted to keep a certain number of the donated machines as compensation and to help offset overhead costs. Based on this information, we included in our initiative's design an allowance for whoever serves in the refurbisher role to retain 25% of donated computers. To explore the feasibility of these partnerships within our community, our group reached out to an Indianapolis-based AFTRR member, *Easterseals Crossroads.* This organization, led by Alvin Alviar, performs refurbishing of donated technology equipment in order to provide technological assistance to individuals with

disabilities. In speaking with Mr. Alviar, our group learned that Easterseals Crossroads is under contract with the State of Indiana's Bureau of Rehabilitative Services and refurbishes approximately 200 computers per year. We explored the possibility of tapping these refurbishing services to satisfy the second need of our 4-part initiative design. Mr. Alviar expressed interest in collaborating with our team in such a way that his AFTRR program would retain a portion of the devices donated from Kosciusko organizations in exchange for serving as a refurbisher within our initiative. The terms of the relationship between TRI of Kosciusko County and Easterseals Crossroads would have to be developed further as part of moving our initiative forward.

Technical Considerations

There are two primary areas of consideration regarding technology with the Technology Reuse Initiative. The first element is the data privacy of those providing computers as part of the Initiative. Companies do not want any of their confidential information available to others and individuals want to maintain their privacy. Many people do not realize that simply deleting files from the computer will not ensure that the information is irretrievable. To ensure confidential files cannot be recovered, the industry standard is to perform a DoD wipe on the drive data (Department of Defense , 2006). This process rewrites data to every sector of the hard drive multiple times to ensure that no information can be recovered.

Software and hardware solutions are available to ensure data cannot be restored. A popular software option is KillDisk. This software has optional uses available for individuals and businesses. It requires a computer to run the software and will wipe a single hard drive at a time.

Some hardware solutions are available to erase the data. For clearing drives individually, the Drive eRazer Ultra is a popular choice. It costs around $250. A benefit to this system includes it being a standalone system to wipe hard drives, therefore a computer is not necessary. An option for wiping multiple drives at once using a DOD compliant process is Pro Duplicator 6 drive duplicator. This also doubles as a drive Sanitizer. The cost is $835 and has a major benefit of being able to wipe 6 drives at once. This device would be purchased with the grant money received from Project Proud.

The final consideration is the availability of software that allows the computers to be more useful to those that receive them. The overwhelming recommendation for nonprofit organizations was Techsoup.org as the best option for nonprofit organizations. TechSoup provides eligible organizations with discounted software, hardware, services, and training. This includes Windows 10, Adobe products such as acrobat or Photoshop as well as Antivirus software. The company works with technology companies across the world to provide software and services at greatly reduced costs.

For individuals, the primary software needed is Microsoft Office applications such as Word, Excel and PowerPoint. Their best free options available are Microsoft's Office Online, Google Docs and Apache OpenOffice. All options allow for the basic functionality that is sufficient for most people. The main difference is that Office Online requires an internet connection while the other options will work independently.

Conclusion

There is no doubt that we live in a county that has a wealth of resources. We know that there is a poverty rate of close to 11% and individuals that are in need of a computer. We also know that there are many charitable organization that need computers. Some large companies and

other organizations in the county are willing and able to give back to the community in the form of old technology. The technology has years of useful life left before needing to be recycled. We simply need the right organizations to aid in supplying the technology, refurbishing it and being a torchbearer for the Technology Reuse Initiative. The Technology Reuse Initiative can be the catalyst to help provide used technology to charitable organizations, schools and needy individuals.

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Appendices

A. Alliance for Technology Refurbishment & Reuse (AFTRR) affiliates closest to Kosciusko county.

HOOSIER AFTRR AFFILIATES

= Indianapolis

= AFTRR Affiliate

= TRI of Kosciusko Co.

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B. Survey Design and questions.

Technology Reuse Initiative for Kosciusko County

Yes

Are you aware of any organizations that already provide free or low-cost computers to Kosciusko County residents and/or the surrounding communities?

○ Yes

○ No

No

Technology Reuse Initiative for Kosciusko County

Please list names of any organizations that are actively refurbishing computer equipment for charitable causes.

Your answer

Technology Reuse Initiative for Kosciusko County

Rate on a scale of 0 to 5 the need, in your view, for a computer refurbishing program to serve charitable organizations within Kosciusko County:

	0	1	2	3	4	5	
no need exists	○	○	○	○	○	○	urgently needed

Would your company be interested in participating at any level in a technology reuse initiative for Kosciusko County?

○ Yes

○ No

○ Not sure

Not sure   **No**   **Yes**

Technology Reuse Initiative for Kosciusko County

If there is someone else within your organization that we should speak with regarding your company's participation, please provide that information below:

Name:

Your answer

Title:

Your answer

Phone number:

Your answer

Email:

Your answer

BACK   SUBMIT

Never submit passwords through Google Forms.

Technology Reuse Initiative for Kosciusko County

What role or roles could you, your company or organization serve in supporting the proposed initiative? Please check all that apply.

☐ donate computer equipment

☐ assist in identifying computer equipment recipients

☐ consulting role

☐ financial support

☐ cannot commit to any role at this time

Technology Reuse Initiative for Kosciusko County

Please provide your contact information below

Name

Your answer

Email:

Your answer

Phone number:

Your answer

Submit Survey