

ICT Infrastructure

India has recently become a powerhouse in technology. It has brought about change in fast way trying to catch up to countries like the US. India has made many changes to policy since it's independence. This has brought about deregulation and privatization to help foster ICT infrastructure. India is looked at in a new light as a source of software and engineering capacity. Marvalous technology parks help bolster the spirit of India's technology landscape. The policy changes have helped affect a brighter future for ICT in India. The continued high standing of India's education has allowed for the development of a highly capable workforce. The government has made great strides in interacting with it's citizens using ICT. ICT production in India has increased very dramatically. Software export has become one of it's main businesses. We have seen a large diffusion of an ICT culture in India. Most teens have cell phones. The sheer size of the ICT market in India has a lot of upside potential. There have been many problems that have come along with these great developments.

India has been plagued with corruption. It stems far and wide and is fairly difficult to subdue. It has created problems for E-government interaction with citizens. The infrastructure has also caused a divide between the rich and the poor. This is also bolstered by the caste system which is still taken to heart by some in India. Political fueds still run their course causing development to slow down. Piracy is still rampant because of improper enforcement of copyright laws. Many of these factors create deter individuals from wanting to invest in India, but the trade off for the low costs hasn't stopped them.

As India continues to develop it's ICT policies and infrastructure is becoming one of the leaders in the global economy. India has shown an ability to produce and export. The advantages it has experienced in technology have spilled over into other industries. India has shown an ability to work with the current technology leaders.

**Incumbent's Exchanges Connected to Reliable Infrastructure
in India (March 2005)**

	Exchanges	Connected by Optical Fiber	Connected by Digital Microwave	Connected by Satellite	Other**
Chennai	210	210	0	0	0
Kolkata	518	518	0	0	0
Maharashtra	4941	4687	226	10	18
Gujarat	3289	3289	0	0	0
Andhra Pradesh	3341	2965	238	5	133
Karnataka	2708	2647	61	0	0
Tamil Nadu	2147	2043	62	4	38
Kerala	1218	1204	0	6	8
Punjab	1536	1533	0	0	3
Haryana	1115	1109	4	0	2
Uttar Pradesh (West)	955	891	0	0	64
Uttar Pradesh (East)*	2760	2385	292	0	83
Rajasthan	2341	2254	31	15	41
Madhya Pradesh and Chhattisgarh	3437	3085	19	15	318
West Bengal and Andaman & Nicobar	1416	1367	35	14	0
Himachal Pradesh	934	714	132	50	38
Bihar and Jharkhand	1591	1534	3	0	54

Orissa	1136	1129	4	0	3
Assam	594	475	115	4	0
Northeast	485	234	79	65	107
Jammu & Kashmir	363	257	55	47	4
Total	37,035	34,530	1,356	235	914

Source: Authors, based on Telecommunications Regulatory Authority of India (TRAI) data.⁴

Notes: * Uttaranchal data has been combined with Uttar Pradesh (East).

** These other reliable media are underground cable (4 exchanges), Analog/Digital UHF² (458 exchanges), PCM³ (2 exchanges), and other media (450 exchanges).

ICT Infrastructure Management

In ITIL terms, Information Communication Technology (ICT) Infrastructure Management is at the opposite side of the spectrum from Business Perspective. It is the "liaison" between Service Management and the Technology. The goal of this service is to use proven, repeatable processes to provide a stable operating environment for all the IT functions using the technology.

Design and Planning

The purpose of this set of processes is to guide the design and planning of IT enterprise architecture. The teams executing these processes work with business architects to devise a set of IT standards and workflows that satisfy current and future requirements. The work spans the product lifecycle of research, selection, introduction, maintenance and sunsetting of all IT infrastructure components. The teams determine the best technological path for the organization going forward and commission the work to attain the goals. For example, the IT architecture team may determine that pagers are no longer a supportive technology and that cell phones are a better, more cost-effective solution. The team would formally sunset

pager use, giving all parties concerned a specific date to convert to the new technology. Deployment processes would be used to introduce the new technology - cell phones - into the production environment by the specified date.

Deployment

These processes control the introduction of hardware and software changes into the operating environment, guiding activities in both production and test environments. The goal is to ensure that introducing changes into production operations has the least impact possible to the business and its customers.

Operations

This set of processes covers the day-to-day work required to monitor and maintain a stable IT infrastructure and operating environment. Some of the tasks associated with the processes are job scheduling, data management (including backup and recovery management), enterprise command center, physical database administration and proactive hardware maintenance.

Technical Support

Some of your best and brightest technicians should be staffed in Technical Support. They are problem solvers and problem preventers. Technical Support provides Level 3 problem determination support to the entire IT community. They assist Design and Planning by providing technical evaluations, both in the form of Proof of Concept (POC) and Pilot tests of new technologies. They also assist the RFI (Request for Information) and RFP (Request for Price) processes by providing detailed configuration and specification information. Technical Support acts as a liaison with vendors on technical matters. Technical Support is also responsible for creating and maintaining the Technical Library and the technical knowledge base for the organization.