Stan's Top 10 causes for screwed-up installs:

(Originally meant for carrier 'Point of Presence' (POP) site installs, most of these issues are applicable to large enterprise or data center installs as well.

1. **Not getting copies of all circuit & colo orders in advance** to verify circuit IDs, speeds, DLCI, VPI-VCI, CIR, Port, IP addressing, Customer Facilities Assignments, etc. During the install is the wrong time to discover something was ordered wrong. This data is also required for equipment configuration and appropriate labeling.

2. **Not verifying site readiness with the site.** Regardless of the committed ready date, call the POP tech; check on the racks, data wiring and DC power sizing; advise him of the number of boxes of equipment you are shipping (so they won't be refused) and the day(s) the install team will be onsite. Insure that the POP received notice of any scheduled maintenance windows. In the case of local access cables from the POP's entrance facilities to the customer rack, ask the POP tech what size cable bundles were used, what size wire (for DC power), whether the POP tech has or will punch down to the customer DSx panel, etc. Procedures vary greatly by POP.

3. **Not scheduling turnup activities in advance.** Turnups for power or fiber (may require a maintenance window), ATM/FR/Private Line circuit, IP Transit, etc., must be scheduled, and rescheduled if delayed. Maintenance windows may require a POP tech to come in after hours to implement. All turnups assume the availability of the appropriate technician to work on the task, which could take from fifteen minutes to several hours. It is not reasonable expect this to happen on a moment's notice.

4. **Not staging and testing the equipment prior to shipment.** The site is the wrong place to figure out how to do something. The staging lab exists to insure that all of the configuration, layout, and wiring issues are correct prior to the install, and that all sites are done consistently and documented. A laptop should be available for testing or last minute changes, but each device should be addressed and capable of running and being maintained remotely before being shipped. This includes routers, switches, muxes, DSUs, dial-in modems, etc. As an example, most dial-in modems will not even answer the phone without entering the appropriate AT commands via the RS-232 interface in advance, and most routers will not accept a modem call via the console without additional configuration.

5. **Not having rack elevations prepared in advance.** The rack elevation tells the installer how to lay out the equipment in the rack. It also documents the install for the monitoring team and the customer. If the layout is not documented, every install could be different, making for a support and upgrade nightmare. Cables may not reach, cable management hardware may not fit, and future upgrades may not fit as planned.

6. **Not knowing how devices are to be wired.** A wiring list should be prepared in advance listing every cable – OCx, DSx, v.35, async, console, DC Power, etc. The exact wiring affects everything from the equipment configuration to cable and patch panel labeling, and it's correct documentation is essential for the monitoring team to support the site remotely.

7. **Not ordering all cables in advance**, or providing pin-outs & color codes for site-made cables. The install is the wrong time to decide whether a straight through or crossover cable is needed, or what gender connector is appropriate.

8. **Not having tested each cable and port installed**, whether being used immediately or not. A good install is fully wired out and each port and entrance pair tested for the maximum documented future expansion, so that only the additional cards and relevant software configuration are needed. A badly wired cable installed months ago and left untested is a time bomb waiting to go off, causing unnecessary troubleshooting time, since the new installer quite reasonably expects that any problem must be with any new components, rather than the old.

9. **Not having planned a dialup 'back door' or telemetry path for troubleshooting.** Without a back door, an outage or configuration error guarantees an expensive return trip to the site. If the physical install is completed, any configuration issues can usually be resolved remotely by the monitoring team or others with the appropriate skill set, far more efficiently than the installer onsite.

10. **Allowing the customer to mandate an unreasonable schedule.** The customer may not think in these terms, but the date they are pushing for is production, not install. Sending a team out to do an install unprepared will not make the customer's production date, since all issues must still be addressed before the site can be accepted. Insist on doing things right ahead of time, rather than going through a fire drill and trying to clean up afterwards. That ALWAYS takes longer.

Each of these issues has in the past caused additional time on site, additional travel, additional support time by other support groups, and delays in customer acceptance. Whether delegated or not, it is the responsibility of the Project Manager to insure that each of these issues is addressed prior to the installation.