

Building the Business Case for Gigabit Deployments

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I. Problem Description

Gigabit High Speed Internet is the next major service offering on the horizon for rural telecommunications providers, broadband providers, municipalities, and campuses. In this whitepaper we're going to explore the business case for FTTH Gigabit Internet deployments, as well as different deployment strategies.

A business case usually contains four major components: an executive brief, an introduction, analysis, and conclusions & recommendations. We will discuss each section and provide a template for making the business case needed for your organization.

Developing a business case for Gigabit Internet is challenging because every FTTH deployment is unique. The physical plant, the customers served, the growth of the FTTH infrastructure, and the mix of service offerings and take rates create variations that make each FTTH project different from any other. However there are still similarities, and enough FTTH upgrades have occurred around the world that some best practices and strategies can be collected and distributed.

It is essential that the case for Gigabit Internet is made now. The speed at which your organization moves forward will be determined by the particulars of your

organization, community, competition, and customers. Quickly making a plan of action and a strategy for Gigabit Internet service will allow your organization to track when that ultimate tipping point occurs for your project.

II. Executive Brief Construction

The executive brief has three parts: a recommendation, a summary, and a decision. Essentially it is an abbreviated version of the entire business case. A reader can then dig into the specifics of the case that most interests them or their department. Wait to craft the final draft of the executive brief until *after* the other parts of the business case have been constructed.

A. Recommendations

Sketch an outline of the brief at the start of your business case creation to guide your efforts. For example, you might outline three possible recommendations for a FTTH project; move forward immediately, move forward when x condition is seen, or do not move forward and revisit in 1 year. By laying out possible recommendations for the project, you'll have an idea of what criteria to gather for the analysis portion of the business case. During a more thorough analysis, other recommendations might emerge.

B. Summary and Decisions

The same principle applies to the summary and decision sections of the executive brief. By creating an outline first, you will already have an idea of the scope, financial metrics, assumptions, costs, and benefits to consider. These initial ideas are simply starting points for discussions with stakeholders and will lead to the discovery of additional drivers and constraints for the project.

In FTTH projects, an outline can lay the ground work for collaboration with organizations in the community: municipalities, utilities, chamber of commerce, education departments, etc. Those partnerships can lead to cost reductions, market size increases, and deployment strategy changes. For example, it may lead to a “dig-once” policy and a sharing of deployment costs with another utility or government agency in a capital project.

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III. The Introduction

When building the introduction, a key aspect to keep in mind is the audience’s level of knowledge. A number of complex terms will be used in a FTTH business case, and without a proper explanation of the forest, readers will get lost in the trees.

The introduction has three main parts: business drivers, scope, and key financial metrics. The business drivers should be described from the perspective of the audience, company stakeholders including shareholders, key departments, customers and community, and the overall organization’s perspective. Approaching the scope should be done in terms of the boundaries of the project – length of time for the project, portion of service area to cover, capital budget to allocate, projected customer take,

and personnel resources needed. Key financial metrics should be approached from the entirety of the project, but also include interim metrics that can be tracked during the project to communicate to stakeholders. There are best practice metrics to collect and compare to past FTTH and Gigabit service projects. The goal with metric collection is to make course changes if necessary and also to confirm and reinforce the business drivers.

A. Business Drivers

Typical business drivers for Gigabit service projects are influenced by demographic changes. New residential customers are demanding more and more bandwidth, and they expect unfailingly high quality connections. Businesses are utilizing mobile workforces to attract and keep talent.

Besides demographic changes driving Gigabit projects, competitive pressures are motivating projects as well. Service providers in more deregulated environments want to be the first to move with Gigabit service and use it to win new customers and mitigate customer churn.

Beyond residential, commercial businesses are demanding Gigabit for all of the third party cloud services they use for ongoing operations. For example, the medical community is now completely digital with x-rays, photos, videos, 3D ultrasounds, etc. and these require enormous amounts of bandwidth to share in a timely manner. Your specific business drivers may include these or others relevant to your situation. What’s important is that you document as many of these as possible to help build the case for your project.

B. Scope

Most Gigabit service builds will eventually span the entire provider service area. This may not happen for many years, and it should be stated within the scope of the project if that is the case. But the scope should only reflect what is possible in the next few years, or within the capacity of the service provider to attempt in the next few years.

For a narrower scope there are several ways to consider phasing in Gigabit service. The project could first look to build in a projected high take rate residential area. These can be identified with demographic data overlaying

outside plant facilities and service areas. Marketing could proactively reach out to a set of customers to gauge the interest in Gigabit service and determine their expectations for the service cost.

Another way to narrow the scope is to look for likely high take rate commercial businesses. There may be a section of the community with more technology-oriented industries, or a more mobile workforce that would be interested in Gigabit services. Education and medical organizations are good targets for the initial scope of the project because many have high bandwidth needs and would take advantage of high speed data services.

If the drivers are competitive pressures, then the scope may be to build preemptively in competitive service areas to stifle competition. Additionally, an area of the network facing particular churn and quality challenges could be a potential target for the scope. It's important to have access to this information and be able to strategically see the bigger picture of your network infrastructure, customers, and competitors.

Many of these attributes can be combined together, especially when building in areas where it may be less expensive given geography, rights of way, and existing plant to use. Another factor to consider is "where can builds be completed or service initiated quicker?" Given competitive pressures or community needs, these may rise in level of importance.

C. Financial Metrics

As the project progresses, a number of key financial metrics should be monitored to provide insight into whether changes should be made to the project, either by increasing the scope and speed, or shifting focus. The deployment costs and the breakdown by crews, new customer premise equipment deployments, and geographic area are all important metrics to track. Many of the factors and drivers used to determine the scope of the project can be validated or invalidated by these metrics.

As Gigabit service goes live, tracking the revenue from the service as well as existing services that may be benefiting or being cannibalized from a new Gigabit tier of service is critical. When considering the return on

investment for the project--besides the specific revenues coming in from the new tier--many service providers see upticks in lower speed levels of service as the awareness push of the Gigabit service brings new levels of awareness for complimentary services. Tracking those revenues and the attribution to the Gigabit service project is important when building in areas where the take rate may be slower.

Another metric to track is the time to breakeven for a new customer. As many service providers have completed FTTN builds, the costs of offering Gigabit service are directly traceable to the specific residential customer or commercial customer. These costs can be averaged across demographic types or geographic areas, and when combined with the service revenue, will provide a time until the project breaks even for each customer. Those metrics are important as sales looks to structure service offerings and marketing factors in the cost to acquire new customers.



IV. The Analysis Section

The analysis section will likely be the largest portion of content for the business case as well as the most in-depth and technical section, so be sure to consider the audience's perspective as you write. There are seven sections for the analysis section: **Assumptions, Cash Flow Statement, Costs, Benefits, Risks, Strategic Options, and Opportunity Costs.**

A. Assumptions

Document all of the assumptions and the reasons that led to their inclusion in the analysis. Evidence will emerge that either validates or invalidates the assumptions and it will be essential in determining any changes that need to be made as the project progresses. Assumptions about a Gigabit service project will be focused on certain main areas.

1. Customers

A number of the business drivers and scope factors focus on customers. The assumptions around those drivers and factors need to be listed and discussed.

✓	What is the size of the customer demand for Gigabit service?
✓	What are the pricing thresholds for early adopters, majority, and laggards?
✓	How much education needs to be communicated about the service?
✓	How many and what are the customer segments; residential, commercial, education, medical?
✓	Do customers have the internal technologies to see value in the service?
✓	Which customers should be prioritized for the build?

Table 1 - Customer Assumptions

The above table lists some example questions to use to determine the key assumptions about customers for a Gigabit service project. The list is not exhaustive and you may find questions that are missing or that are not pertinent to your project.

2. Build-Out

In the process of determining the costs of the project, assumptions should be made about the build out process and scope.

✓	What costs will there be for labor associated with deployment?
✓	How much engineering work is required to support a steady deployment pace, or change pace given market conditions?
✓	What material costs will there be for equipment and new plant for deployment?
✓	How involved is the right-of-way process for various localities and what time frames are needed to prevent blockers to the build?
✓	How detailed and broad does the planning phase of the build need to be?
✓	How much overhead will the build require to manage the various sub-projects?

Table 2 - Project Build Assumptions

Table 2 has a few of the questions that should form the set of assumptions associated with a Gigabit service build project. As stated earlier the specific assumptions that pertain to your market and conditions will vary.

3. Operations

An important consideration during the excitement of the build process is the ongoing operational needs of the new service and how it fits into your current operational workflows.

✓	What technologies are needed to orchestrate service fulfillment and provisioning?
✓	What project build metrics are monitored for pulse checks and success?
✓	How are silos of your organization kept up to date with the latest service build information?
✓	What additional training or workflows are needed to supplement existing operations?
✓	What type and scope of monitoring needs to be put in place to ensure quality of service meets customer expectations?
✓	What does it cost to manage the ongoing operations of Gigabit service?

Table 3 - Operational Assumptions

What you do not want to happen with a project of this scope is to forget to plan for the ongoing operational needs of the service and how they will impact current operations.

4. Revenue

As the Gigabit service is turned up, revenue will trickle in. The assumptions around revenue will contribute to determining the cash flow of the project and how much of the project can be self-funding as it deploys.

✓	What takes rates will result in what size revenue inflows?
✓	What revenue returns are required for continuing build out as planned?
✓	Are other service options ready to capitalize on the buzz created by Gigabit service and will those revenues fund deployment?
✓	What revenue returns will trigger changes in the build?
✓	What new service plans and products need to be launched with Gigabit service?
✓	How often will revenue be tracked for executive decision makers?

Table 4 - Revenue Assumptions

Revenue assumptions that are critical to your market need to be spelled out explicitly. Many Gigabit projects spur additional growth in a number of supplemental services besides the Gigabit data plan. Those supplemental revenues should be planned for and correctly attributed to the Gigabit service project.

5. Competitors

The ancillary services that come from a Gigabit project and the attention it brings will prompt competitor reactions. The high bandwidth of Gigabit service means it will attract cord-cutters from competitors, customers at the edge of your service areas, and businesses that are frustrated with their current service. Additionally, competitors will look to steal business from other service plans with special promotions. Planning how your company will react to these moves and the assumptions will help guide how market conditions are monitored.

B. Cash Flow Statement

In this section, consider the ongoing financing of the project. The cash flow statement should account for the impact on current cash flows with planned reserves for market changes with the build but also market changes with the existing services and operations. Cash is king-- ensuring a steady pace to the project that plans for cash expenditures and new revenue from the Gigabit service will ensure the project meets with success.

C. Costs

We previously discussed some of the cost assumptions associated with build out of the project and ongoing operations. Cost categories include: planning, rights-of-way, engineering, equipment, labor, overhead, and operational costs. As much as possible, costs should be broken down by the planned timeframe and project phase of expenditure. This will allow adequate preparation time to secure financing and allow negotiations with suppliers ahead of time. A robust cost model will feed into RFPs and RFIs and let executive decision makers look for strategic options.

D. Benefits

Obviously some benefits were covered in the revenue section--everyone appreciates increased revenue. Further details about when those revenue flows are expected and the size of the flows should be listed here. Additionally, the benefits to other areas of the organization should be listed. Marketing will benefit from new service launch buzz and other departments may benefit from better supporting equipment and software used for the Gigabit service that benefits ongoing operations. Lastly, stakeholder interests should be mentioned because the audience of this business plan will likely include community and other business leaders who may partner on some portion of the project or be the first customers of the service.

E. Risks

In this section it is important to lay out all of the known risks to the deployment project and ongoing Gigabit service operations. Known risks include the accuracy of all of the assumptions that have been made--risks associated with

burdening existing departments and resources with an additional project workload. Risks associated with suppliers, and labor availability should be noted, along with plans to manage those risks. Detailing all of the methods by which the state of these risks will be monitored or measured are vital. This section must also include the scope of the implications from these risks. If the risk changes to a different level, then what are the resulting implications for the project?

F. Strategic Options

The initial project deployment plan and go-to-market strategy for Gigabit services will probably change with greater understanding of the project conditions as time progresses. New understandings will reveal other deployment or service options. Competitors may make a misstep that others should capitalize on. As best as can be done at the outset, the list of strategic options should be detailed in this section.

For Gigabit service projects those strategic options are wide and varied given the types of projects that have occurred. For example, besides laying fiber all the way to the home, British Telecom has rolled out technology called G.fast (ITU G.9701) that can provide 1000Mbps over copper lines with greater than 24Mbps out to approximately 6,500 ft. (2,000 meters). As your Gigabit service rolls out and more and more fiber is run, G.fast could provide a way to expand new service offerings to customers excited by the fiber roll out but not yet within the project build area. Additionally, keeping an ear to the ground for local capital projects whereby a dig once policy can be followed may alter where the build goes. It is also important to consider which areas can be built the fastest and most economically, as well as areas that have the largest proportion of customers likely to adopt the service.

As many categories and revenue models have been discussed, there are that many more strategic options because various strategies can be combined to suit your company's specific circumstances. Quoting from strategy expert Jeroen De Flander, "Strategy is about thinking about a choice and choosing to stick with your thinking." Whichever options you decide to pursue, stay with that line of thinking even if you don't stay with the option.

G. Opportunity Costs

A Gigabit service project will inevitably draw a lot of resources from your organization. Money, time, flexibility to adapt to changing market conditions, and ultimately some project that could have been done will take a backseat. Laying out those opportunity costs in this section will make sure all stakeholders understand what is being passed on for this project.

Additionally, if any new funds or resources become available this section can serve as a check on pouring those resources into the Gigabit project. The Gigabit project will draw in as much resources available but if your organization has detailed some additional opportunities then maybe in the future those opportunities can be revisited.

"Strategy is about thinking about a choice and choosing to stick with your thinking."

Jeroen De Flander, strategy expert

V. The Conclusion, Recommendations, and Next Steps

Prior to this section, the context surrounding the Gigabit service project has been laid out and the specific attributes of what the project will entail through deployment to completion and operations. Here we will summarize the specific action items needed next for the project. Those could include beginning market assessment, researching vendors for plant and contracting duties, or developing a more detailed project plan and management team.

We will also detail the line of thought that lead to the conclusions that are reached and how much weight was given to particular factors that influence those decisions. In the future, that line of thinking can be examined, validated or adjusted for changing conditions.

VI. Delivering the Business Case

Lastly, but perhaps most importantly, a significant amount of thought needs to be given to delivering the business case. Successful Gigabit service projects draw on more than the communications services provider's resources. Community, local businesses, medical campuses, education campuses, and local neighborhoods all will see significant benefits and likely network effects from a Gigabit service project. Luckily earlier in the business case we examined benefits from their perspectives, and now is the time to tailor the presentation of the business case to each audience. Delivering the business case is really the first marketing campaign, a campaign for partners, early adopters, supporting resources, and will build momentum to get the project off to a head start.



At Mapcom Systems we have a number of clients who are either in the process of, or have already completed Gigabit service projects. If you would like to benefit from our experience, then feel free to use and expand upon this business case template, reach out to us to set up conversations with peers, and learn how what we do has helped make these projects successful.

About Mapcom Systems

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