

Return on Investment Analysis of Toledo Lucas County Public Library

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Executive Summary

The “Return on Investment” (ROI) for the Toledo Lucas County Public Library is computed by assessing the value (or benefit) of library materials and services to Toledo area library patrons and then comparing this value with TLCPL library operating expenditures. For the purposes of this analysis, library services are broken into the following categories: Physical circulation, digital/electronic circulation, computer & technology services, reference services, and programming and other services. The following figures provide a sense of the extent of Toledo Lucas County Public Library’s services in 2015:

- Total 2015 circulation of *physical items* (books, DVDs, CDs, audiobooks etc...) was 5,761,067 items.
- Total 2015 circulation of *digital/electronic items* (eBooks, digital audiobooks, downloadable movies and music, etc...) was 583,493 items.
- In 2015 library customers logged nearly 3.5 million hours of library *computer and Wi-Fi usage*.
- There was a total of 960,524 library *reference transactions* (reference material usage, reference questions answered, databases accessed) in 2015.
- More than 210,000 persons attended *TLCPL programs* in 2015.

The table below provides an overview of the estimated economic value deriving from the different types of services provided by the Toledo Lucas County Public Library (TLCPL) in 2015.

Summary of Economic Value Provided by Toledo Lucas County Public Library in 2015

Library Service	Estimated Value	Share of Value
1. Physical Circulation	\$40,949,070	40.3%
2. Electronic Circulation	\$9,125,812	9.0%
3. Computer & Technology Services	\$19,770,644	19.4%
4. Reference Services	\$27,894,521	27.4%
5. Library Programs & Other Services	\$3,937,933	3.9%
Total	\$101,677,980	100.0%

The table above shows that the total benefit to library patrons of utilizing the library’s wide array of services was **\$101,677,980** in 2015.

In 2015, Toledo Public Library's operating expenditures were \$37,059,506. When the total benefit of \$101.7 million is compared to library operating expenditures of \$37.0 million, a direct benefit-to-spending ratio of 2.74 to 1 is reached. This means that ***the Toledo Library directly returns an average of \$2.74 in library benefits to Lucas County for every \$1 that is spent.***

Beyond the direct return on the library's investment of 2.74 to 1, Toledo-area residents derive an additional benefit from the library's operations. There is an "economic multiplier effect" that occurs because the additional effect of the library providing \$101.7 million in value to consumers is that this amount of money is "freed up" to be spent elsewhere in the area economy because the library services are free of charge. This spending then ripples throughout the economy.

Applying the "Household Consumption" multiplier computed by the U.S. Bureau of Economic Analysis increases the total economic value to Toledo area residents of the Toledo Lucas County Public Library to \$143.3 million. When compared to the library's expenditures of \$37.1 million in 2015, the ***total Return on Investment deriving from the libraries activities is 3.87 to 1. This means that for every \$1 spent by TLCPL, area residents receive an average of \$3.87 in economic value.***

Why the above figures are conservative

The methodology used in this report intentionally erred on the side of being conservative when assigning values to the various services provided to customers by TLCPL. Additionally, there are many qualitative aspects of library services for which this study did not try to account. These qualitative benefits include:

- the impact of reading programs on literacy
- the impact of job training and resume workshops on employment outcomes
- The value of enhanced computer skills attained through computer training provided by the library
- the value of financial information provided in workshops, databases and reference materials
- the intrinsic value of outreach programs in providing library access to those who cannot access the Library on their own

While this study attempted to measure the free-market cost of delivering some of the initiatives described above, that is a far more limited measure of benefit than the value of the programs themselves.

For these reasons, the ROI figures cited above should be considered as conservative "lower-bound" estimates of Return On Investment in the Toledo Lucas County Public Library, with the true value to Lucas County residents being even greater (though not immediately quantifiable).

Return on Investment Analysis of Toledo Lucas County Public Library

Toledo Lucas County Public Library

The Toledo Lucas County Public Library dates to 1838. It was the first public library funded by tax dollars in the state of Ohio. The library system is anchored by the Main Library, a downtown Toledo landmark since it opened in September 1940, and 18 branch libraries located throughout Lucas County. The Main Library is home to 1.2 million books, CDs, videos, DVDs and reference materials, ranking it as the fifth largest public library collection in the state of Ohio. The library system overall contains a collection of nearly 2.2 million print, video, audio, and digital materials. The library serves nearly 300,000 cardholders and hosts over 3 million visitors annually. The library has a staff of just over 300 FTE workers, including 91 librarians and 92 circulation clerks.

I. Measuring the Economic Value of Public Libraries

“Economic Impact” studies generally examine the net gain in economic activity drawn to an area as a result of a particular project, initiative, workplace, or attraction. Examples of possible subjects for economic impact studies might include the Chrysler Jeep factory, the Toledo Mud Hens baseball team, or Cedar Point amusement park. These and other similar initiatives provide economic impact to a particular region by bringing people and businesses to a geographic region beyond what would exist without the initiative. However, most public agencies – with libraries being a prime example – are designed first and foremost to deliver services to the residents of the metropolitan area in which the agency is located, rather than to increase economic activity by attracting outsiders into the area. For this reason, an economic impact study would be an inappropriate method for evaluating the benefits deriving from the agency’s activities.

A much better approach is to examine the services delivered by the public agency in question from a cost-benefit perspective. These types of analyses (often referred to as “Economic Benefit”, “Cost-Benefit”, or “Return on Investment” studies), compute the net economic return from the activity under study to the community that provides the service. In the context of the Toledo Lucas County Public Library, such a study would compare the library’s level of operating expenditures (funded by state and local revenues) to the benefits provided to the community through use of the Library’s materials, services, and programs.

Libraries make a variety of materials available for customers to borrow. These materials include books, audiobooks, movies and music in both physical and electronic format. Libraries also provide periodical subscriptions and reference materials for use within the library. As computer technology has advanced, libraries have made computers available for use in the library, provide free Wi-Fi service, and often provide basic computer training for customers as well. Technological changes also have caused libraries to

expand reference materials to include electronic databases accessible both from within the library and from remote locations for library cardholders. In addition, libraries also offer a variety of programs for library customers, and they make meeting rooms available to community organizations free of charge.

All of the services described above provide a tangible benefit to library users. A return-on-investment analysis must assign a dollar value to these services if possible. Such an assignment generally can estimate only the direct benefit from library services. A “direct” benefit represents the value of the item, information, or entertainment provided by the library service itself. For example, a person who accesses a book about writing a resume receives the economic value of that information measured approximately by the value of the book.

An “indirect” benefit represents the value derived from the use of the item, information, or entertainment provided by the library service. To continue the example from the preceding paragraph, a person who uses the information in a book about writing a resume to obtain a good job obtains an indirect benefit from the library material. The indirect benefit of the library service in this instance is the successful pursuit of an employment opportunity. Another example of this is the Library’s “Ready to Read” training program for adults, the aim of which is to teach adults to help their children be ready to learn to read when they begin school. What is the true value of teaching a child to read? In this, as in most similar instances, no method exists to measure the value of this indirect benefit. The reasons for this inability to measure indirect benefits include the absence of a standard of measurement and the absence of any knowledge of relevant outcomes. For example, is the indirect benefit of the job equal to its annual salary or the marginal increment of the salary of that job over the job that the library patron would have obtained without the assistance of library materials? Even more fundamental is the question of how would the library know that the use of its materials in each instance had a specific effect.

Many examples exist of such indirect benefits. When library programs for children promote reading, their success may translate into greater literacy rates and a more effective work force with consequent benefits for the local economy. Private investors use investment services from Dun & Bradstreet or Standard & Poor’s maintained in library reference rooms. An indirect benefit of such reference services would include an improved investment return, but, again, no method exists to track or quantify these benefits.

The analysis in this report will quantify the direct benefits of library services where the availability of data and appropriate measures of value permit. In addition, this analysis will also compute the multiplier effect of economic value obtained by Lucas County residents from utilizing the materials and services provided by the library system.

II. Valuation of Specific Library Services

For the purposes of this analysis, the services and programs of the Toledo Lucas County Public Library (TLCPL) are organized into the following categories:

- A. Circulation of Physical Materials including Books, Periodicals, DVDs, & CDs,
- B. Circulation of Digital Materials including eBooks, downloadable audio books, digital magazines, & streamed movies
- C. Computer & Technology Services including loaning of laptops and tablet devices, patron use of library computers, Wi-Fi provision, and computer training
- D. Reference Services including non circulating books and periodicals, provision of answers to reference questions, and electronic database usage
- E. Other Library Services, Programming and Outreach including meeting room use, children's, young adult, and adult & family programs, Bookmobiles, Genealogy, Job & employment and personal finance workshops, etc...

TLCPL staff provided data relating to the above categories of library service in 2015. The value of the economic benefit received by Toledo library customers from utilizing the various types of library services (provided free of charge) was computed by estimating the cost of purchasing comparable services in the private sector. Depending on the type of service, the private sector counterpart might be:

- ***purchase*** (i.e. books and periodicals for which there is no – or at least a very very small – rental market);
- ***renting*** (i.e. movies can be rented from Redbox, Netflix or the fewer but still remaining brick and mortar video stores while audiobooks can be rented from stores such as Cracker Barrel);
- or a ***fee-for-service*** arrangement (i.e. computers can be used at FedEx Office for 35 cents per minute and genealogical research assistance generally costs about \$50 per hour)

Information about comparable market values was drawn from a variety of sources, including information derived from online sources, investigation of the cost of comparable services conducted by other libraries, discussions with TLCPL staff regarding private sector alternatives to library services and programs, and computations logically based on the data itself. An explanation of the specific valuation method appears in connection with the discussion about each service.

A. Circulation of Books and Other Physical Materials

1. Book Circulation

TLCPL customers checked out over 3.3 million books in 2015 (this figure includes an estimated 75,474 books borrowed from other libraries through SearchOhio/OhioLINK). New book average acquisition costs were \$13.64 in 2015 for children's books and \$21.24 for teen and adult books.

Since there is not really a rental market for books, the average acquisition cost represents a good estimate of the market value of the books circulated by TLCPL. However, since the patron only borrowed the book to have the use of it for a limited period of time, and because there is a viable market for used books, the acquisition cost should be discounted to reflect the fact that the borrower does not benefit from the resale value of the book. For example, assume that a consumer without library access purchases a copy of *The Girl on the Train* for \$18. After reading the book, assume the consumer can resell it to a second-hand bookstore for \$7. (The resale amount is hypothetical and used here for illustration purposes only.) As a result, the net value to the consumer derived from the use of the book equals the difference between acquisition price and resale value or \$11 (\$18 - \$7 = \$11). The library customer who borrows *The Girl on the Train* obtains the benefit of the use of the book without obtaining the potential resale benefit. Thus, the borrower would save \$11 in this example, which then becomes the net value of borrowing the book in this example.

Using this methodology, the assignment of a higher discount value means that a book has a higher resale value and that the net benefit derived from merely borrowing the book is less. Conversely, a low discount factor would imply that a book has less resale value. (Note for comparison that high resale value is what often makes monthly lease costs for luxury automobiles lower than one might think, as luxury cars typically have a higher residual value after the lease period expires than do “regular” cars). With less resale value, the net value obtained by a borrower increases. In the example of *The Girl on the Train* above, if the book had a resale price of \$2, the net value to the borrower would equal \$18-\$2=\$16. If the book had a resale price of \$10, the net value to the borrower would equal \$18-\$10=\$8, and so on.

This study assigned an average discount of the purchase price of 50%. In other words, the assignment of the net value when a patron borrowed a book assumed that the net value of the use of the book equaled its acquisition cost less a resale value of 50%. In *The Girl on the Train* example, this method would assign a reduction of \$9.00 to reach an estimated use value of \$9.00 (\$18 - \$9.00 = \$9.00.) Thus, the formula for computing the value of books borrowed equaled:

Number of Books Borrowed X (Acquisition Cost– 50% Discount) = Total Economic Benefit of Book Circulation

This formula (using the separate acquisition costs for children’s and teen/adult books) yields a value of **\$29.9 million** for the TLCPL customers who borrowed books circulated in 2015.

While it is true that books typically do not have a resale value of 50% (a Half Price Books outlet will sell used books at 50% of the retail cost but will only make money if they pay less than 50% for the books they purchase), it is also true that potential library customers could opt to purchase books on the used market instead of buying them new. Thus, ***setting the market value for used books at 50% of the new book cost reflects both a reasonable as well as conservative estimate of the value of books.*** If an \$18 book

really has a resale value of \$6 then the net value placed on library circulation would be \$12 rather than the \$9 assumed here. On the other hand, if the consumer could find this book on the used market for \$9 and then resell it themselves for \$3, the net value would only be \$6. Since both options exist, a 50% resale value based on the new book price represents a reasonable approach and to the extent that the new book market is larger than the resale market, the 50% resale value will err on the conservative side in establishing value.

The same logic of discounting the value of music CDs because of their resale value will also be employed in this study. Resale markets do not exist for magazines, eBooks, and downloadable audiobooks, and the market comparison for videos and audiobooks on CD or tape is the rental market, so the discounting approach will not be used in the valuation of these library materials.

2. Periodical Circulation

The Toledo library also permits some circulation of periodical materials. TLCPL magazine circulation was 135,175 in 2015. Other libraries in Ohio levy a \$5.00 per magazine charge for lost periodical items. This charge appears consistent with a review of magazine cover prices. This \$5.00 price was multiplied by the number of times periodicals circulated to obtain an estimated value of about **\$676,000**. Magazines were assumed to have a negligible resale value for purposes of computing this estimate, and as a result, the borrower is assumed to realize the full value of the cover price.

3. Music Circulation

TLCPL circulated a total of 263,533 music CDs in 2015 (this figure includes estimated SearchOhio/OhioLINK circulation of 6,013). The economic value of music CD circulation was based on the same method as applied to book circulation. The average acquisition cost of a new music CD equaled \$19.84. The estimated economic value of borrowing a music CD multiplied the circulation figure by the price of the CD discounted for its resale value at 50%. This method yielded an estimated value of **\$2.6 million**.

4. Film Circulation

In contrast to books, a well-developed market exists for the rental of films both in physical DVDs and in online streaming. Toledo library DVD circulation was 1,808,601 in 2015 (this figure includes SearchOhio/OhioLINK circulation of 59,355).

DVDs can be rented by consumers through Redbox, Netflix and brick & mortar stores such as Family Video. Family Video charges \$2.79 for newer releases that can be kept for 1 or 2 nights. Slightly older releases are \$2.79 for 5 nights. Redbox charges \$1.50 per film per day. Keeping a Redbox movie for 5 days would cost \$7.50. Netflix of course allows “unlimited” rentals at various prices depending on the number of movies that can be rented at one time. Current Netflix plans are \$7.99 per month for 1 DVD at a time, \$11.99 per month for 2 movies at a time and \$15.99 per month for 3 movies at a time. Allowing for the fact that Netflix only ships movies 5 days per week and there is a minimum 3 day turnaround for each shipment (one day to arrive, one day to watch, and

one day to return), Netflix’s “unlimited” movie policy really only allows for a maximum of 7 DVDs per month under the 1 DVD at-a-time plan, 14 under the 2 at-a-time plan and 22 under the 3 at-a-time plan. This works out to slightly less than a \$1 per movie, though it only allows consumers to keep them for 1 day. If consumers keep Netflix movies for additional days it reduces the number of movies that can be rented in a given month and thus increases the per movie cost of rental.

Considering that most libraries allow customers to borrow movies for 7 days, a rental price of \$3.00 per movie as a benchmark if anything would err on the side of being too low. The application of this \$3.00 rental fee per film circulated from the TLCPL collection yielded an estimated economic value of **\$5.4 million**.

5. Recorded Books

Toledo Library offers customers the options of recorded books on tape, recorded books on CD, and “Playaway books” (the “Playaway devices can also be borrowed). Cumulatively, the circulation of these recordings equaled 161,426 (this figure includes an estimated SearchOhio/OhioLINK circulation of 3,683). Many people may know that the Cracker Barrel restaurant chain rents audiobooks. A customer buys the book at list price and then can return it to any Cracker Barrel restaurant and will receive a refund of the purchase price minus a rental charge of \$3.49 per week. Since TLCPL allows audiobooks to circulate for 21 days, the application of a \$10.47 per book price in connection with the circulation data yielded a total economic value of **\$1.7 million**.

Physical Circulation Value Summary

Table 1 summarizes the various kinds of circulating physical materials, the number of circulated items, and the economic value received by customers from borrowing these materials.

Table 1: 2015 Circulation of Physical Library Materials from Toledo Lucas County Public Library, Comparable Prices in Sale or Rental Markets, and Net Value Received After Allowance for Resale Where Appropriate

Library Item	Circulation	Market Comparison	Market Price	“Sellback” Deflator	Estimated Value
Children’s Books	1,373,438	Purchase	\$13.64	50%	\$9,366,844
Teen & Adult Books	1,934,122	Purchase	\$21.24	50%	\$20,540,370
Periodicals	135,175	Purchase	\$5.00	0%	\$675,875
Music CD	263,533	Purchase	\$19.84	50%	\$26,14,251
Film DVDs	1,808,601	Rent	\$3.00	NA	\$5,425,803
Audio Books	161,426	Rent	\$10.47	NA	\$1,690,135
Other Items*	84,722	Purchase/Rent	\$10.00	25%	\$635,790
Total	5,761,067				\$40,949,070

* “Other” physical circulation was assumed to be a mixture of the various items in proportion to reported figures.

Table 1 shows that Toledo Library total circulation of physical materials was 5,761,067 items in 2015 and the value to library customers is over \$40.9 million.

B. Circulation of eBooks and Other Electronic Materials

In addition to the circulation of physical books, audiobooks, magazines and periodicals, movies, and music, TLCPL also provides a wide array of digital materials for Lucas County residents to borrow. These digital materials are available through a variety of digital distributors. These distributors include:

- ***OverDrive*** - eBooks, eMagazines, eAudiobooks, eMusic, and eVideo (which includes both movies and television),
- ***Hoopla*** - eBooks, eAudiobooks, eMusic, and eVideo (which includes both movies and television),
- ***OneClickDigital*** - eAudiobooks
- ***Flipster*** - eMagazines
- ***Zinio*** - eMagazines

1. eBook Circulation

TLCPL makes available a broad assortment of eBooks that library customers can check out and read on Kindles and other electronic devices. The circulation period for eBooks is typically the same as for physical books – 21 days. TLCPL provides eBooks to customers through the OverDrive and Hoopla digital distribution services. In 2015 circulation of eBooks was 367,644.

The economic value of eBooks of \$15 is based on the approximate “middle ground” purchase price of eBooks on Amazon.com. While there are a number of eBook rental options/ subscription plans available to consumers (Kindle Unlimited, Scribd, Oyster, etc...), bestsellers from major publishers are typically excluded from the eBook inventory of these services which makes them an inappropriate standard of comparison. TLCPL’s average eBook licensing cost through OverDrive and Hoopla in 2015 was nearly \$21, which also suggests that the \$15 cost used here is both reasonable and conservative.

Application of the \$15 eBook price to the circulation figure of 367,644 results in an economic value of **\$5.5 million** for eBook circulation in 2015.

2. Digital Audiobook Circulation

TLCPL also provides a broad assortment of digital audiobooks for customers to download. eAudiobooks are made available to TLCPL cardholders through the OverDrive, Hoopla, and OneClickAudio digital distribution services. In 2015 Toledo’s circulation of eAudiobooks was 135,431.

Audiobooks are typically more expensive than “regular” print or digital books because of the additional talent and production costs involved in making a recording of a book.

Audible.com is the largest producer of downloadable audiobooks. An audible.com subscription costs \$14.99 and entitles the user to 1 credit. Many books cost 1 credit, but some cost 2, and additional books can be purchased at 30% discount off the purchase price. Because libraries allow customers to borrow multiple eAudiobooks, the \$14.99 Audible.com subscription price is too low of a comparison point. A \$23 price is used here which reflects a roughly 50% premium over an eBook and is also consistent with the middle ground purchase price of eAudiobooks on Amazon.com. TLCPL's average eAudiobook licensing cost through the 3 digital distributors was over \$50 per title in 2015, again suggesting that the \$23 price used here is both reasonable and conservative.

Application of the \$23 price for downloadable audiobooks to the circulation of 135,431 results in an economic value of **\$3.1 million** for eAudiobook circulation in 2015.

3. Digital Periodical Circulation

The Toledo library also circulates digital periodicals through OverDrive, Flipster and Zinio. TLCPL eMagazine circulation was 33,994 in 2015. The same \$5 price that was used for hard copy magazines and periodicals is also used for digital periodicals. This \$5.00 price was multiplied by the number of times digital periodicals were downloaded to obtain an estimated value of about **\$170,000**. As with hard copy magazines, digital periodicals were assumed to have a negligible resale value for purposes of computing this estimate, and as a result, the borrower is assumed to realize the full value of the cover price.

4. Movie Streaming Circulation

The Toledo Public Library enables customers to stream movie and television video content through the OverDrive and Hoopla digital distribution services. TLCPL cardholders streamed 22,956 digital videos in 2015. Consumers have a variety of options to rent digital movie and television content. Amazon Prime, iTunes, and Digital On-Demand pay per view services through cable and satellite TV providers offer recently released movies for \$5.99 each. Older movies are available for \$3.99 each. Individual episodes of many television shows are available for purchase on iTunes for \$1.99 (SD video quality) or \$2.99 (HD video quality). Based on these prices, a cost of \$4 per video download is appropriate. Application of this \$4 price to the video streaming circulation of 22,956 results in an economic value of **\$92,000** for downloadable videos circulation in 2015.

5. Hoopla Digital Music Circulation

Toledo library customers downloaded a total of 23,468 music CDs through the Hoopla digital distribution service in 2015. The approximate middle ground price to download a complete music CD on iTunes is \$9.99. Application of this price to the TLCPL music CD download circulation figure of 23,468 yielded an economic value of **\$234,000**.

Electronic Circulation Value Summary

Table 2 summarizes the various kinds of circulating electronic materials, the number of circulated items, and the economic value received by customers from borrowing these materials.

Table 2: 2015 Circulation of Digital Library Materials from Toledo Lucas County Public Library, Comparable Prices in Sale or Rental Markets, and Net Value Received

Library Item	Circulation	Market Comparison	Market Price	“Sellback” Deflator	Estimated Value
EBooks	367,644	Purchase	\$15.00	0%	\$5,514,660
Digital Audio Books	135,431	Purchase	\$23.00	0%	\$3,114,913
Digital Periodicals	33,994	Rent	\$5.00	NA	\$169,970
Movies Streamed	22,956	Rent	\$4.00	NA	\$91,824
Music Downloads	23,468	Purchase	\$9.99	0%	\$234,445
Total	583,493				\$9,125,812

Table 2 shows that Toledo Library total circulation of electronic materials was 583,493 items in 2015 and the value to library customers is over \$9.1 million.

C. Computer and Technology Services

Along with circulating physical and digital materials TLCPL also provides a variety of computer and technology services for customer use. These services include the opportunity for patrons to use a computer in the library, computer training courses (both in a library branch and via the library’s “Cybermobile”), wireless internet access (“Wi-Fi”) for library users, and the lending of laptop and tablet computer devices. The following discussion explains the method used to assign a value to these library services or uses of library facilities.

1. Use of Library Computers

Libraries routinely make computers available for patron use. Some patrons use library computers to access the Internet and electronic databases to which the library subscribes. Patrons also may use library computers for other common functions such as word processing and spreadsheet analysis. TLCPL customers accounted for 552,158 hours of computer use in 2005. The cost of computer rental at Fed Ex/Kinko’s is 35 cents per minute. This equates to \$21 per hour. Based on this hourly rate, the economic value of TLCPL customer computer use was nearly **\$11.6 million** in 2015.

2. Wi-Fi Access

An often overlooked library service is the provision of Wi-Fi access to library users. While the item above made clear that many TLCPL customers utilize the library’s own computers, many library visitors also bring their own portable computers and make use of the library’s quiet environment to work on their own. Wi-Fi access allows these library users to access the internet, an issue of growing importance as more and more software

makes use of cloud computing file storage techniques. In 2015, TLCPL customers logged 2,907,442 hours of Wi-Fi use.

Figuring out a market price for Wi-Fi service is not easy. Home internet service generally varies from \$25-\$50 per month depending on the provider, the speed and type of connection. The Gogo in-flight Wi-Fi service offers an hour connection for \$5. Many airlines charge more than that. Internet access in a hotel room at a Westin, Hilton, Sheraton or comparable hotel is typically \$11.99 to \$14.99 per day. On the other hand, Panera and McDonalds offer “free” Wi-Fi, but only for paying customers and often only for a finite period of time. Given this range of market fees for Wi-Fi, this study assigns a value of \$2.50 per hour for Wi-Fi service at TLCPL. When this modest hourly rate is applied to the 2.9 million in Wi-Fi hours used by library customers, an economic value of nearly **\$7.3 million** in 2015 is reached.

3. Computer Laptop and Tablet Lending

Toledo public library has a stock of computer laptop and tablet devices available for cardholders to borrow. Laptops were borrowed 994 times and tablet devices were borrowed 2,604 times by customers in 2015. The laptops are valued at \$500, while the tablets are valued at \$99 each. Applying these prices to the laptop and tablet circulation figures yields economic value of **\$497,000** for the laptops and **\$258,000** for the tablets in 2015.

4. Computer Training

Like most other libraries, Toledo public library provides training sessions to teach customers the use of common software applications of general interest, internet search techniques, and other basic computer skills. This training occurred at Main Library and in library branches and through TLCPL’s “Cybermobile” (a mobile unit stocked with a small battery of computer stations). Based on information about fee services for computer training in northwest Ohio, a value of \$25 per hour per patron was assigned to the computer training offered by the library. The number of patron hours of training totaled 6,077. At \$25 per hour, Toledo library provided roughly **\$152,000** worth of training to customers in 2015.

Table 3 summarizes the various computer and technology-related services provided by the TLCPL along with the estimated economic value received by customers from utilizing these services.

Table 3 shows that the Library provided an array of computer and technology services in 2015 and the value to library customers is nearly \$19.8 million.

Table 3: 2015 Toledo Lucas County Public Library Computer and Technology Services Provided and Net Value Received

Technology Services	Circulation or Hours	Market Price	Estimated Value
Patron Computer Use (hrs)	552,158	\$21.00	\$11,595,318
Patron Wi-Fi Use (hrs)	2,907,442	\$2.50	\$7,268,605
Laptops Loaned	994	\$500	\$497,000
Playaway Tablets Loaned	2,604	\$99	\$257,796
Computer Training (hrs)	6,077	\$25.00	\$151,925
Total			\$19,770,644

D. Reference Services

Providing access to reference materials and research services is one of the fundamental purposes of a library. Libraries provide three different kinds of reference services. These services include the availability of non-circulating reference materials and periodicals, assistance in finding reference materials and answering questions provided by professional librarians, and access to electronic database materials from both within the library and also from remote locations such as a home or business. As was the case when valuing circulating materials, this report values reference services by drawing comparisons with private sector alternatives for accessing reference information. The following discussion explains the method used to assign a value to TLCPL reference services.

1. Reference materials

In 2015 TLCPL customers accessed reference materials a total of 5,616,542 times. TLCPL data shows average acquisition cost of reference materials in 2015 was \$440. The “sellback” deflator for these types of books is assumed to be 40%. This percentage is lower than the 50% figure used in this study for circulating books due to the typically narrower interest in reference materials. Applying the \$440 average reference book cost to the number of reference transactions yields a non-discounted value of \$24.7 million. Once the 40% sellback price is accounted for, the net total value to TLCPL customers of accessing the library’s extensive reference collection is **\$14.8 million** in 2015.

2. Reference questions answered

Toledo librarians and reference staff answered 284,336 reference questions in 2015. Note that this is the total number of *reference questions only* and does not include questions regarding equipment help, directions, library rules and processes, or help with E-Media. Private sector reference services tend to cost about \$50 per hour. TLCPL reference question data revealed the average time to answer a reference question to be about 6 minutes. Thus Library staff can answer 10 questions per hour, which makes the cost per question equal to \$5. At this rate, the economic value for assisting TLCPL patrons with their reference needs is over **\$1.4 million** in 2015.

3. Electronic Database Usage

TLCPL database usage by customers was broken into 4 categories. Employment & Business related databases were accessed 48,187 times, Early Literacy databases were accessed 36,981 times, and Genealogy databases were accessed 230,009 times by library customers in 2015. Other library databases were accessed a total of 304,846 times.

Discussions with TLCPL staff who had experience with Employment & Business related research services found a cost of roughly \$75 per hour. An internet search of Genealogy research and databases yielded a typical cost of at least \$50 per hour. Discussions with TLCPL staff also provided an experience-based market cost for Early Literacy database usage of \$15 per hour. Other database usage was presumed to be less specialized (and hence less costly) than Employment and Business and Genealogy research endeavors, yet more expensive than Early Literacy, and was priced accordingly at \$25 per hour.

Based on a review of available data regarding TLCPL database usage, the average length of a database session is found to be half an hour, resulting in a net price of half of the preceding amounts. When the above rates are applied to the above database usage figures and combined with an average session length of ½ hour, the total economic value of TLCPL database usage in 2015 is over ***\$11.6 million***.

Table 4 summarizes the various kinds of research-related services provided by the Toledo Library along with the estimated economic value received by customers from utilizing these services.

Table 4: 2015 Toledo Lucas County Public Library Reference Services Provided and Net Value Received

Reference Services	Quantity	Market Price	Net Price	Estimated Value
Use of Reference Materials	56,165	\$440	\$264	\$14,827,671
Reference Questions Answered	284,336	\$50 /hr	\$5*	\$1,421,680
Employment & Business Database Usage	48,187	\$75/ hr	\$37.50/ hr	\$1,807,013
Early Literacy Database Usage	36,981	\$15/ hr	\$7.50/ hr	\$277,358
Genealogy Database Usage	230,009	\$50/ hr	\$25/ hr	\$5,750,225
Other Electronic Database Usage	304,846	\$25/ hr	\$12.50/ hr	\$3,810,575
Total				\$27,894,521

* The Reference Services net price of \$5 per question is based on a cost of \$50 per hour and an average of 10 questions answered per hour.

Table 4 shows that the Library provided an array of reference services in 2015 and the value to library customers is nearly \$28 million.

E. Other Library Services, Programs, and Outreach

Like most other library systems, TLCPL provides much more than just access to print and electronic materials, reference and research assistance and access to technology. TLCPL

provides a wide array of programming for all ages, workshops, author visits, reading programs, outreach services (such as bookmobiles) for those who cannot physically get to the library, and availability of meeting rooms.

TLCPL pre-school storytime and other children's programs typically involve a professional "entertainer" of some sort (puppeteer, musician, magician, etc...). Discussions with TLCPL staff taking into account typical cost of performers and average group size resulted in an average cost of \$20 per hour for children's programs. Because Pre-school storytimes are typically a half hour while other children's programs are usually an hour, the market price of story time is set at \$10 per attendee.

Young adult programs and adult programs of a general nature (such as author visits) are considered less costly by TLCPL staff than are children's programs. A cost of \$15 per hour with an average program length of 1 hour used for these activities.

Toledo Lucas County Public Library also offers a variety of more specialized adult workshops, relating to genealogy, job & employment issues, personal finance, and other topics. Genealogy programming is valued at the same \$50 per hour cost that was used for genealogy databases, while employment and personal finance related workshops are valued at \$25 per hour. A lower rate is used for employment workshops than for accessing employment related databases because of the more general nature of the workshop events.

TLCPL also provides Passport assistance and provides meeting rooms for public use. The Library receives \$25 for each Passport application processed and a rate of \$50 per event is used for meeting room usage. The meeting room rate is based upon an Internet review of alternate mid-sized meeting room space at hotels and other private venues.

Toledo Library also offers several reading-related programs. Nearly 18,000 children, teens and adults participated in summer reading programs through the Toledo Library in 2015. A modest price of \$10 per person was applied to these programs which are primarily focused on heightening interest in reading at all ages. Toledo Library also offers the "Ready to Read training program for adults. The objective of this program is to teach adults how to help their children be ready to learn to read. When considering a program of this nature it is hard not to wonder what the price of literacy is. One way to think about the value of a program that strives to help adults instill such a fundamentally valuable skill in their children is to consider that the cost of one summer session class through the Toledo City school district is \$100. If *Ready to Read* results in the avoidance of the need to repeat even a single class over the summer then \$100 would seem, if anything, to vastly underestimate the value of such a program.

Finally, the Library offers a variety of outreach programs that make books and other library materials available to those that are unable to get to the library on their own. The TLCPL Bookmobile provides service to senior independent living facilities, nursing homes, rehab centers, communities with special needs, mobile home communities, apartment complexes, shopping centers and other sites. The benefit of providing books,

videos, CDs and other library materials to those who cannot get out on their own likely far exceeds the value of the book itself. In this study we assign the modest value of cost of \$2.88 for a saved trip to the library (based on the IRS 2015 mileage allowance of 57.5 cents per mile and an average trip length of 5 miles).

Table 5 summarizes the various categories of programming, workshops and outreach services provided by the Toledo Library along with the estimated economic value received by customers from utilizing these services.

Table 5: 2015 Toledo Lucas County Public Library Programming, Outreach & Other Services Provided and Net Value Received

Library Programming, Outreach & Other Services	Attendance or # of Events	Market Price	Estimated Value
Pre-school Storytime	45,988	\$10*	\$459,880
Other Children's Programs	88,555	\$20/hr	\$1,771,100
Young Adult Programs	10,688	\$15/hr	\$160,320
Adult Programs	41,065	\$15/hr	\$615,975
Summer Reading Programs	17,878	\$10/person	\$178,780
Genealogy Workshops	2,168	\$50/hr	\$108,400
Job & Personal Finance Workshops	3,040	\$25/hr	\$76,000
Passport Assistance	1,242	\$25 each	\$31,050
Ready to Read Training for Adults	958	\$100	\$95,800
Outreach Services (Trips saved)	101,203	\$2.83/trip	\$290,958
Meeting Room Use (# of Events)	6,569	\$50	\$328,450
Total			\$3,937,933

* Storytime cost of \$10 is based an average program length half that of other children's programs

Total attendance at Toledo Library programming, workshops, and training sessions was over 210,000 persons in 2015. Table 5 shows that meeting room usage, bookmobile and similar outreach initiatives, children's library programs, story-time, adult and young adult programs, and genealogy, job & employment, and personal finance programs provided a total benefit of nearly **\$4.0 million**. As the above discussion hopefully makes clear, the nature of many of these programs is such that the value computed above significantly understates the true value of these library initiatives.

Overview of Toledo Library Return on Investment Analysis

Table 6 provides an overview of the estimated economic value deriving from the 5 different types of services provided by the Toledo Library.

Table 6: Summary of 2015 Economic Value Provided by Toledo Lucas County Public Library

Library Service	Estimated Value	Share of Value
1. Physical Circulation	\$40,949,070	40.3%
2. Electronic Circulation	\$9,125,812	9.0%
3. Computer & Technology Services	\$19,770,644	19.4%
4. Reference Services	\$27,894,521	27.4%
5. Library Programs & Other Services	\$3,937,933	3.9%
Total	\$101,677,980	

II. Toledo Lucas County Public Library Return on Investment

TLCPL 2015 operating expenditures were \$37,059,506.

As shown in Table 6 above, the total value to Library customers of utilizing the library's wide array of services was \$101,677,980. Thus, the direct benefit-to-spending ratio is 2.74. This means that **the Toledo Library directly returns an average of \$2.74 in value to Lucas County for every \$1 that is spent.**

Beyond the direct return on the library's investment of 2.74, Lucas County residents derive an additional benefit from the library's operations. There is an "economic multiplier effect" that occurs because the additional effect of the Library providing \$101.7 million in value to consumers is that this amount of money is "freed up" to be spent elsewhere in the area economy because the library services are free of charge. This spending then ripples throughout the economy.¹

For purposes of this analysis, the "Household Consumption" economic multiplier for Ohio of 1.4098 as computed by the Bureau of Economic Analysis, U.S. Department of Commerce is used. When this multiplier is applied, the total value to Lucas County residents of the Toledo Lucas County Public Library increases to \$143.3 million. When compared to the library's expenditures of \$37.1 million in 2015, the **total Return on**

¹ Note that this study does not compute the economic impact of *library expenditures* themselves – such as salaries of employees and purchases of books, computers & other materials – only the impact of the *benefits* received by library patrons. To also include the impact of library expenditures on the economy would be "double-counting" as these expenditures are paid for through taxes paid by residents, which in the absence of libraries would be available for spending on private goods.

Investment deriving from the libraries activities is 3.87. This means that for every \$1 spent by TLCPL, county residents receive an average of \$3.87 in value.

III. Other Programs, Services and Initiatives of the Toledo Lucas County Public Library

The preceding discussion and computation of the Return on Investment from the TLCPL collection, programming and other services was predicated on the ability to measure and quantify the extent of the Library's activities and to reasonably quantify a market value for each. There are many services and initiatives that the Toledo Library undertakes that defy measurement and quantification. The fact that these are omitted only means that the ROI figures cited above, if anything, underestimate the true value of the Toledo Library to the surrounding community.