

**A CITIZEN PERCEPTION SURVEY
TO ASSESS MARKET INTEREST
IN A LOCALLY OWNED
TELECOMMUNICATIONS NETWORK SERVICE**

**PREPARED FOR
THE YELLOW SPRINGS MEN'S GROUP**

**BY
THE CENTER FOR URBAN AND PUBLIC AFFAIRS
WRIGHT STATE UNIVERSITY
AND
THE YELLOW SPRINGS MEN'S GROUP
COMMUNICATIONS NETWORK STUDY COMMITTEE**

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Chapter 1: Introduction

The Yellow Springs Men's Group contracted with Wright State University's Center for Urban and Public Affairs (CUPA) to conduct a citizen perception survey to assess market interest in a locally owned telecommunications service. Many nonprofit and government agencies have turned to public opinion surveys over the past few decades as a means to accomplish goals specific to their organization. The goal of this survey, sponsored by the Yellow Springs Men's Group and under the guidance of their technical advisory committee, is to assess citizens' satisfaction with their current telecommunications services, as well as their support for a locally owned cable and Internet service. This survey provided all citizens of Yellow Springs an equal opportunity to voice their opinions and views regarding this community issue. The following paragraphs will further explain the objectives of the survey, provide an overview of the report, and discuss the methodology and limitations of the survey.

Objectives

The main objectives of this survey are to assess citizen perceptions of current telecommunications services in Yellow Springs, as well as to identify potential future telecommunications options.

Methodology

Questionnaire Design

The survey instrument was designed by Wright State University's Center for Urban and Public Affairs, in consultation with the Yellow Springs Men's Group. The survey was finalized with the approval of the Yellow Springs Men's Group.

Sampling Design

This study was a random digit dialed (RDD) telephone survey of households in Yellow Springs. In an RDD study, any household with standard telephone service has an equal opportunity to be interviewed. Therefore, since each household has an equal chance of being selected, results from the survey generally represent the opinions of the community as a whole. Because RDD includes both listed and unlisted telephone numbers, random digit dialing is preferred over other sampling methods. A sample of random digit dial telephone numbers was purchased from Survey Sampling Inc., a national company that generates telephone numbers.

Survey Implementation

Interviews were conducted from Tuesday, August 5, 2003 through Saturday, August 30, 2003, usually between the hours of 4:00 p.m. and 9:00 p.m. Interviewers utilized a Computer Aided Telephone Interviewing (CATI) software program that displays the questionnaire on a computer screen and allows the interviewers to enter the response directly into the computer. Such a system helps to minimize errors in gathering data by eliminating transcription. A total of 311 households were surveyed to obtain a 49 percent response rate, a 95 percent confidence and a plus or minus 5 percent sampling error.

Data Analysis

Primarily, we use descriptive statistics to analyze and interpret the survey findings. To measure the statistical differences among responses, a chi-square test was used to compare, for example, the differences between responses from individuals who own their homes to those who rent. Statistically significant differences among demographics, where applicable, are presented throughout the report.

Limitations

The survey has a couple of limitations. As with every telephone survey, the primary limitation is that it excludes households that do not have telephones. It is estimated that about five percent of households nationally do not have telephones, and these households are more likely to be poor. A second limitation of the study is that it is based on self-reported information. Attempts were made to include more than one question on important topics to test for internal consistency.

Acknowledgements

The preparers would like to acknowledge the support of the Antioch Company Foundation for financial support of this project; the Wright State University Center for Urban and Public Affairs for the survey work and professional guidance; the members of the YSMG Communications Network Study Committee and Kent Bristol, Director of the Miami Valley Cable Council for consultation and data supply. The members of the YSMGCNSC are: Paul Abendroth, Jeff Campbell, Dan Dixon, Dave Heckler, Darrell Murphy, Bruce Rickenbach and Ron Schmidt.

Chapter 2: Summary of Citizen Survey Findings

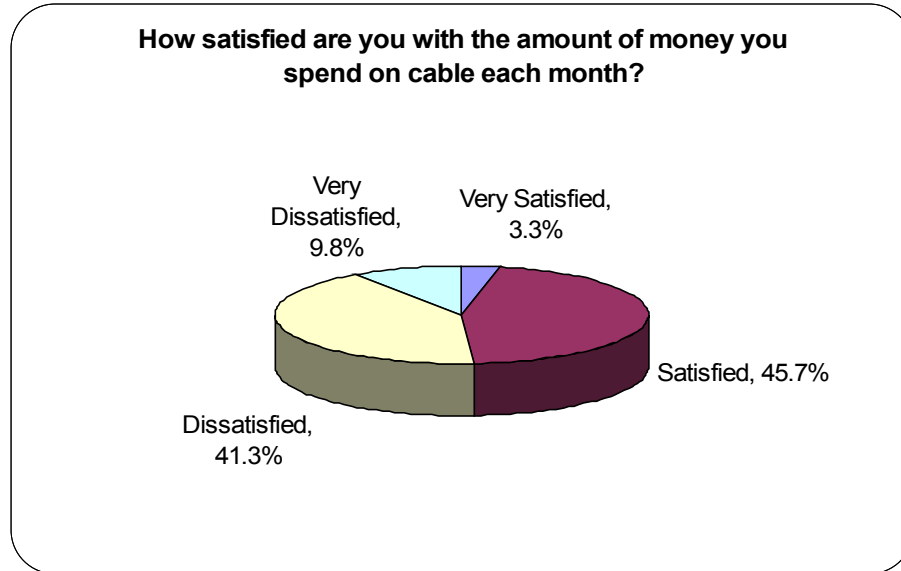
Before determining the need for a combined telecommunications package, it is important to assess the current market in Yellow Springs. Currently:

- Three in five (60.8 percent) Yellow Springs residents have cable television service. The most common reasons for not having cable service include such statements as “doesn’t watch/have time for TV,” “too expensive,” and “has a satellite dish.”
- The cost of cable services varies, based primarily on the level of service that each individual has chosen. Respondents stated that their monthly cable bill ranged from \$10 to \$110. The highest number of respondents pay \$40-\$50 a month for their cable services.
- Three-quarters (75.6 percent) of Yellow Springs residents have Internet access in their homes. Of those respondents who have Internet access in their home, three-quarters (75.1 percent) have a telephone line connection, while the remaining 24.9 percent have a cable connection.
- The cost of Internet access in Yellow Springs varies significantly, with some individuals paying as little as \$3 a month, while others are paying as high as \$60 a month. About 20 respondents (or roughly 10 percent of those with Internet access) do not pay for the service, often because of an affiliation with an educational institution (Antioch or Wright State).

In order to capture those individuals who currently have cable service, the new package would need to offer a lower cost while maintaining the current level of service and availability of programming. Those individuals who are “anti-TV”, those without a television and those individuals who believe television is a waste of time, appear to be an unobtainable market. In total, 54 individuals of the 311 surveyed (17.4 percent of those surveyed) are “anti-TV,” and do not appear to be attainable with any sort of cable package.

Referring to a similar telecommunications study conducted in Lebanon in 1997, significantly fewer people in Yellow Springs currently have cable service. Specifically, 77.0 percent of Lebanon residents had cable service, compared to just 60.8 percent of Yellow Springs residents. It should be noted that the characteristics of Lebanon and Yellow Springs are different; however, given the relatively small percentage of residents in Yellow Springs who are current cable subscribers, it appears that a vast majority would need to switch in order to make a local venture viable.

One of the most important findings is the importance of cost in determining whether an individual has cable, as well as the individual’s satisfaction with the cable service. Of the 184 individuals surveyed who have cable television service, 94 respondents (51.1 percent) stated that they are dissatisfied or very dissatisfied with the cost of their cable service.

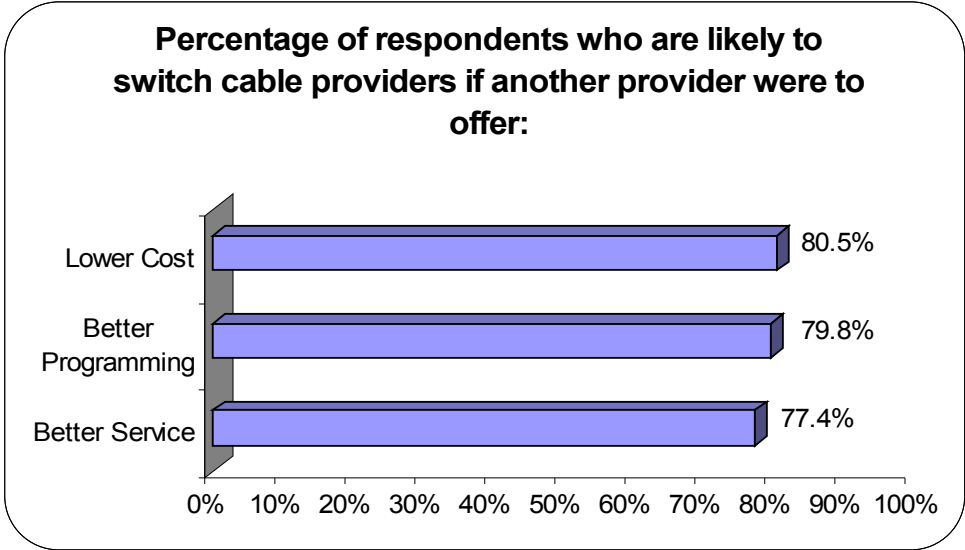


Market Capture

Respondents were first asked to identify their current Internet service provider. While responses to this question varied, there were several common responses. America Online (68 respondents), Time Warner Roadrunner (33), and Earthlink (23) were the most common responses.

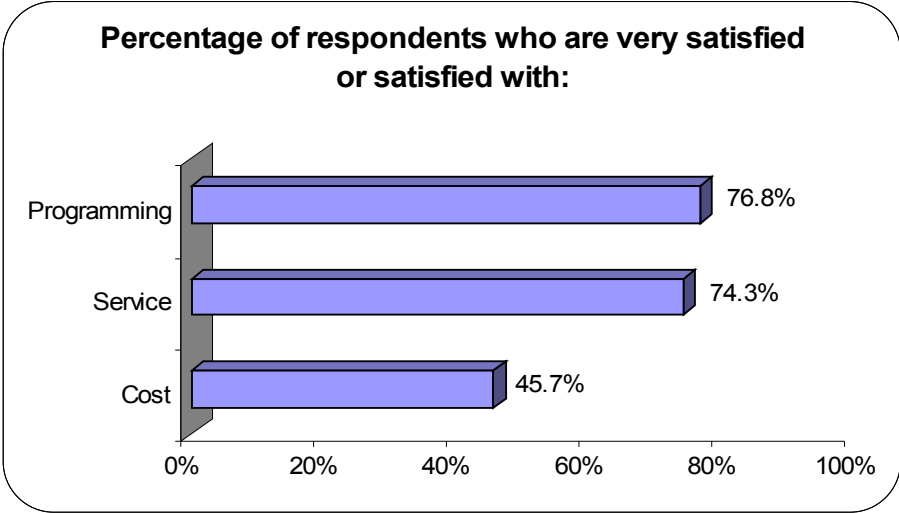
More than three-quarters (75.7 percent) of all respondents stated that if a community cable service at or near the same cost were made available, they would be likely or very likely to switch to such a package. This number increases to 89.1 percent when referencing those individuals who currently have cable. In other words, almost 90 percent of those residents who currently have cable would consider switching to a community package. These statistics also show that of those without cable service, 55.2 percent would consider purchasing cable service if there was a community package available.

- 80.5 percent of respondents stated that they would likely switch cable providers if a new provider were to offer a lower cost
- 79.8 percent of respondents stated that they would likely switch cable providers if a new provider were to offer better programming
- 77.4 percent of respondents stated that they would likely switch cable providers if a new provider were to offer better service
- 71.5 percent of respondents stated that they would consider combining their cable access with high speed Internet, telephone service, or both



However, while these figures seem to indicate that a local package is desirable, it is important to put these statistics in context. Three-quarters (74.3 percent) of respondents stated that they are satisfied with the overall service from their current cable provider, while 76.8 percent are satisfied with the programming that is offered by their local cable provider. When comparing these statistics to the Lebanon benchmark discussed previously, just 54 percent of Lebanon residents rated their cable package as excellent or good.

As previously discussed, Yellow Springs would need virtually all current cable subscribers to switch in order to make a local venture successful (using the Lebanon study as a benchmark). If over three-quarters of respondents are satisfied with these aspects of their current cable package, the likelihood of these users making a switch may not be as high as would be desired.



Demographic Influences on Responses

Demographic variables, such as income and home ownership, can be used to explore patterns in the aggregated responses. In this case, income and homeownership do not play a statistically significant role in whether individuals have cable service in their homes. However, individuals who rent are less likely to have Internet access than home owners (60.3 percent and 79.8 percent, respectively). Similarly, individuals with lower incomes are less likely to have Internet access than those with higher incomes. When analyzing results for those with household incomes of \$35,000 or less, 58.1 percent of households have Internet access. When analyzing results for those with household incomes of greater than \$35,000, 87.3 percent of households have Internet access.

Conclusion

While there appears to be evidence that shows a high level of support for a local package, additional research needs to be done in order to assess the actual feasibility. Several items that need to be addressed before any action is taken: how many people are actually needed in order to sustain such a service, how will the cost of such a package compare to what is currently in place, how many individuals are currently paying less than this new price for their package, and given the reality of a new service, how many people would actually make a change. After a technical feasibility study, including estimated costs, is completed, focus groups can be conducted that would give residents a chance to speak about the issue while knowing the exact costs.

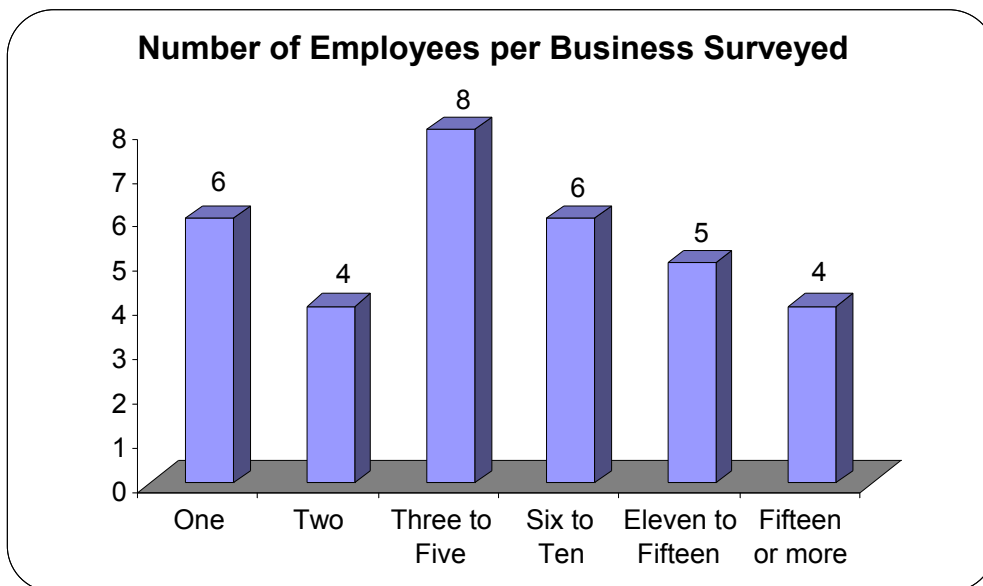
Chapter 3: Summary of Business Survey Findings

In addition to the citizen perspective on telecommunications issues, it is also important to assess the perspective of Yellow Springs businesses. CUPA contacted 90 Yellow Springs businesses in order to discuss their Internet, cable and telephone needs. Of these 90 businesses, 35 completed the survey. Surveys were conducted over the telephone by trained Wright State telephone interviewers, by fax, and by e-mail. The method by which the survey was conducted was determined by the respondent, using whatever method was most convenient for the respondent.

Industry

The two largest categories of businesses surveyed were the retail (non-technology) and healthcare industries, with six businesses surveyed in each industry (17.6 percent). Video production and design surfaced as the third largest industry surveyed, with 14.7 percent (5 businesses). Another 14.7 percent (5 businesses) are in the computer, computer components, and research industry. The education, publishing, electronics, travel, and manufacturing industries each had two businesses (5.9 percent) participate. The remaining three businesses were equally divided among the construction, real estate, and finance industries.

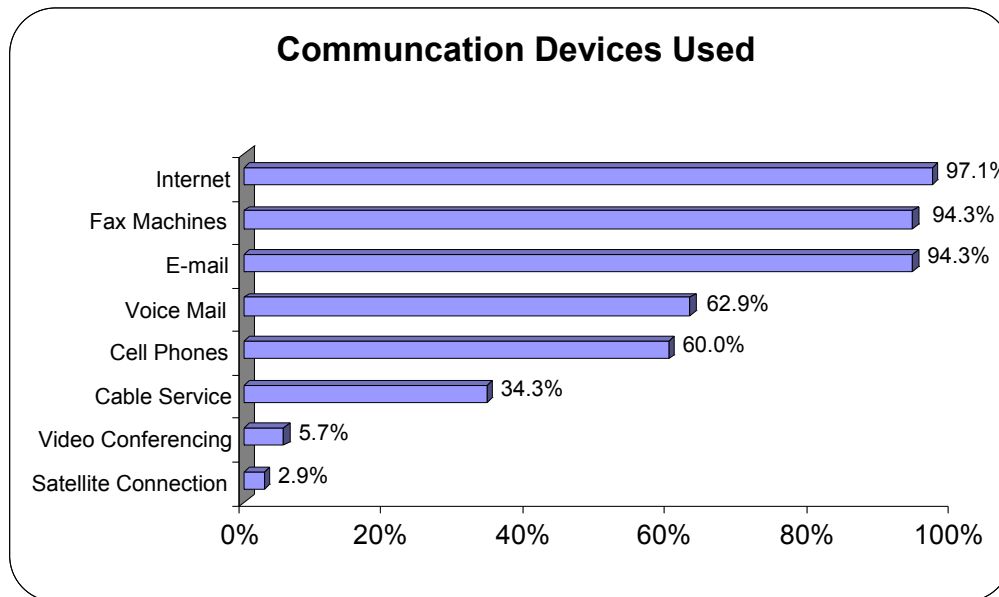
The average number of employees per business surveyed was 10.7. However, this included an outlier business that employs 130 individuals. Therefore, if this business is removed, the average number of employees per business surveyed is 7.0.



Communication and Existing Technologies

Businesses were asked to identify which communication devices their organization uses. Almost all businesses surveyed utilize Internet, e-mail and fax machines (97.1 percent, 94.3 percent and 94.3 percent, respectively). Fewer businesses use voice mail (62.9 percent), cell phones (60.0 percent), and cable service (34.3 percent). Finally, 5.7 percent of

businesses (or 2 businesses) use video conferencing and 2.9 percent (or 1 business) has a satellite connection. A complete analysis of all services is provided in the figure below.



Businesses were also asked to identify who they communicate with most frequently. Almost two-thirds of businesses (64.7 percent) stated that they communicate with customers most frequently. Another third of respondents (32.4 percent) stated that they communicate with suppliers most frequently. Other responses included associates/colleagues (23.5 percent), head/branch offices (5.9 percent), and other individuals (17.6 percent). (It should be noted that percentages do not add up to 100 percent because several respondents selected more than one answer.)

Telephone and Internet Services

In order to gauge the current rates that Yellow Springs businesses pay for their telephone and Internet services, businesses were asked to specify how much they pay per month for their telephone and Internet.

Telephone expenses varied dramatically between companies, based on size and the type of industry surveyed. Smaller organizations, usually in the retail or design categories, pay the lowest rates, usually between \$35 and \$80 a month. Larger organizations, as well as those with branch/corporate offices and those in the electronics fields, pay the most for telephone service with some businesses paying as much as \$1300 a month.

Internet expenses were much more reasonable, with businesses paying anywhere from \$20 a month to \$150 a month for Internet service, based on the size of the business and the number of computers. As would be expected, organizations with more computers pay more per month in Internet expenses. Specifically, when studying organizations that have ten or fewer computers, Internet expenses tend to be no greater than \$50 a month. When studying organizations with more than 10 computers, Internet expenses are usually \$100 a month or more.

About half of the businesses surveyed (48.5 percent) get their Internet service from a major Internet service provider (Time Warner, Roadrunner, America Online). The remaining organizations have Internet service through a different service provider, while one organization handles all of its Internet services internally within the corporation.

Slightly more than half of the businesses surveyed (51.4 percent) have a LAN (Local Area Network) at their location. Those businesses who stated that they have a LAN were asked what functions they perform over the network. The most common reason for having a LAN is to share a printer (88.9 percent, or 16 of 18 respondents). Other common responses include to share documents (72.2 percent), access the Internet (66.7 percent), check e-mail (66.7 percent), check central information (38.9 percent), company intranet (33.3 percent), and for various other reasons (22.2 percent).

Finally, businesses were asked if they would consider combining their telephone service with high speed Internet service. Of the 26 businesses that responded to this question, 84.6 percent (or 22 of 26 businesses) stated that they would consider combining these services. Four businesses stated that they would not consider combining their services. Of the nine businesses that are not included, three already have a combined service, while the other six either needed more information before making a decision or declined to answer the question.

Future Uses of the Internet

Finally, respondents were asked a series of questions to assess the value of the Internet to their individual organization.

- Three-quarters (75.0 percent) of the businesses stated that their present structure is adequate for their future needs.
- More than three-quarters (77.1 percent) believe that the Internet is essential to conducting business
- More than half (51.4 percent) of businesses believe that having high speed Internet access is essential to competing with businesses in other cities
- Less than fifteen percent (14.3 percent) of businesses have telecommunications needs that are not currently being met
- Roughly one-quarter (25.7 percent, or 9 businesses out of 35) of the businesses surveyed stated that they have a staff member who is dedicated to the support of computers and networks.

Conclusion

There does appear to be a niche market for a community cable package when analyzing the needs and desires of businesses in the Yellow Springs community. While many businesses stated that their needs are currently being met, a vast majority stated that they would consider combining telephone and Internet services. Cost is obviously a primary concern, as many small businesses cannot afford the often high costs of telecommunications. A new package would need to continue to meet the needs of businesses at a similar cost, while at the same time offering the convenience of having one service provider. However, it should be noted that most of the larger businesses in Yellow Springs declined to take the survey, and the businesses that did respond stated that they either did not make decisions locally or

would not be interested in such a switch. Therefore, the primary market among businesses is with the smaller (10 employees or fewer) companies, which may require nothing more than a simple residential package.

Estimated Balance Sheet

The Yellow Springs Men's Group CN Study Committee met several times following the completion of the Citizen Survey in order to identify the feasibility of a cable package. Data reported in this section was gathered by the Committee based on data obtained from another jurisdiction. Since this jurisdiction does not have similar demographics to those of Yellow Springs, the data may be subject to error. Any inaccuracies in the data may influence the estimated revenues and expenditures, thus altering the feasibility of the project. In addition, data presented below includes only monthly revenues and expenditures, and does not include any capital outlay which would be associated with such a project.

Revenues

Household Data

Approximate # of Households	1500
Percent Household Cable Penetration	60%
Percent Household Telephone Penetration	60%
Percent Household High Speed Data Penetration	60%
Monthly Household Cable	\$23.00
Monthly Household Telephone	\$28.00
Monthly Household High Speed Data	\$35.00

The first row represents the approximate number of households in Yellow Springs.

Based on survey data, the Committee assumed 60 percent household penetration for cable, telephone and high speed data. This estimate is based on the fact that over 80 percent of respondents stated that they would switch cable providers if another provider were to offer lower cost and over 75 percent stated that they would switch if another provider were to offer better service and programming. In addition, 75 percent of respondents stated that they would consider switching if a local package were offered that would support the Yellow Springs community. It is assumed that not all individuals who stated that they would consider switching providers would actually switch. 60 percent penetration was selected after discussion by the Committee as a number that may be accurate based on the history of the village in supporting local ventures. This data should be used with some degree of caution; however, as over 75 percent stated that they are satisfied with the quality of their current cable service and programming, indicating that a smaller number of people may actually switch service providers.

The estimated monthly cost for cable, telephone and high speed data access mirror that of the City of Lebanon, who also has a local cable package. Therefore, their data was used as a baseline in order to determine cost. It should be noted that the cost of telephone service only includes local service, and that the addition of long distance service will add additional revenue, as well as an additional expense. If a package including cable, telephone and high speed data were offered at a lower cost than the units sold individually, less revenue would be generated for these components.

Business Data

# of Businesses Cable	5
# of Businesses Telephone	10
# of Businesses High Speed Data	90
Monthly Business Cable	\$35.00
Monthly Business Telephone	\$55.00
Monthly Business High Speed Data	\$70.00

The number of businesses who are estimated to switch their cable, telephone and high speed data service are all estimates, and are not based on any baseline data. However, the costs associated with these services are based on costs obtained from the City of Lebanon, and are likely similar to those that would be charged in Yellow Springs.

Total Projected Monthly Revenues

Total Monthly Cable	\$20,875
Total Monthly Telephone	\$25,750
Total Monthly High Speed Data	\$37,800
Total Revenue	\$84,425

The total monthly revenues include business and residential services combined. For residential, we assume 60 percent penetration of 1500 households, or 900 households for our estimates. Of course, a change in actual penetration will cause changes in revenue estimated.

Expenditures

All expenditure data is based upon data gathered by the Yellow Springs Men's Group from other jurisdictions. Therefore, given the fact that Yellow Springs is substantially smaller than other jurisdictions, all expenditure figures are estimates.

Labor Costs

# of Full Time Employees	6
Average cost/employee per month	\$5500

The employment estimates are based upon the cable system once it is up and running, and do not include any employment costs that may be associated with any capital expenditures. In this case, the Men's Group estimates that six full-time employees would be needed in order to operate this system on a day to day basis. The average salary for these employees would be \$66,000 a year, or \$5,500 a month. This salary is an estimate, assuming that some employees would be making less (i.e. individuals answering the telephones), while some would be making more (i.e. individuals laying the lines and making repairs).

Cost of Cable Service per Household/Business

Monthly Base	0
Monthly/install	\$10

Based on figures received from the City of Lebanon, the cost per cable hook-up will be approximately \$10 per location. Based on 60 percent residential penetration, as well as an estimated five businesses switching to local cable service, service to an estimated 905 cable hookups would be required, at a total cost of \$9,050 per month to the service provider.

Costs of Telecommunications Service per Household

Monthly Base	0
Monthly/install	\$17

Based on figures received from the City of Lebanon, the cost per unit for telecommunications service will be approximately \$17 per line, not including long distance. Based on 60 percent residential penetration, as well as an estimated ten businesses switching telecommunications service, an estimated 910 telecommunications hookups would be required, at a total cost of \$15,470 per month to the service provider.

Cost of High Speed Data Service per Household

Monthly Base	1150
Monthly/install	\$15

Based on figures received from the City of Lebanon, the cost per unit for high speed data service will be approximately \$15 per line, with an additional monthly payment of \$1,150. Based on 60 percent residential penetration, as well as an estimated 90 businesses switching to high speed data service, an estimated 990 hookups would be required, at a total cost of \$16,000 per month to the service provider, including the monthly base payment.

Total Projected Monthly Expenses

Labor Costs/month	\$33,000
Cable Cost/month	\$9,050
Telecom Cost/month	\$15,470
HS Data Cost/month	\$16,000
Total Cost/Month	\$73,520

Conclusion

When examining total revenues and expenditures, this venture would produce an estimated \$10,905 per month (\$84,425 (revenues) minus \$73,520 (expenditures)), not including any capital debt expenditures that would be paid monthly (this does not equate to profit because it does not include capital expenditures). Certain fixed and variable costs are not included, and any changes in the data estimates may have a dramatic effect on the net gain/loss per month.

To make a final determination regarding the viability of this venture, it is necessary to generate an estimate of the cost of installation of the system. From this the monthly debt service expense can be derived. Although it is impossible to exactly predict the cost of the system, an estimate, based upon a survey of technologies and typical costs, along with reasonable estimates of the cost of money for this venture yields the following:

Interest Rate (%)	4.00
Years	10
Head End Equipment	\$0
Install cost / household	\$1,200
Total System Cost	\$1,800,000
Amount to Finance	\$1,800,000
Principle and Interest	\$18,224

It should be noted that no money was allocated for Head End Equipment. Even with the exclusion of any cost for Head End Equipment, it can be observed that this venture would run a significant monthly deficit (\$7,319). Any additional expense for Head End Equipment would only increase the size of the monthly deficit.

Recommendations

Based upon the above conclusion, it seems unlikely that this enterprise could be successful as a stand-alone venture. No reasonable changes to the assumed numbers can result in predictions of viability. However, recent advances in high speed or broadband transmission over power lines (BPL) may change the basis for the conclusions drawn by reducing the costs for installation of the transmission/distribution network. The viability of this technology is still somewhat uncertain but it is being promoted strongly by the FCC and other agencies. As noted in the attached news article (see appendix) pilot testing is under way in several communities. The most recent seems to be Cincinnati where ambitious plans as well as a major pilot project are under way. (See also, Appendix)

The value of an effective communications network has been recognized by the Yellow Springs community both through the survey and through the obvious benefit for economic development. If the economics of using BPL were sufficiently advantageous to permit even break-even operations the venture might be feasible.

In order to assess whether this venture would be successful, a full feasibility study would be needed. This study would examine costs associated with such a project across a wide variety of jurisdictions, specifically jurisdictions of similar size to Yellow Springs. It would also obtain specifics of completing all aspects of such a project. There are many possible components to such a feasibility study, which may include the following:

- Focus groups with citizens to gather more information on services desired in order to switch providers (this would address the issue of 75% of respondents being satisfied with their current programming and service). These groups would also clarify survey results.
- Creation of a technology management advisory committee which would include citizens and members of the business community. This committee would be responsible for sharing technical information, problem solving, and investigating opportunities for pooling resources such as equipment and services. Eventually, this committee would prepare and implement the telecommunications plan. (The Yellow Springs Men's Group may serve in this capacity, but it may be important to bring in additional stakeholders).
- Data collection to obtain accurate estimates of capital costs.
- Follow-up survey with businesses to assess the market for telecommunications needs. This would eliminate any estimates that are present in the above data. However, given past resistance to face to face and telephone surveys, some sort of incentive may be needed.

We therefore recommend that additional information be gathered reflecting current or near future economics of BPL to determine if a full feasibility study is warranted. Otherwise, It is our recommendation that no further investigation or action be initiated. This report will be transmitted to the sponsor as well as interested individuals in local government and business. Additional copies may be obtained from the Yellow Springs Men's Group

APPENDIX

Broadband Over Power Lines?

Associated Press

01:15 PM Feb. 09, 2003 PT

ST. LOUIS -- Coming to a home or office near you could be an electric Internet: high-speed Web access via ubiquitous power lines, of all things, making every electrical outlet an always-on Web connection.

If it sounds shocking, consider this: St. Louis-based Ameren and other utilities already are testing the technology, and many consider it increasingly viable.

This truly plug-and-play technology, if proven safe, has the blessings of federal regulators looking to bolster broadband competition, lower consumer prices and bridge the digital divide in rural areas.

Because virtually every building has a power plug, it "could simply blow the doors off the provision of broadband," Federal Communications Commission chairman Michael Powell said last month.

For competition's sake, "absolutely, we would applaud it," says Edmond Thomas, chief of the FCC's Office of Engineering and Technology.

"We're going to have an absolute stampede to move on this. This is a natural," said Alan Shark, president of the Power Line Communications Association, which includes Internet providers such as Earthlink as well as utility companies. "It'll change the way we do business on the Internet."

While existing providers of broadband through cable TV lines or phone wires consider the technology intriguing, they stress that talk of it has been around for years, with nothing to show for it.

Existing broadband providers such as St. Louis-based Charter Communications, the nation's third-largest cable company, believe they have the edge because they are known commodities and can bundle high-speed Internet with video and even telephone service in some markets.

If ever deployed, power-line broadband "certainly is competition, but we feel our product would stand up well," said David Andersen, a spokesman for Charter, which has nearly 1.1 million high-speed Internet customers.

Digital power lines are believed to be able to carry data at roughly the same speeds as cable or DSL lines. And because electricity is more prevalent in homes than cable or even telephone lines, a vast new communications infrastructure could be born overnight -- notably in rural areas, where broadband access has lagged.

There, the scarcity of potential subscribers hasn't justified the high cost of laying cable or building satellite towers. A December 2001 report by the FCC-created National Exchange Carrier Association estimated it would cost about \$10.9 billion to wire all of rural America.

Even where broadband is available, many people have trouble justifying spending \$40 or \$50 a month for it, about twice the cost of popular dial-up services.

Now Ameren, which serves about 1.5 million electric customers in Missouri and Illinois, is studying whether its portfolio could include broadband over its medium-voltage distribution systems and, more importantly, if it'd be profitable.

Keith Brightfield, heading the project for Ameren, says it's too early to say when the company could deploy the technology, and the utility makes no claims it can deliver broadband more cheaply than current providers. The goal, he said, is to be competitive at Internet access without losing focus on Ameren's bread-and-butter energy business.

Companies have found that turning power lines into a stable, high-speed system of data transmission is tricky. Network interference and such things as transformers and surge arrestors have hindered broadband delivery.

But over the past few years, Shark says, many of those hurdles have been cleared with improved technology. Brightfield says previous efforts to deploy the technology in Europe failed because their electric system differs from that in the United States.

Still, there's no shortage of skepticism.

"I think they're a long ways from proving it; let's leave it there," said Larry Carmichael, a project manager with the Electric Power Research Institute. "The tests to date have been so small, as far as looking at the financial and technical viability. It's still at the very early stage of development."

The technology works like this: Data is carried either by fiber-optic or telephone lines to skip disruptive high-voltage lines, then is injected into the power grid downstream, onto medium-voltage wires.

Because signals can only make it so far before breaking apart, special electronic devices on the line catch packets of data, then reamplify and repackage them before shooting them out again.

Other technologies use more elaborate techniques that detour the signal around transformers.

Either way, the signal makes its way to neighborhoods and customers who could access either it wirelessly, through strategically placed utility poles, or by having it zipped directly into their homes via the regular electric current. Adaptors at individual power outlets ferry the data into computers through their usual ports.

The nonprofit Douglas Electric Cooperative in Oregon, with more than 9,000 customers in a service territory the size of Delaware, hopes the electric Internet technology can complement the co-op's high-speed fiber-optic cabling, which is too pricey to extend to rural customers, said Mark Doty, a Douglas superintendent.

The co-op hopes to field-test the technology as early as this summer -- nice timing for member Bart Exparza, who is fed up with his slow dial-up connection at his home deep in Oregon's tree-lined, mountainous countryside.

"Imagine the cartoon of a guy standing on top of his computer, pulling his hair out. That's me," the self-employed electrical contractor frets. "I just roll my eyes and think, 'Golly gee.'"

End of story

Cinergy News Release

Cinergy and Current Communications to Offer Broadband Services Over Power Lines

CINCINNATI, March 2, 2004 - Cinergy Broadband, LLC, a subsidiary of Cinergy Corp. (NYSE:CIN), and Current Communications Group, LLC announced today they are beginning to offer broadband over power line (BPL) services in the greater Cincinnati, Ohio area. A subsequent expansion is planned for Northern Kentucky and Indiana.

Cinergy Broadband and Current have formed a joint venture that will roll out broadband services under the brand Current Communications[6]. Initially, these services will consist of high-speed Internet and will eventually be bundled with voice over IP (VoIP). Current will manage the venture, which will build and operate the BPL network and provide marketing, customer support and back office functionality. The BPL network will be deployed on electric distribution infrastructure using proven, proprietary BPL equipment and technology from Current's subsidiary, Current Technologies, LLC. The companies have also created a second joint venture to pursue the deployment of BPL to targeted municipal-owned power companies and rural electric cooperatives across the United States. This joint venture will be managed by Cinergy Broadband and will market Current's BPL technology to its target customer utilities.

In addition to the joint ventures, Cinergy has made an investment in Current as part of a larger round of financing. In the financing, Current's existing investors, Liberty Associated Partners, LP and EnerTech Capital, LP, have each contributed additional capital. The

aggregate amount of financial commitment to Current and the BPL ventures by all parties in these transactions exceeds \$70 million.

Cinergy plugs in as Web provider Power fines set to carry Internet to outlet near you
By Mike Boyer The Cincinnati Enquirer

A unit of Cinergy Corp. today will become the nation's first electric utility to offer high-speed Internet service to customers via its power lines, turning every electrical outlet in homes or offices into a Web connection.

The technology, which will be offered first in Hyde Park and Mount Lookout, holds the promise of adding competition and cutting prices for broadband services while making such service available (particularly in remote and rural areas) without costly investments in cables.

The Federal Communications Commission has been pushing the technology to bolster competition - and thus spur more Americans, who are less likely than Japanese or South Korean consumers, to have broadband access. FCC Chairman Michael Powell has said the technology like the kind Cinergy will use "could simply blow the doors off the provision of broadband."

Cinergy Broadband teamed with Current Communicat'ons Group, a Germantown, MD. technology company to test the service - known as broadband over power lines or BPL - in about 1 00 homes in Hyde Park in the last year. "Our pilot has been very successful, with more than 75 percent saying they would be willing to subscribe to the service" said William Grealis, Cinergy executive vice president and president of Cinergy Broadband.

Cinergy and Current have formed a 50-50 joint venture to roll out the service here under the. Current Communications name.

Current joins Cincinnati Bell's Zoomtown digital subscriber service and Time Warner Cable's Road Runner service in marketing high-speed Internet in Cincinnati.

Cinergy thinks that BPL has a couple of advantages over competitors. It doesn't require a cable or phone line, and can be operated from anyplace where there's an electric wall outlet. Upload and download speeds are the same, unlike DSL and cable modem service - whose upload speeds are slower than download speeds.

We believe we have better speeds at competitive prices," Grealis said. Cinergy and Current plan to offer several levels of service starting at 1 megabit a second at \$29.95 a month. Road Runner locally costs \$44.95 a month for download speeds of up to 3 megabits; Cincinnati Bell's Zoomtown costs \$41.95 a month for the same speed. They both offer signup discounts. Cinerg/s service will be marketed initially to about 1 6,000 homes in the Hyde Park-Mount Lookout area.

In what he described as a "measured rollout," Grealis said the partners plan to make the service available to about 55,000 homes in a dozen communities in Hamilton County this year, including Wyoming, Delhi Township, Terrace Park and Norwood. Early next year, it will expand into Northern Kentucky.

The joint venture also plans to begin offering voice over the Internet telephone service to customers next fall. Prices for that service haven't been set.

Cinergy and privately held Current are forming another joint venture to market the technology to municipally owned power companies nationally. Grealis said that's a potential market of 24 million homes.

Cinergy is also investing \$10 million in Current Communications, as part of a new round of venture funding of more than \$70 million, along with Current's other investors Liberty Associated Partners and EnerTech Capital LP. Cinergy Broadband is part of the utility's nonregulated business and isn't funded by electric or gas rates.

"I think there will be a stampede toward (broadband over power lines) in 2005," said Alan Shark, president of the Power Line Communications Association, an industry trade group in Arlington, Va.

Growing popularity of high-speed Internet service for game playing and downloading music, coupled with refinements in the technology itself, are building momentum for commercial deployment, he said.

One of the problems with broadband over power lines in the past has been a lack of industry standards and competing technologies, he said.

About a dozen utilities and technology companies have been experimenting with broadband for several years.

Shark said the only commercial deployment of BPL now is in Manassas, Va., where the municipality has teamed with a New York investment firm to market the capability to about 15,000 homes.

Although broadband over power lines has been discussed for years, technical limitations have slowed its development, but that might be about to change. The FCC recently announced it plans to begin developing rules for the technology and has signaled that its views BPL as a third "pipeline" to deliver high-speed Internet service, along with cable modems and digital telephone lines.

After evaluating various BPL technologies for several years, Grealis said Current's system is, one that works, and we think it's the only one that works, "

Tim Barhorst, an information technology consultant in Hyde Park who has been using the technology for a year, said he's been impressed.

"I find it very convenient," he said, noting that he can set up his computer anywhere there's an electric outlet. He said the speeds are better than his Zoomtown service and comparable to Road Runner.

Alex Pardo of Cinergy said the Internet traffic travels on a separate band wave from the electric current, so there's no interference. He said the utility has found no problem with radio wave interference, a concern raised by many amateur radio operators.

http://www.cinergy.com/News/default_corporate_news.asp?news_id=420