

Dr. Kayoun, Session chairman

Now we will move to a specific market segment, the Chinese LAN cable industry. The speaker is Thomas Chaung from LTK Industries, which is a Hong Kong based company. Mr. Chaung is the marketing and sales director of the company. Let us welcome Thomas Chaung.

Mr. Thomas Chaung

Good morning, ladies and gentlemen.

I am very happy to have this presentation on behalf of my company. We are very glad to share some information and experience with all the companies here.

In my presentation I will go through the following:

- Brief Introduction of LTK

- The last decade

- Market Overview

 - Size and Capacity

 - Segmentation, Branding, and Pricing

 - Counterfeit and Sub-standard markets

- Manufacturing Overview

- Challenges

Company Background

- ❑ Established in 1981 and a member of Gold Peak Group.
- ❑ Headquarters located at Hong Kong Science Park.
- ❑ 7 manufacturing plants in Shenzhen, Huizhou, Shanghai and Dalian, all with ISO 9001 & ISO 14001 accreditation.
- ❑ First wire & cable maker approved with UL RSCS.
- ❑ Sales turnover around HK\$1.3 billion in 2004.



Milestones on LAN Cable Production

- 1993 Factory established in Shanghai
- 1994 ISO9001 accredited by BASEC
First Asian factory verified by UL on Cat. 5
- 1995 Start OEM for reputable brand name in the market
- 1997 Factory Expansion to cope with overseas demand
- 2001 Factory expanded to one of the biggest OEM factories in Asia
- 2002 Cat. 6 cable verified by UL
- 2005 Awarded with UL RSCS approval on Green product and production



The last Decade

Before 1995

- ❑ Primarily CAT3 voice graded cable market.

1995 – 2000

- ❑ Data networking was gaining popularity in China.
- ❑ CAT5, CAT5e cables were introduced.

2001

- ❑ LAN cable sales took off significantly.
- ❑ Lots of cable manufacturers, regardless of their capability, jumped into LAN cable market.
- ❑ “Sub-standard” products impacted the market.

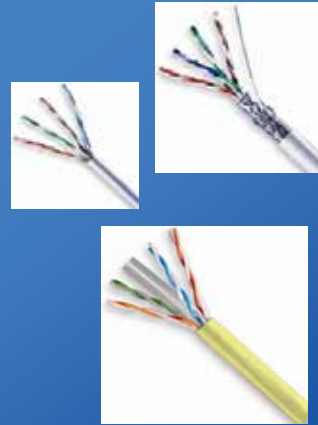
Since 1995 the telecom market has been open in China. We find some data network products being sold in the market and they have become popular, especially the CAT5 and CAT5e products in the years up to 2000.

Since 2000, we have seen a lot of business in systems and cables. Obviously, because of the demand in the market, we also saw a lot of substandard products regardless whether they were qualified or not.

The last Decade

2001 – 2005

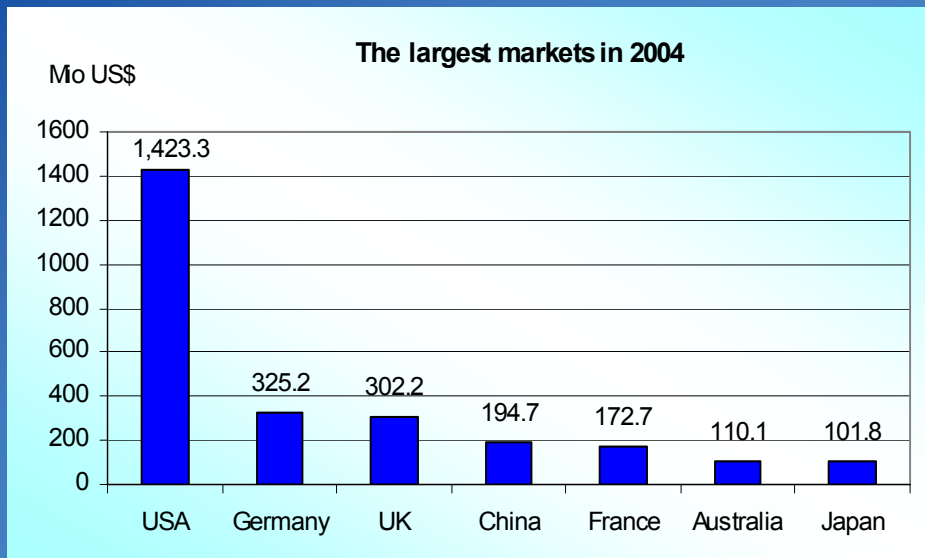
- ❑ LAN cable overall sales growth along with economic growth.
- ❑ Margin continuously drops due to price decrease driven by competition, counterfeit products, and “Sub-standard” products.
- ❑ New products like CAT6, CAT7, 10G are being introduced to the market.



In the last 5 years, we have seen some growth in LAN cable products, which goes along with the economic growth in China. But unfortunately, what we find quite a decrease in prices in the market, instead of the decent margins we used to have.

We also see new technology like CAT6, CAT7 or 10G.

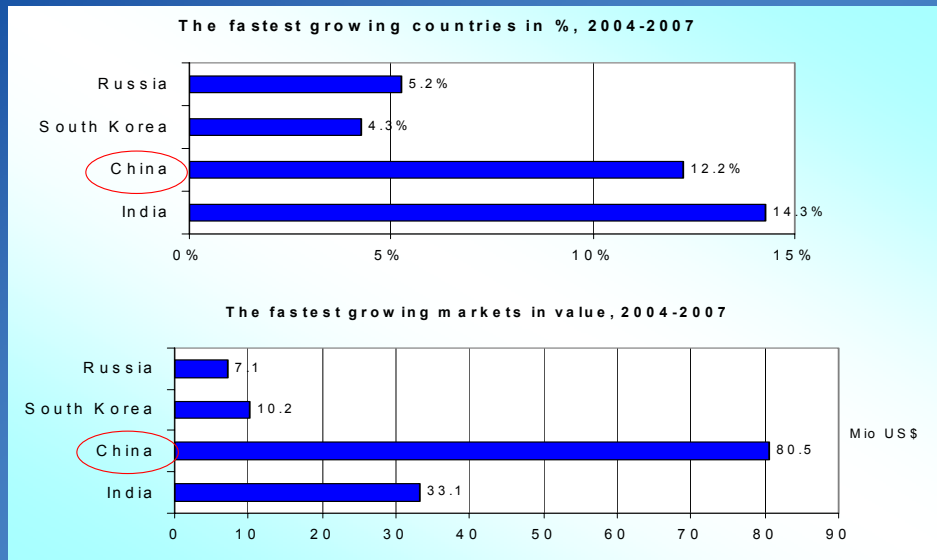
Global Market Overview



Source: BSRIA – Worldwide Market Overview
Structured Cable 2004, Published March 2005

In the global market, the USA is taking the leading position. China is ranked number 4 with a market size close to US\$ 200 million in LAN cables.

China LAN Cable Growth



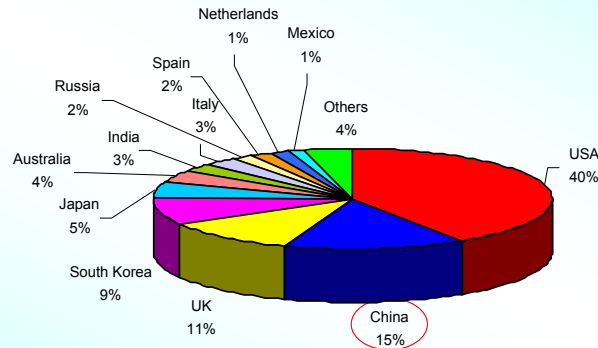
CHINA: one of the fastest growing countries

Source: BSRIA – Worldwide Market Overview
Structured Cable 2004, Published March 2005

Growth in China is about 12% per year, which is a pretty good growth rate. In terms of percentage, this is close to India's growth rate, but absolutely speaking China's increase with US\$ 80 million is more than twice that of India.

UTP, FTP & STP in China

UTP cable per country in volume, 2004



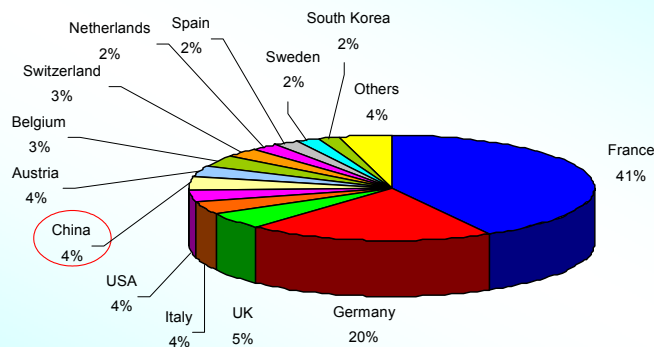
UTP in China: 15% (629.8 million meters)

Source: BSRIA – Worldwide Market Overview
Structured Cable 2004, Published March 2005

On the global side China consumes 15% of the world market in UTP cables. The absolute number (630,000 km) is quite big.

UTP, FTP & STP in China

FTP cable per country in volume, 2004



FTP in China: 4% (16.9 million meters)
STP is insignificant in China

Source: BSRIA – Worldwide Market Overview
Structured Cable 2004, Published March 2005

In the FTP market, I believe, France and Germany are the “shielded” world. The other countries have only minimal use of that technology.

CAT5e & CAT6 in China

Copper cable value in million metres

Country	Category	Sum of 2002	Sum of 2003	Sum of 2004	Sum of 2005	Sum of 2006	Sum of 2007	Sum of CAGR
		468.8	541.3	649.8	717.7	803.7	803.7	24.0%
China		468.8	541.3	649.8	717.7	803.7	803.7	24.0%
	Category 5e	398.5	433.0	454.9	445.0	442.0	361.7	7.4%
	Category 6	70.3	108.3	194.9	272.7	361.7	442.0	31.4%
	Category 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
		468.8	541.3	649.8	717.7	803.7	803.7	24.0%

70% is CAT5e

Categories by volume (channel) in mio. cable metres

Country	Cable Type	Sum of 2002	Sum of 2003	Sum of 2004	Sum of 2005	Sum of 2006	Sum of 2007	Sum of CAGR
		468.8	541.3	649.8	717.7	803.7	913.4	50.0%
China		468.8	541.3	649.8	717.7	803.7	913.4	50.0%
	Copper Backbone	3.5	3.2	3.1	2.9	2.8	2.7	-4.0%
	FTP	12.5	15.1	16.9	22.0	31.9	49.4	43.0%
	STP							
	UTP	452.8	522.9	629.8	692.8	769.0	861.3	11.0%
		468.8	541.3	649.8	717.7	803.7	913.4	50.0%

Future growth in CAT6 & FTP

97% is CAT5e

Source: BSRIA – Worldwide Market Overview
Structured Cable 2004, Published March 2005

In China, almost 650 million meters of LAN cables were in use in 2004. Most of them (70%) are in CAT5e. We classify this as the standard or traditional product. In terms of cable construction 97% of these cables are UTP.

China LAN Cable Market Segment

Four primary markets

(1) Financial project and high-end commercial building markets

- ❑ Branded name market
- ❑ Require highest standard, highest data rate transmission
- ❑ Sold by reputation and job reference
- ❑ Smallest segment but highest in sell value

(2) Government project markets

- ❑ Branded name market
- ❑ Require high standard, high data rate transmission
- ❑ Smaller segment but higher in sell value

China LAN cable market segment

(3) Telco market

- ❑ Favor in local brand
- ❑ Used in Local area edge network (局網)
- ❑ Require moderate standard and data rate transmission
- ❑ Medium segment

(4) Residential building and construction market

- ❑ Standard not essential
- ❑ Counterfeit and “Sub-standard” products flooded with market
- ❑ Keenest competition in price
- ❑ Sold by human network
- ❑ Largest segment but lowest in sell value
- ❑ The counterfeit product sales is estimated to be much more than the original brand's

China LAN Cable Branding

Local brands are limited in brand recognition and marketing
→ focus on domestic market.

Local brands primarily compete in local government, utilities, residential, SME, retail, or price cautious market.

- Some major local brands: TCL, Orient, Putian, Ship, etc.

Foreign well known brands currently still dominate the high-end market due to their:

- Total solution.
(including network design, connectivity, cables, consultation, etc.)
- Technology advancement.
- Quality and Services.

China LAN cable branding

Local brands are expected to grow and start to compete in the higher end and export market due to:

- The slow development of CAT6 or higher end market gives time to local brand to develop its quality, technology, and know how.
- Strong local penetration and low cost build brand re-cognition.

A definite threats to foreign brand

Foreign brands have to differentiate in continuous tech advancement and setting standards; not only limited to quality and image.

China LAN Cable Pricing

In the 90's, limited manufacturers had the know-how and capability, LAN cable prices were high.

In 2000-2001, growing in production capacity and maturity, CAT5 and CAT5e prices dropped substantially.

In 2004, due to the high raw material cost, overall cost was increased approx. 20-40% from the lowest.

China LAN cable pricing

UTP CAT5e price ranges from US\$28 – US\$35 per kft depend on brand and quality.

Profit margin for CAT5e UTP product reduces to single digit % or just break even.

Majority domestic / Asia demand is still CAT5e UTP, extremely tough for legitimate manufacturers to survive solely by CAT5e's slim margin.

Counterfeit & Sub-standard products

Counterfeit / Sub-standard products are primarily focus in CAT5e segment

- ❑ Mature product
- ❑ Low technology requirement in manufacturing equipment
- ❑ Less investment

Counterfeit / Sub-standard CAT5e can be sold as low as US\$ 25 a box.

Counterfeit & Sub-standard products

As per our own estimation, Counterfeit / Sub-standard CAT5e accounts for more than 50% in the residential, SME market due to its low cost.

This extremely low price and over-supply disrupted the overall market price.

Rely heavily on distributors or retailers who can help to reduce the use of counterfeit and sub-standard products.

Intellectual Property in China

China has defined its IP laws, regulation and have taken actions for enforcement.



However, there are difficulties for local law enforcement officers to catch the offenders because:

- ❑ Counterfeit's manufacturers are typically in the remote area while China is large geographically.
- ❑ Sometimes counterfeits' manufacturing are also covered by a legitimate production.

Intellectual Property in China

Brand holders typically appoint lawyers to lead and handle the prosecution procedure in conjunction with:

- ❑ Technology Supervision Bureau (TSB)
- ❑ Public Security Bureau (PSB)
- ❑ Counterfeit products will be confiscated once found.

However, to prosecute and confiscate the production line, the IP offenders need to be caught during the counterfeit in production.

- ❑ In this case, private or undercover investigators will need to be used.

China LAN Cable Manufacturers

Current situation in 2005

- Known manufacturers : ~ 70 (estimated)
 - Approx 15% are quality-conscious manufacturers with state-of-the-art manufacturing and testing equipment.
 - Major OEM manufacturers: LTK, etc.
 - Others focus in domestic market with local brands.
 - Some are using original voice grade (CAT3) cable equipment and upgrade to support the CAT5 and CAT5e. Limited future development and support capability.

- Unknown manufactures : > 100 (estimated)
 - Mostly small production scale
 - For domestic market, counterfeit and “Sub-standard” products

China LAN cable production capacity

According to Wire and Cable Association in China (中電) in 2004, the total LAN cable manufacturing capacity is around 1.1 million km



CAT5 : 17% (~ 187 million meter)
CAT5e : 71% (~ 781 million meters)
CAT6 : 9% (~ 100 million meters)
Multi-pair: 3% (~ 33 million meters)

(Based on the collected data from manufacturers)

China LAN Cable Supply and Demand

According to BSRIA, between 2004-2007,

China is:

- ❑ The second fastest growing country (12.2%) after India
- ❑ The fastest growing markets in value (Mio. US\$ 80.5)

However, China has low growth in FTP & STP.

This indicate the majority growth and competition is still in CAT5e segment.

China LAN cable supply and demand

Comparing BSRIA & Wire and Cable Assoc. in China (中電電纜) data, it shows that:

- ❑ Most CAT5e supply can be consumed locally in China.
- ❑ Significant portion of CAT6 or above products is imported.

Million meters	Manufacturing Capacity (Supply)	Demand
CAT5e	781	454.9
CAT6	100	194.9

China LAN Cable Market Challenges

Due to the substantial quantity of the counterfeit and sub-standard products, market price for CAT5e UTP has dragged down to approx. US\$ 30 per kft regardless of manufacturers quality, R&D efforts, and high raw material prices.

Majority sales are still at the low end, modest growth in CAT6.

Slow acceptance to new standard – CAT7 or 10G.

China LAN cable market challenges

Continuously high raw material price (i.e. copper) and growing production cost (i.e. wages).

Due to the high raw material price and over-capacity in low end product, market consolidation is expected.

Competition is still focus on price:

- ❑ Price continuous to drop in CAT5e and already started in CAT6

Majority of manufacturers are lacking environmental concerns:

- ❑ Green (Environmental Friendly) is a definite trend
- ❑ Not only limited to products, but also to overall production
- ❑ A long-term management commitment

China LAN Cable Market Needs

Education, education, and education for both the industry and customers:

- ❑ To drive majority understanding of quality and standard to reduce the number of counterfeit and Sub-standard products.
- ❑ Enhance know-how, efforts, and management commitment to deal with green (environmental) issues.

Government enforcement and action is needed to reduce the number of counterfeit and sub-standard products in the market and enforce the industry concerns of environment.

Urgency to promote and introduce new products and standard into the market to increase profit margin.

Here you can see the needs for the China LAN cable market.

Thank you !



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Question:

Could you describe the technical difference between standard and sub-standard products in China?

Mr. Thomas Chaung

The sub-standard products do not meet the internationally accepted standards from ISO or IEC. Sometimes the products in the market are qualified as grade A, grade B, and so on, depending how close they adhere to the respective standards.

Question:

Have you in China set up an independent laboratory for testing cables, which is a consortium between the government and the cablemakers?

Mr. Thomas Chaung

As I mentioned before, there is an agency to enforce the standards in the market. But unfortunately they do not put enough effort into this problem. In most of the counterfeit cases one has to investigate oneself. As China is developing, I am sure that the government will pay more attention to this problem.

Question:

The price information I heard during this session has shocked me. Are the prices you mention retail prices or sales prices?

Mr. Thomas Chaung

The prices are for brand names out to distributors, 1 or 2 dollars will be added by the distributors to the retailers.