

Council Communication

November 4, 2014, Business Meeting

AFN Business Plan Approval and Funding Options

FROM:

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SUMMARY

This item seeks Council approval of the Ashland Fiber Network Strategic Business Plan October 2014 (Plan) and asks Council to direct staff to develop and implement funding.

Council reviewed and discussed the draft AFN Strategic Business Plan in detail at the October 6, 2014 Study Session. Council indicated a preference for the development of the internet and new fiber services recommended in the Plan. At the same Study Session, Council requested the draft Plan be revised to allow for a greater variety of funding options. The Plan has been restated to reflect the analysis under way in cooperation with City Administration and City Administrative Services (Finance). The final Plan no longer specifies the precise funding mechanism, rather funding is identified to be developed in cooperation with the City Administration and Administrative Services (Finance) departments.

Approval of the Plan and direction to implement funding will begin the execution phase of the Plan. Staff will then develop operational tactics in order to achieve the benefits contained in the Plan.

BACKGROUND AND POLICY IMPLICATIONS:

Ashland Fiber Network is at a crossroads. Within the Plan two alternative directions were presented. The first alternative provides for the development of a new family of products based on optical fiber technology and an increase in internet capacity. The second alternative does not include new products but does provide an increase in internet capacity. Both alternatives suggest a new approach to the market and a need for additional funding. Funding measures are needed in order to achieve the benefits envisioned in the strategic plan. At the October 6, 2014 Study Session Council indicated a preference for the first alternative.

As part of the Strategic Plan, two strategic projects are identified.

- FY2016: Increasing internet bandwidth – required to maintain/improve the current performance of the network (key to customer satisfaction) and provide for additional new customers
- FY2017: Development of a new fiber based service – provides advanced services and a new revenue stream

The Plan determines the direction, priorities and long term viability of AFN. Detailed tactical plans, project plans and budgets will be guided and developed as a result of funding and implementing the strategic plan. The Council also requested that the City Administrator present options for starting the expansion and upgrade of AFN in the current fiscal year, rather than waiting for the next budget cycle.



A memo outlining how that could be achieved, as well as financing options for the preferred alternative is attached.

FISCAL IMPLICATIONS:

Implementing the Council's preferred option will cost \$600,000 over the course of the next three years. A memo is attached from the City Administrator outlining options for funding that work and for initiating upgrades and expansion of AFN in the current fiscal year.

STAFF RECOMMENDATION AND REQUESTED ACTION:

Staff is asking for council approval of the Ashland Fiber Network Strategic Business Plan October 2014 including the recommended implementation of the internet and new fiber services envisioned in the Plan. Staff is asking for Council to direct staff to develop and implement a workable funding solution.

SUGGESTED MOTION:

1. I move to approve the Ashland Fiber Network Strategic Plan dated October, 2014.
2. I move to direct staff to implement the funding solution for the internet and fiber services envisioned in the Plan, described in the City Administrator's October 29, 2014 memo as _____.

ATTACHMENTS:

[Ashland Fiber Network Strategic Business Plan, August 2014 \(draft\)](#)

Memo to Mayor and Council regarding AFN financing options

Ashland Fiber Network Strategic Business Plan, October 2014 (final)



Memo

DATE: October 29, 2014
TO: Mayor and City Council
FROM: Dave Kanner, city administrator
RE: Financing options for AFN improvements

The Council, at its October 6 study session, received the Ashland Fiber Network Strategic Business Plan, and expressed its preference for pursuing an option whereby the City will invest \$600,000 over the next three years for the purpose of upgrading the speed and reliability of the system and preparing to offer “Fiber to the Premises” service for commercial and industrial customers. The Council also expressed an interest in getting to work on these upgrades in the current fiscal year rather than waiting until the next budget cycle. This is problematic, since there is no money appropriated specifically for this purpose in the current budget cycle.

The draft business plan presented on October 6 proposed to fund the required upgrades by having the City forgive AFN central service fees in the amount of \$200,000 a year for three years. I do not support this proposal, as it pushes the cost of internal services off onto all other funds (unless we were to cut a concurrent amount from Central Services, which would be very difficult to do in such a small fund). Some have suggested using an unappropriated fund balance in the Central Services Fund to cover the reduced contribution, but I do not support that option, either, as there are other, very legitimate uses of that fund balance -- for true internal service purposes, some of which support the Council’s primary strategic planning goals -- that I would consider to be a higher priority for Central Service funds. These uses can and should be considered in the budget-setting process.

There are, however, a number of other options to consider, one of which could provide funding to jump start the AFN improvement process in the current fiscal year. Those options are as follows:

1. (PREFERRED OPTION) Use economic development funds, supplemented by funds from the reserve fund. AFN’s upgrade costs could be covered by using \$100,000 annually from the Economic Development Program and \$100,000 annually from the reserve fund. There remains about \$85,000 in unspent Economic Development Program funds in the current fiscal year that could be used to jump start the improvements. Those funds had been allocated for the next phase of the Business Retention and Expansion Study, marketing AFN to commercial and industrial customers and additional GIS support for phase 2 of the Chamber’s Business Portal. This strategy does mean that economic development funds normally used for programmatic activities would be used exclusively for AFN for a period of three years (or longer, if we choose to reimburse the reserve fund), however the use of these funds for AFN is consistent with the



Economic Development Strategy and with implementing actions within the Strategy. What's more, if developing AFN into a competitive force is truly our economic development priority, as I believe it should be, the expenditure is more than justified. The Reserve Fund is, by resolution, intended to be used for capital expenditures "for which sufficient funding sources have not been identified," and this clearly qualifies.

2. Use the Reserve Fund. As noted above, these AFN upgrades would qualify for using the Reserve Fund. The Reserve Fund has more than enough money in it to pay for this and using the Reserve Fund impacts no other City programs. However, per the resolution establishing the Reserve Fund, appropriations from the Fund must be approved by the Budget Committee as part of the annual budget process. Therefore, money from the Reserve Fund would not be available until next fiscal year.

3. Reduce AFN's annual debt service payments and spread those costs to the other funds that currently contribute to the debt. AFN currently contributes \$409,000 annually toward a debt service payment of \$1,150,000. Other funds that contribute to debt service are Electric (\$541,300), General Fund (\$95,150), Water (\$78,200), Waste Water (\$95,800) and Streets (\$30,000). If AFN's debt service payment was reduced by \$200,000 and that amount spread across other contributing funds in a proportion equal to what they currently pay, the annual increases would be as follows:

Electric: \$128,812

Waste Water: \$22,797

Water: \$18,609

General Fund: \$22,643

Streets: \$7,139

Except for Electric, these are not unmanageable increases. The increase in Electric, however, translates into a 1% increase in electric rates or a decrease in other Electric Department expenditures, most likely in capital projects.



Ashland Fiber Network Strategic Business Plan October 2014



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Executive Summary

Ashland Fiber Network (AFN) is at a crossroads. AFN must decide whether to move forward with new services and a new approach to the market or to simply work to maintain existing services and infrastructure. AFN can choose, as it has in the past, to continue to improve telecommunications services in Ashland and challenge the competition to match or exceed AFN's initiative. Alternatively, AFN can choose to provide current services until those services are outdated and displaced by the competitive market. The path forward has risks, requires investment, and is subject to competitive reaction. The strategic plan provides a focus on operating in a competitive environment and the strategic changes needed to become a viable competitor. This plan discusses the choices, the strategies and the outcomes. The recommended path is to move forward with new investment in fiber based services. Should funding not be available to move forward, an alternative maintenance strategy is recommended.

Since AFN's inception there have been conflicting pressures. AFN operates as both a division of the city and a competitive telecommunications provider. With expectations of operating as a city service providing community benefit, yet deriving funds from the competitive market, AFN has struggled to generate the revenue necessary to fulfill both roles. AFN's ambitious initial investment did not gain AFN the market penetration necessary to meet either of its roles. AFN has delivered or been the catalyst for the state of telecommunications in Ashland (Google "Oregon 2013 eCity"); AFN must now make a decisive move into the future.

AFN is fortunate to have a robust fiber infrastructure. With this infrastructure AFN is well positioned to offer next generation fiber based telecommunication services. The technology for delivery of new fiber based services is commercially available and is installed in other parts of the country. The mechanism for funding the investment necessary to implement new services will be determined through additional work with the City Administration and Administrative Services (Finance) departments. If funding is not possible, an alternative maintenance strategy is available.

Market momentum is currently in our competitor's favor. Continuing to react (slowly) to the competition will continue to reduce AFN's market share and revenues. AFN has a narrow window of opportunity to gain market share and to gain market momentum. To do this, AFN will change its approach to the market and aggressively compete with the larger incumbent for revenue. AFN will promote AFN services in competition with the large incumbent. While the incumbent often uses pricing as its means of differentiation, AFN will use new services, performance, reliability, customer service and a consumer desire to deal locally ("recycle dollars") to gain advantage. With a new family of services and an agile approach to the market, AFN will provide advanced telecommunication services, garner market share, and begin the journey to successful self-funding. These outcomes will not be quick and there is a narrow window of opportunity to establish market position.

General Company Description

Mission Statement

Ashland Fiber Network (AFN) is a Municipal Telecommunications Utility providing community based solutions and services to enhance the quality of life and economic growth of the community by eliminating the constraints of location, distance, and time.

Strategic Goals

- Enhance competitive advantages
- Improve distribution channelⁱ effectiveness
- Transition to an agile organization
- Change focus from product to market and solution focus
- Ensure long term fiscal viability
- Re-establish technological innovation/leadership
- Maximize the community value of the network through the continued evolution of the infrastructure

Strategic Objectives

- Enhance competitive advantages
 - Maintain customer service advantage
 - Develop advanced/required products
 - Gain market share
- Improve distribution channel effectiveness
 - Community involvement/local presence
 - Regular utility bill inserts
 - Establish performance benchmarks
- Transition to an agile organization
 - Gain service design flexibility
 - Openly market AFN's brand and services (UB)
 - Preemptive and quick response to competition
- Change focus from product to market and solutions
 - Use Chamber data base to directly target customer segments
 - Solicit feedback from market segments and respond with relevant services
 - Improve reliability and performance

- Ensure long term fiscal viability
 - Grow customer market share
 - Reduce bandwidth and internal expenses
 - Successfully deploy services

- Re-establish technological innovation leadership
 - Deploy Google City Fiber-like enterprise services to local businesses
 - Design, engineer, and implement a physically diverse bandwidth path to a Tier 1 point-of-presenceⁱⁱ
 - Deploy competitive and reliable cable modem services to residents and small businesses

- Maximize the community value of the network through the continued evolution of the infrastructure
 - Enable new technologies
 - Maintain service standards
 - Provide community access when possible

Business

Operating in a competitive telecommunications environment, AFN is a “last mileⁱⁱⁱ” supplier of telecommunication services to the residential, commercial, governmental/educational, healthcare and alternative telecommunications provider (Internet Service Provider and Competitive Local Exchange Carrier – ISP/CLEC) market segments. AFN operates in and around the City of Ashland. Since 2001, AFN has developed and maintained a hybrid fiber coaxial network. The network enables AFN to serve the market with both the active and passive services required: TV programming (partner), Ethernet circuits, internet, dark fiber, collocation, and telephony (partners).

Market

AFN’s target market is the telecommunications users in and around the City of Ashland. The telecommunications market consists of five market segments: residential, commercial/industrial, government/educational, healthcare and alternative telecommunication providers (ISP/CLEC). While based on similar technologies, the commercial/industrial, health care, and ISP/CLEC market segments require or value customized features. The largest market segment is residential. The residential market is a commodity market.

Industry

The telecommunications industry has both mature commoditized components as well as high growth components. While fixed rate services such as TV and telephony are mature and have become commodities, other services such as internet, Ethernet and collocation continue to expand in both purpose and volume of use. The industry is driven by new and growing technologies. The influence of these technologies has opened the need for networks capable of supporting such technologies as Cloud Services^{iv}, IPTV/OTT^v and Information and Communications Technology (ICT^{vi}). These technologies continue to pressure existing networks for both performance and reliability. AFN is focused on the delivery of the current and emerging technologies.

There are three broad access and delivery technologies – wireless, metallic cable and fiber optic cable. Wireless continues to grow as the number of wireless devices is expected to surpass wired devices in 2016. The growth in wireless is dominated by cellular technology. Metallic cable represents the largest installed telecommunications technology. Metallic cable ranges from plain old telephone system (POTS) twisted pair to coaxial cable. Both technologies continue to move forward in bandwidth capacity. Fiber optic cable currently provides the backbone (backhaul) capacity for the other technologies. As costs have come down and bandwidth demand continues to go up, fiber is the future proof technology in telecommunications (backhaul, middle mile and last mile). AFN expects these broad trends to continue.

History^{vii}

Ashland was a first mover in bringing telecommunications services to the City of Ashland (internet). The City of Ashland’s Electric Department developed its proposal for creating Ashland Fiber Network in the late-1990s. The proposal responded to the regulatory, market, and public environments of the period. Communications technology and everything internet were growing exponentially, stock markets were at historically high levels, capital markets were flush with low-interest money, the Federal government prioritized competitive telecommunications services through the Federal Telecommunications Act of 1996, and the deregulation of energy markets created an

unknown future for public electric utility providers. Ashland Electric Department saw the creation of AFN as an opportunity for the City to create a telecommunications utility to meet demand for communications services in Ashland and diversify/strengthen the City's electric business.

Ashland's City Council approved the Electric Department's plan to build a fiber optic communications ring in February 1997 and the City's AFN Implementation Team was formed. The AFN business plan was presented by the Electric Department to Ashland's City Council in late-1998 and was approved by Council. That plan intended for Ashland Fiber Network to be self-supporting through revenues, with initial construction debt repaid by operating revenues within a ten-year period.

The AFN project experienced financial problems quickly after launch. Construction costs far exceeded estimates and the envisioned system build out was curtailed. Charter Communications purchased TCI and rebuilt the TCI network in Ashland creating a strong competitive alternative. Active price competition ensued. The telecommunications utility failed to generate positive net revenues as planned. A pivotal moment for Ashland Fiber Network came in 2004, when the City of Ashland determined that AFN would not be able to pay its business and intra-fund loans. Bonds for 15.5 million dollars were issued to consolidate AFN-related debt and to provide a measure of financial stability.

AFN continued to struggle to define its business and identity over the ensuing years. Multiple directors (five in seven years) brought their strategy, focus, and organizational structure to bear in an attempt to make AFN viable. Activities included investing in unsuccessful services, contracting out the operation of AFN's cable TV business, separating AFN from Ashland's Electric Department, blending mutually beneficial resources between AFN and the City Computer Services Division and refocusing AFN on providing Ethernet and internet services. The lack of consistent, successful, long-term direction created brand issues and market confusion providing the competition with the momentum to gain market share. The events led to worsening financial performance by the division.

In FY2013 – FY2014 AFN reinvested in technologies to bring the AFN cable network back to a state of competitive technology. This effort allowed AFN to provide services on par with the competition. In FY2013 technologies were added to increase both reliability and performance capacity for the network. In FY2014 an engineering review of the network and follow-on projects further increased reliability. In FY2014 new node groups were created and all groups were rebalanced to provide better reliability, better response and improved services.

Moving forward, lacking significant change in how AFN addresses the market and competition, AFN will continue to ebb downward. In addition, lacking investment in successful new services, AFN will not survive the inevitable evolution from metallic cable based services to fiber based services.

Core Competencies/Strengths

AFN has the experience, infrastructure and service mix to provide and compete for the telecommunications services needed within Ashland. Customer service (local, friendly, and competent) combined with citizen penchant for community centric economics (recycling local

dollars within the community) strengthen AFN's position vis-à-vis the competition. Additionally, the existing infrastructure represents a barrier to entry for any new competitors.

Challenges

AFN has been inconsistent and unsuccessful in new service development. AFN must design new services not only to meet the needs of the customers but to take momentum away from the competition. AFN's confusing service offerings together with confusion caused by the distribution channel has produced a vague and confused image which, when coupled with constrained marketing efforts, has led to market share loss. AFN must become the company known for its solutions and ease of doing business.

Investment is needed to lower variable product costs (internet) and significantly increase the competitiveness of the internet product set. Additional investment in a targeted fiber based roll-out will provide a service not available from the competition. The targeted investment will put AFN in a product leadership position. The fiber services investment will provide Ashland businesses with the reliability required to leverage Cloud Services and the World Wide Web.

AFN is at a crossroads; shall AFN continue as a shadow provider or become an active competitor of Charter Communications/Comcast? AFN must pick an identity, a mode of operation. AFN must then be empowered to pursue the strategies and tactics necessary to gain success. AFN can be a successful competitor in its traditional residential market if cost structures and distribution channels are improved. AFN can serve emerging demand with new fiber based products. AFN can become a self-sustaining City enterprise if necessary investments are made to fund competitive internet and new fiber services.

Risk exists. If competition should decide to build fiber to compete with AFN, it is unlikely AFN could compete on a citywide scale. While this would lead to decreased revenues for AFN, it would accomplish the goal of having a fiber network in Ashland to enhance connectivity and enable economic growth.

The Long Term

AFN has a narrowing opportunity to be a provider of key telecommunication services to the Ashland Community. AFN has the opportunity to see growth beginning in FY2017. The growth requires capital investment and an agile, competitive AFN. To compete, AFN must operate as an efficient telecommunications provider focusing on services and revenue. AFN must change its focus from products to markets and provide solutions to the targeted market segments: residential, commercial/industrial, government/educational, health care and ISP/CLEC. If focused on services and the needs of these markets, AFN can be successful.

Telecommunications is a fast paced change or perish competitive environment. Technologies move forward, become cheaper and then outdated. Risks are ever present. Competitors gain advantage through technology, merger and even bankruptcy reorganization. With a focused change in strategy and investment, AFN can continue to serve the existing markets and fulfill a vital (and otherwise potentially vacant) role in the City's quality of life and economic development.

Alternative long term strategies are outlined below together with probable outcomes and requirements. The strategies are:

- 1) **Move Forward:** (horizon: perpetual)
 - a) Principles
 - i) Regain residential market share - provides time and funding for new services
 - ii) Operate under a build to revenue model
 - iii) Roll out FTTx^{viii} solutions (see ii above)
 - iv) As technology is supplanted
 - (1) phase out coax assets (retaining all fiber)
 - (2) right-size AFN
 - b) Outcomes/Requirements
 - i) Provides a build to revenue deployment model
 - ii) Provides community deployment of fiber based services
 - iii) May attract investment by competition (Charter/Comcast) to deploy fiber
 - iv) Requires investment to reduce internet costs
 - v) Requires investment in technology for FTTx
 - vi) Requires funding source for investments
 - (1) To be identified in cooperation with City Administration and Administrative Services (Finance) departments.

Choice 1 is the same as choice 2 (next page) with the addition of fiber services. Note this strategy is long term and execution will depend upon the success of developed revenue streams. Success under this scenario is highly contingent upon the national competitor not making significant investment in their current plant or deploying more advanced fiber based services.

2) **Maintain:** (horizon: 7-15 years)

a) Principles

- i) Regain residential market share - provides time and sustaining funds
- ii) Operate under a build to revenue model
- iii) When technology is supplanted (no longer economically viable)
 - (1) Dispose of coax assets (retaining all fiber for City operations)
 - (2) close AFN

b) Outcomes/Requirements

- i) Does not deploy fiber services to the community
- ii) Stalls interest the competition may have in developing fiber services
- iii) Requires investment to reduce internet costs
- iv) Requires funding source for investment
 - (1) To be identified in cooperation with City Administration and Administrative Services (Finance) departments.

This is the same as option 1 above with the elimination of new fiber services. Success under scenario 2 is highly contingent upon the national competitor not making significant investment in their current plant or deploying more advanced fiber based services.

Should the City decide at some point to sunset AFN, exit strategy scenarios and possible outcomes may be:

3) **Sunset:** (horizon: tbd)

a) Principles

- i) Dispose of assets and close AFN

b) Outcomes/Requirements

- i) Eliminates operating costs
- ii) Loses AFN contribution to debt repayment
- iii) Loses AFN contribution to central services
- iv) Does not provide fiber services to the community
- v) Stalls any interest the competition may have in developing fiber services

Products and Services

AFN provides products and services to meet the critical telecommunications needs of the market segments addressed (residential, commercial/industrial, government/education, health care, ISP/CLEC). AFN's products are primarily derived from the delivery of Ethernet and/or internet circuits. Collocation services are available and play a role in securing long term circuits. Value added features are available to provide a better value proposition for both Ethernet and internet products. Products are customized based on the need of the market segment served.

The industry trend is to higher performance (speed) and high reliability products. According to J.D. Power, performance and reliability are by far the most important components of customer satisfaction.^{ix}

In addition to the core product the following value added features are available:

Ethernet based products:

- Quality of Service, prioritizes customer traffic over competing traffic on the network
- VLAN^x, virtual local area network, provides a secure, private connection (tunnel) between two points using a public network
- Trouble shooting and technical support

Internet based products:

- Bursting rate, additional bandwidth available above the customer committed rate over a short (burst) time period
- IP address, permanent, unique address for identifying the customer to the internet
- Trouble shooting and technical support

Residential Products

The residential market segment (residential, SOHO^{xi}) purchases the Ethernet and internet based products. The physical delivery of the product is through a Hybrid Fiber Coax (HFC) cable plant (cable modem) technology and wireless technology. The products for this segment tend to be lower bandwidth and for personal use. The products are low margin and very price sensitive. Reliability is a key driver for this market segment. Ethernet based products are determined by the bandwidth and any additional feature set selected by the customer (please see Ethernet based products above). Internet based products are determined by bandwidth and any additional feature set selected by the customer (please see Internet based products above). This market segment rarely chooses value added features.

To ease new service startup or switching from a competitive service AFN provides:

- End user hardware (cable modem)
- Installation services, service turn-up, additional cabling of residence

- Consulting services, design of house network, trouble shooting resident hardware and network

Commercial Products

The commercial market segment (commercial, industrial) purchases the Ethernet and internet based products. The physical delivery of the product is through either Hybrid Fiber Coax (HFC) cable plant (cable modem) technology, fiber based technology, or wireless technology. These products tend to be high usage, moderate bandwidth and for business use. The commercial segment also purchases the collocation product. This segment depends on AFN's products and experiences economic benefit from their use. The products have a strong margin and price sensitivity is often determined by the importance of the usage and size of the business. Reliability and consistent performance are key drivers for this market segment. Ethernet based products are determined by the bandwidth and any additional feature set selected by the customer (please see Ethernet based products above). Internet based products are determined by bandwidth and any additional feature set selected by the customer (please see Internet based products above). Additional product features such as bursting and quality of service are valued in this market segment.

Government/Education Products

The government/education market segment purchases the Ethernet and internet based products. The physical delivery of the product is through either Hybrid Fiber Coax (HFC) cable plant (cable modem) technology or fiber based technology. These products tend to be high usage, high bandwidth and for business use. This market segment also purchases the collocation product. The segment depends on AFN's products and experiences high public service benefit from their use. The products have a low margin and are price sensitive. Reliability, bi-directional symmetry, and consistent performance are key drivers for this market segment. Ethernet based products are determined by the bandwidth and any additional feature set selected by the customer (please see Ethernet based products above). Internet based products are determined by bandwidth and any additional feature set selected by the customer (please see Internet based products above). Additional product features such as quality of service, VLAN and IP addressing are valued in this market segment.

Health Care Products

The health care market segment (hospital, medical group/office) purchases the Ethernet and internet based products. The physical delivery of the product is through either Hybrid Fiber Coax (HFC) cable plant (cable modem) technology or fiber based technology. These products tend to be high usage, high bandwidth, and for medical and business use. Though valuable to the segment, to date the segment has not purchased any collocation product. This segment depends on AFN's products and experiences high economic and service benefit from their use. The products have a strong margin. Price sensitivity is low and determined by the critical nature of the information moving across or being sheltered in the product. Reliability, bi-directional symmetry, and consistent

performance are key drivers for this market segment. Ethernet based products are determined by the bandwidth and any additional feature set selected by the customer (please see Ethernet based products above). Internet based products are determined by bandwidth and any additional feature set selected by the customer (please see Internet based products above). Additional product features such as bursting, quality of service, VLAN and IP addressing are valued in this market segment.

ISP/CLEC Products

The ISP/CLEC market segment purchases the Ethernet and internet based products. The physical delivery of the product is through Hybrid Fiber Coax (HFC) cable plant (cable modem) technology and fiber based technology. A major portion of AFN's revenue is derived from this segment. Revenue is derived primarily through the delivery of TV (ISP partner) and/or internet services directly to the ISP's customers. The ISP provides support and billing services to the customer. With the exception of TV content, AFN provides the product. The products are delivered to residential, commercial and health care segments. Product usage follows the patterns for these segments as discussed above. This market segment also purchases the collocation product. The segment depends on AFN's products and experiences economic benefit from their use. The products have margins below the comparable AFN direct supplied products and are price sensitive. Ethernet based products are determined by the bandwidth and any additional feature set selected by the customer (please see Ethernet based products above). Internet based products are determined by bandwidth and any additional feature set selected by the customer (please see Internet based products above).

Competitive Advantages

AFN has these competitive advantages:

- **Fiber infrastructure:** AFN's fiber infrastructure is situated to readily serve commercial/industrial, government/education, and health care markets. The fiber optic infrastructure is within one thousand feet of eighty-five percent of the City's commercial locations. The infrastructure currently serves both as a transport ring for the coax (cable) system and as a backbone for customer connectivity. This investment in infrastructure represents a significant barrier to existing and new competitors.
- **Local Customer Service.** From installation to customer care, everything is provided within Ashland. Local staff, with knowledge of the Ashland mores, provides a consistent, professional, and friendly user experience.
- **Recycling Revenue.** Customer dollars stay in the local community and support the expansion of telecommunication services in Ashland.

Competitive Disadvantages

AFN has these competitive disadvantages:

- **Product Cost Structure:** AFN's cost of internet service is currently significantly higher than our competitors. The cost structure makes it difficult to compete with a national carrier on a price basis (service and promotions).
- **High Fixed Costs:** Fixed costs of labor, central service allocations and debt service account for a significant portion of operating costs.
- **Distribution channels/Market confusion:** Some agency issues with channel products and services. Confusion with end customers over who is the provider and who is responsible for support. No clear service or customer care brand.
- **Competitor:** Competitor is well-funded, has national (international) buying power and has active and aggressive marketing campaigns.
- **Government Transparency:** The strategies, plans and outcomes of AFN are in the public domain. The strategies and plans are laid bare to the competitor who then has perfect knowledge and can plan and implement counter strategies to ensure their competitive success.

Pricing

Pricing for the residential, small commercial, small industrial and small health care is set primarily by the competitive market. While the products serving these market segments are commodities, differentiation is possible thru good customer service. Pricing for larger commercial, industrial and health care segments are a combination of market and the customer's value proposition. Pricing for government and education market segments is set through a standardized bidding process. The price point is usually close to the cost of providing services.

AFN operates in a competitive market. AFN must set its pricing appropriately; high enough to cover expenses and fund capital investment and low enough to garner sales.

Marketing Plan

Economics

“The telecommunications industry is in a state of continuous technological and economic flux driven by intense competition and new technologies^{xii}.” The development of new Information Technologies such as Cloud Services, video services (IPTV, OTT), Information and Communications Technology (ICT) and social communication services (Facebook, Twitter, etc.), is quickly increasing the demand for telecommunication services. The expanding use of telecommunications services also requires higher performance and reliability levels from the telecommunications layer in order to deliver the new technologies.

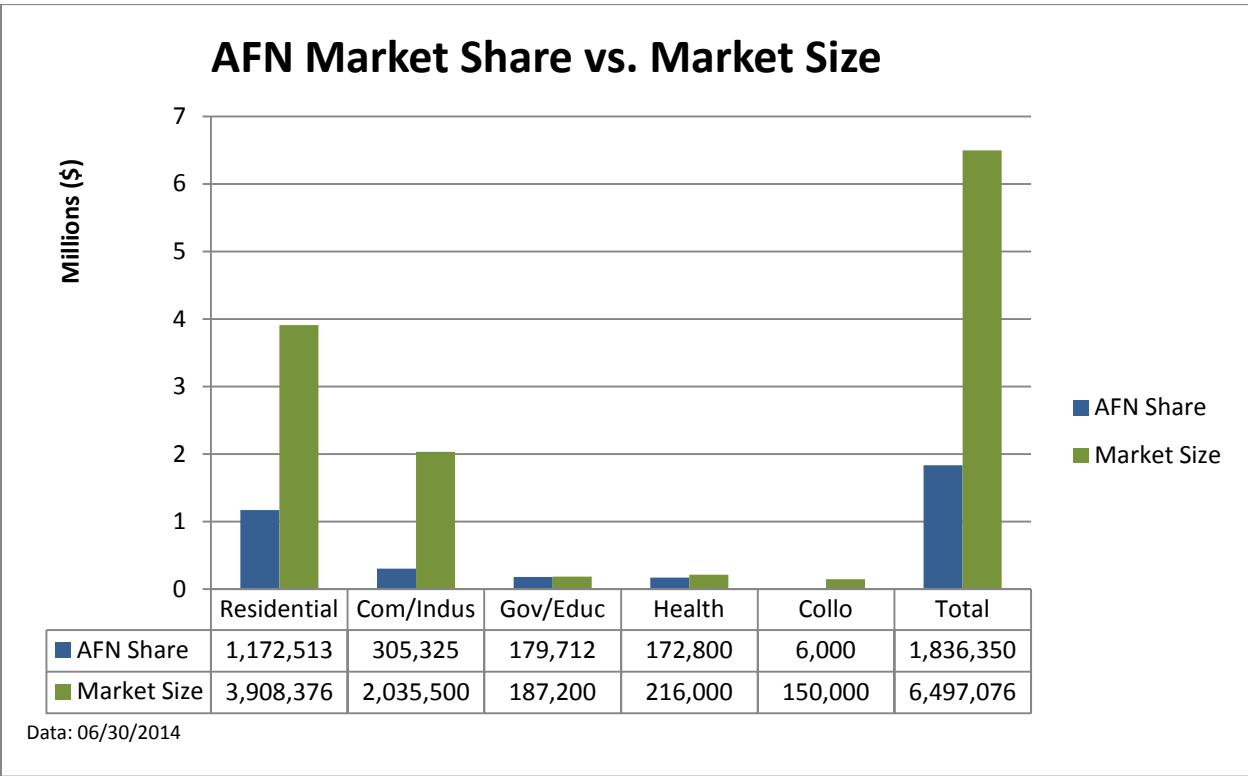
Government, large businesses and large health care providers have recognized the value of these services and have moved to gain their benefit. The small and middle tiers of these markets are now beginning to see the justification for their use. The enabling piece is connectivity. The key to the connectivity is performance and reliability. To be successful AFN needs to ensure the network is

positioned to meet these requirements. AFN’s cost structure must be addressed in order for AFN to continue to enhance the performance of the network. In addition, AFN should increase reliability by investing in fiber based last mile technologies.

The Telecommunications industry is highly competitive. The Ashland market is dominated by Charter Communications, a national Multi-System Operator (MSO). Charter has a better cost structure due to buying power and bankruptcy reorganization in 2009. Charter is anticipated to swap the Ashland market with Comcast. Comcast is also a national MSO. Comcast also benefits from its buying power. Comcast is consistently ranked below average on customer satisfaction and actively works to abolish net neutrality. Both these positions provide a good contrast to the AFN customer care reputation.

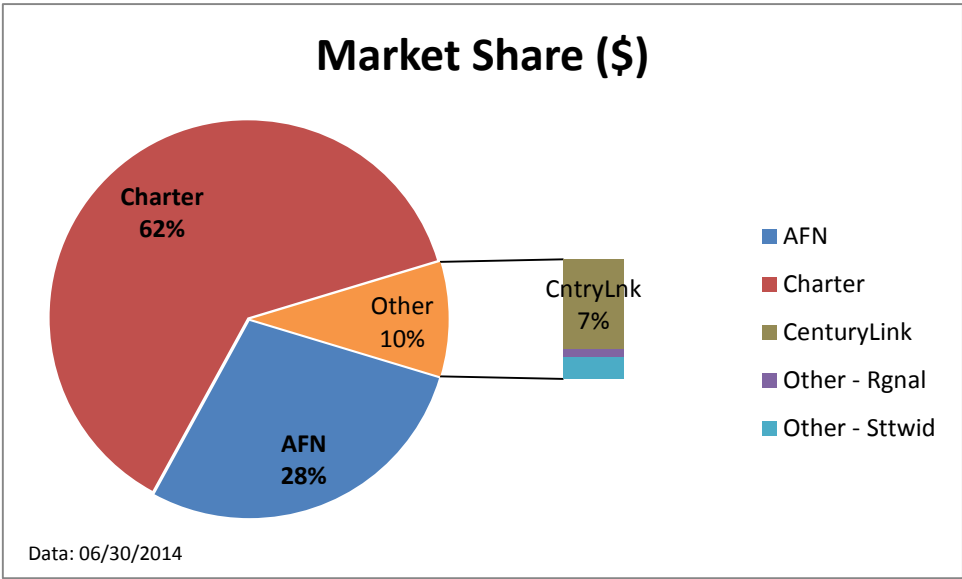
AFN services the Ashland telecommunications market. The Ashland Telecommunications Market value is estimated to be 6.5 million dollars. The following chart presents the relative position of AFN in the market in total and for each of the identified market segments. AFN numbers include services provided to ISPs.

Figure 1 - AFN Market Share vs. Market Size^{xiii}

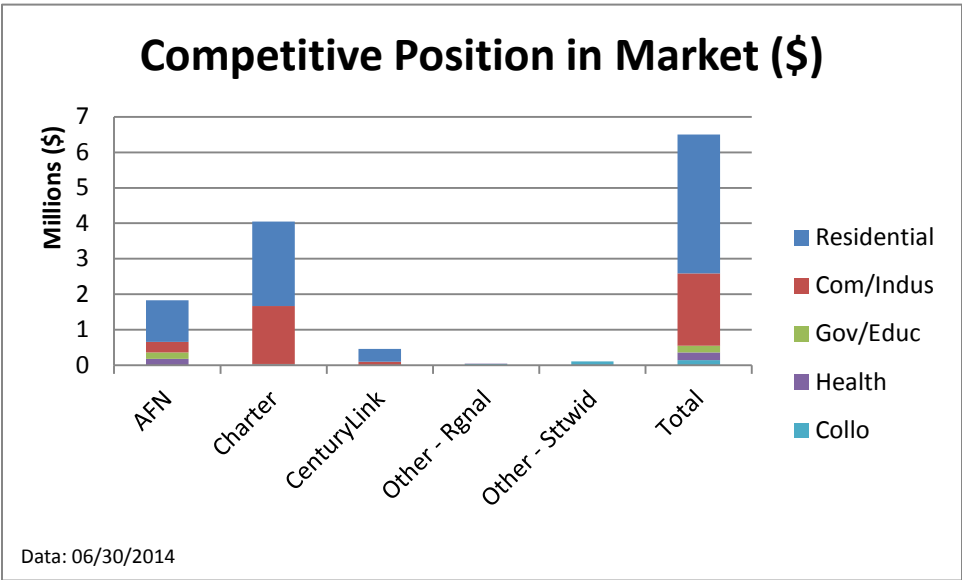


The relative market share for the market participants is presented in the pie chart below. AFN has approximately twenty-eight percent of the Ashland telecommunications market. AFN numbers include services provided to ISPs.

Figure 2 - Market Share of Market Participants (Revenue \$)



The share of each market served by the active market participants is presented in the chart below. AFN numbers include services provided to ISPs.



Demand

The chart below illustrates the utilization of various internet access technologies for the past five years. The demand for both wired and wireless internet connectivity continues to grow. The City of Ashland’s utilization is expected to follow national trends. Significantly, AFN provides two of the three fast growing connection technologies (cable modem, fiber) and has the potential for a leadership position in fiber.

Table 1 - Trends in Connectivity^{xiv}

At Least 3Mbps Downstream and 768Mbps Upstream by Technology (thousands)					
Technology	2009	2010	2011	2012	2013
	Jun	Jun	Jun	Jun	Jun
aDSL	5,614	6,275	8,909	12,875	16,029
sDSL	9	13	16	30	34
Other Wireline	129	177	204	239	289
Cable Modem	23,958	30,616	34,113	37,798	46,014
Fiber	3,333	4,192	5,188	6,001	6,989
Satellite	-	-	1	87	791
Fixed Wireless	64	92	145	214	337
Mobile Wireless	224	4,188	16,242	43,025	93,247
Total	33,331	45,553	64,818	100,269	163,730

Table 2 - Bandwidth Growth (Fiscal Year End)

Year	Bandwidth (Mbps)	AFN’s demand for internet services continues to grow. The chart at left shows the bandwidth growth over successive four year periods. Demand is expected to grow three fold over the next four years.
2006	100	
2010	300	
2014	1500	
2018	4500	

Trends

The Telecommunications Industry continues to change. The emergence of fast, reliable cellular services has led to the decline of the triple play with cellular supplanting home based VoIP^{xv}. The emergence of new technologies, IPTV/OOT coupled with smart TVs (and standalone devices) is pressuring traditional video (broadcast and cable) providers. The “internet of everything” is demanding high performance and high reliability for consumers. The telecommunication industry is moving quickly to IP based services. IP services continue to grow, broadband subscriptions grew one percent^{xvi} in 2013, and traditional cable customers shrank by two percent^{xvii}. In the same timeframe, for the first time ever, total broadband subscriptions outnumbered total cable subscriptions. The direction for technologies, customers and telecommunications is to IP (internet) based services.

AFN has the potential for growth in the commercial/industrial, health care market segments and slow growth in the residential market segment. The commercial/industrial and health care market segments will require the introduction of an affordable fiber solution. The addition of a lower cost fiber based service allows these customers to move up to a faster, better performing and more reliable product set.

Barriers to Entry

The high capital cost to construct a fiber and coaxial plant makes AFN's investment in telecommunications infrastructure (twenty five miles of fiber, one hundred nineteen miles of coaxial cable) a significant barrier of entry for any new competitors. The existing competitor is believed to have less fiber and an equivalent amount of coaxial cable in the area, though the exact amount is not known.

External Factors

Technology: Cloud technology is shaping demand for fast and reliable internet connectivity. The rapid adoption of Cloud (and Software/Platform/Infrastructure/ "as a service") model of Information Technology provides opportunities. The growing push to replace coaxial with fiber represents a significant risk if AFN does not begin to similar evolution. While coaxial and wireless (esp. cellular) continue to move forward in capabilities, fiber continues to provide the most robust, future proof technology. The commercialization of Passive Optical Networking (PON) makes it possible to serve small commercial/industrial/medical customers economically with fiber services. An example of the growth in this technology is Google Fiber.

Regulation: While not actively being pursued in Oregon, MSOs have pursued legislation in other states to prohibit or curtail municipal telecommunication networks. If Oregon were to pass such legislation, AFNs future prospects could be reduced or extinguished.

Economy: Economic swings affect expansion of services, but have little effect on the contraction of services. During times of economic distress residential customers look to internet connectivity for entertainment while commercial, industrial and healthcare look for additional efficiencies through internet use. During growth periods demand for internet grows, during economic downturns the demand for internet access does not significantly shrink.

Industry: The industry continues to experience consolidation (Comcast/Time Warner). The benefits of scale provide significant leverage for cost reductions (internet, programming, operations). AFN does not enjoy the same scale of cost savings.

Products^{xviii}

Internet Based Products

Internet provides global access to the World Wide Web and serves as a communication mechanism for applications (i.e. Cloud Services, email, messaging, VoIP, video, social/peer networking). Uses for internet continue to expand as more applications and services are created and connected to this versatile communications path.

Some of the benefits realized by our customers are:

- Anytime communication with family, friends, and the world. Access to educational/medical/governmental resources which promote learning, health and an informed citizenry.
- Access to information technologies which can facilitate the communication of critical information (medical, security), increase productivity, and reduce costs. The internet can provide access to affordable business tools and applications for small as well as large entities without the concern for physical location.

Ethernet Based Products

Ethernet provides a point to point communication path for transmitting data. Ethernet is used predominately by commercial/industrial, health care, government/education and ISP/CLECS to communicate data and information within a single entity or when an entity needs to physically isolate/secure their communications. Ethernet can be used (and often is) as an underlying transport mechanism for internet traffic.

Customers

AFN serves a wide spectrum of customers. The customers are associated with their market segment:

Residential: The residential market segment consists of households and small home offices located within Ashland. Customers exhibit a high degree of price sensitivity and demonstrate a preference for buying local. The customers value ease of purchase, setup, maintenance and termination (customer service). Internet and TV (via partner) are the services currently purchased.

Commercial/Industrial: This market segment consists of commercial home based enterprises, small to large stores, trades, entertainment, hospitality, manufacturers, and other non-medical business enterprises. Customers exhibit some price sensitivity and require predictable performance with high reliability. Customers expect good customer service – ease of doing business from purchase through billing and maintenance. The availability of new information technologies (Cloud Services) is moving these enterprises into a new dependence on internet and Ethernet services. Applications enabled by telecommunication services can lower costs, provide competitive advantage/parity, and allow the enterprise to address a larger marketplace.

Government/Educational: The government/educational market segment consists of local, regional, statewide and federal government, their districts, agencies and stations. The customers are price sensitive and require predictable and reliable service levels. The customers require patience and

perseverance when doing business (working within their unique procurement process). These customers often purchase Ethernet, internet and collocation. The customers have a resistance to changing providers and purchases may grow organically.

Health Care: The health care market segment is composed of hospitals, emergency care clinics, medical offices, residential medical facilities, alternative care facilities and satellite medical business processing locations. The customers are less price sensitive with the requirement for high reliability and security. Customer service (especially support and maintenance) is of extreme importance due to the critical nature of the information being handled. This segment requires patience and development before any purchases will be made. These customers often purchase Ethernet, internet and collocation. The customers have a high resistance to changing providers and once engaged, purchases may expand quickly.

Internet Service Provider (ISP): This is the largest customer group for AFN. ISPs serve as both a value added reseller (TV) and privately branded distribution channel. ISP's customers are primarily residential but they also serve commercial/industrial, and health care market segments. While the largest ISP does not, this customer group can and does sell competing services from Charter and CenturyLink.

Competition

AFN's two main competitors are:

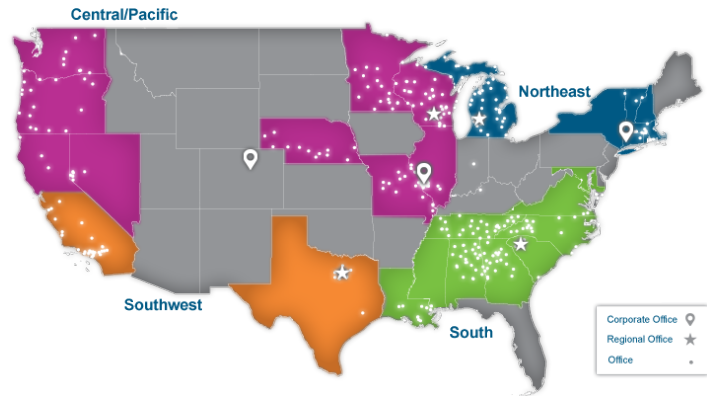
Charter Communications, Inc.

400 Atlantic St 10th Floor
Stamford, CT

Central/Pacific Regional Office:
St. Louis, MO

Local Offices:
Charter Medford Store
Medford, OR

Third Party Service Locations:
Thirteen in Medford/Ashland area



CenturyLink (S&P 500)

100 CenturyLink Drive
Monroe, LA

Northwest Regional Office:
Seattle, WA

Oregon Market (Outside Portland)
Bend, OR



Charter is a large national MSO and CenturyLink is a large national Incumbent Local Exchange Carrier (ILEC). Both companies can provide Ethernet and internet services. Their technologies serving Ashland can limit the availability and performance of their products. Charter provides cable modem and limited fiber delivery, CenturyLink provides xDSL via copper twisted pair. Neither Charter nor CenturyLink have a fiber plant capable of matching AFN for reach, performance or reliability.

Charter has demonstrated a readiness to aggressively compete with AFN. Charter reconstructed their plant and has consistently worked to introduce products and features ahead of AFN. Charter is expected to turn the Ashland area over to Comcast if the projected merger between Comcast and Time Warner gains

J.D. Power 2013 U.S. Residential Internet Service Provider Satisfaction StudySM



Source: J.D. Power 2013 U.S. Residential Internet Service Provider Satisfaction StudySM
 Charts and graphs extracted from this press release must be accompanied by a statement identifying J.D. Power as the publisher and the J.D. Power 2013 U.S. Residential Internet Service Provider Satisfaction StudySM as the source. Rankings are based on numerical scores, and not necessarily on statistical significance. J.D. Power.com Power Circle RatingsSM are derived from consumer ratings in J.D. Power studies. For more information on Power Circle Ratings, visit jdpower.com/tags. No advertising or other promotional use can be made of the information in this release or J.D. Power survey results without the express prior written consent of J.D. Power.

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regulatory approval. While Comcast has not shown a disposition to put fiber infrastructure into communities the size of Ashland, if Comcast does build fiber infrastructure in Ashland, Comcast would be a formidable competitor.

Competitive Analysis

Table 3 - Competitive Analysis – AFN Internal Analysis of Strengths and Weaknesses, Competitive Comparison

Factor	AFN	Strength	Weakness	Charter	CenturyLink	Importance ¹
Products	Good	•		Good	Poor	1
Performance	Average		•	Average	Average	1-2
Reliability	Average		•	Average	Average	1-2
Quality	Good	•		Good	Good	1-2
Price	Moderate		•	Low	High	2-4
Service	Good	•		Poor	Poor	1-4
Selection	Good	•		Average	Poor	1-2
Stability	Average		•	Good	Good	1-2
Expertise	Average		•	Average	Average	1
Reputation	Below Average		•	Poor	Below Average	1-3
Location	Poor		•	Non-Existent	Non-existent	4
Sales method	Poor		•	Good	Poor	1-4
Advertising	Poor		•	Average	Average	2-5
Image	Average		•	Below Average	Unknown	2

Charter is the active competitor in Ashland. Charter is often first to market and has consistently demonstrated aggressive promotion and pricing. The pending territory swap presents a window of opportunity while Charter pauses for merger activity and Comcast focuses on operational integration.

¹ 1= critical; 5 = not very important

AFN will continue to improve the performance and reliability of the services and work the performance, reliability and price attributes into strengths. The combination of competitor distraction, products, performance, reliability, and customer service present an opportunity to gain market share.

Niche

AFN provides telecommunication connectivity to residents and businesses of Ashland. Connectivity is provided via the delivery of Ethernet and internet services. The services are provided via cable, fiber and wireless technologies.

Marketing Strategy

AFN provides services for customer telecommunication connectivity. AFN competes with the incumbent national service provider using similar technologies; however, AFN's services are targeted at the need of the local market segments. Differentiation is accomplished through service unique attributes, customer service, performance, reliability, and a "support local" preference within the community.

AFN will market to the incumbent provider customer base to gain market share. AFN will focus on the commercial/industrial and health care segments. The new fiber based services will be trialed in the current AFN customer base and then offered to the ISPs and marketed to the incumbent's customer base.

AFN will continue to use direct and wholesale channel distribution (ISPs) to sell to and support the customer base. For AFN direct customers, AFN provides all customer facing activities and maintains the delivery of services to the end customer. For ISP customers, the ISP provides all customer facing activities and AFN maintains the delivery of services to the end customer.

Promotion: AFN will use direct marketing, mail and email lists to contact and market to the incumbent's customer base. Participation at local events will be trialed for effectiveness. Depending on size and projected service usage, businesses may be contacted directly. While pricing is not generally used for promotion, pricing may be used to overcome customer resistance to switching (switching costs). AFN will explore ways to participate with ISPs in promotions.

Advertising: To this point advertising has been limited and brand oriented. Regular advertising will be tracked and audited to determine where and how often service advertisements will be used. The effectiveness will be monitored.

Promotional Budget: AFN's current promotional budget is twenty-six thousand dollars. The majority of the budget goes to image advertising. The budget will be increased to support service oriented sales initiatives (gaining market share from incumbent).

Pricing: Pricing for the largest segment (AFN direct and ISP residential customers) is set by the competitive environment. The price elasticity is high (higher price => lower demand). Service performance, reliability, and customer care can be effective in customer retention.

Pricing for other market segments is value based.

Distribution (Placement)

AFN utilizes two sales channels to reach customers:

Retail sales (aka AFN Direct): AFN is the owner of the customer and responsible for all facets of the sales, installation, support, and administrative (i.e. billing) functions. AFN retail also promotes the other distribution channel (ISPs), and allows the customer to choose with whom they wish to do business.

AFN must become the company that is known by its solutions and ease of doing business. AFN will clear impediments and provide a distribution system where the customer can make AFN the easy choice for the services they need. AFN must be easier to do business with than the competition. AFN should reinstitute a point of sale at the initial point of contact in City Hall. AFN should work to understand and eliminate the logistical and procedural barriers in order to make AFN a welcomed conversation in customer interaction. In order to provide for additional customer convenience, the web based self-registration should be reinstated.

Internet Service Providers (ISP): The ISPs are independent third parties who have agreements for the purchase and resale of AFN services. AFN contracts with five ISPs. AFN provides delivery and services to the ISP at a discounted rate. The ISP is responsible for acquiring, supporting and billing the customer. Two of the ISPs are located in Ashland. One of the ISPs has a store front in Ashland. Three of the ISPs provide customer support with in-house staff; two of the ISPs use a third party customer support service. Three of the ISPs sell competitor's products.

AFN serves a broad spectrum of customers. Internet Service Providers (ISP) are the largest customer group. ISPs act as a distribution channel for the resale to the residential, commercial/industrial, and health care market segments. AFN also addresses these market segments. Both AFN and ISPs need to focus their efforts on success against the competition. The ISP group provides value added services (TV, phone) and many sell competing internet and Ethernet products from Charter and CenturyLink.

The chart below shows the customer counts and five year change for each of the ISPs and AFN.

Table 4 – Customer Counts by ISP

Customer Counts - Five Year History						
	July 1, 2010	July 1, 2011 [*]	July 1, 2012	July 1, 2013	July 1, 2014	5 Yr Delta [#]
Ashland Home Network	2,159	2,938	2,768	2,596	2,514	(424)
AFN	107	176	316	453	520	413
Jeffnet	723	643	584	515	459	(264)
Computer Country	252	254	249	212	208	(44)
Infostructure	957	220	204	186	182	(38)
Hunter	2	4	3	6	9	7
	4,200	4,235	4,124	3,968	3,892	(350)

Notes: ^{*} Ashland Home Network acquired approx. seven hundred Infostructure customers

[#] Ashland Home Network and Infostructure are 4 year delta

The AFN direct sales have proven effective in making significant gains (up three-hundred eighty-six percent in five years).

The ISP channel has been challenged. With the exception of Hunter the ISPs have lost seven-hundred seventy customers during the five year period. The causes are likely: a) competition for cable TV (channel selection and features), b) services (performance) late to market, and c) limited marketing efforts and the representation of alternative services.

AFN's direct efforts have proven effective; this channel should be allowed to freely compete against the larger incumbent. The message delivered to potential customers must be clear and unambiguous. AFN is the Ethernet and internet alternative to the competition. Where there is a mutual advantage for AFN to support the ISPs efforts, AFN and the ISP will leverage our relationship. However, AFN can no longer stand in the background but rather must openly and actively drive to gain market share against the larger incumbent.

Sales Forecast

Fiber Service to the Premise (new)

Fiber to the premise (FTTx) is a natural and anticipated extension of the AFN network. The AFN network has a core fiber network (twenty-five miles) serving the City. Historically only the customers with the budgets to construct and pay for dedicated fiber connections have been able to take direct advantage of AFN's fiber network. New (to Ashland) technology now makes fiber affordable to the small/medium business/enterprise. The project brings fiber from the ring to the customer premise. The initial area targeted for installation is a commercial area currently being served by AFN. Existing customers have expressed a need for the features fiber can provide – high performance and high reliability. The underlying technology for this proposal is Passive Optical Networking (PON).

AFN has a real opportunity. The need and demand are there. The technology and supporting technologies are there. Additionally, a confluence of factors may distract the competition and provide AFN the opportunity to develop unmatched services and capture market share. Delaying the project will likely close the opportunity vis-à-vis the competition.

This project is contingent upon meeting key assumptions. Without meeting or mitigating these assumptions the project should not go forward. The assumptions are outlined in the following tables.

Revenue

Outcomes are dependent upon the assumptions noted below and in following forecast Revenue and Expenses Tables.

The assumptions for Revenue/Sales are:

- The new service revenues begin in FY2017 (September 2016)
- Revenues ramp up slowly over an eighteen month period to reach a maximum of sixty-five connections. It is reasonable to expect the number of connections to keep growing, but for purposes of conservatism, the numbers are held to these levels.

The first twelve months sales projections for the new fiber based services (Quantum 50 and 100) are shown in the table below. These numbers are conservative, minimum expected sales.

Twelve Month Sales Forecast - Quantum Service

	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	Total
Quantum 50				1	6	9	11	13	18	25	28	33	144
Sale Price/unit	85	85	85	85	85	85	85	85	85	85	85	85	
Quantum 50 Total	-	-	-	85	510	765	935	1,105	1,530	2,125	2,380	2,805	12,240
Quantum 100					1	2	2	3	3	4	4	5	24
Price	110	110	110	110	110	110	110	110	110	110	110	110	
Quantum 100 Total	-	-	-	-	110	220	220	330	330	440	440	550	2,640
													14,880

The above table indicates a go live launch date in September, 2016. Following the launch, sales ramp up slowly as AFN refines installation and support techniques. After the first six months, sales ramp up more quickly and by month eighteen level off at about sixty-five customers for the Quantum 50 service and continue to grow slowly for the Quantum 100 service for the remainder of the projection (please see the next table - Five Year Sales Forecast – Quantum Service). This forecast is based on specific cluster of AFN commercial customers who have expressed the real need for a fiber based product.

Five Year Sales Forecast - Quantum Service (realistic)						
	FY2017	FY2018	FY2019	FY2020	FY2021	5 Year Total
Quantum 50	avg 12/mo	avg 50/mo	avg 62/mo	avg 65/mo	avg 65/mo	
Sale Price/unit	85	85	85	85	85	
Quantum 50 Total	12,240	51,000	63,240	66,300	66,300	\$ 259,080
Quantum 100	avg 2/mo	avg 6/mo	avg 8/mo	avg 10/mo	avg 12/mo	
Price	110	110	110	110	110	
Quantum 100 Total	2,640	7,920	10,560	13,200	15,840	\$ 50,160
Total	14,880	58,920	73,800	79,500	82,140	309,240

The additional fiber based service is projected to add \$309,520 to AFN’s revenue over the five year period. As success and revenue allow, the service can be deployed into other commercial/industrial locations. Ultimately this service can provide fiber to the premise where ever revenue allows.

The effect on AFN net Revenue projections is illustrated in the Revenue table below. Please note only FY2017 and FY2018 projections appear in the table below

Resources						
	FY2014	FY2015	FY2016	FY2017	FY2018	Total
High-Speed (fiber based)	199,419	204,404	209,514	229,632	279,041	1,122,010
Internet Service	1,630,416	1,630,416	1,711,936	1,797,533	1,887,410	8,657,711
Cable	99,003	85,018	85,018	85,018	85,018	439,075
Funding (Internet, FTTx, Opx)	-	-	200,000	200,000	200,000	600,000
Total Revenue	1,928,837	1,919,838	2,206,469	2,312,183	2,451,469	10,818,796
Notes:						
Year FY2014 actuals						
Year FY2015 budget						
Years FY2016-2018 are projections						
Revenue from PON starting in FY2017						
Internet Services annual growth rate 5% beginning FY2016						
Funding (Internet, FTTx, Opx) tbd with City Administration and Administrative Services (Finance) departments						

The new revenue appears only in FY2017 and FY2018, remaining projected revenues (FY2019-FY2021) do not appear in this table

Requirements

The effect of the Quantum services on AFN expense projections is illustrated in the table below.

The assumptions for Expenses are:

- Current budgeted capital investments are reduced in FY2016 –FY2018 to cushion the impact of the FY2016 internet (\$250k) and the FY2017 PON (\$250k) capital projects
 - FY2016 \$190k down to \$50k
 - FY2017 \$126k down to \$50k
 - FY2018 \$105k down to \$50k
- Capital investment of \$250k for internet capacity in FY2016
- Capital investment of \$250k for PON technology in FY2017

Requirements						
	FY2014	FY2015	FY2016	FY2017	FY2018	Total
Personnel	648,083	651,600	677,700	704,800	733,000	3,415,183
Operating	881,960	930,402	958,314	987,063	1,016,675	4,774,414
Debt	409,000	409,000	409,000	409,000	409,000	2,045,000
Capital	103,235	115,000	300,000	300,000	50,000	868,235
Total Expenses	2,042,278	2,106,002	2,345,014	2,400,863	2,208,675	11,102,832
Notes:						
Year FY2014 actuals						
Year FY2015 budget						
Years FY2016-2018 are projections						
Original Budget Capital Investments reduced in FY16-18						
Capital Investment in internet in FY2016						
Capital Investment in PON in FY2017						

The difference between Resources and Requirements is presented below as cash flow.

Cash Flow	(113,441)	(186,164)	(138,545)	(88,680)	242,794	(284,036)
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Project financial analysis:

Payback Period 4.3 years

Net Present Value (6% discount;
timed from project launch) \$19,096

The fiber based Quantum services (PON technology) are recommended and provide a positive return to both the community and AFN. The funding source for these projects will be identified in cooperation with City Administration and Administrative Services (Finance) departments. If funding requirements cannot be met or otherwise mitigated the project should not go forward.

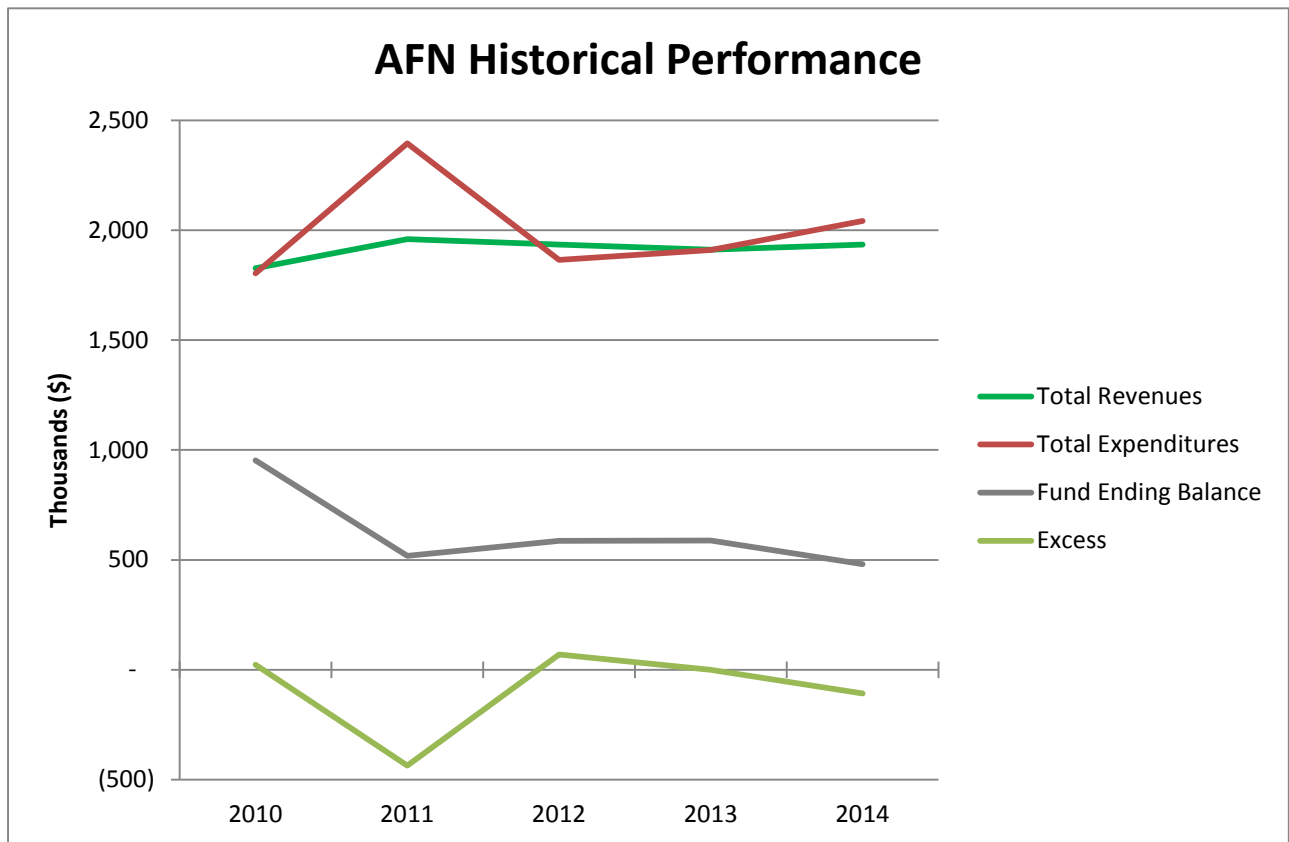
Financial Performance and Forecast

Performance

AFN’s financial performance remains below breakeven. The aggressive marketing by the competition, the delayed system upgrades to match competitive services, the lack of new products, and the declining performance in the distribution channels have led to a loss of customers and their associated revenue. While AFN works to bolster income in the traditional business (cable, internet) through more aggressive marketing (ISP and Retail), the outlook is to continue the trend through FY2016. In FY2017, with the help of capital projects and anticipated marketing efforts, the division begins to rise above breakeven. While a new family of services is described in the strategic plan, the financial requirements for implementation may make the project untenable. Moving forward, the continued lack of new products puts the division in a precarious competitive position five to six years in the future.

The chart below shows the Historical financial performance for AFN.

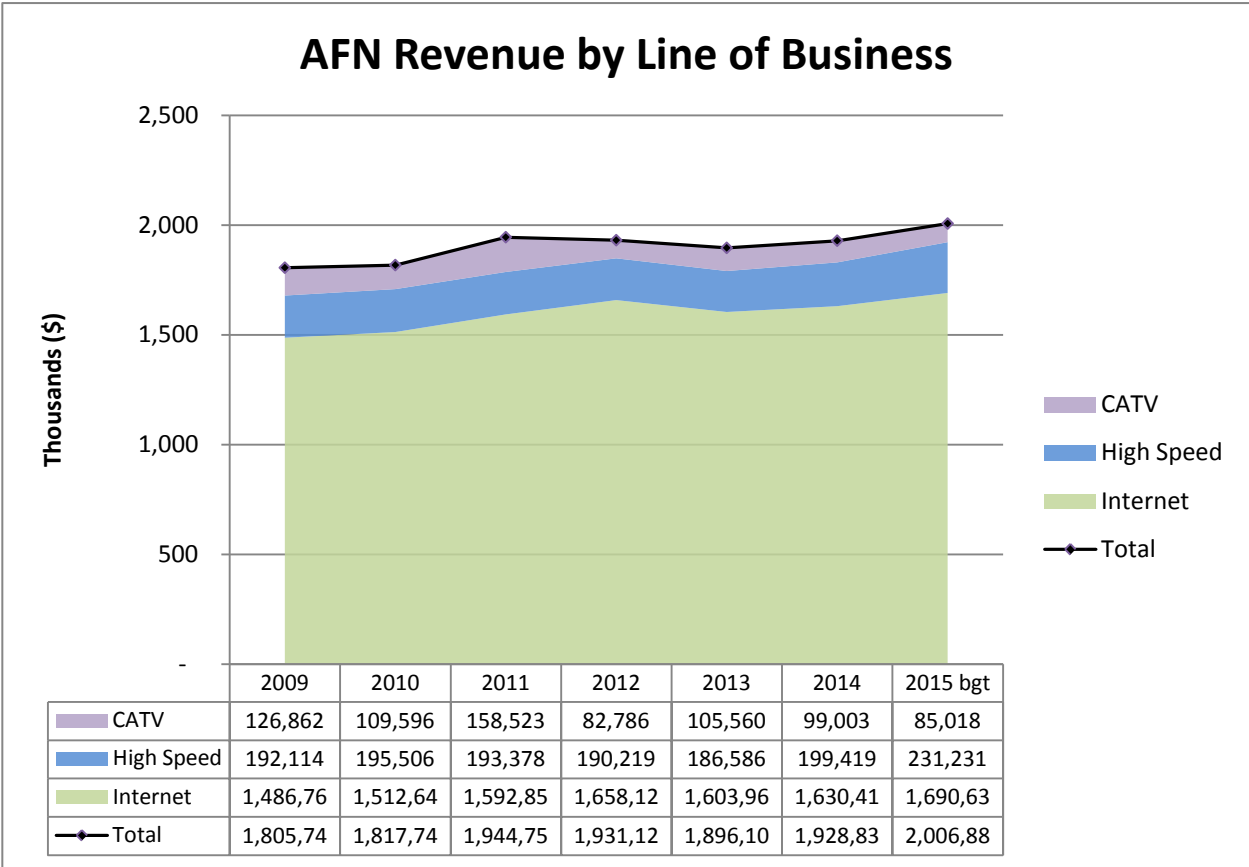
Figure 3 - Historical Financial Performance



Note: Excess = Revenue – Expenditures

The following chart illustrates the historical trends within the division’s revenue by line of business.

Figure 4 - Revenue by Line of Business



Note: Change in CATV revenue in 2012 is a result of contract renegotiation in April, 2012

Forecast

The following two charts show the four year projections for net revenue and expenses for the division. It is important to note there are no new services in these projections. However, there is a two-hundred fifty thousand dollar investment to increase internet capacity in FY2016. The investment is required to meet projected demand for internet by new and current customers. The internet capacity is required to continue to provide internet as a service (eighty-five percent of revenue in FY2014). The internet project is designed to provide for the increasing bandwidth utilization by our customers and forestall unsustainable pricing from the current supply chain.

The following table presents the Revenue projections through FY2018. These projections are based on an expected growth in both the High-Speed and Internet service. This growth is based on a change to more active marketing, and leveraging AFN’s local customer support advantage. The funding source for the internet project will be identified in cooperation with City Administration and Administrative Services (Finance) departments.

Resources						
	FY2014	FY2015	FY2016	FY2017	FY2018	Total
High-Speed (fiber based)	199,419	204,404	209,514	214,752	220,121	1,048,210
Internet Service	1,630,416	1,630,416	1,711,936	1,797,533	1,887,410	8,657,711
Cable	99,003	85,018	85,018	85,018	85,018	439,075
Funding (Internet, Opx)	-	-	150,000	150,000	150,000	450,000
Total Revenue	1,928,837	1,919,838	2,156,469	2,247,303	2,342,549	10,594,996
Notes:						
Year FY2014 actuals						
Year FY2015 budget						
Years FY2016-2018 are projections						
NO Revenue from PON						
Internet Services annual growth rate 5% beginning FY2016						
Funding (Internet, Opx) tbd with City Administration and Administrative Services (Finance) departments						

The assumptions for Expenses are:

- Current Budgeted capital investments are reduced in FY2016 –FY2018 to cushion the impact of the FY2016 internet (\$250k) capital project
 - FY2016 \$190k down to \$50k
 - FY2017 \$126k down to \$50k
 - FY2018 \$105k down to \$50k
- Capital investment of \$250k for internet capacity in FY2016

Requirements						
	FY2014	FY2015	FY2016	FY2017	FY2018	Total
Personnel	648,083	651,600	677,700	704,800	733,000	3,415,183
Operating	881,960	930,402	958,314	987,063	1,016,675	4,774,414
Debt	409,000	409,000	409,000	409,000	409,000	2,045,000
Capital	103,235	115,000	300,000	50,000	50,000	618,235
Total Expenses	2,042,278	2,106,002	2,345,014	2,150,863	2,208,675	10,852,832
Notes:						
Year FY2014 actuals						
Year FY2015 budget						
Years FY2016-2018 are projections						
Original Budget Capital Investments reduced in FY16-18						
Capital Investment in internet in FY2016						
NO Investment in PON						
Cash Flow	(113,441)	(186,164)	(188,545)	96,440	133,874	(257,836)

The following charts represent analysis of AFN’s Expenditures. The first chart shows historical expenditures and the second chart presents the FY2014 actual expenditures.

Figure 5 - AFN Expenditure Analysis, Historical

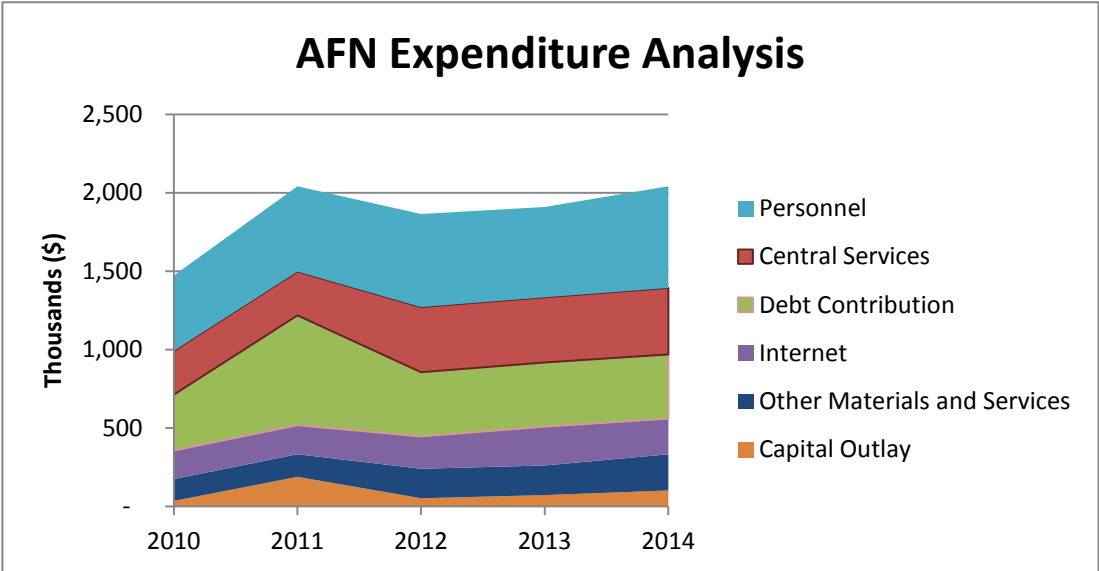
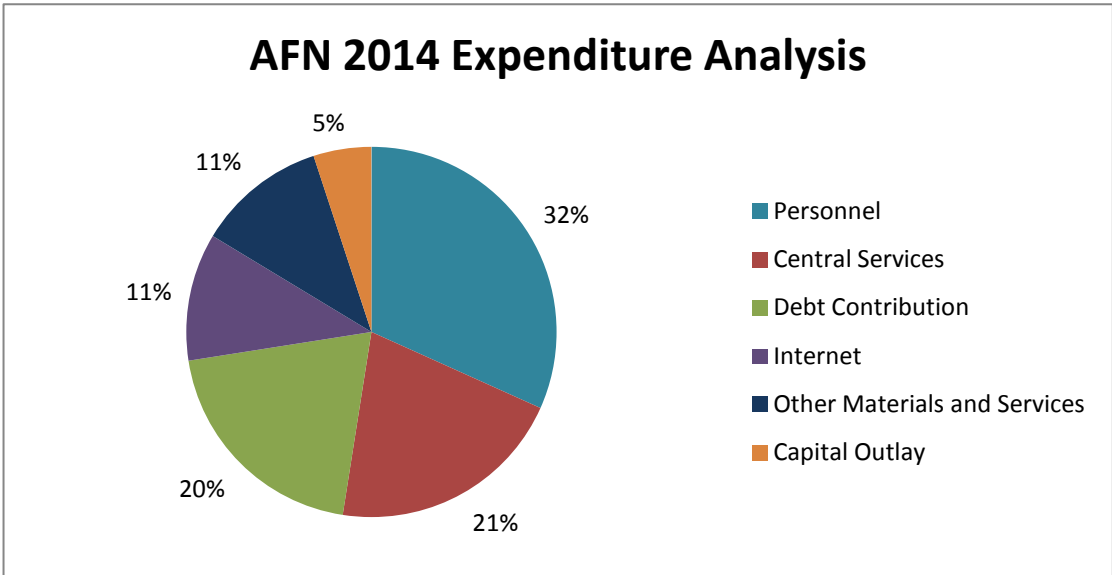


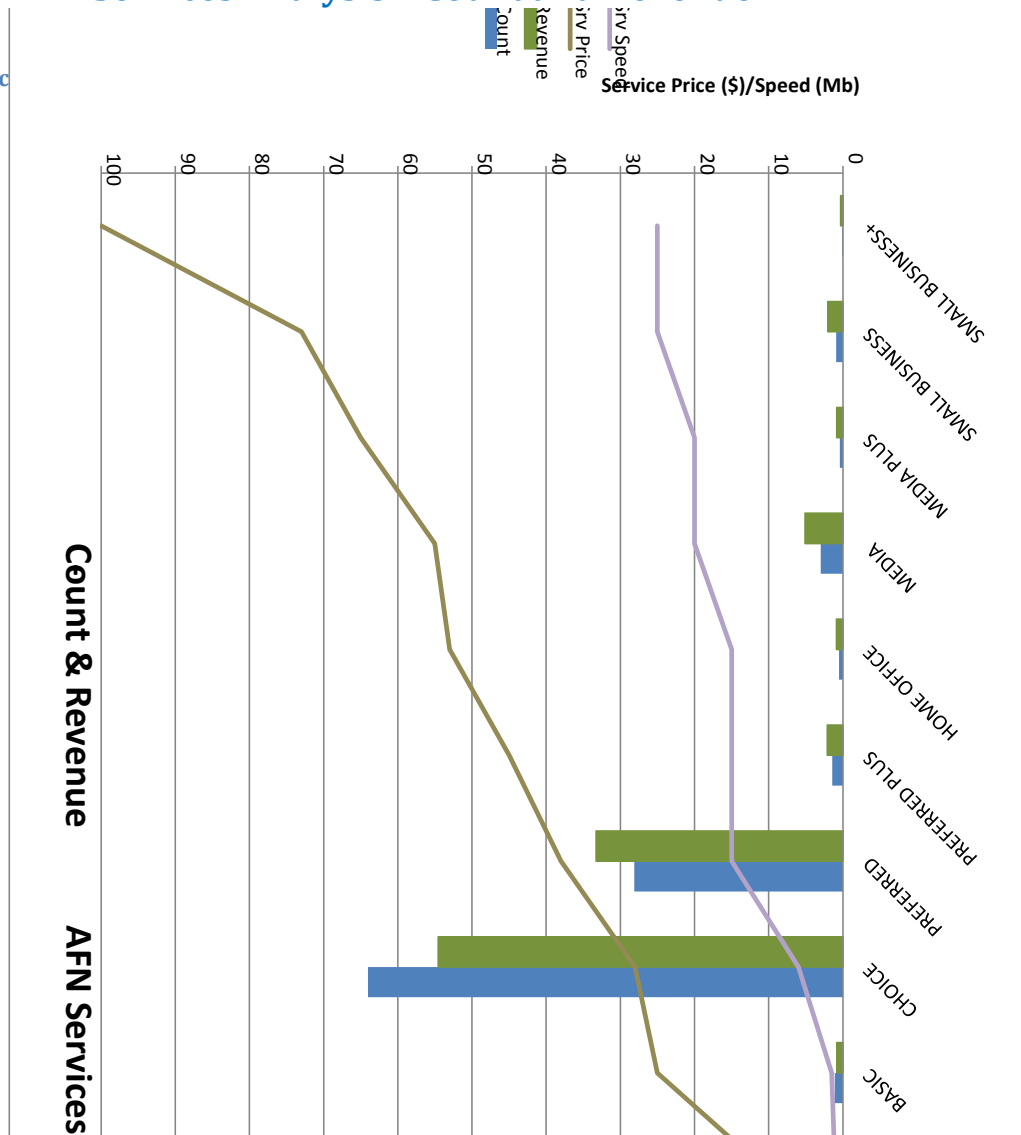
Figure 6 - AFN Expenditure Analysis, 2014



The two charts above present where AFN uses its resources. In FY2014, Personnel, Central Services and Debt Contribution represent seventy-three percent of AFN’s expenditures. Combined with the eleven percent required for Internet, eighty-four percent of expenditures are fixed.

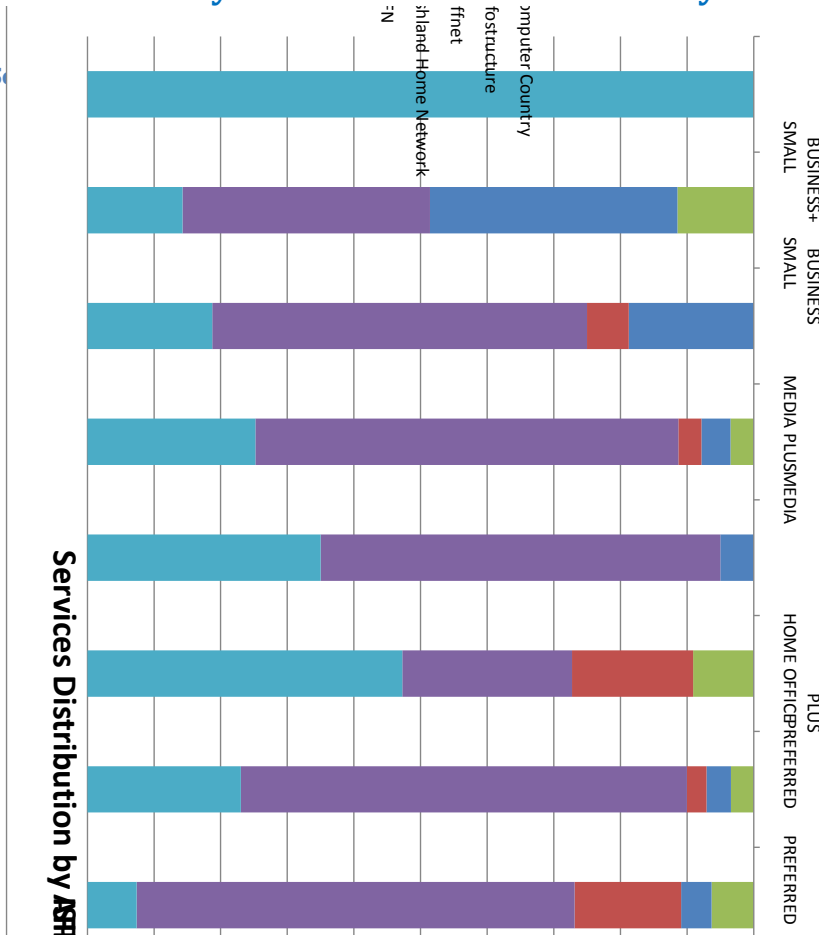
Appendix A – AFN Services Analysis – Count and Revenue

Figure 7 - AFN Service



Appendix B – AFN Channel Analysis - Services Distribution by ISP

Figure 8 - Channel Analysis - S



Appendix C—Current AFN Rates Structure

The following chart is AFN's current flat wholesale rate structure, implemented in January 2011.

AFN Fiber Network Products

Community Access (No longer promoted)

Email Activity Dial Up Alternative

Up to 256 Kbps Download / 256 Kbps Upload

\$9 month Wholesale

\$9 month AFN Direct Retail

Basic (No longer promoted)

DSL Alternative for Moderate Internet Users

Up to 1.5 Mbps Download/ 256 Kbps Upload

\$25 month Wholesale

\$30 month AFN Direct Retail

Choice

The Most Popular Internet service

With 200 GB/month bandwidth usage

Up to 5 Mbps Download/ 1 Mbps Upload

\$28 month Wholesale

\$35 month AFN Direct Retail

Preferred

General Media Applications

With 250 GB/month bandwidth usage

Up to 15 Mbps Download/ 3 Mbps Upload

\$38 month Wholesale

\$45 month AFN Direct Retail

Preferred Plus

For Web-based TV and Movie Viewing

With 300 GB/month bandwidth usage

Up to 15 Mbps Download/ 3 Mbps Upload

\$45 month Wholesale

\$55 month AFN Direct Retail

Appendix C—Current AFN Rates Structure (continued)

Media

Online Gaming and General Media Applications

With 300 GB/month bandwidth usage

Up to 20 Mbps Download/ 5 Mbps Upload

\$55 month Wholesale

\$65 month AFN Direct Retail

Media Plus

Premium Residential Services

With 350 GB/month bandwidth usage

Up to 20 Mbps Download/ 5 Mbps Upload

\$65 month Wholesale

\$75 month AFN Direct Retail

Home Office

For Home Office Applications Enabling Fast Two-Way File Transfers

With 350 GB/month bandwidth usage

Up to 10 Mbps Download/ 3 Mbps Upload

\$53 month Wholesale

\$65 month AFN Direct Retail

Small Business

With 500 GB/month bandwidth usage

Up to 25 Mbps Download/ 5 Mbps Upload

\$73 month Wholesale

\$85 month AFN Direct Retail

Small Business Enhanced

With 500 GB/month bandwidth usage

Up to 25 Mbps Download/ 10 Mbps Upload

(Not Available Wholesale)

\$100 month AFN Direct Retail

AFN MAX Home PROMO

Implemented June 23, 2014

Charter Alternative

With 500 GB/month bandwidth usage

Up to 30 Mbps Download/ 5 Mbps Upload

\$45 month Wholesale

\$55 month AFN Direct Retail

Appendix D—Proposed AFN Rates Structure

The following chart is AFN's proposed rate structure to be updated with partner input to implement in the near future.

AFN Fiber Network Products

Internet Essential

Low Income Connectivity Assistance

With 100 GB/month bandwidth usage

Up to 5 Mbps Download / 1 Mbps Upload

\$9 month Wholesale

\$9 month AFN Direct Retail

Choice

Our Most Popular Internet service

With 200 GB/month bandwidth usage

Up to 7 Mbps Download / 1 Mbps Upload

\$29 month Wholesale

\$35 month AFN Direct Retail

Preferred

General Media Applications

With 300 GB/month bandwidth usage

Up to 15 Mbps Download/ 3 Mbps Upload

\$39 month Wholesale

\$45 month AFN Direct Retail

Max Home

Online Gaming and General Media Applications

With 350 GB/month bandwidth usage

Up to 30 Mbps Download/ 5 Mbps Upload

\$45 month Wholesale

\$55 month AFN Direct Retail

Enterprise

Home Office and Small Office Connectivity

With 500 GB/month bandwidth usage

Up to 50 Mbps Download/ 5 Mbps Upload

\$80 month Wholesale

\$85 month AFN Direct Retail

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Endnotes

ⁱ Distribution Channel - distribution channel (aka marketing channel) provides for the delivery of products and services to the end-user or consumer either directly (direct channel) or through intermediaries.

ⁱⁱ Point-of-Presence - location where telecommunication providers offer a connection point to their network and services. The major regional Points-of-Presence are located in: Portland, Seattle, and San Francisco.

ⁱⁱⁱ “last mile” - denotes the final connectivity leg between the telecommunications provider and the final customer or consumer.

^{iv} Cloud Based Service - generally described as one of the following services.

Software as a Service (SaaS). The capability provided to the consumer is to use the provider’s applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Platform as a Service (PaaS). The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

Infrastructure as a Service (IaaS). The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

^v IPTV/OTT:

Internet Protocol TV (IPTV), Transport and delivery of TV programming via a privately controlled internet protocol network

Over the Top (OTT), Transport and delivery of TV programming via the public internet protocol network

^{vi} ICT - Information and Communication Technologies, the integration of both computing and communications technologies into consumer goods, “The internet of everything”

^{vii} History - edited and updated from *Ashland Fiber Network Strategic Business Plan*, page 10, August 2010

^{viii} FTTx: Fiber To The x - refers to all possible optical fiber topologies from a telecom or cable carrier to its customers, based on the location of the fiber's termination point

FTTH and FTTP (home and premises) the fiber ends inside the home or building

FTTC and FTTN (curb and neighborhood) the fiber ends outside the home or building

^{ix} Press Release, *J.D. Power Reports: Customer Satisfaction is High among Internet Customers Who Upgrade to Premium Speed Offerings To Boost Performance*, J.D. Power, McGraw Hill Financial, 26 September 2013

^x VLAN: Group of devices on one or more networks that are configured to communicate as if they were attached to the same wire, when in fact they are located on a number of different network segments

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- ^{xi} SOHO - Small Office Home Office, small or home office environment and the business culture that surrounds it
- ^{xii} Telecommunications Industry Market Research, *Introduction to the Telecommunications Industry*, Plunkett Research Limited, Available from: <<http://www.plunkettresearch.com/telecommunications-market-research/industry-and-business-data>>. [9 September 2014]
- ^{xiii} Federal Communications Commission, Industry Analysis and Technology Division Wireline Competition Bureau, *Internet Access Services: Status as of June 30, 2013*, Available from: <https://apps.fcc.gov/edocs_public/attachmatch/DOC-327829A1.pdf>, [16 July 2014]
US Census Bureau, *2008-2012 American Community Survey 5-Year Estimates*, Data Set: Selected Economic Characteristics, Ashland, Oregon
Ashland Chamber of Commerce, Business License Database, June 2014
Report: Marketing Segment by Product Group, July 2014
- ^{xiv} Federal Communications Commission, Statistical Reports, Internet Access Services, 6/14 Release, *Local Telephone Competition and Broadband Deployment*, pg. 25, Table 7, Available from: https://apps.fcc.gov/edocs_public/attachmatch/DOC-327829A1.pdf. [14 July 2014]
- ^{xv} VoIP - Voice over Internet Protocol, delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks
- ^{xvi} Wired Business, *The Internet is Officially More Popular Than Cable in the U.S.*, Available from: <<http://www.wired.com/2014/08/the-internet-is-now-officially-more-popular-than-cable-in-the-u-s/>>, [12 September 2014]
- ^{xvii} Bloomberg News, *TV Subscriptions Fall for First Time as Viewers Cut the Cord*, Bloomberg, Available from: <<http://www.bloomberg.com/news/2014-03-19/u-s-pay-tv-subscriptions-fall-for-first-time-as-streaming-gains.html>>, [15 September 2014]

xviii Products:

Internet - Internet is a communications protocol used to ensure quick addressing/routing and error free delivery of information from source to final destination (especially across multiple networks).

Ethernet - Ethernet is a more tightly focused communications protocol used to connect and identify unique physical devices within a single network.

Though predating the International Standards Organization's Open Systems Interconnection (OSI) standard model for communication among devices, Internet and Ethernet do support different layers of the OSI model (see table below).

(Ethernet - Layer 2; Internet - Layers 3 and 4)

		OSI Model	Examples
Data	7	Application Layer Facilitates communication between software applications like Outlook, IE	Web Application
	6	Presentation Layer Data representation and encryption	HTTP
	5	Session Layer Interhost communication	80
Segments	4	Transport Layer End to end connection and reliability	Transmission Control Protocol (TCP)
Packets	3	Network Layer Path determination and logical addressing	Internet Protocol (IP)
Frames	2	Data Link Layer Mac and LLC - Physical addressing	Ethernet
Bits	1	Physical Layer Media, signal and binary transmission	CAT5