

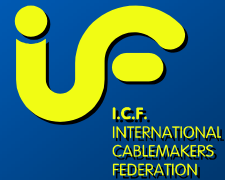
Structural Change in the Wire & Cable Industry

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Good morning!

The cable industry has kept the corporate finance community very busy since the mid-nineteen nineties with mergers, acquisitions, spin-offs, public offerings and so on. It has been a busy time.

Outline

1) Themes of Structural Change

2) Drivers of Structural Change

3) Industry Concentration

4) Business Models

5) Business Models & Performance

6) Sustainability

My first task will be trying to sort out the different themes of structural change which have occurred over that period and identify them.

Secondly, looking at the drivers of structural change. What are the reasons of these developments happening?

Thirdly, looking at industry concentration. Because the level of concentration is intimately connected with the pace of structural change.

Next, looking at business models. Because structural change often occurs as companies change their business models as they operate.

Then I look at the financial performance of the cables industry in recent years and see whether there is any correlation between the business models used by companies and their financial performance.

Finally, I will look at the longer term, the sustainability of the cable industry, its viability as we move into the future.

Themes of Structural Change

“Phelps Dodge opens magnet wire plant in Mexico”

“Pirelli to develop Hungary, plans cuts in Germany”

“Walsin Lihwa builds new optic fiber plant in Nanjing”

“Furukawa & Otochu start power cable production in China”

Let's look at some of the headlines we have seen in the industry over the years since the mid-nineteen nineties as an indication of some of the themes we have witnessed. Here are some of the news we noticed:

There are relocations or geographical reorientations of companies moving out of their domestic market over nearby borders, e.g. from the US to Mexico, from Western Europe to Eastern Europe, from Taiwan into mainland China. The companies follow after their own customer base. As their customers move to new markets, they move along with them. The theme here is **relocation and regionalization**. Moving across national borders into regional locations.

Themes of Structural Change

“IRCE looking to site winding wire plants in Brazil”

“Superior agrees 2nd Israeli takeover”

“TKH builds FOC plant in China”

Similarly, companies moving out of their home region and going global, e.g. moving out of Europe into Asia, across continental borders. The theme here is **relocation and globalization**. Probably a weaker theme than regionalization but increasingly important.

Themes of Structural Change

“GEC in UK sells most cable interests to TT Group”

“ABB sells Elektrokoppar & winding wire units”

“Siemens to give up fiber & copper data cables to Corning”

“Alcatel plans to spin off Nexans”

“Lucent to sell off optical fiber and cable”

The next theme here is **disengagement**. Companies, who have been suppliers of public systems, whether that be telecom, energy or transportation systems, basically are getting out of the cable business. They conclude that they do not really want to be in components. Either they regard cables as part of a components business, which they do not want to be integrated with, or they are disappointed with the financial performance.

Themes of Structural Change

“Madeco acquires control of FICAP to become South America’s largest”

“Superior takes on Essex to form \$2.4 bn cables giant”

“F+G sells cable operations to NKT”

“Dutch group Draka & NKF to join forces”

“Elektrim Kable sale to KFK (Tele-Fonika) to go ahead”

The next theme deals with getting companies together. Mergers and acquisitions, forming larger groups, looking for more power in the market, looking for synergies, looking for saving overhead costs by putting two businesses together. The theme here is **consolidation**.

Themes of Structural Change

“Draka completes German restructuring”

“Pirelli to close two UK plants after absorbing BICC General assets”

“Tele Fonika to close Ozarow after Elektrim takeover”

One of the reasons for consolidation is an attempt to restructure capacity in a more sensible and efficient way, to try and reduce duplicate capacity. The theme here is **rationalization**.

Themes of Structural Change

“Sumitomo & Hitachi study HV merger”

”Showa & Fujikura to join in magnet wire”

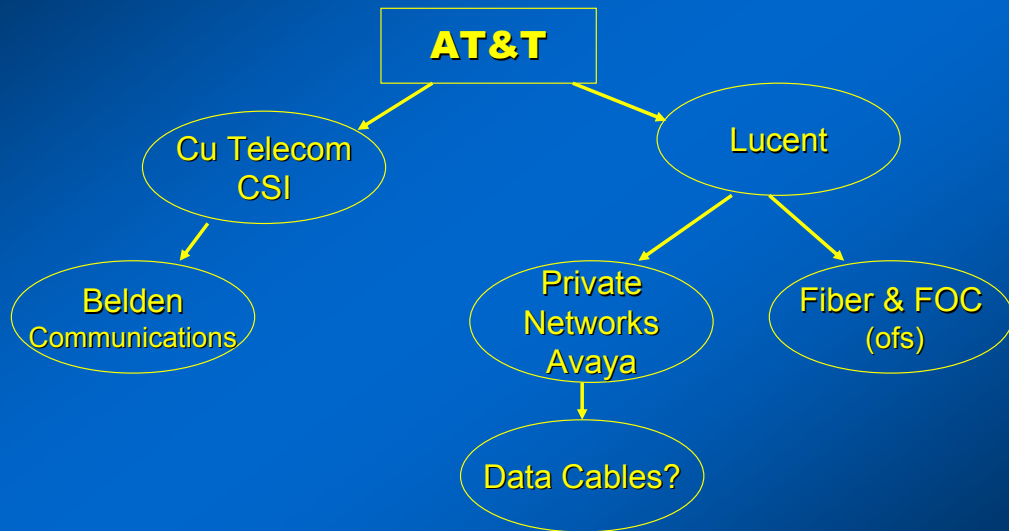
“Furukawa & Fujikura to form power cable j/v”

“Mitsubishi Cable & Showa to integrate power cable units”

“SEI, Hitachi & Tatsuta to form sales j/v”

In the last couple of years (2000 – 2002) we heard a lot of announcements by Japanese companies about realignments and joint ventures. For the most part these have been in the marketing arena. There has been relatively little restructuring in the manufacturing base. For these reasons I call this theme **Japanese-style rationalization**.

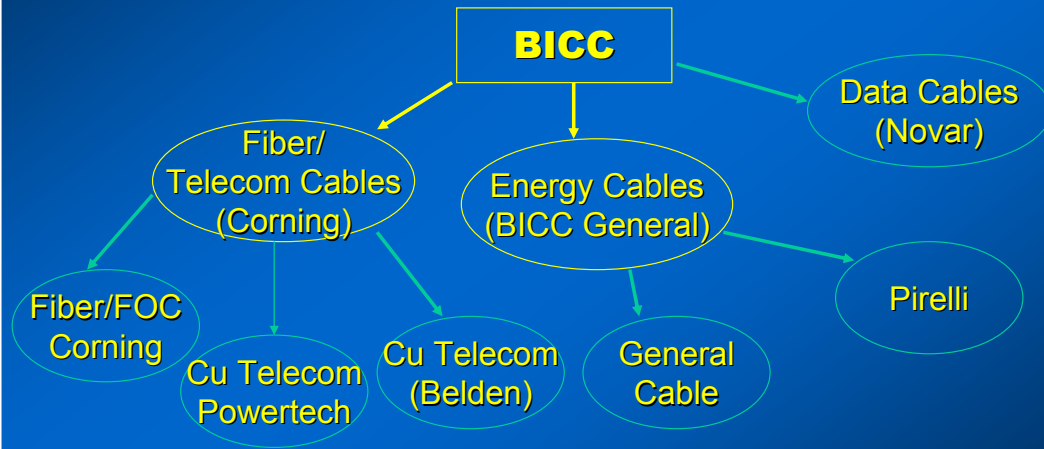
Themes of Structural Change Break-ups



Another constant theme has been **break-ups**. A couple of examples here, first from the mid-nineteen nineties.

The break-up of the cable activities of AT&T. First of all spinning off the copper telecom business and later spinning off the whole of Lucent Technologies. In a second phase of assets moving on further, the assets owned by one owner were moving into the hands of three owners.

Themes of Structural Change Break-ups



An even more extreme example is BICC. Initially there was a break-up into two organizations and then assets were sold on and on again. Eventually the BICC assets end up in six fragments. The theme here is **disintegration**.

Themes of Structural Change

- Spin offs or sales of product lines
- Break ups of large groups
- Creation of full line companies through consolidation
- Have created forces toward

A result of some of these spin-offs or sales of product lines and break-ups of large groups is the creation of full line companies through consolidation. We created some forces moving towards either **sector specialization** along product lines or the opposite, namely the **diversification** of product interests.

Case Study - BICC

- 1994** "BICC is an international engineering business"
- Early 1997** "The optical telecoms & data comms businesses, is where our main investment programme is aimed"
- mid 1997** "Structural overcapacity now exists in cables in mainland Europe"
- Early 1998** "BICC is in the process of radically restructuring its European cables interests"
- 1998/99** "We concluded that these businesses are better placed with Corning General Cable"
- 1999** "We are now in a position to concentrate on our chosen growth areas such as rail engineering"

Let's now move towards the drivers of structural change. As an illustration I give a case study of BICC. What happened there will give us some leads what some of the drivers of these changes are.

Even as you go back as far as the early nineteen nineties it is interesting that BICC was describing itself rather than as a cable company as a construction company. It talked of itself as an international engineering business. This is already reflecting the management concern that the investment community would see it rather as a service company than as a manufacturing company, giving a market valuing manufacturing companies less than service companies. But even in 1997 BICC was saying very strongly to its shareholders that cables was the basis of its strategy. By mid 1997 profits were falling, the share price was falling and the message was that structural overcapacity exists. By early 1998 it was stressing that it was radically restructuring its manufacturing cable interests. It was not giving much time for those restructuring efforts to bear fruits. Already in 1998 the company concluded that the cable business is a better business with other companies. This is pretty amazing considering only a few years before BICC was the world's second largest cable manufacturer. By 1999 with a new CEO in place we heard that BICC is now concentrating on rail engineering. If that was its chosen growth area it was certainly chosen very rapidly.

BICC Case Study

- Investors seem to value service companies higher than manufacturing companies.
- Investors/analysts and market collapse drove management to actions before restructuring had time to bear fruit.
- Management was unprepared.
- Exit resulted from a string of reactions to market conditions.
- The strategy to exit cables and focus on rail engineering was created retrospectively.
- Exit was a tactical, not a strategic decision.

The conclusions from this case study can be seen on the above slide.

The Drivers and the Process of Structural Change

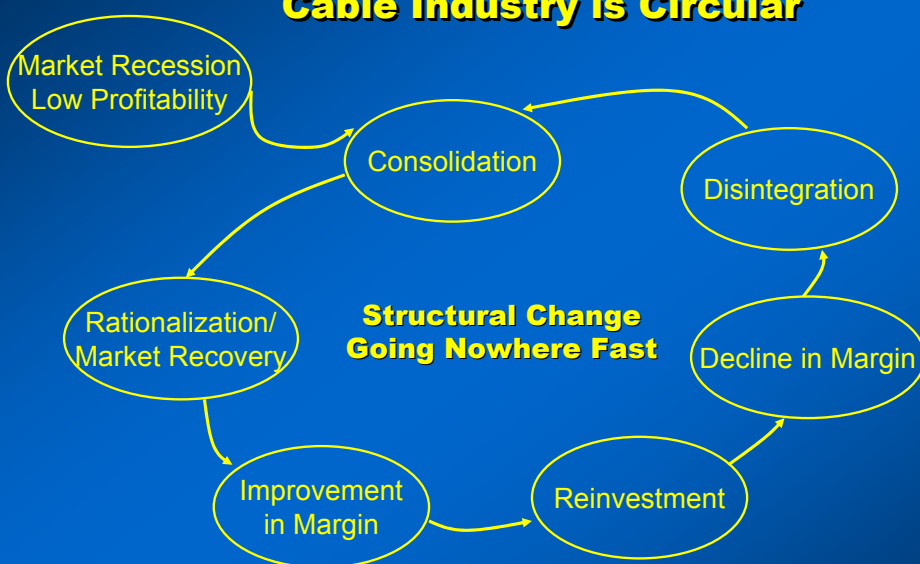


With the conclusions of the BICC case study in mind let's look at the drivers of structural change. What have the main drivers been?

First, one has been the stagnation in traditional markets like Europe, North America and Japan, and the increasing market power of customers. This has been the main driver of consolidation and with it rationalization, at least to a limited degree. Cable consumption has been moving South to the developing world and with it the pressure for regionalization and to a limited extent globalization as well. Systems companies deciding to outsource components rather than having components manufacturing within their own groups. This is a force for disengagement. Cablemaking being perceived in the investment community as delivering low-returns and inadequate shareholder value plus the premium paid on service companies rather than manufacturing companies have been forces pressing for disengagement and also disintegration. As a result of this we have seen on the one hand sector diversification as businesses and different product lines being put together to create full sector companies and on the other hand sector specialization happening as companies disintegrate along product lines.

There are counteracting factors at work. Consolidation is the opposite of disintegration and diversification is the opposite of specialization. Clearly, the structural change is not moving in one particular direction.

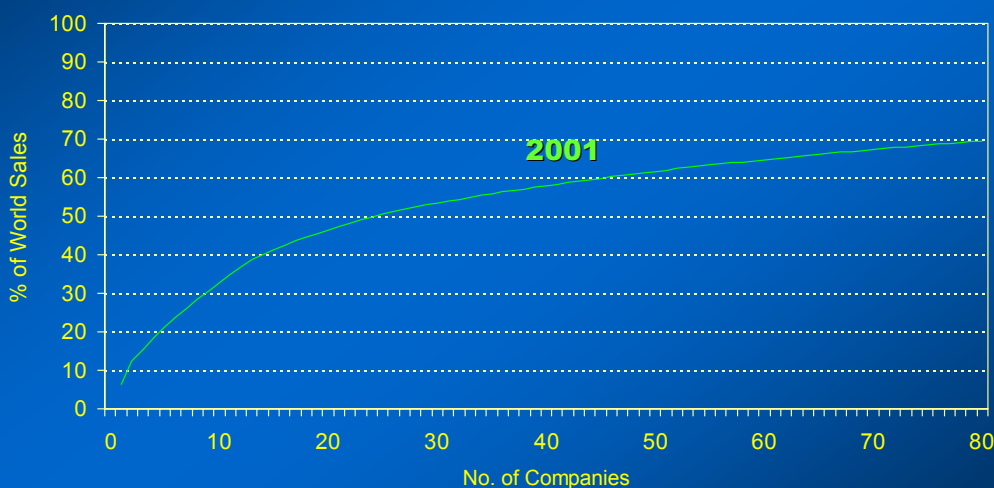
Structural Change in the Wire & Cable Industry is Circular



Structural change is not to appear linear, it appears to be circular. We could represent it in this fashion.

The structural change tends to begin when there is some external shock to the system, either positive or negative, typically a market recession leading to low profitability. The first natural and logic reaction is to consolidate the industry. This will be followed by a certain amount of rationalization which will help the market to recover. The margins improve. Then there is the tendency with more free cash flow and difficult times in the past, that companies tend to reinvest. Looking to get themselves more efficient they invest in their existing plants and also in new capacity. Soon afterwards structural overcapacity will rapidly drive margins down again. The investment community gets frustrated. This puts pressure on company executives and we get into the phase of disintegration. This does not improve matters. If anything it increases competition. But it does create opportunities for companies to pick up assets at below replacement value and to begin again on the process of consolidation. So we go on a full circle and around and around. The process may slow down until another shock to the system occurs. For example, the telecom collapse recently makes the system start working around again. I tempt to say it is structural change, but structural change going nowhere fast. To test if this is really true I am going to look at industry concentration.

In the global wire & cable industry the top 5 account for 21% of sales, top 20 for 47%, top 50 for 62%

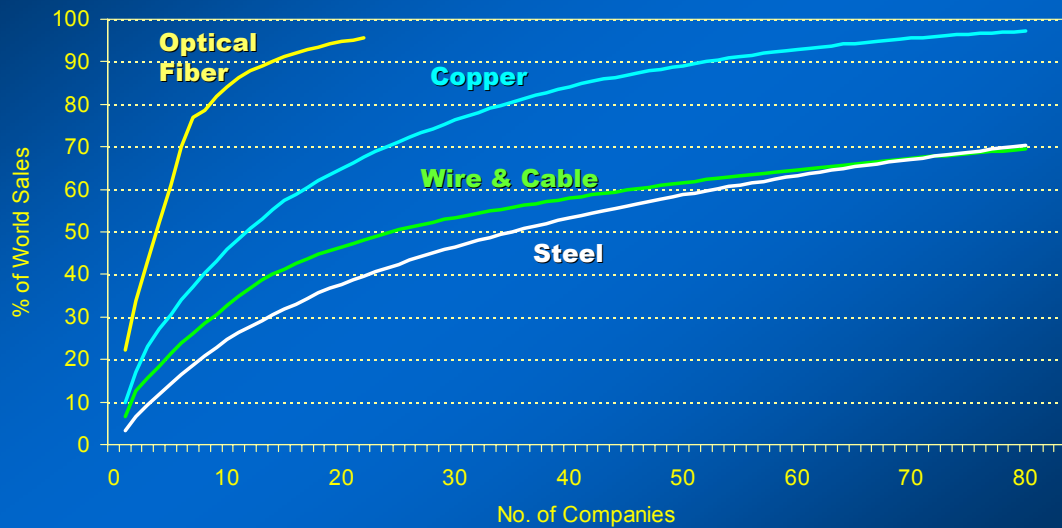


Looking at concentration, the way of measuring it, is by looking at the number of companies on the horizontal axis from the largest companies to the smallest and the percentage of sales to the industry accumulatively on the vertical axis. Above you can see the concentration curve for the cable industry.

The largest company in the industry accounts for some 5% or 6% of global capacity. Whether this is Pirelli or Nexans is a difficult question. But it is fair to say that they together account for 10% or 11% of the market. The top 5 companies account for 21%, the top 20 for about half and 80 companies for about 70% of world sales of cable. Of course, the other 30% are represented by a rather large number of small companies, in China alone more than 1000 companies.

This is the concentration curve for last year. Is this a highly or lowly concentrated industry? To answer this question we have to look at some other industries.

Wire & cable industry concentration is low and comparable to the steel industry 2001



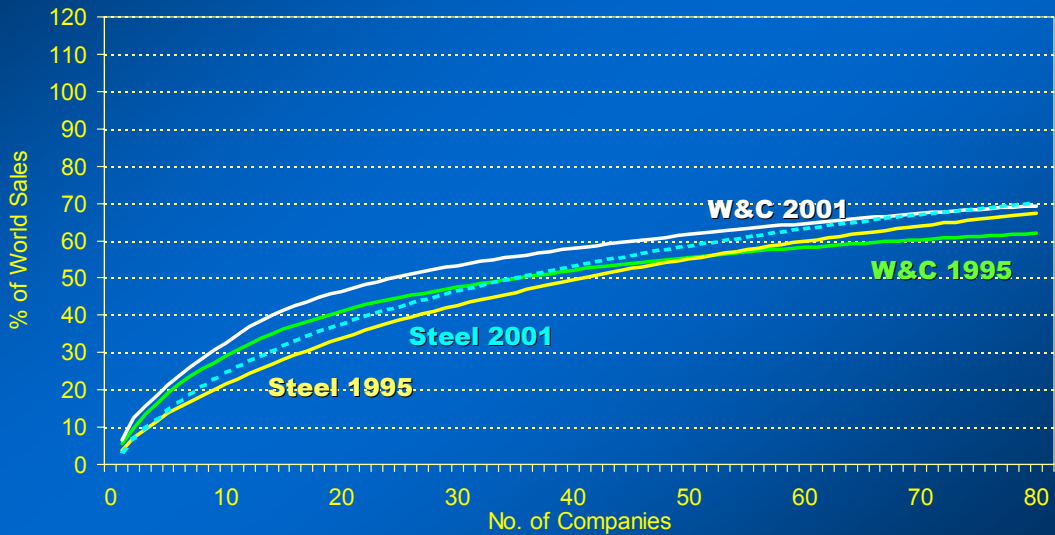
Here you can see the concentration of the optical fiber (yellow curve), copper (blue curve) and the wire & cable industry (green curve) in comparison to the steel industry (white curve).

The yellow curve shows the concentration of the optical fiber industry, where the largest company has a share of about 30% of the market and the whole industry is virtually captured by 20 companies.

The blue curve shows the concentration of the copper industry, where the largest company has a share of about 10% of the market. The whole industry is accounted for by about 80 producers. 10 companies account for approx. half of world sales. So, the copper industry is about twice as concentrated as the wire & cable industry. From that comparison the concentration is relatively low.

A comparable industry is the steel industry. The two industries have structurally a lot in common.

Wire & cable industry is not becoming much more concentrated – like steel



Here we see the concentration curves of the industries for w&c and steel over time.

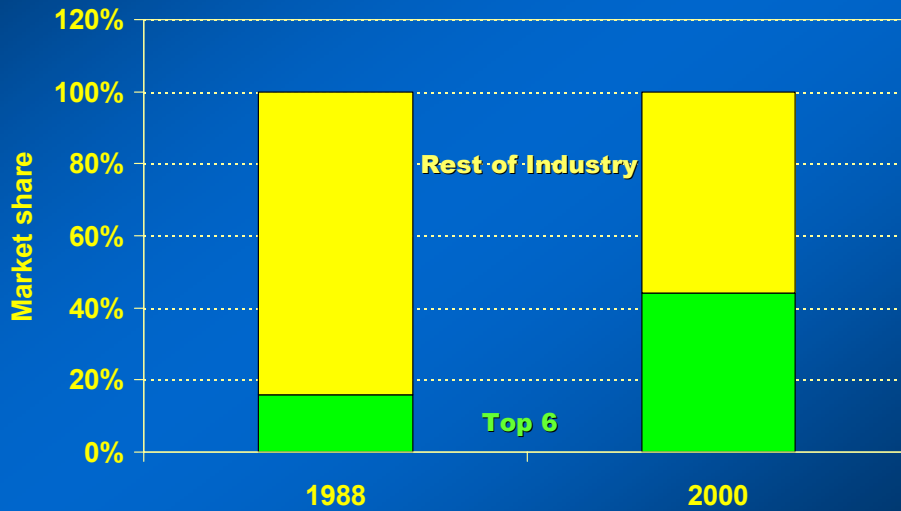
From 1995 to 2001 it can be noticed that there is some increase in concentration in the w&c industry, but relatively minor over these 6 years.

The concentration of the steel industry, as you can see, is being very similar.

The question arises whether concentration really matters?

The cement industry is one that has seen some real consolidation....

- Cement capacity controlled by the top 6 global players

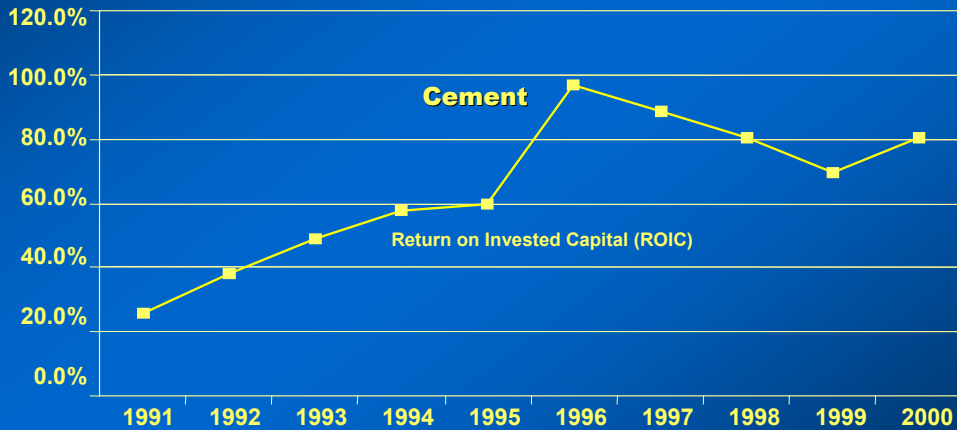


Other industries unlike wire & cable and steel have succeeded in increasing their concentration level.

Here is one example of the cement industry, where in 1998 the top 6 companies accounted for less than 20% of the market. By 2000 they doubled their share of the market.

....and it has improved its return on capital dramatically

- European cement industry Return on Invested Capital



This is what happened to their return on capital over that period. There has been a dramatic increase in return on capital.

This shows concentration can be done.

Only in North America has the industry become more concentrated

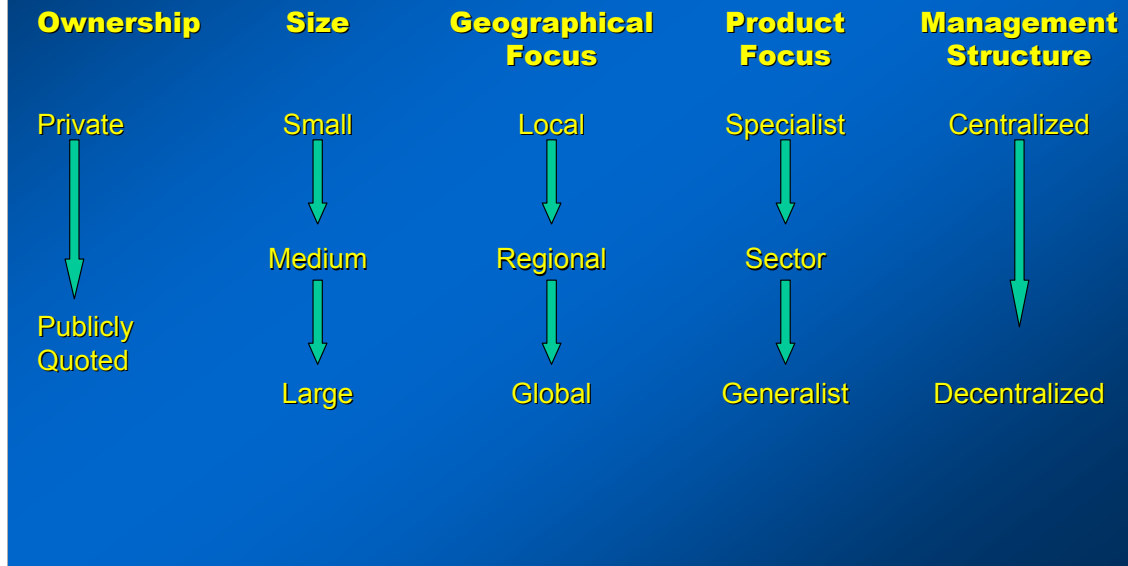
Sales of Top 5							
Europe		North America		N.E. Asia		Other	
1995	2001	1995	2001	1995	2000	1995	2000
\$12.8b	\$10.7b	\$5.6b	\$7.8b	\$8.2b	\$7.9b	\$1.8b	\$1.6b
Alcatel Pirelli BICC Siemens ABB	Nexans Pirelli Draka Alcatel Leoni	Southwire Essex AT&T General PD	General Corning Superior Tyco Southwire	SEI Furukawa Yazaki Fujikura Hitachi	SEI Furukawa Fujikura Yazaki Hitachi	Pac.Elect P.Dunlop Leader Riyadh Ficap	Pac.Elect Shanghai Riyadh Madeco Heng Tong

We have seen that the cable industry has not become more concentrated on a global level. What about the concentration on a regional level?

Here we have the annual sales of the top 5 companies in each region in 1995 and 2001. In Europe the share actually has gone down over this period. North America is the only region, where we have seen a significant increase in concentration.

Of course, the names have changed a lot. In Europe and the United States the names are very different. Whereas in Japan (North East Asia) the names have not changed. There is quite a change of names in the rest of the world (Other) as well. 2 Chinese companies are now among the top 5 in the rest of the world.

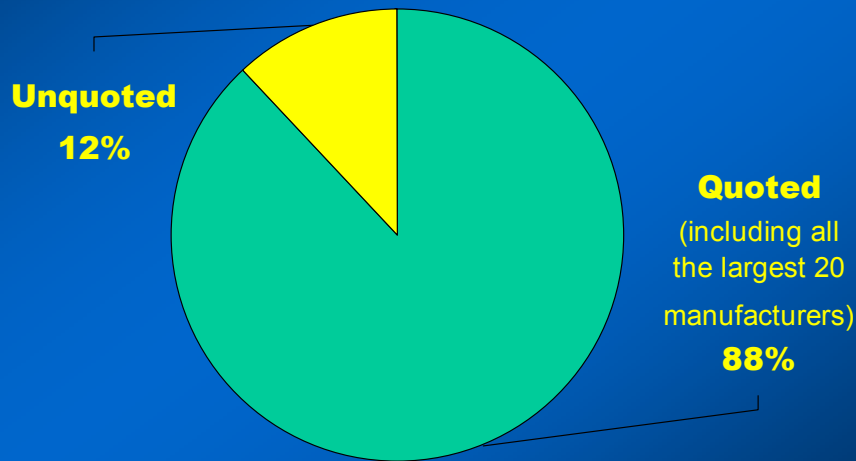
How can we classify wire & cable companies by business model?



Now I like to talk about different business models employed in the wire & cable industry in order to see if they are related to their success or failure.

In order to answer this question, I am using a rather simplistic approach by classifying w&c companies according to ownership, size, geographical focus, product focus and management structure.

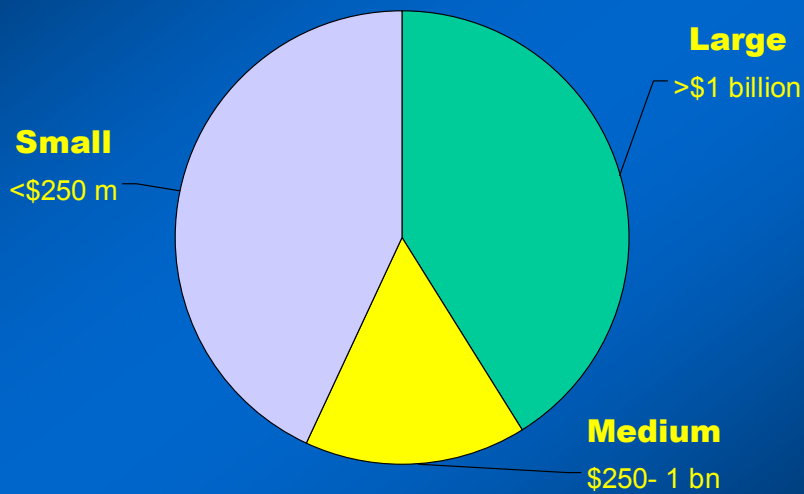
Sales of largest 100 manufacturers dominated by public companies



Looking at the ownership structure of the industry, I will take the sales of the 100 largest cable manufacturers. Public (quoted) companies dominate the industry (88%). They include all of the largest manufacturers but 2, namely Southwire and the Marmon Group, which are privately owned (unquoted).

But if you look at the whole industry, i.e. all the cabled makers in the world, the majority (70% in terms of sales) of the **small** companies are privately owned.

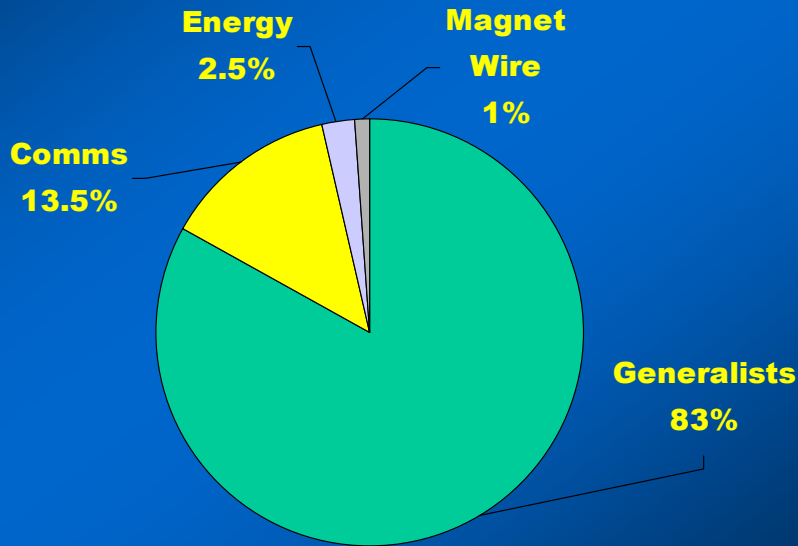
An industry dominated equally by the large and the small
(size of company wire & cable sales – the whole world industry)



As far as size is concerned small and large is a relative term. I define large companies as those with cable sales of more than \$1 billion and small companies with less than \$250 million.

Both the large and small companies play a large role in this industry. A relatively small share of this market is held by medium sized companies.

**Rigidly defined (>90% of sales criteria)
there are few specialists among the
largest 100 companies
(Wire & Cable Sales)**



In terms of product specialization I select those companies among the largest 100 companies, which have 90% or more of their sales in one particular sector, e.g. communications.

Under a narrow definition of that kind clearly the generalists dominate the industry.

This is certainly a simplistic way of looking at things.

Classifying companies to business models as a matrix

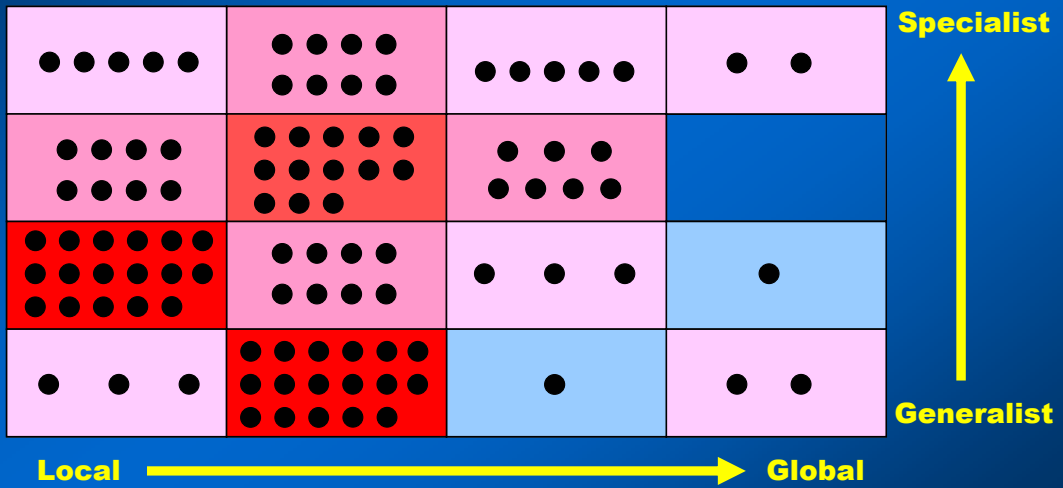
- Some Examples

Encore Wire	Rea Magnet Wire	Andrew Corp	Corning	Specialist ↑ Generalist
Hindustan Cables	Jinro Industries	Leoni		
Shanghai Cables	Ericsson Cables	PD Wire & Cable	Draka	
Shenyang Cable	Madeco	Furukawa	Pirelli	
Local			Global	

Here we look at a 2 dimensional matrix, on the horizontal axis local to global orientation, on the vertical axis from generalists to specialists.

I am trying to place different companies into this matrix. For example, in the top right hand corner Corning is obviously a fiber-optic specialist operating on a global level, contrasting with Encore Wire, which is operating only in the United States and specializing in building wire, and Pirelli, a generalist, operating globally. There is one space I could not find any company out of the top 100 which could fit in there.

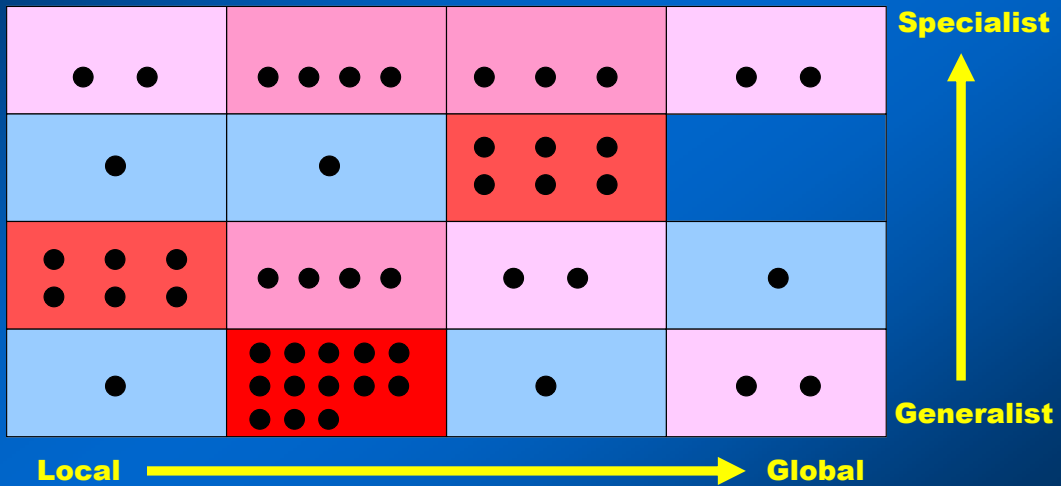
**The most prevalent models are regional/
full product range or local/wide range
(World's 100 largest Wire & Cable Manufacturers)**



Now, we take the top 100 companies and place them in this matrix, to observe how they tend to accumulate.

The hot spots seem to be companies operating in a local or national market with a relatively wide product range, and companies operating in a regional market with a full product range.

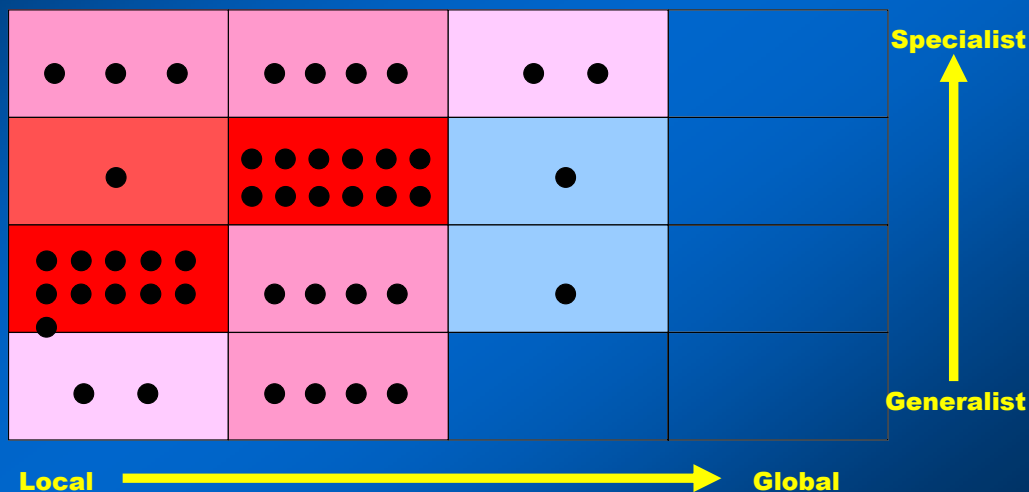
**The most prevalent model among the 50 biggest is regional/full product range
(World's 50 largest Wire & Cable Manufacturers)**



I am trying to add a little bit more complexity to the matrix by looking at the size of the companies as well as their product specialization and their geographical specialization.

Let us look at the largest 50 companies and place them in the matrix. The preferred place, they like to be in, is the regional market with a full product line.

**The most prevalent models among small & medium manufacturers are regional/fairly specialized or local/wide range
(World's second 50 Wire & Cable Manufacturers)**



The smaller second 50 companies seem to feel more comfortable either with a relatively wide product range in a local market or relatively specialized in a regional market.

Clearly these companies do not feel comfortable either operating globally or even operating within a wide region. It looks pretty cold for them in that particular position.

The archetypical profile of the cablemaker

- No particular size
- Public company if bigger
- Private company if smaller
- Makes a broad range of cables
- Serves a local or regional market

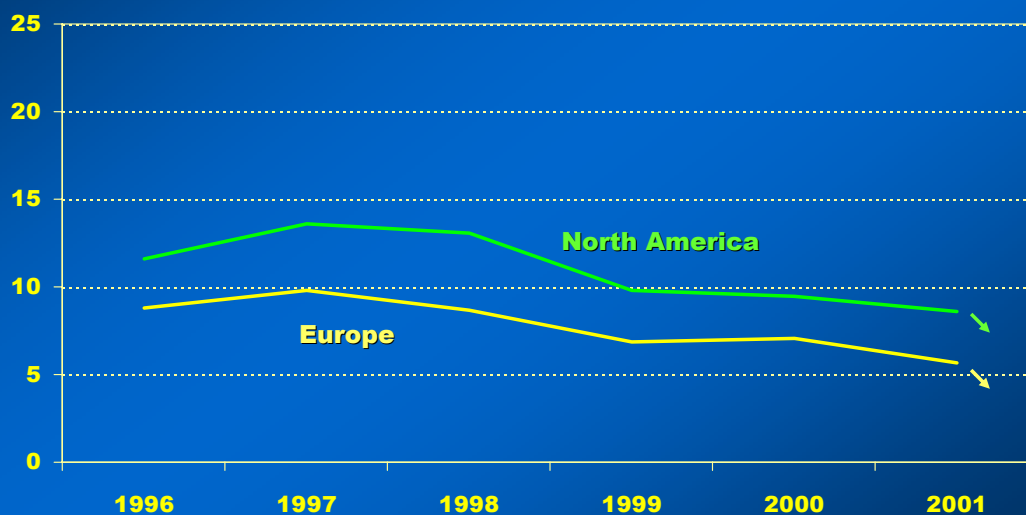
Is there an archetype of cablemaker?

Both small and large companies predominate.

Public companies for the bigger ones and private companies for the smaller ones.

Generally the archetype of cablemaker manufactures a broad range of products and he serves a local or regional market rather than a global market.

Average margins in wire and cable are falling (EBIT as % of sales)



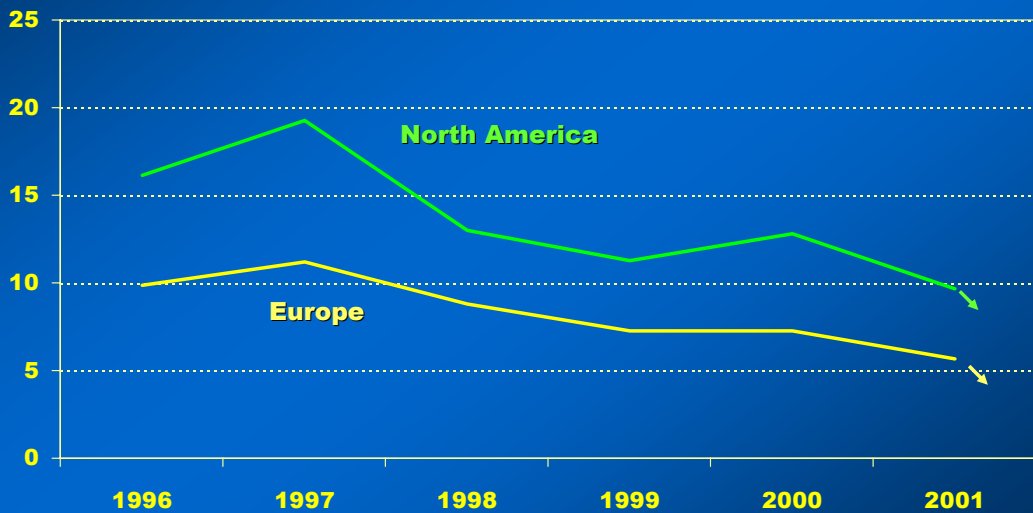
Now let us look at the performance.

Here we look at average profit margins over the years 1996 to 2001.

We include only those companies which in their majority were dealing with cables in order to get a better idea of the true profitability in the industry.

North American companies tend to be more profitable than the European. I guess this is attributable to the tremendous boom in the US economy we saw in the late nineteen nineties. But margins have been falling consistently in the US from 15% to now under 10%, and clearly falling sharply this year. In Europe margins have been lower and falling in a same way over time, and again with 2002 not looking too good.

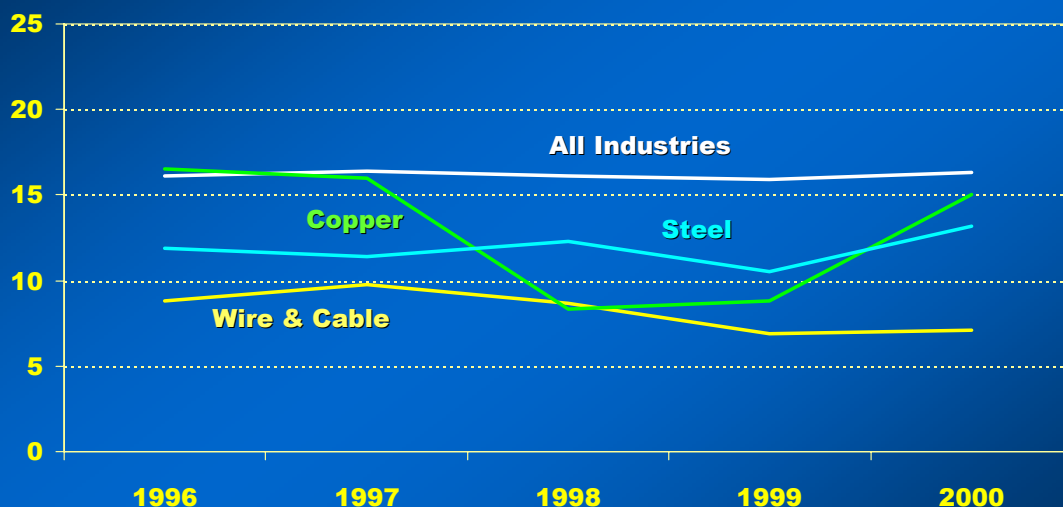
So is return on capital (EBIT as % of total assets)



When we look at return on capital, the earnings before interest and taxes (EBIT) as a percentage of total assets, we see for North America a drop from 20% down to 10% over the last 6 years. In Europe we observe a similar decline, starting on an even lower base.

How does this compare with other industries?

Margins are inferior to some other basic industries, if less volatile (EBIT as % of sales)



First let us look at operating margins.

The white line shows the operating margins of **all** industries, not only manufacturing industries but service industries as well. It is just over 15%.

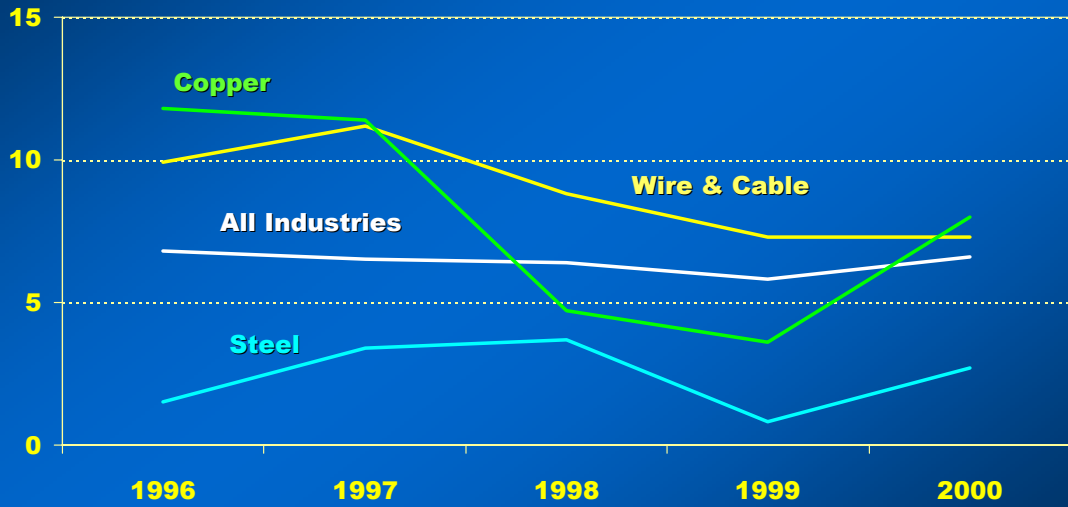
If we compare this with the wire & cable industry (yellow line) it is obviously much inferior.

The margins of the copper industry (green line) are more volatile, typical for a commodity business.

The steel industry (blue line) in terms of margins is performing better than the wire & cable industry.

But if we look at return of capital employed it looks rather different.

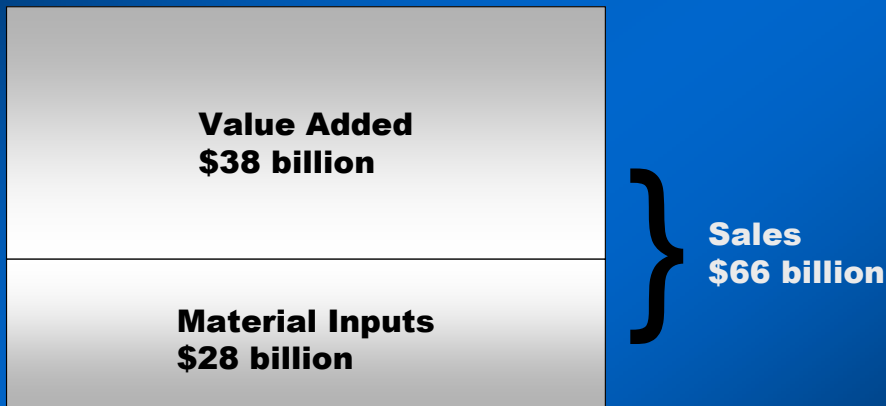
Return on capital employed is better than average (EBIT as % of total assets)



Here we see the EBIT as a percentage of total assets for the same industries as in the previous slide. The wire & cable industries have done better. Why is this the case?

The answer is to be found in the value added structure in the wire & cable industry.

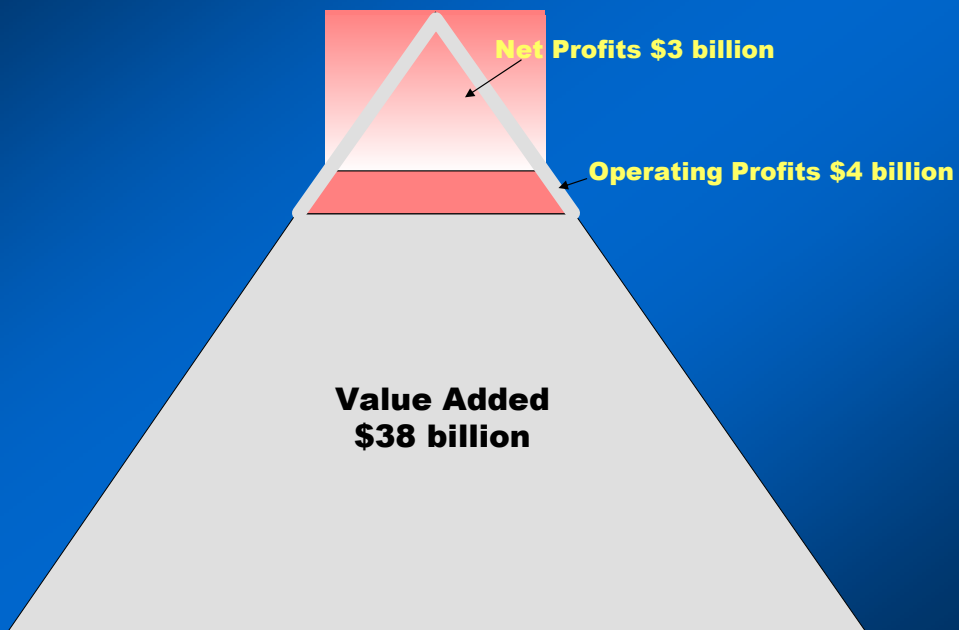
Of world sales, about 60% constitutes “value added”



If you take the wire & cable industry in total, about 28% of its annual sales is accounted for by material inputs. By that I mean conductors (copper and aluminum, optical fiber) and plastics and resins. The value added part is about 60% of the total sales.

If you look at the value added on a company level rather than on an industry level, given that many companies buy in drawn wire or compounds, the actual value added on a company level is lower than that, probably averaging somewhere between 40% and 45% of total sales.

**Operating margins relative to value added
are much more comparable to other
industries than margins on sales**

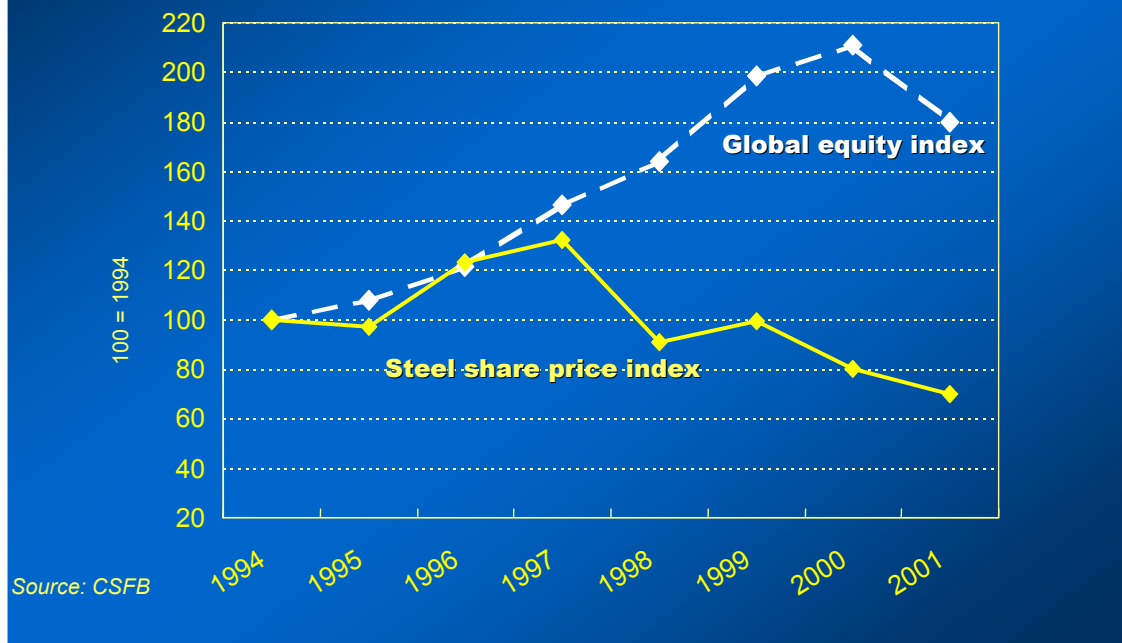


Here we look at the value triangle in cables. This is an estimate for global operating profits of \$4 billion in 2001. If we compare this to \$65 billion of sales, it does not look very impressive. But if we compare it to \$38 billion of value added, it looks a lot better.

That is a more reasonable comparison to make. For example, by comparing it with the copper industry where virtually all of the sales represents the value added.

Why is the investment community rather disillusioned with the cable business? It is not because of operating performance.

But investors may have seen the value of their investments destroyed. The example of steel

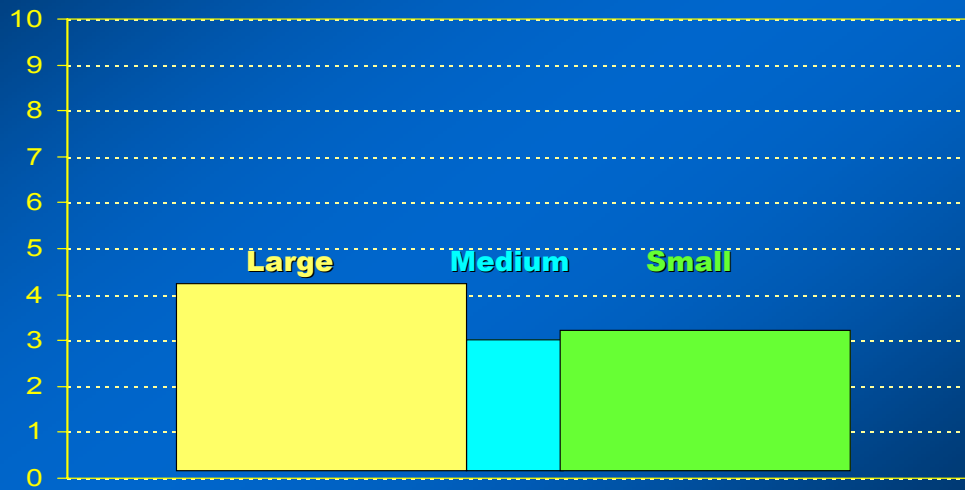


The investment community looks mainly at total shareholder value, which consists firstly of operating profit and secondly of capital gain. I do not have the numbers for cables, because there is not really a share price index constructed for cables. I have taken the example of steel. But this parallels the situation in the cable industry.

Here you can see that the share prices of steel companies vastly underperformed in the global equity market. Effectively meaning that investors have seen the value of their investments in steel shares being destroyed over that period. We have seen something similar in the cable industry.

Do we see some correlation between the business models and the profitability?

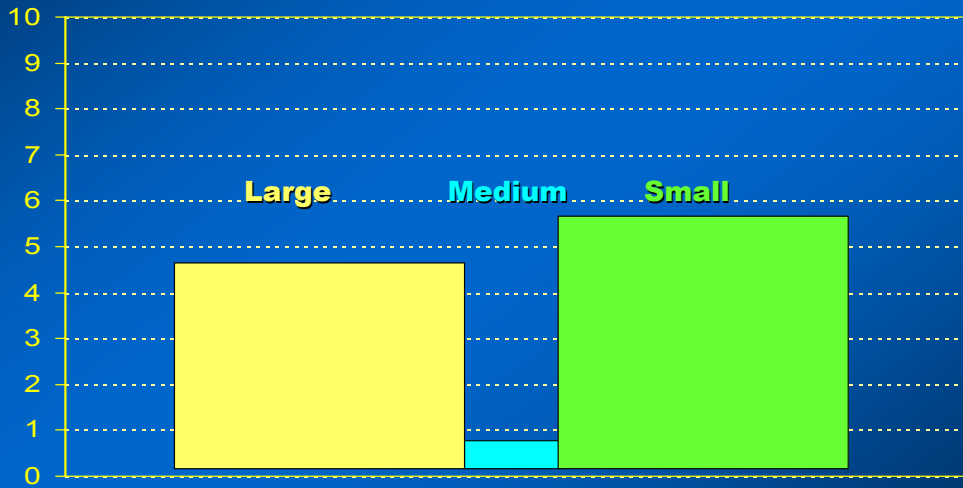
**On average, for all cable manufacturers,
profitability seems best for the big
(net profit as % of sales)**



These are data from the top 100 wire & cable manufacturers.

There seems to be some benefit from being big. It is marginal, but nevertheless there seems to be some benefit.

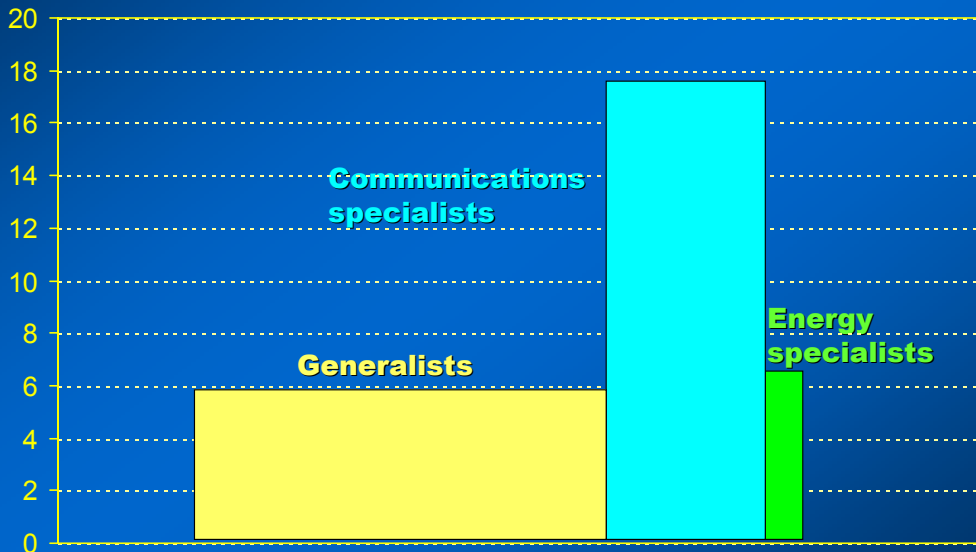
**However, among non diversified
cablemakers the smallest are more profitable on
average, and medium-sized companies underperform
(net profit as % of sales)**



If we excluded those companies which have a significant proportion of their operations outside of cables, e.g. components, accessories, equipment, etc. the smallest companies are marginally more profitable than the big ones.

The medium sized companies performed the least well.

Communications specialists have been much more profitable than generalists... (% operating margins in 2000)



In terms of product specialization the telecom cable specialists performed very well. This is not surprising since the data are from 2000 with the boom at that time. This seems to be more a case of market conditions than any underlying benefits from specialization in communications.

I suspect, what we are going to see this year, is that the margins will just about equalize at a rather low level for all 3 categories.

One word of caution about making comparisons of this kind. Even if we see that the profitability of larger or smaller companies is better, this should not be a recipe for you to go out there to break-up your business. These things may be explained by some other correlations as well. There may not be a causal relationship between size and profitability.

Sustainability

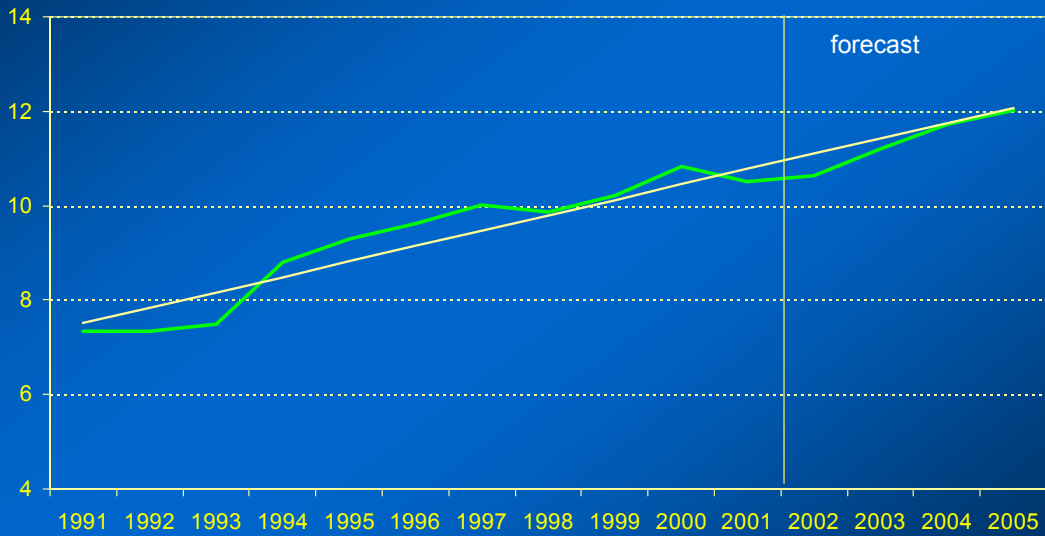
- Will there continue to be a market?
- Can profitability be enhanced?
- Will the industry have access to capital?
- Can the industry achieve genuine structural change?
- Can it attract and motivate talented staff and management?

The last issue I like to look at is the long term viability of the cable business and its sustainability into the future.

There are several questions that need to be answered, as listed in the above slide.

The last question I would like to leave to Nigel Purse, who will later on talk about human resources.

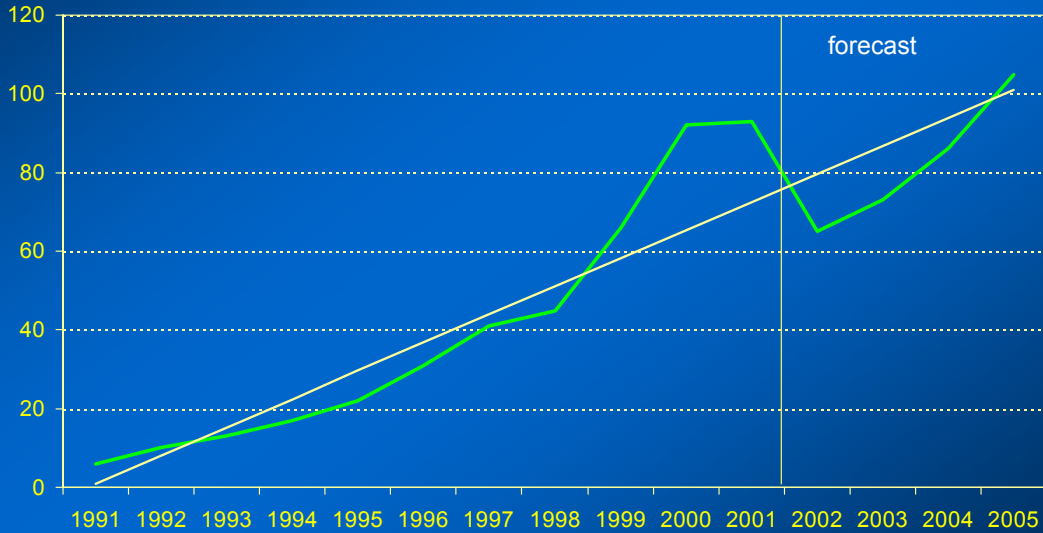
Long-term growth rates for metallic cables remains positive (million tonnes conductor)



For metallic cables we are in a recession now, as you can see from the slide. But this recession looks rather similar to the recession we experienced in the early nineteen nineties. Of course, we saw another dip in 1997 and 1998 during the Asian crisis.

In our view there is no reason to believe that there will be a major discontinuity in the long term growth rate of metallic cables.

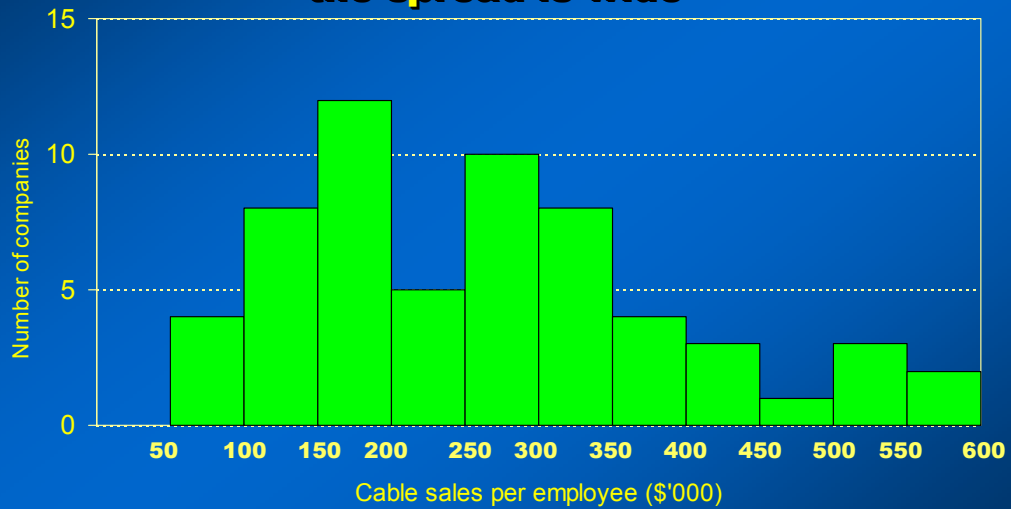
**Despite the current gloom, long-term growth rates for fiber optic cables are also positive
(million fiber Kms)**



Over the last few years, clearly we had a rollercoaster ride in as far as fiber optic cable business is concerned. But again looking at the long term trend line one could argue that the condition, we saw in 1999 through 2001 in terms of the boom in fiber optic cable demand followed by the dramatic decline we have seen last year and this year, does not necessarily mean that the long term growth rate is negative.

It will take some time to get back to the trend line. But our view will be that we will get back to the trend line. It might take 3 to 4 years to get there. But the long term growth rate is still positive.

Annual cable sales per cable employee vary between \$50,000 and \$600,000 and the spread is wide



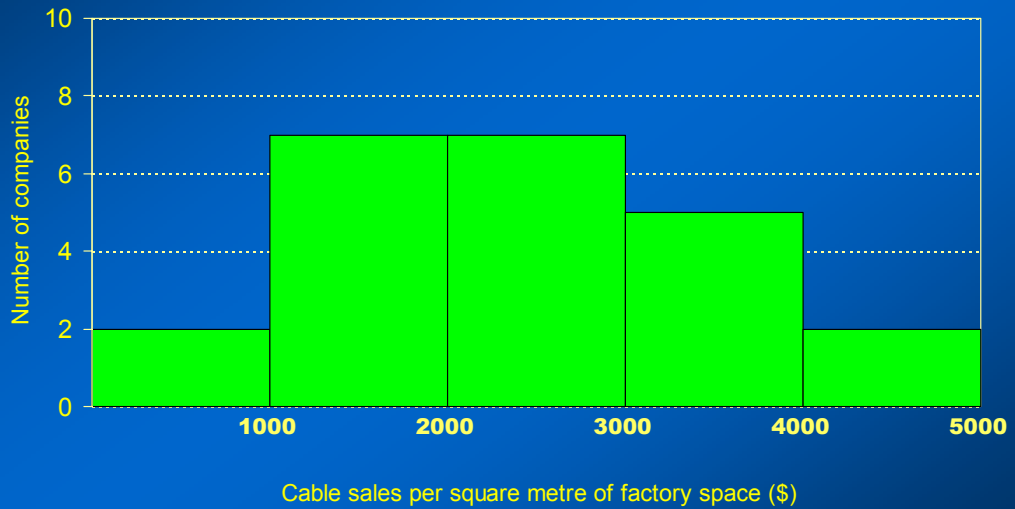
The next question, I like to tackle, is:

Can profitability be enhanced?

In order to give an answer I have looked at a sample of wire & cable companies and at some ratings of their efficiency.

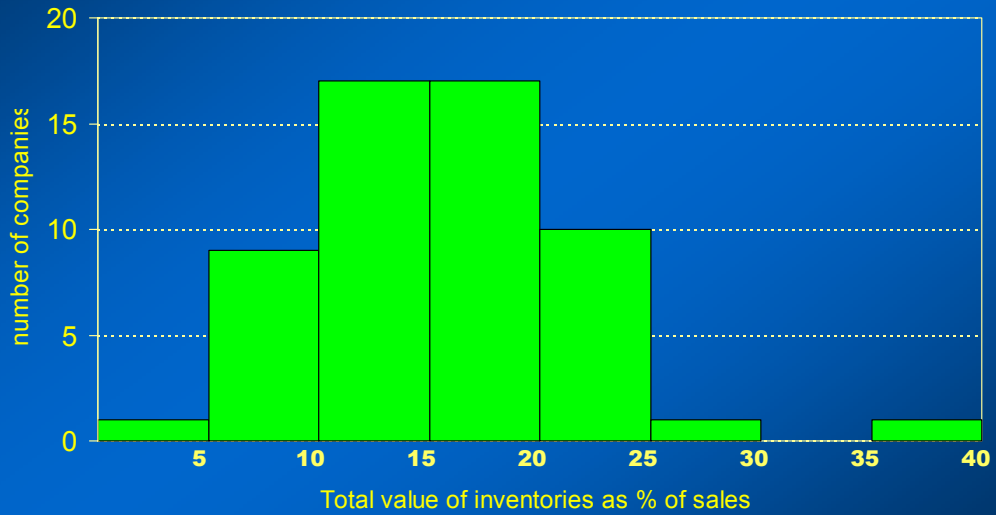
First an index of labor productivity, with a number of companies on the vertical axis and cable sales per employee on the horizontal axis. It is striking how broad the range is in terms of cable sales per employee, from 50 000 to 600 000.

Annual cable sales per metre of factory floor area is also widely spread, from \$400 to \$4,500



Next let us look at the index of capital productivity like usage of floor space, i.e. sales per meter of factory floor area. Again you can see a wide spread on the horizontal axis.

Companies manage to operate with different inventory costs - from 5% of sales to 40%

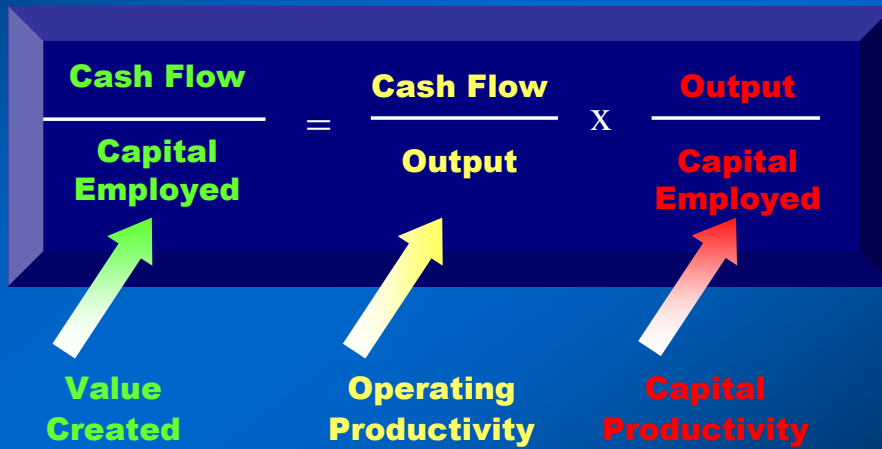


Finally, let us look at the index of capital productivity like inventory cost, i.e. total value of inventories as a percentage of sales. Again you can see a wide spread on the horizontal axis.

I suggest there are opportunities for companies to benchmark against one another and get their operating performance improved.

There is definitely more potential for efficiency improvement.

Capital productivity is just as important as operating productivity



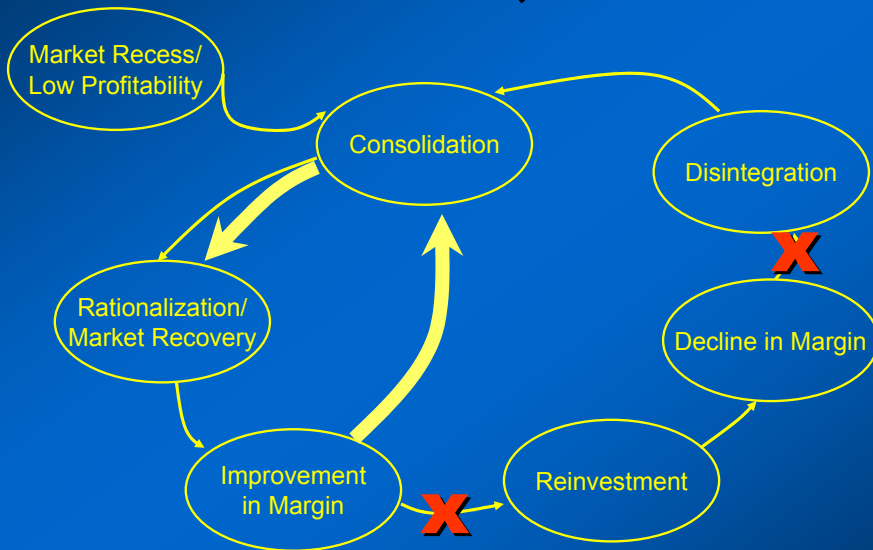
Will the industry have access to capital?

Fashions change – the investment community might like manufacturing again.

Investors should be educated that ROI in cables is above average.

Management can show shareholders that they appreciate the need for capital productivity, which is as important as operating productivity.

Achieving structural change – break some links in the circle, reinforce others



Now let us come back to where I started from.

Can this industry achieve positive and genuine structural change?

Here we have this vicious cycle we saw before. What is required to change things?

We need to break some of these links.

First, we need to break the link between decline in margin and the pressure on companies from the financial community to disintegrate. Naturally, this depends on your relations with that community.

Second, we need to stop this tendency to reinvest when free cash flow becomes available. One has to conserve capital.

Third, we need to reinforce some of the positive elements of this cycle. When free cash flow becomes available, perhaps the best way to use it is to finance consolidation and rationalization rather than to finance reinvestment. Clearly, we need to strengthen the link between consolidation and industry rationalization.

I hope this ending on a relatively positive note will give you an optimistic stimulus for your own situation. Thank you for your attention!