Communicating with a Serial Device over the Internet via Port Forwarding

In most cases, a LAN is set up to not allow direct communication between a serial device and an outside internet connection, unless the serial device initiates the connection.

This "device out" conversation initiation ("ET call home") can be done with the Tibbo chip if desired. Typically, the Tibbo calls out to a so-called link server, and then an outside PC queries the link server and thereby relays a connection to the serial device (like an old fashioned telephone switchboard).

This seems unnecessary if the serial devices in question (and maybe everything else on the LAN) have fixed IP addresses. You can still theoretically have DHCP for all PCs on the LAN with little possibility of conflict if the serial devices' fixed IPs are on a totally different "band" of LAN addresses than the PCs. For example, all the PCs would gain an address in the LAN band 192.168.3.xxx via DHCP, whereas the serial devices would have fixed IP addresses in the LAN band 192.168.1.xxx.

If your IT professional accepts this hybrid solution, then he can "forward" certain ports of the main (ISP) IP address. Here we are referring to the usually fixed (but sometimes dynamic though seldom varying) IP address that identifies your LAN to the world wide web.

(If you don't know this "external" IP address, download a dynamic DNS program that checks it for you. Even where your ISP refuses to assign a fixed IP address, the dynamically assigned IP address almost never changes: you basically have to change the "first encountered" device and its associated MAC number for your dynamic IP address to change.)

Now what does port forwarding mean? It means that any inquiry to your external IP address directed to that port is automatically connected to a specific *internal* LAN IP address.

For example, suppose that your external (ISP) IP address is 67.162.60.132. You can "forward the port" 30900 to the (normally inaccessible) LAN address 192.168.1.90. If you now query (say with Hyperterminal) the IP Address 67.162.60.132, port 30900, you will be directly connected to your serial device at 192.168.1.90, port 30900.

Port forwarding is a great way of circumventing normal router firewall blocking without seriously compromising any computers on the LAN. *This allows a user to remotely poll serial devices over the internet*.