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128 delegates attended the 10th ICF Congress and the event was marked very useful and effective. The topic "Industry Response to Change" combined an update of the Bathtub Model with a view from Wall Street, recommendations for Asset Management and the prospects of electronic Supply Chain Management, with a follow-up on e-Business. ICF Council members presented a global industry outlook. Technology topics covered fiber-optics status and new fiber classes and it was explained how HVDC opens a new perspective for electric power networks. The segmentation of wire and cable consumption was made visible by the X-ray of the Americas.

In his address to the General Assembly the President Dr. Morchio emphasized the importance of human resources, saying: *"Think about the future and take in account that fresh blood and new ideas can bring leverage to move faster than expected."*

The Standing Commission has reviewed the comments and wishes given during the Thursday lunch session and thanks the delegates for the contributions. This way of personal communication is more effective than by questionnaire and will be improved.

FRONT PAGE PICTURE

Guess what you see, is it a new application for copper telecom wire? For sure it is a surprising and exciting object that we have chosen to illustrate to our readers all seasons' good wishes from Vienna.

REPORTS AND WEBSITE

The Congress reports are available in print and on CD-ROM and have been mailed to delegates as requested at the registration form. Additionally, all reports and the survey data on the Americas can be downloaded from the ICF website "members only". For energy efficiency of electric motors see the link to an advance notice for a seminar organized by the European Copper Institute.



NEWSLETTER

DSL in Europe: A Boost To Metallic Telecom Cable Demand?

The telecommunications business in Western Europe is changing fast. With the wider penetration of the internet and the coming e-commerce revolution, the local telecom access facilities are not sufficient to meet the market's needs. Digital Subscriber Line (DSL) technology provides a means of offering broadband services over the existing copper telecom access network. While in theory requiring little replacement of external metallic telecom cables, recent experience in the United States has shown that DSL can create significant incremental demand. Will the same be true of Western Europe?

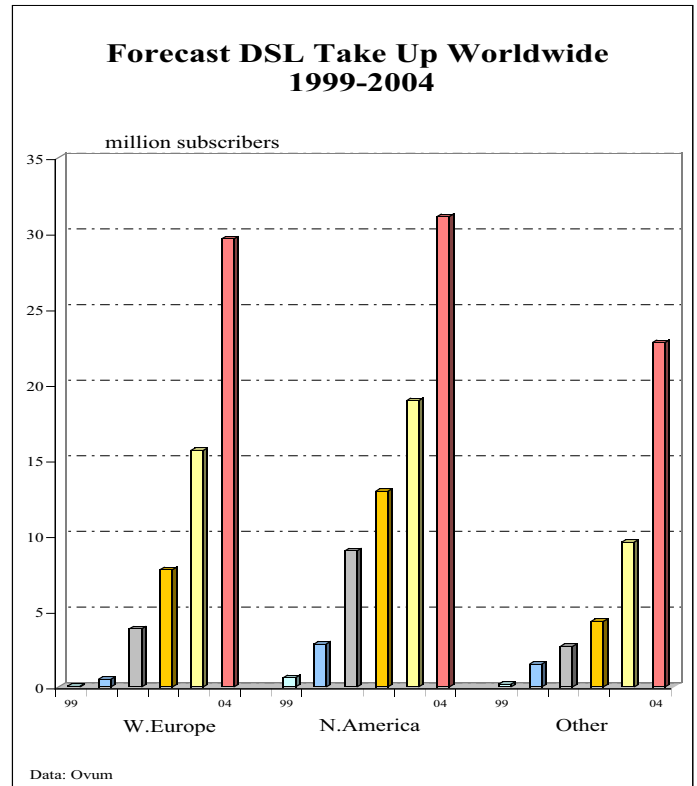
Certainly, any boost to demand would be welcome, as the copper cable market is still declining. The penetration of fibre optics deep into the public networks has virtually eliminated the need for large pair count cables while, nearer the subscriber, a sluggish rate in line growth has stunted demand for smaller cables. In most countries renovation demand is small, as the state-owned incumbent local exchange carriers (ILECs) that operate the telephone system historically installed to a high standard and managed full replacement schedules.

During the 1990s, the ILECs lost their dominance over European telecoms. They ceded share in long distance traffic, to new pan-European fibre based network operators. Much of the growth the ILECs' core voice business was taken by mobile phone operators while, in the fixed network, new entrants claimed a large share of the revenue generated by burgeoning data traffic. Simple fixed line voice telephony, to which the ILECs are best adapted, grew only slowly. In this fluid environment, state ownership of the former monopolies no longer makes sense. In the UK, British Telecom became a private entity early in the 1990s, now others are following suit.

Privatisation has meant a further fall in metallic cable demand. Replacement and other non-critical investments are being cut in order to improve the financial figures. Now, the demand for outside plant metallic telecom cable reflects only the necessary replacement of obsolete cable (perhaps 2% of the existing network annually), disruption due to construction work and small increments to the subscriber base. In 2000, we estimate the total market for outside plant metallic cable in Western Europe at 14M pkm. This compares to a market of over 40M pkm/a ten years ago.

While investment in twisted pair copper cables is falling, the

demands placed upon them are growing. With the exception of cable television (CATV) networks, these cables form the only point of access to fixed line telephony services for virtually all subscribers. The market now demands that twisted pair copper cables carry large volumes of data as well as traditional voice traffic. The cables are owned by the ILECs, but they no longer have a free hand in determining whether or not competitors can have access or the terms that apply. Current deregulation is leading to the unbundling of the ILECs facilities. In theory, this allows free access to others wishing to use the existing fixed network on fair terms.



Unbundling is being driven through by national and EU public policy makers wishing to achieve universal access to broadband services. The authorities are faced with the spectre of a digital divide, between those that can afford high speed access through leased lines and those that cannot. DSL is the enabling technology that unbundling is designed to promote. Without open access to the fixed network, there would be little commercial pressure for the ILECs to provide DSL services, as cost prevents others from building their own networks in competition. The process of unbundling and the adoption of DSL are, therefore, closely linked.

DSL technology will allow data speeds of up to 9Mbit/sec to be achieved on existing copper telecom networks by using frequencies above the telephone bandwidth. The technology requires new equipment both at the exchange and at the

subscriber premises. System design is typically asymmetric (ADSL), with downstream speeds ranging 1.5-6.0Mbit/s, upstream speeds from the subscriber 64kbit/s-1.5Mbit/s. Before the introduction of DSL, the effective limit of the copper-based switched network infrastructure was 64kbit/s, the single channel rating of ISDN services.

The unbundling process requires access to be given to individual subscriber lines by the ILECs to competitive service providers. As normally envisaged, this means the installation of separate equipment by the competitor at local telephone exchanges owned by the ILECs (co-location). This is a cause of friction. In the UK, British Telecom claims that up to half of the exchanges where co-location has been requested are unsuitable for this purpose; for others it claims that there are huge costs involved. Frustrated by BT's delaying tactics, two large US companies (Global Crossing and WorldCom) have abandoned plans to offer ADSL services in the UK.

While they can delay competition, the period of monopoly profits for the ILECs is now almost over. In order to benefit from growth in the volume of telecom business, especially the value added services, they are having to become much more agile in their service offerings. Hence, their current interest in DSL roll out. Virtually all of the 0.5 million DSL lines installed in Western Europe to date are operated by the ILECs. Although competitors will gain share, the ILECs should remain dominant.

Ovum forecasts an exponential rise in DSL take up, to achieve nearly 30 million lines by 2004. What does this mean for copper telecom cable? In theory, DSL can be carried on existing copper networks with little additional investment. In practice, experience in the United States has shown that this is not necessarily the case. Distance from the exchange is one factor. DSL operates effectively only where this distance is less than 3.5 km. Where the local loop is longer, investment is required. New cable also comes into the picture where the existing cable is

deficient. Unfortunately, both conditions apply far less in Western Europe than in the United States because of the continuous investment by the ILECs in the past, their long-standing use of polyethylene cables with 0.4 mm conductors and above and the denser population structure. In the UK, where there are evident deficiencies in the existing network, the ILEC is installing fibre deeper into the system rather than selecting a pure copper solution.

While the ILECs claim that their existing networks are sufficient, DSL is slowing in the decline in the demand for outside plant metallic cables in Europe in 2000 (when the market drop will have been only 3-4%). Some cables are being replaced in order to make the networks DSL-compatible. Also, we may expect replacement schedules to be upgraded to ensure continued network integrity. If DSL grows at the rate that Ovum predicts, then it is probable that the market for outside plant metallic telecom cables should at least stabilise, if not show modest growth. Moreover, DSL equipment installation in the exchanges, especially by non-ILECs, implies a huge percentage growth in the comparatively small exchange cable business. If, as in the United States, DSL installation spurs the CATV companies to compete with large scale investment in cable-modems, this also has implications for cable demand.

Looking at just the copper twisted pair cables, however, we cannot be too optimistic. The number of plants in Western Europe making such cables has been slashed over the years but capacity has not, as some lines were moved rather than retired. We estimate that effective capacity to produce outside plant metallic cables now stands at 30-35M pkm/a. Even assuming that the regional market were to grow to approach 20M pkm/a and that exports were maintained, both optimistic assumptions, there is quite enough capacity to fulfil this need. While the market may rebound slightly, we are unlikely to see a large rise in prices resulting from a capacity constraint.

DSL Services and the Outside Plant Copper Telecom Cable Market in Western Europe

Roll Out Schedule of DSL Services in Western Europe

Country	Operator	Launch	Comment
Austria	Telekom Austria	Nov 99	Major cities. Nationwide by 2003.
Belgium	Belgacom	Mai 99	Proposed 75% coverage end-2000.
Denmark	Tele Denmark	Jul 99	Extended from major cities in 2000.
Finland	Sonera Elisa	Jun 98 1997	Selected cities. Initially Helsinki only.
France	France Telecom	Nov 99	Initially Paris. Nationwide by 2003.
Germany	Deutsche Telekom	Jan 99	Planned 220 networks end 2000. Nationwide 2003.
Ireland	Eircom	Jul 00	Trials underway.
Italy	Telecom Italia	Jun 99	In 25 cities end 1999. Being extended.
Netherlands	KPN Telecom	Nov 99	Major cities end 2000.
Portugal	Port. Telecom	Jan 01	Trials underway.
Spain	Telefonica	Sep 99	Planned 109 networks end 2000.
Sweden	Telia	1999	Planned reach 1 mn households end 2000.
UK	BT Kingston Comm.	Apr 00 1998	Planned 50% coverage March 2001. Coverage E. Yorkshire. To be extended in 2001.

Source: Analysys "Delivering DSL in Europe" (available December 2000).

DSL Take Up Forecasts 1999-2004 (mn subscribers)

	1999	2000	2001	2002	2003	2004
Western Europe	0.1	0.5	3.8	7.8	15.6	29.6
France	0.0	0.1	0.9	1.9	3.6	6.7
Germany	0.0	0.1	1.0	1.9	3.4	5.7
Italy	0.0	0.0	0.3	0.6	2.0	4.7
Spain	0.0	0.0	0.2	0.6	1.3	2.9
United Kingdom	0.0	0.0	0.4	1.1	2.4	4.5
Other	0.0	0.2	1.0	1.7	2.9	5.2
North America	0.6	2.8	9.0	12.9	18.9	31.1
Asia-Pacific	0.1	1.3	2.3	3.4	6.7	14.0
Other	0.0	0.2	0.4	0.9	2.9	8.7
World Total	0.8	4.8	15.5	25.0	44.1	83.5

Source: Ovum

External Metallic Cable Capacity and Market Size in 2000

	Major Plants	Minor Plants	Capacity (M pkm/a)	Market (M pkm)
France	2	1	4.0	1.7
Germany/Czech Rep.	2	2	4.5	2.1
Italy	2	1	4.0	1.5
Scandinavia	2	3	4.5	1.2
Spain	2	2	5.0	1.9
United Kingdom	2	1	4.0	3.4
Other Countries	3	7	7.0	2.3
Total	15	17	33.0	14.1

Note: Ex-Siemens plant in the Czech Republic sells largely to the German market.

Source: Metalica



NEWSLETTER

News in Brief

(provided by Metalica, UK)

Developments in Optical Fibre: Alcatel has announced plans to triple its fibre making capacity by expanding plants in Germany, the United States and France. On top of its existing \$750 million programme in the US and Australia, **Corning** has announced a \$50 million upgrade to its UK plant. The investments, to be complete in 2002, should raise Corning's capacity by 50%. **Lucent** now plans to make optical fibre as well as cable at its new plant in Brazil. It intends to focus on speciality fibres, with new investments in the United States and Denmark. In South Africa, **Zeconi Holdings** is to construct a R250 million plant which, once complete, will be the largest in the southern hemisphere. Production is scheduled for 2002.

Corning, Pirelli and Cisco: **Corning Inc.** acquired **Pirelli SpA's** 90% stake in its optical components business for \$3.6 billion in September and subsequently bought the remaining 10% owned by **Cisco Systems Inc.** in October. The Cisco share results from a deal struck last February, when Pirelli sold its terrestrial optical systems business to Cisco. In November, Corning and Cisco announced a strategic alliance to deliver Internet Protocol (IP) solutions to internet service provider customers. Meanwhile Pirelli, which announced a third quarter operating profit increase of 130% to Euro 126 million on sales of Euro 1.83 billion (up 19%), intends to put money back into its core business areas, but not necessarily all into cable. In October, Pirelli launched a US\$73 million takeover bid for the 49% of **Pirelli Cables Australia (PCA)** that it did not already own.

The Lucent and Alcatel Cable Sector Spin Offs: The separation of **Lucent's** Enterprise Networks Group into the independent **Avaya** went ahead at the end of September, but the launch of **Nexans** as a separate entity from **Alcatel** has been postponed until next year. The poor investment climate and internal disagreement as to whether or not Nexans should incorporate fibre optics business may lie behind the delay. Third quarter results of Alcatel suggested a strong performance by the cables business area, with a 17% increase in sales and a 67% increase in operating income compared to 1999.

Delphi Automotive Invest in Eastern Europe: A US\$16 million wire harness plant is to be built by **Delphi Automotive Systems** at Senica in Slovakia. Output of the plant, to employ 1,000 workers, will be aimed mainly at the German market.

Superior Telecom Streamlines in the Middle East: US-based **Superior TeleCom** is consolidating its power cable operations in the Middle East at Sha`ar Haneger. The 60,000 sq.m. plant, expanded by 40%, has ten modern production lines. Some equipment originates from the now-shut Haifa plant and the recently acquired Pica Plast factory in Kiriat Gat.

Leoni AG Expands Further: German **Leoni AG** has acquired a 51% interest in **Protec Kabel Produktion GmbH**, based in Schmalkalden and Bretzfeld, Germany. Protec manufactures ready-to-fit solutions for automation and employs 90 people.

Corning in Cable Plant Ownership Changes: The South African power electronics group **Power Technologies Ltd.**, owner of **Aberdare Cables**, has acquired **Cables de Comunicaciones SL**, a Spanish copper telecom cable producer employing 300 with annual revenues of US\$50 million, from **Corning Inc.** Prior to Corning's ownership, the plant had been owned by BICC. In China, **Corning International Corp.** has rounded out its ownership of former **Siemens** cable assets by taking a 50% share in **SOFC**, a fibre optic cable joint venture with **Chengdu Telecommunications Cable**. The venture will now be called **Chengdu CCS Optical Fibre Cable**. Corning has also agreed with the Vietnam PTT authority, **VNPT**, to take on the Siemens stake in the fibre optic cable company **FOCAL**.

Taiwanese Investment in Vietnam: **Ta Ya Electronic Wire & Cable** has recently announced a US\$8.9 million investment in a winding wire subsidiary in Vietnam.

Taihan Invests in Malaysia: South African based **Malesela Holdings** has combined with **Taihan Electric** of South Korea to form **M-Tec**, a fibre optic cable venture in Malaysia. Taihan is to inject US\$13.5 million into M-Tec, partly to pay off debt incurred in Malesela's existing Malaysian cable business.

Furukawa Electric Divests US Subsidiary: The **Furukawa Electric** 63% stake in the US fibre optic cable company **Optical Communications Products (OCP)** was valued by the market at \$115 million at its IPO in November.

The ICF Newsletter is published several times each year by The **International Cablemakers Federation**, P.O.Box 26, A-1014 Vienna

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