Connectivity is the One Service, All Others Build Upon

Why You Consider Connectivity Closely

Before any other consideration, you need to know how your network, devices, and programs are going to talk to each other. It needs to be fast enough, flexible enough, redundant enough, and cost efficient — enough said? Not in the least, connectivity is the start of the conversation that leads to all other solutions you'll require to meet your needs!

What Needs to Be Considered

Budget: All things being equal, budget is usually driven by two variables; bandwidth/requirements and what's accessible. The more you want, and the faster you need it, may limit your choices and increase your costs. Often infrastructure, what's available and proximity to service, will play a heavy role. Lead times for hardwired connections tend to be longer, while wireless and satellite are extremely quick to set-up (but not the long-term solution). Budget is always an issue, but know you have options.

Speed/Bandwidth/Performance: We'll start by learning what your typical usage will be, and how much speed will be needed at any given time. Are you looking for a low demand scenario with light browsing/checking email, or more intensive file sharing, video streaming/conferencing, or resource heavy cloud applications?

Dedicated with Guarantees vs. Shared Service (Broadband): Data connection is much like a utility, acting as a pipe through which the data flows. The bigger the pipe, the more data can flow. The more taps into the pipe, the more data capacity is being diverted. With a shared service you may notice drops during peak usage. With a dedicated service you get every last bit you pay for; you may also receive a Service Level Agreement (SLA) for speed/uptime plus faster response times to resolve any issues.

Time to Install (Planning Your Timeframe): Some solutions are plug and play — from setting up a dish or antenna, to preconfigured cellular enabled phones, tablets, laptops or specialty devices — and require very little in the way of lead time. Other solutions may require scheduling a technician to bring the connection from the nearest hub to the desired location. Overall, the more lead time, the more options available. When possible also allocate lots of lead time to allow for unexpected delays. This is not like hooking up your home cable, even fast installs can run into roadblocks – like hardware/inventory shortages or even the requirement of FCC approval. Backups can be quick, but are often not a viable longterm solution.

Location: Both the physical location of your business and where your current applications reside may dictate the type of service, the lead time to get it installed, and your options for providers. Denser urban areas may offer more options, meaning only the last part of the run needs to be built out. Depending on the situation, a little extra effort/expense to engage a preferred provider can be worth it, especially based on the location of your critical applications. On-premise, Cloud, and hybrid applications all have different bandwidth requirements to function, and are an important consideration for connectivity options.

Redundancy/Uptime/Use-Case/Disaster Recovery: One solution may not do it all. If fact, you should expect any one solution will fail, which is why you need multiple connections to ensure network and operation continuity. Multiple connections, within or across different providers, is a great practice to ensure desired speed and business continuity. Buy more connections knowing some will fail and include a cellular wireless backup in your mix. With traffic routing, you can direct/prioritize the use of your various connections, helping to avoid network congestion.

Temporary Services: Sometimes you only need connectivity for a short period of time. This could be for a special event, an alternative location, or while waiting for the full deployment of a different chosen method of connection. Interestingly, sometimes wireless and satellite solutions work so well, a hardwired connection is never needed! There are even services/Providers that specialize in offering temporary service.

Cybersecurity/Integrity/Compliance: As mentioned earlier, from a Cybersecurity perspective, varying the connection types can also help minimize the networks attack surface. Some deployments, like laboratory environments, by their very nature, may require a dedicated private network versus public network to insure the reliability/integrity of the data to maintain quality, and for regulatory/compliance reasons. These private network versus public network requirements are often necessary for healthcare, financial or other regulated fields where privacy is a top consideration.

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Connectivity Options

Type	Pros and cons	Price
Cable Internet	Fast, Reliable, Readily Available	**$**
Local Exchange Carrier (telco/comm service)	Local limited area	**$**
Mobile Internet (LTE/5G)	Better in Cities	**$$**
DSL (Digital Subscriber Line)	Speed can be unreliable, more common in rural areas	**$$**
Fiber-optic	Extremely Fast/Extremely Reliable	**$$$**
Satellite	Doesn't require elaborate setup, speed varies, bad weather and obstructions can affect service	**$$$**
Fixed Wireless	Like satellite, but connects to a nearby wireless hub	**$$$**

	SLOWER	FASTER
$	**Broadband DSL (Digital Subscriber Line), Fios, Coax, ABF**	**Fiber Dedicated Connections**
$$$	**Cellular/Mobility Standard 1G** Standard 1G LTE 3Gw 5 G (Sub 7 GHz) 5G (Greater than 7 Gz Satellite	**Microwave Fixed Wireless**

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