

Cummins Power Generation (CPG) delivers essential power solutions to the telecoms industry



Rapid development

Since the launch of the Internet in 1992, the telecoms industry has changed more rapidly than anyone could have predicted. With subsequent developments such as the introduction of broadband services in 2000 and the launch of third generation mobile services in 2003 almost every industry relies on the ability to communicate with customers and suppliers in order to conduct its business. Telephone systems are central to this communications infrastructure.

Telephone systems, also known as private branch exchanges (PBXs) or switches, traditionally provide businesses with voice communications. However, there are different systems that make use of traditional telephone lines, but better suit the requirements of certain businesses:

- Voice systems that deal purely with voice and no data
- Converged voice and data systems, with the capacity to deal with both
- IP based solutions which are more advanced and can deal with voice, data and video services

Competition

As there is no longer a monopoly on the provision of telecoms services, the providers

are vying for customers and in fact, the number one challenge facing these providers is customer retention. The old adage that suggests it costs five times as much to win a new customer as it does to ensure the retention of an existing one certainly rings true here.

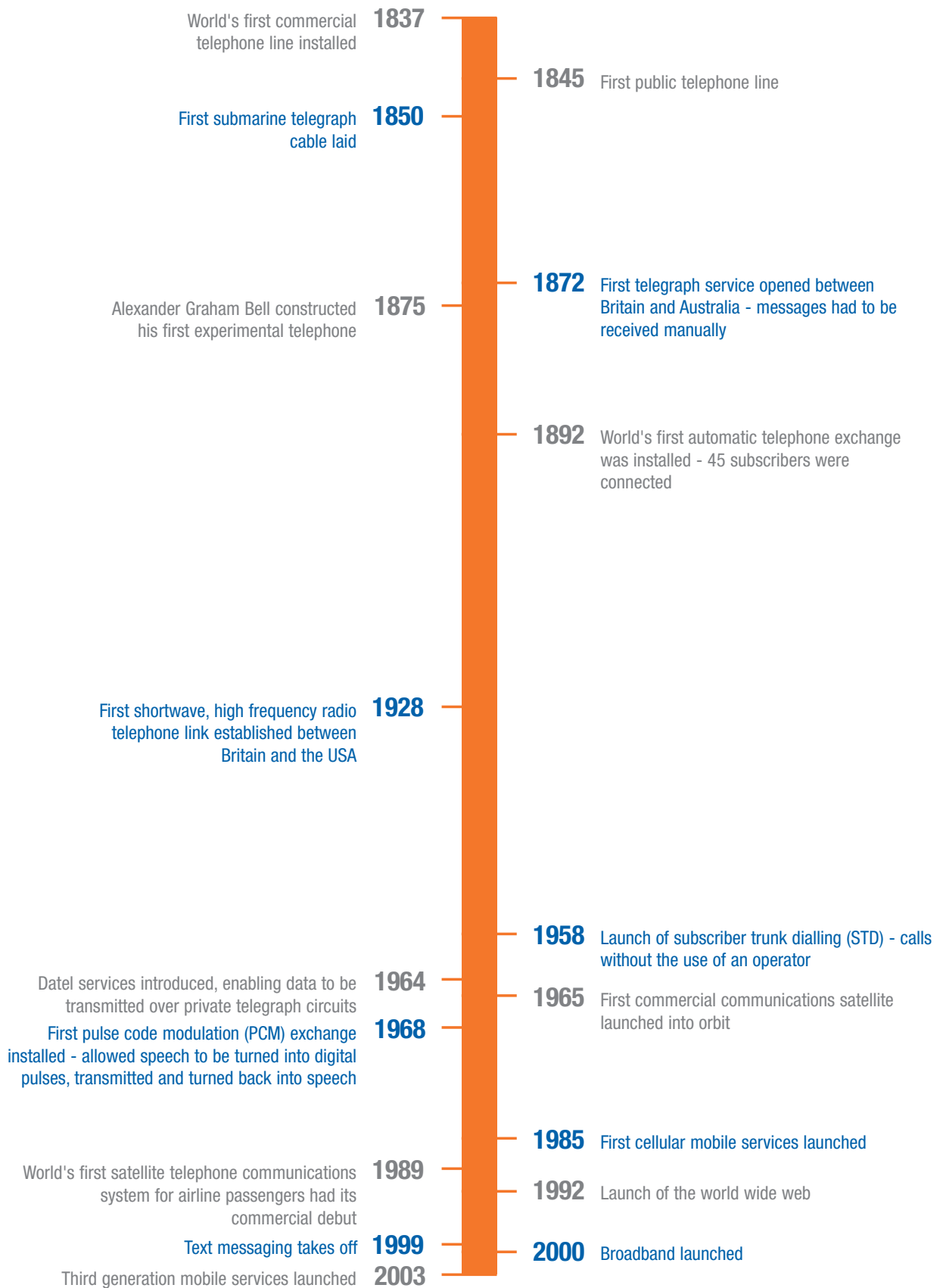
The main factors that force customers to switch providers are poor service performance and unreliability. Any dips in the service provided are guaranteed to lose customers for the provider.

Power outages

Both wireless and wireline service providers across the world acknowledge that power outages are the most likely cause of interruptions to the service they provide. Therefore they need to ensure appropriate backup systems are in place so connections are not lost and customers are not affected.

Major problems caused in recent years by tropical storms in the Caribbean, the Bahamas and Latin America as well as the well-publicised black-out events in North America and Europe highlighted the vulnerability of existing infrastructures.

Developments in the telecoms industry to date



Cummins Power Generation (CPG) solutions

Increasingly telecom companies are turning to CPG to provide these backup power solutions. CPG has been supplying onsite power systems to keep operations running smoothly for over 80 years - a reliable service that telecoms, wireless, broadband and other telecom technologies require.

CPG has in fact had extensive experience of working with telecom companies and therefore has developed generator sets to meet the specific needs of the telecom industry.

Whatever the telecom customer's requirements, CPG has a generator set tailored to meet that need. However, most projects require enclosed sets due to the nature of the installation, which is often in a built-up residential area. The enclosed sets can be fitted with silencers and feature vibration reduction technology. The containers that house the generator sets are also lockable for safety reasons and to prevent vandalism.

Although CPG is capable of installing powerful generator sets (up to 3,000 kVA) for large-scale projects, most telecoms



companies have multiple sites that individually require, much smaller kVA values, the smallest being 11kVA.

Rental Market

CPG has a wide offering for the telecoms market - there is a different generator set tailored to each type of telecom requirement, including when companies need short-term solutions. CPG

delivers reliable and cost-effective power during scheduled maintenance, weather-related emergencies or start-up.

With a network of local distributors in over 130 countries, CPG is also able to provide single-source warranty, planned maintenance, start-up and around the clock emergency service. CPG - truly an international company, working to provide local solutions.



Cummins Power Generation, a subsidiary of Cummins Inc. (NYSE:CMI) is a global leader in increasing the availability and reliability of environmentally responsible electric power around the world. With over 80 years' experience, its global distributor network delivers innovative, low emissions power solutions for any need across the world. For more information please contact *name* Cummins Power Generation, *address* *phone* www.cumminspower.com



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Nicosia, Cyprus



SpiderNet ISP

Located in Nicosia, Cyprus, SpiderNet is the island's leading Internet service provider (ISP). With over 2200 modems and servers available in all towns on the island, the provider gives its customers the facility to access Internet connectivity from any corner of the island at local telephone call rates.

Although the fifth ISP to enter the Cyprus market, SpiderNet has quickly become the market leader by gaining the respect of its rivals and customers who realise its competitive strength.

In order to maintain this position, SpiderNet has invested heavily in its network infrastructure to enable it to continue to provide reliable and high quality Internet services to large corporations and this includes an investment in uninterruptible power supplies (UPS).

Concerned about the possibility of an electricity authority failure, SpiderNet turned to CPG's local Cyprus distributor, Uniplant Ltd, to provide a generator set and UPS system allowing the consistent supply of reliable Internet connection for its customers.

The 110kVa generator set was installed in the roof of the four-storey main office in Nicosia early in the morning by crane, after the street had been closed to traffic. Being situated in a busy capital, SpiderNet had to take noise reduction into consideration and so Uniplant Ltd provided a silenced set which goes almost unnoticed.

Renos Theodorou, Powergen Sales Manager of Uniplant Ltd said, "CPG has a great reputation for being able to provide good value, reliable power solutions and fast delivery and installation. We also provided the Client with PowerCommand® software for local monitoring from the Building Management Office. The Client is very pleased with the service we provided on behalf of CPG and no longer has to worry about the consequences of a power failure."

Tanzania

Mobitel

Tanzania's mobile telephone system is expanding in order to bring the outlying areas of East Africa into contact with each other. The process is being sped up with the installation of standby power generator sets provided by CPG.

Mobitel, the leading cell-phone network provider in Tanzania, has purchased 20 CPG generator sets to provide emergency electricity for mobile phone transmission stations, some of which are located in remote areas of the country. The generator sets provide instantly available standby power to the transmitter towers in the event of mains power failures. Cummins Diesel South Africa (CPG's local distributor) arranged for the shipment of 20 C22D5(S) (17.5kVA) generator sets with 400V 32A transfer switches to Dar Es Salaam in Tanzania.

“Power outages are fairly frequent in some areas of Tanzania and reliable emergency power is absolutely essential if the Mobitel network is to remain operational,” said Dave

Baxter, regional sales manager at Cummins Diesel South Africa's power generation division.

The generator sets are equipped with special AMF (automatic mains failure) sensors. When mains power fails, the generator sets immediately switch in, ensuring that communication links stay open by feeding an emergency supply of electricity to the transmission tower. When mains power is restored, the standby sets continue to run for a few minutes, until they are satisfied that mains power is permanently restored.

Encased in noise-reduction steel canopies, the generator sets are fitted with 600 litre diesel fuel tanks, which guarantee around 60 hours of backup power.

Baxter said, “For urban areas, the generator sets are normally equipped with a standard 120 litre fuel tank, but in distant rural areas it is obviously necessary to have larger tanks to reduce refueling intervals.”

Pakistan



Siemens/Telnor

In 2004 Norwegian mobile telecoms operator, Telnor, was awarded the contract to operate a cellular network in Pakistan. The company then struck a deal with Siemens to actually build the network in the Southern areas of Pakistan.

At over 75 Siemens/Telnor sites in Pakistan city power is either unavailable or unreliable and the telecom company recognised the catastrophic effect this could have on its business. Therefore it had to implement backup power supplies as quickly as possible.

Cummins Sales and Service Pakistan won the contract to provide this backup power and has now completed its largest ever installation for a telecoms company - and in record time.

Three hundred and fifty roof-top sites requiring 20kVa generator sets built on top of multi-storey buildings; 20 highway sites consisting of 40kVa twin generators; 2 master switching controls (MSC) 100kVa twin generators and one more MSC site comprising three 500kVa generator sets with MC 150s have been installed.

These sets were installed between December 2004 and July 2005, with almost 70% of the installation completed by March 2005 it was not only a record for CPG in terms of rapid deployment, but also for Telnor in the mobile communications business in Pakistan.

The purpose of the installation was to supply power to telecom equipment from within purpose-built shelters at each site. However, many other environmental factors needed to be taken into account in order for the installation to be considered successful. In the case of a city power outage, the generators also provide air conditioning inside each of the shelters. For the most part the generators were installed on top of residential buildings so sound attenuation and vibration dampening were major considerations of Cummins Pakistan.

At sites where there is no power at all from the national grid, Cummins Pakistan designed and installed intelligent ATS panels that automatically switch between the available generator sets and utility. This is of utmost importance when providing a continuous power supply.

Tariq Haq of Cummins Pakistan said, "We were initially chosen to provide this service because we are able to produce and install the generator sets at very short notice. Cummins is the brand of choice in Pakistan, but we still had to prove we were worthy of being awarded the contract, especially as it was on such a large scale. We have now achieved that by meeting all our customers' requirements. The Client is now happy and it is likely when the Client expands, Cummins Pakistan will once again be called upon to provide a reliable service."

Senegal



Sentel and Sonatel

Matforce, the local distributor for CPG in Senegal, has recently provided prime power solutions for both the largest and the second largest mobile phone operators in the country.

Both operators, Sentel and Sonatel respectively, needed their sites up and running before the end of 2006. With nearly 400 sites requiring reliable power - it is a huge task for the CPG distributor.

However, Matforce has so far completed installations at nearly 70 of these sites in just four months leaving it well on track to meet all targets.

Sentel has been provided with one C11D5 enclosed generator set featuring 11kVa at each site and Sonatel sites have received enclosed 15kVa twin generator sets that will run alternately in 12-hour loops.

These rural sites are all without mains power and so need a continuous source of power in order to allow both telecom

companies to operate without interruption. The generator sets installed also have to be able to provide air conditioning for the shelters in which they are housed. In addition, sound attenuation was an important consideration so as to keep noise pollution to a minimum in these rural areas.

Matforce already has a solid reputation amongst the telecoms industry in Senegal and this coupled with the ability to deliver the product quickly and provide a 24/7 emergency service secured the contract for the distributor.

Ismael Adjovi of Matforce said, "This contract was certainly made possible by Matforce's ongoing good reputation and expert technical knowledge, however, a key factor was definitely the support of the Cummins Power Generation technical sales team for the French speaking countries in Africa. We are very pleased that this project has been such a success and look forward to the continuation of the installation."

