

## Some Assembly Required

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With the Christmas season behind us and the frustration of assembling gifts left under the tree still fresh in mind, let's take a look at purchasing information technology (IT) when "some assembly is required".

Public bidding is of course required by statute to ensure that our tax dollars are spent judiciously and legally. IT bid documents and specifications are prepared by business managers, purchasing agents, technology directors, consultants, attorneys or they may be a collaborative effort by all. The business terms and conditions are often standard, but the hardware and software descriptions and specifications are often quite detailed with brand, model and part numbers provided for easy pricing and response.

*Why do many IT bid specifications end with "Quote Installation and Configuration" and provide zero or little detailed description of the expectation, qualifications or metrics for the installation?*

Some requests for proposal do require the winning bidder to show proof of hardware or software resale authorization by the manufacturer or certification, but differentiating qualified IT vendors requires more than a certificate. Here are several suggestions which may improve the procurement process, separate qualified from unqualified vendors and improve the performance and reliability of your network infrastructure.

*Provide Logical Network Design Goals with the Bid Specifications*

Don't expect the winning vendor to configure network IT infrastructure hardware such as switches, routers, firewalls, and servers unless you have provided prospective bidders with the logical network design objectives and the IP addressing scheme as a component of the equipment specifications. Without the details on what's expected of the winning bidder the vendor will often assign a junior, less experienced engineer to a job to lower the cost of labor. That means on the job training for the assigned technician, potential cost overruns or worse. If the existing or new logical network design does not accommodate the new network hardware, legacy network hardware, applications or address concerns about security and growth, the installation of network components may result in complete network failure or recurring network problems. Bid specifications should provide bidders with the logical network design details and implementation plan parameters for minimizing network downtime and recovering from a potential network failure. Better yet, contract for the logical network design separately or engage a qualified consultant or managed service provider to review the logical network plan, IP addressing scheme and the implementation plan.

### *What does "installation" mean?*

Equipment installation may include some or all of the following but don't assume that the bidder knows what you expect or need, so spell it out. The last item is critical to every installation and should be required on every IT bid request. If the engineer/vendor leaves your site without providing this information you may be locked out of accessing the equipment in the future to make changes.

- ✓ Remove equipment from packaging and mount in existing cabinet, rack or shelf.
- ✓ Provide aforesaid cabinet, rack or shelf.
- ✓ Assemble optional modules, power supplies, or interfaces on the equipment
- ✓ Configuring equipment with a name and IP address provided by buyer
- ✓ Connecting patch cords between equipment and data cabling infrastructure.
- ✓ Connecting equipment power supplies to buyer provided power source preferably an uninterruptible power supply (UPS).
- ✓ Loading or updating the Operating System on the equipment
- ✓ Configuring the equipment according to the aforementioned logical network design and acceptance plan.
- ✓ Removing and/or disposing of obsolete equipment.
- ✓ Pre-staging and/or burn-in of equipment on the bench or off-site.
- ✓ Project acceptance and as-built documentation to include a network diagram, IP addresses, OS version, passwords, serial numbers, current equipment configuration, start-up test results, warranty status, technical contact and business contact information.

On large, complex projects a project manager may be needed to coordinate the installation with the owner's representative, the technology department, tradesman, the internet service provider, etc. Don't assume a project manager is included with every installation.

### *Is the equipment manufacturer or the bidder going to support the IT infrastructure installation and/or the post-installation?*

Equipment manufacturers provide warranties ranging from 90 days to lifetime, and maintenance contracts with a variety of coverage options and prices. The project contract and acceptance, however, is often between the buyer and the systems integrator or equipment reseller. In fact, the manufacturer may not support equipment that has been improperly configured, installed unsafely or in a manner which conflicts with industry protocols and standards. When a network is made up of components from multiple manufacturers, finger pointing between vendors may exacerbate network installation problems and potential failures.

A detailed acceptance plan needs to be included with the bid specifications to ensure that the network is working properly and that equipment has been installed according to the logical network design and the manufacturer or industry best practices. The acceptance plan should spell out the process for testing every device, application and operating system with the new network equipment preferably in a manner which will not affect the production environment.

*Look for experience, depth, references and consider managed services.*

Administrators can expect *infrequent* network service interruptions, because IT infrastructure is complex, susceptible to power outages, equipment failure, human error and external network factors. Setting a network service level goal and response time expectation raises the bar for employees, budgets and vendors. Managed service providers may own and lease back some portion of the network infrastructure including equipment, technical support, logical network/security administration, and refresh the network components every 60 months with an SLA. Managed network infrastructure services will alter IT budgeting and procurement practices as the IT industry moves towards managed/cloud services and longer term agreements.

Equipment resellers are not managed IT service providers. Managed IT service providers add value with experienced employees and trouble-shooting processes, network operation facilities to support your service level goal 24x7, network management software tools and the ability to manage the logical network infrastructure remotely as well as on-site. If you have any doubt about a vendor's claims, check out the references, visit the vendor's network operations center or request a SOC report.

Choosing the right vendor to install, configure and manage your network infrastructure is critical to the delivery of 21<sup>st</sup> century electronic communications. Providing detailed installation and configuration requirements in bid specifications will significantly improve the quality of IT services and ultimately network infrastructure performance.

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