What is a PRI line?

- There is only one line physically terminating on the customer PBX but still a PRI line can receive/send 30 calls simultaneously! A PRI line is end to end digital circuit.  
- A PRI (Primary Rate Interface) line is a form of ISDN (Integrated Services Digital Network) line which is a telecommunication standard that enables traditional phone lines to carry voice, data and video traffic, among others.  
- A PRI circuit consists of two pairs of copper lines terminating on a modem from a service provider premises to the customer premises. It uses multiplexing/de-multiplexing techniques to carry more than one channel in a single circuit. There are two common forms of PRI lines – E1 (which carry 30 channels in the two pairs of copper lines, common in Europe, India) and T1 (which carry 23/24 channels in the two pairs of copper lines, common in United States).  
- Each channel in a PRI line provides 64 Kbps for data transmission.  
- A PRI line can connect to both Analog/Mixed EPABX systems and also the newer IP PBX systems. A PRI Card / Interface might be required to terminate the PRI circuit on the PBX.  
- A PRI line can also be used to connect two PBX systems thereby providing 30 channels between them for interoperability.

Advantages of PRI Lines:

If thirty separate analog trunks are taken instead of one PRI line,

- The cost of terminating all the thirty analog trunk lines becomes higher than terminating one PRI line.  
- There would be thirty rentals to be paid instead of one consolidated lower rental for a PRI line.  
- Some analog trunks might be used more (uneven distribution of calls) and some lines may not have even crossed the free calls limit.  
- Terminating 30 analog trunks in a PBX also requires more free slots/cards than the one slot usually occupied by one or even two PRI trunk cards.  
- Direct Inward Dialing: For each PRI line, the service provider would provide more around 100-500 numbers which can be used by outsiders to call the extension directly, instead of having to go through the PBX Auto-attendant.  
- Caller ID: Since all the extensions have their own number, this unique number will be displayed in the phones that they are calling to. Some call centre applications are based on the unique caller ID number for differentiation of services.  
- It is possible to offer both voice and data in the PRI line. Some service providers have dynamic offerings where data is transmitted in all the channels that are free (not occupied by voice) at that given point of time.  
- Call hunting (Where the call lands in any channel that is free, instead of the called number specifically – For example, if there is one board number but a number of people are calling in at the same time and still a channel is allocated to them .With analog lines, if one number is busy, they need to call in another number manually) is possible by default with a PRI connection, but for the analog trunks this facility needs to be extended by the service provider and enabled on the PBX, involving additional cost at times.  
- PRI lines can be used for voice connectivity, data connectivity, video conferencing, faxing, and all the above can be done simultaneously too (on different channels).  
- PRI lines are end-to-end digital lines and hence the clarity is much better than analog trunk lines.  
- Since they are digital lines, PRI lines are more reliable and trouble shooting is also easier with them. They are mostly on a fiber core ring and hence there is some redundancy.  
- It is harder to tap into digital lines and listen to the conversations.  
- There are flexible billing options available with most of the PRI service providers. The billing can be centralized or distributed (department wise, etc).  
- PRI lines take lesser time to establish calls then analog trunk lines.  
- Some service providers offer flexible plans where instead of the full 30 channels, they provide and charge for only 20 channels etc. This makes PRI lines more economical for smaller companies.

Dis-advantages of PRI lines:

- A PRI line is economical only if the minimum rental charged by the service provider for a PRI line is more than the average value of calls with analog trunk lines every month in an organization. Otherwise, the usage may not even cross the free call value provided by the service provider for a PRI line.  
- A PRI line is not so economical for long distance/ international calling. An ITSP or SIP trunk service provider who takes the calls over the internet might charge much lesser for international long distance calls.  
- Inter branch communication between the branches is not free of cost with PRI lines (Some PRI service providers provide this facility, but all your branches may need to have PRI lines from the same service provider and there also might be a minimum revenue commitment for the same). With VOIP systems, inter-branch communication can be done over internet/ leased lines hence reducing the cost drastically.  
- The cost of a single PRI card to connect to your EPABX/ IP PBX is still very high. Most of these cards are proprietary, meaning you can buy them only from your EPABX vendor.