

Business Models for Success - How to survive in the European PCB Market

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The number of PCB manufacturers in Europe declined from 700 in the nineties to 400 early this decade and is forecasted to shrink to the range of 100 by 2010. A share of these companies will not survive the coming years; while the majority are financially under heavy pressure due to global pricing and off shoring activities of their customers. A number of companies, large ones, medium size and small ones have found their way to be very successful in this environment. What are business models and secrets of these successors?

Agenda

1. Can we learn from the Business Model Japan?
2. Europe a slow growth, high wage area only?
3. Three Business Models for Success
4. Growth Industries in Europe
5. Conclusion

The Japanese Business Model

As can be seen in Figures 1 and 2 Japan leads the world in PCB manufacture. However, as noted in Figure 2, even Japan has seen some slowing of growth. Much of this is due to the general downturn all electronics have seen in past years.

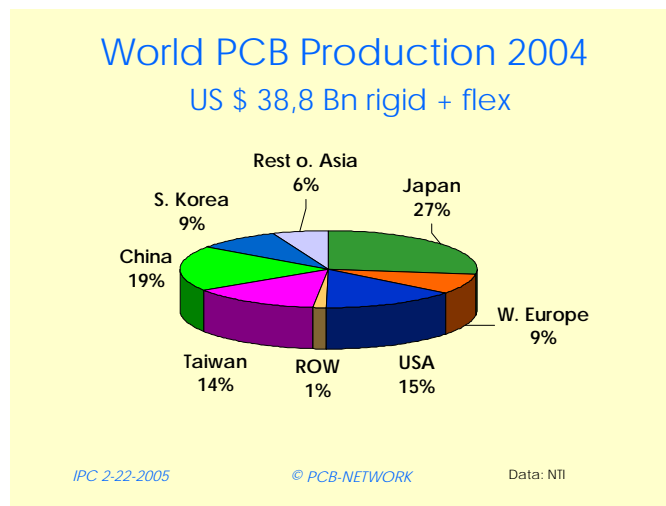


Figure 1 - Japan Strongly Leads the Global PCB Market

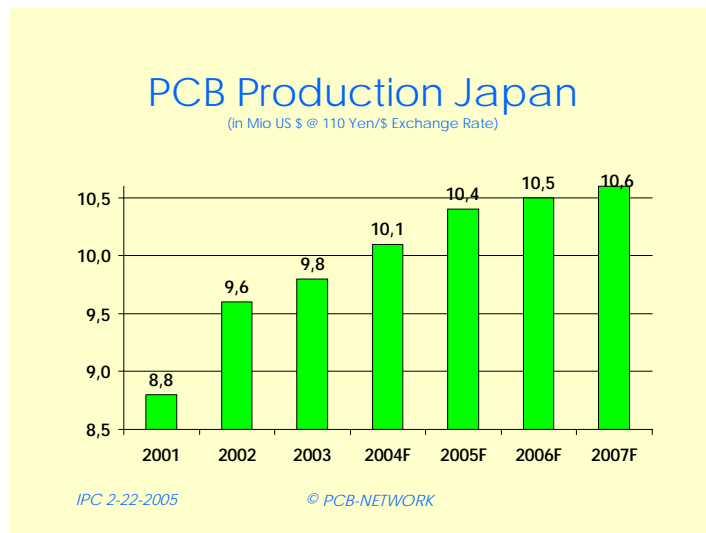


Figure 2 - Growth Slows Down to 2 – 4 %

Slow Growth in Europe

Figures 3 and 4 show the growth of the PCB market by technology and region.

Flexible circuits and platforms for silicon are the leading technology growth areas. However, market growth in Europe lags the rest of the world.

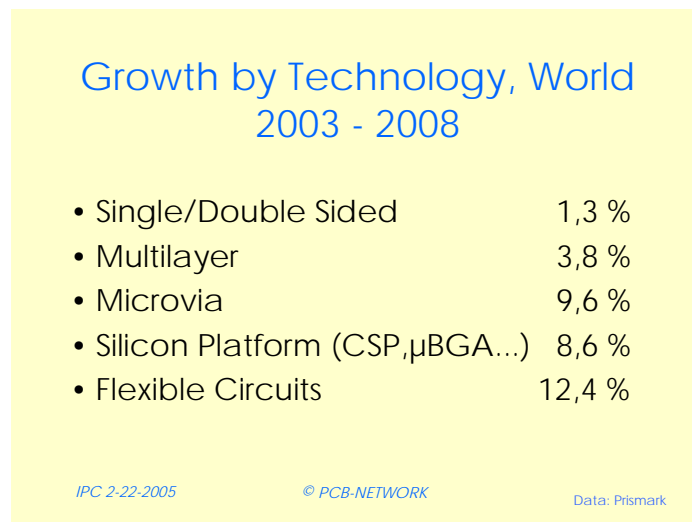


Figure 3 – Technology Areas

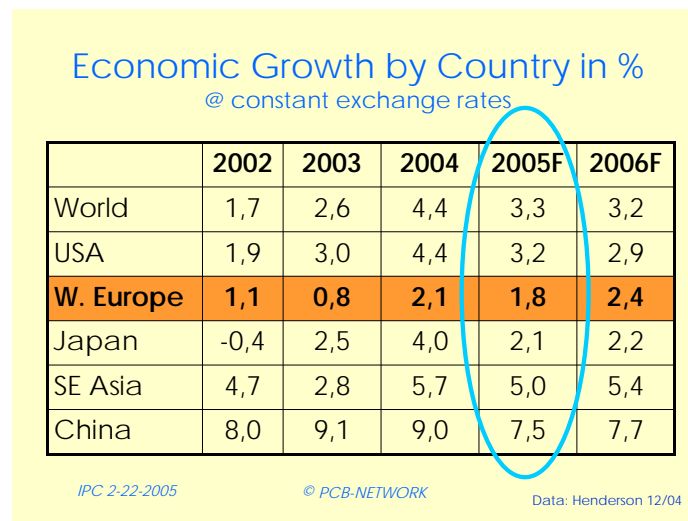


Figure 4 - Europe and Especially Germany are Slow Motion Economies

A look at Figure 5 shows that by 2010, if the current rate of manufacturing decline continues, there will only be 100 PCB manufacturers left in Europe.

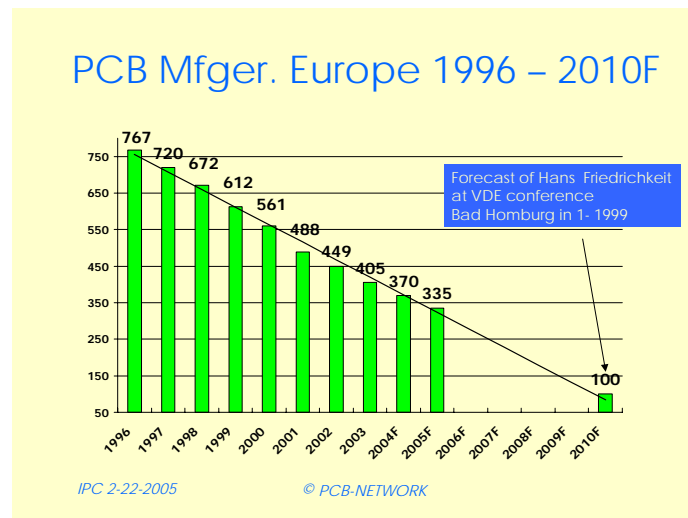


Figure 5 - Europe is loosing Its PCB Manufacturers nearly along a Straight Line since 10 Years

Three Business Models for Success

There are three business models we can consider. Each of these offers the possibility for a company to become successful. These models, shown in Figures 6, 7 and 8 are:

1. Be where your customers are.
2. Develop a niche technology.
3. Consider the size you need for the market.

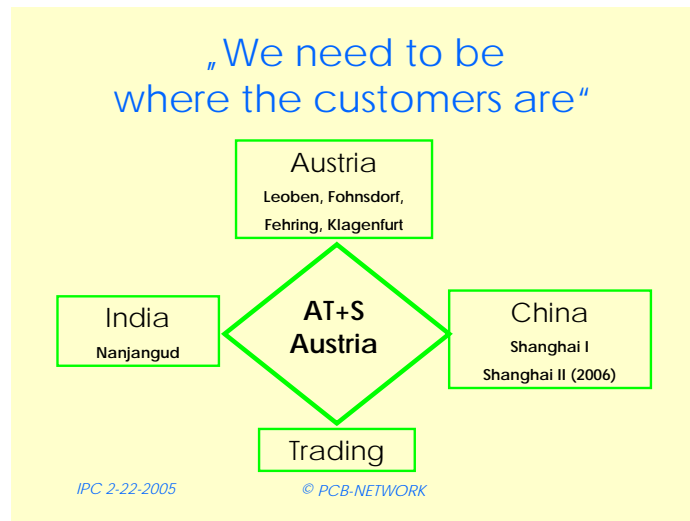


Figure 6 - A Financially Successful Global Player



Figure 7 - Common Business Areas for Niche Players

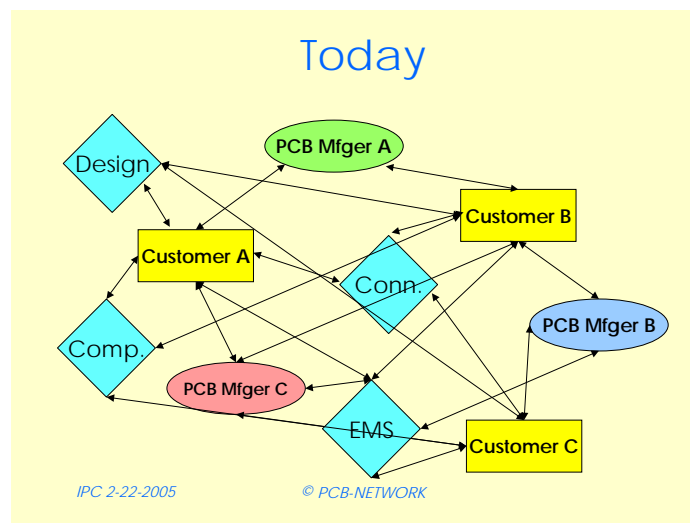


Figure 8 - Is Middle Size a Dead End Road?

Growth Areas

Figure 9 shows areas of the PCB market by growth in Europe. Note that automotive and industrial are key market segments. However, automotive is a global market while industrial (along with such areas as medical) is a geographically fragmented market.

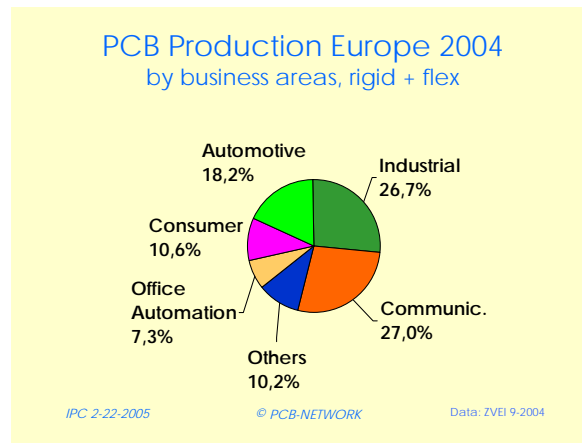


Figure 9 - Automotive and Industrial are the Key Market Segments. Automotive is Global, while Industrial and Medical is a very Fragmented Market

Conclusions

Figure 10 shows eight suggested rules for success in the global market place.

For each business the path to success will be different. Good luck in your journey on your path! (Figure 11.)

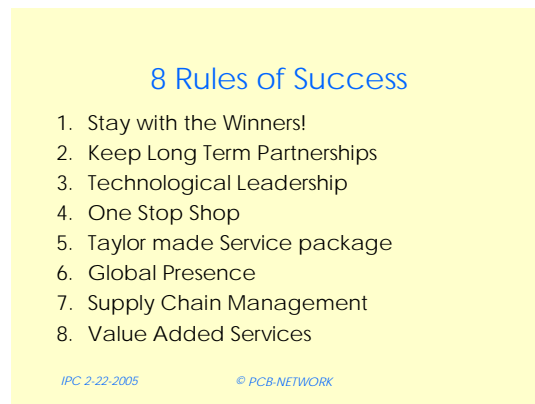


Figure 10 – 8 Rules for Success



Figure 11 – Good Luck!



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Business Development

Business Models for Success

**How to Survive in the
European PCB Market**

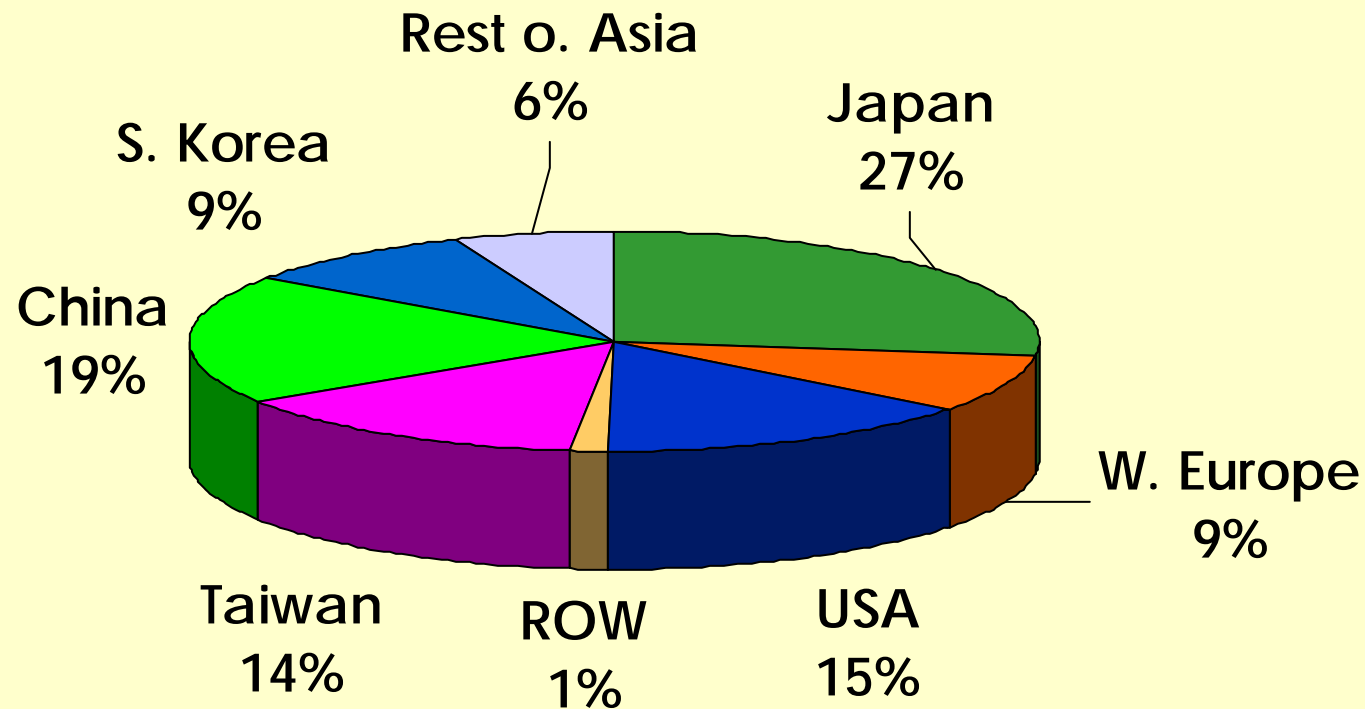
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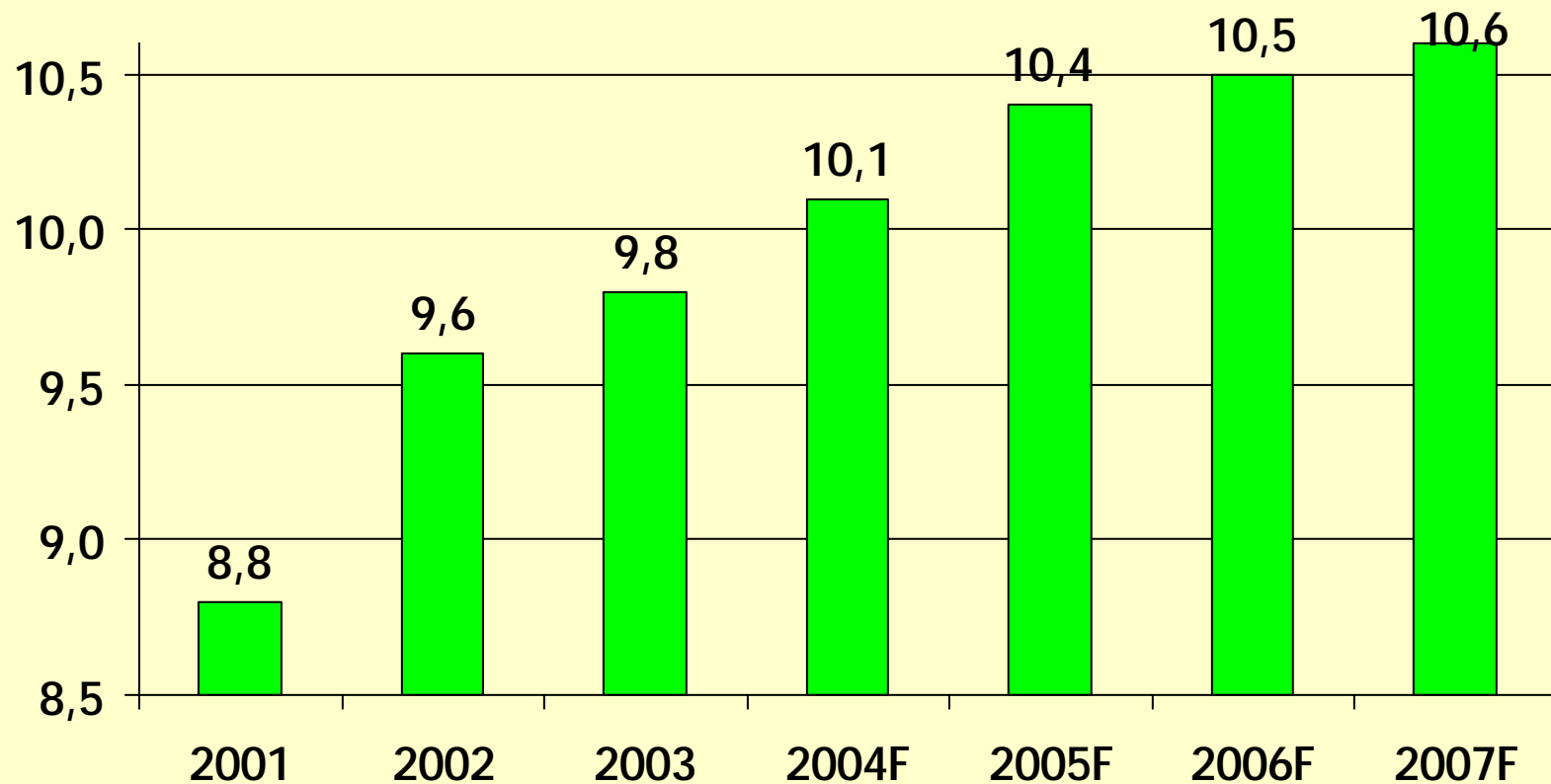
World PCB Production 2004

US \$ 38,8 Bn rigid + flex



PCB Production Japan

(In Mio US \$ @ 110 Yen/\$ Exchange Rate)



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Growth by Technology, World 2003 - 2008

- Single/Double Sided 1,3 %
- Multilayer 3,8 %
- Microvia 9,6 %
- Silicon Platform (CSP, μ BGA...) 8,6 %
- Flexible Circuits 12,4 %

Japan leads in 3G Cellphone and infrastructure technology



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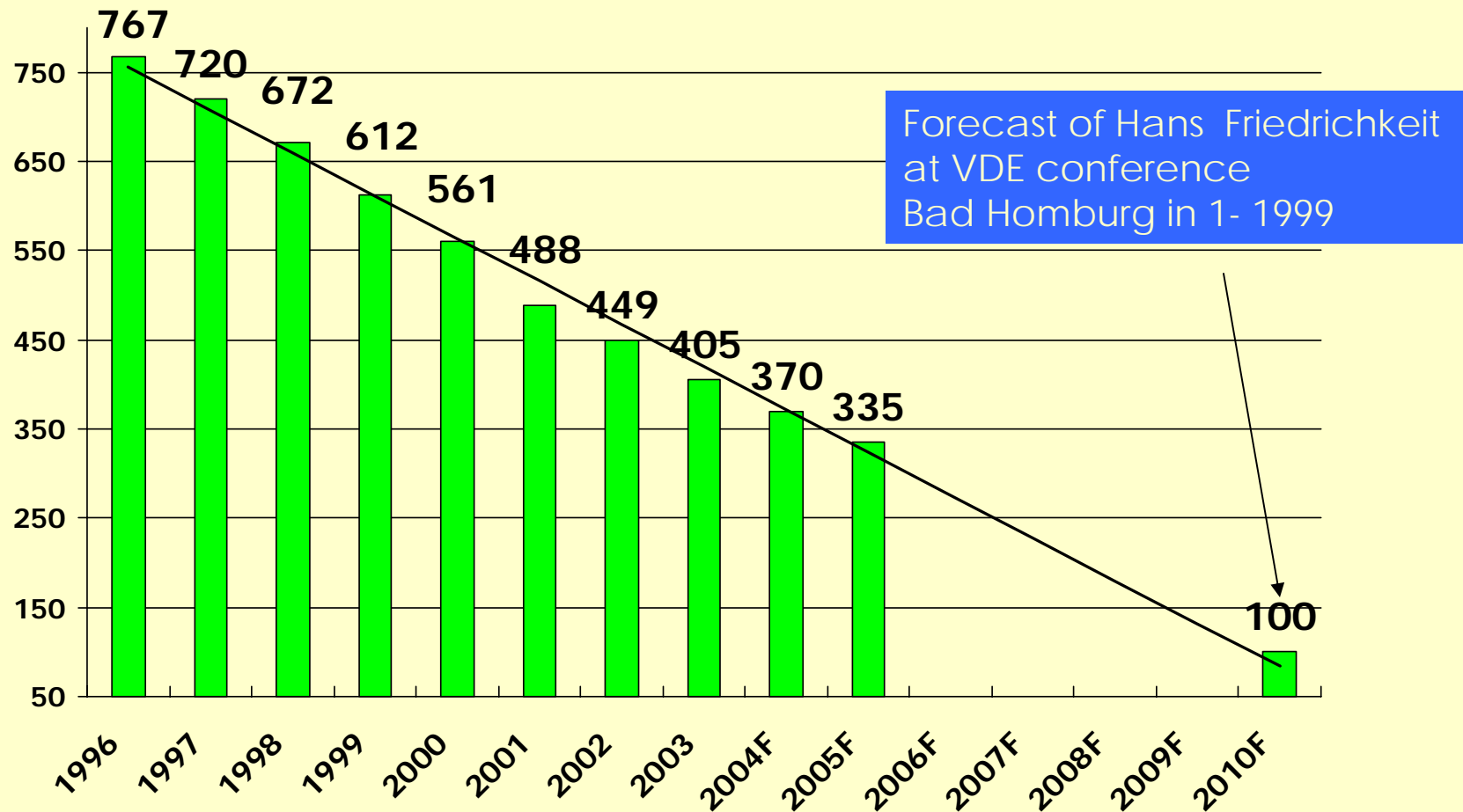
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Economic Growth by Country in %

@ constant exchange rates

	2002	2003	2004	2005F	2006F
World	1,7	2,6	4,4	3,3	3,2
USA	1,9	3,0	4,4	3,2	2,9
W. Europe	1,1	0,8	2,1	1,8	2,4
Japan	-0,4	2,5	4,0	2,1	2,2
SE Asia	4,7	2,8	5,7	5,0	5,4
China	8,0	9,1	9,0	7,5	7,7

PCB Mfger. Europe 1996 – 2010F



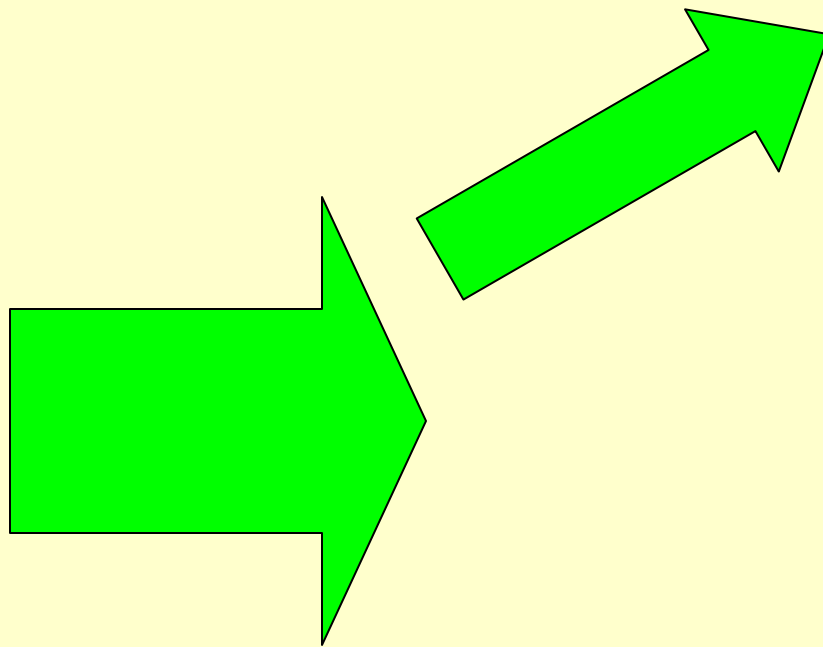
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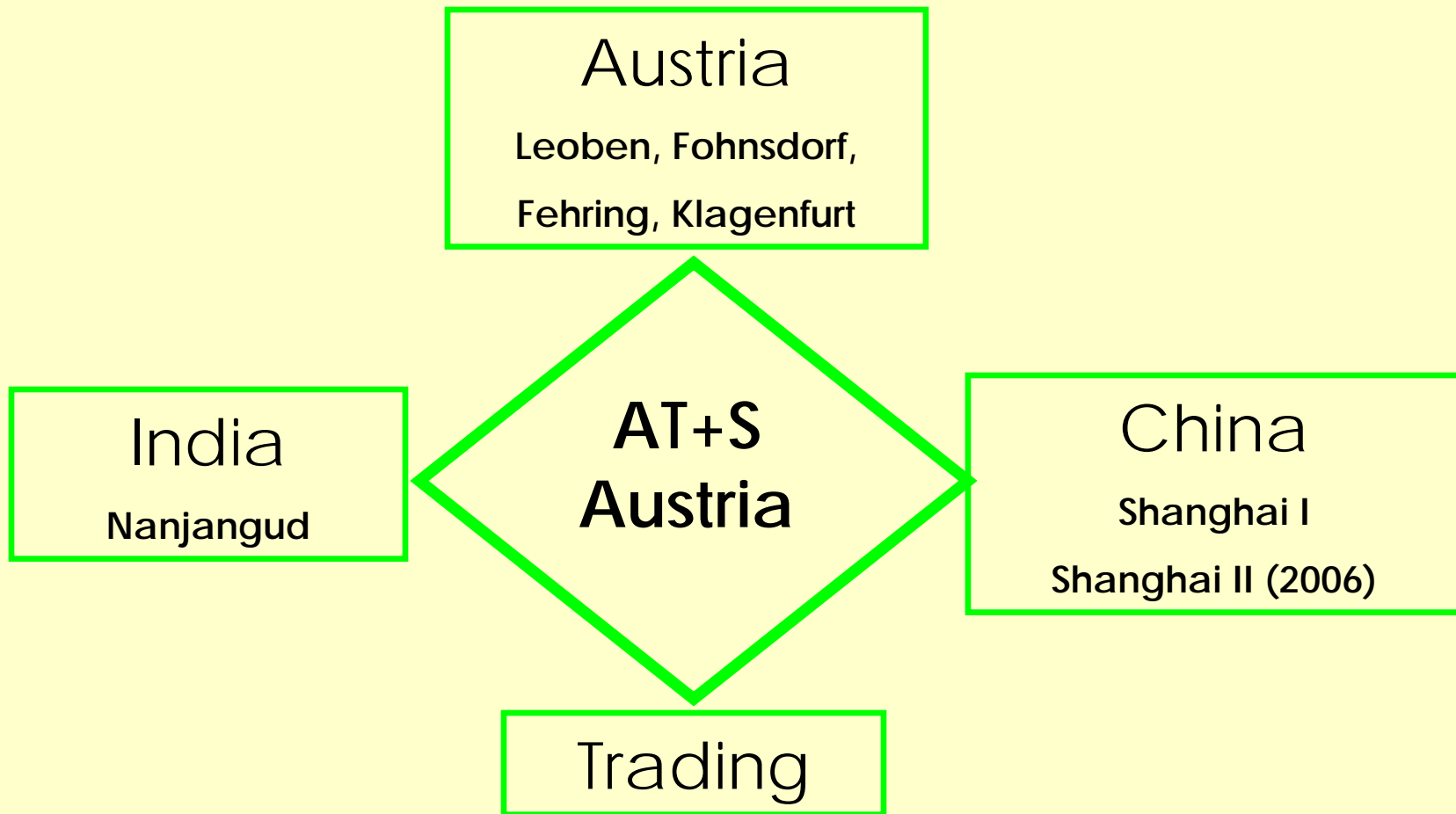
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Business Models in Europe



Global Player

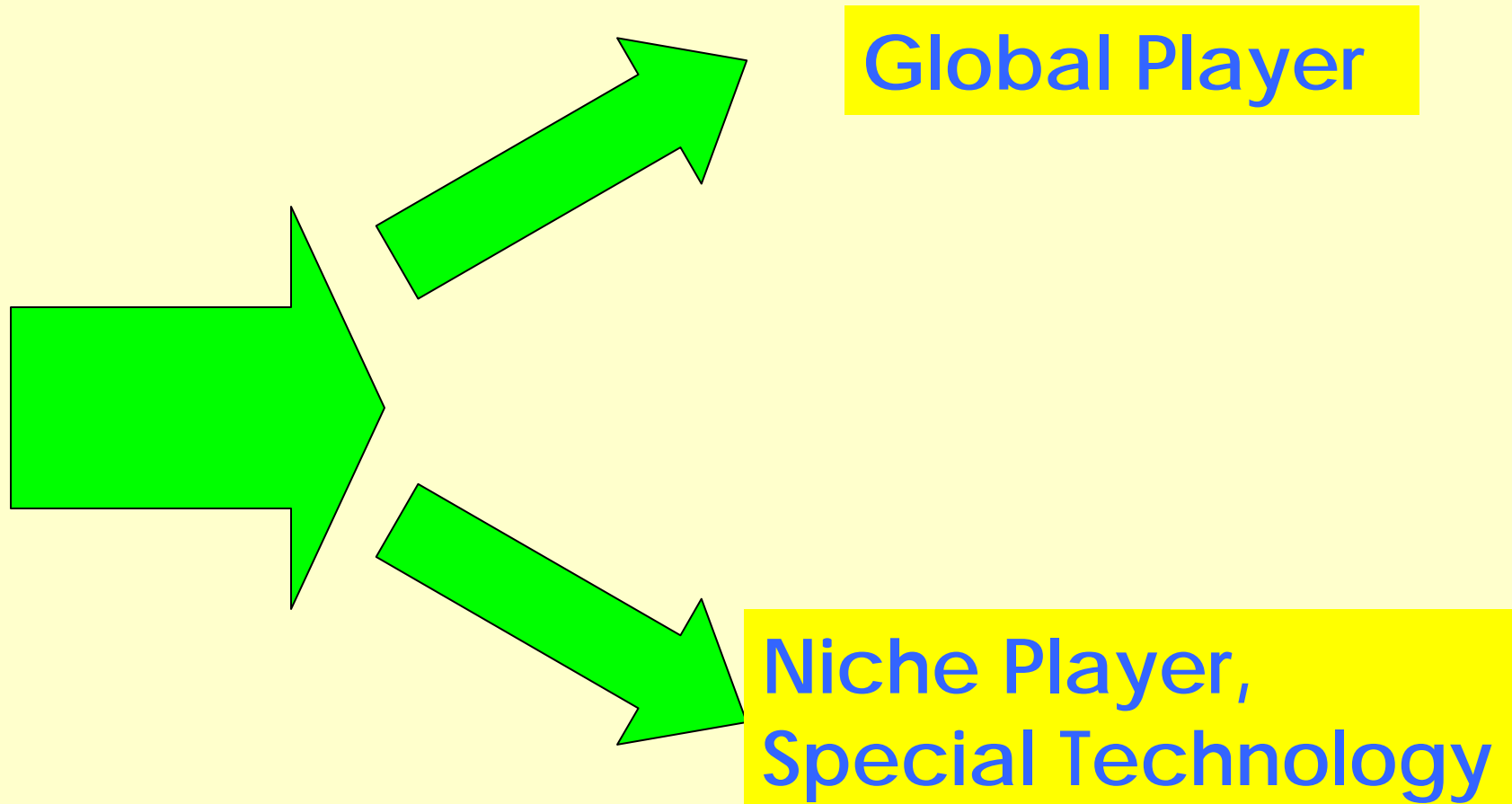
„We need to be
where the customers are“



Werke & Verkaufsbüros



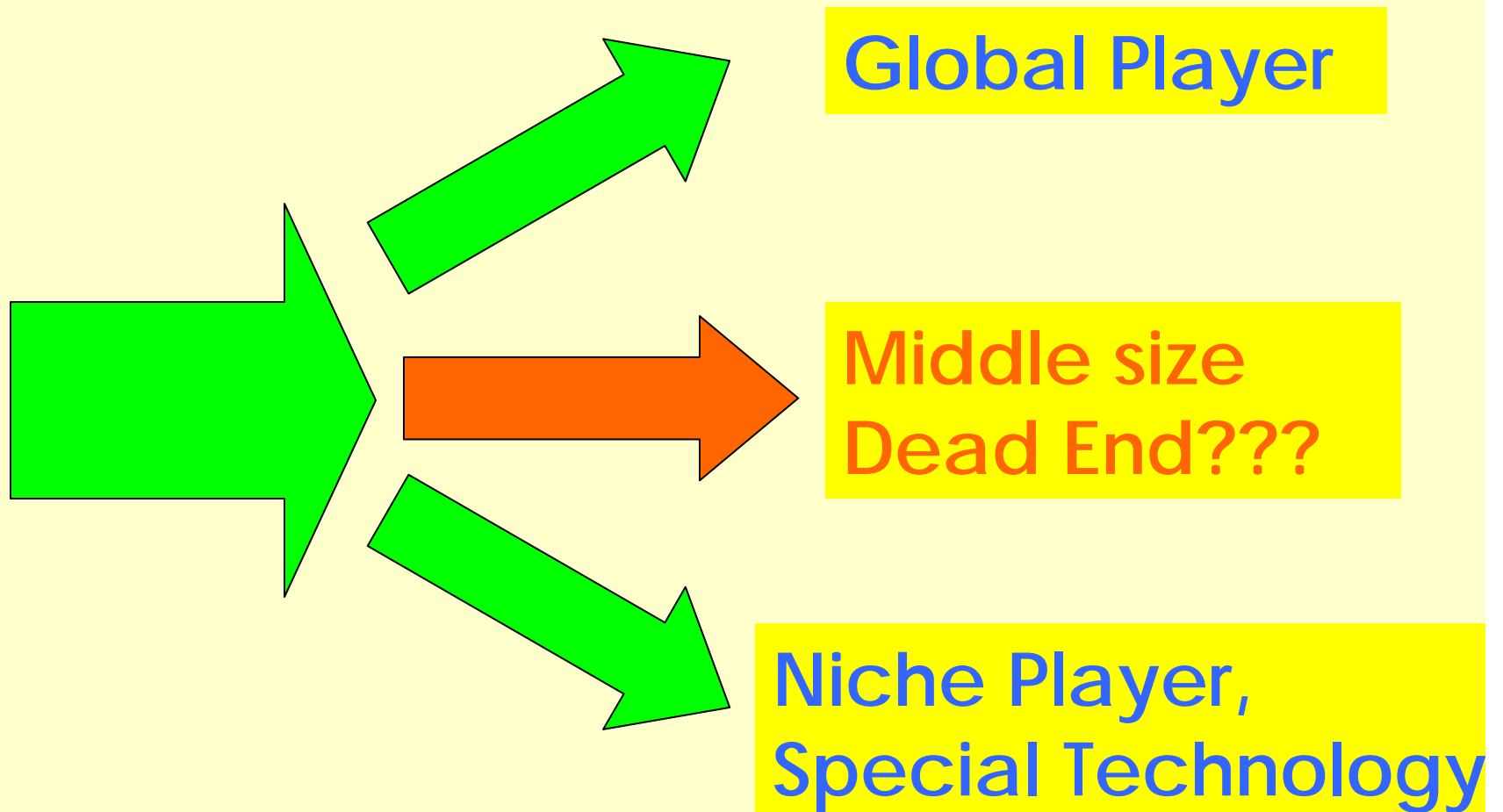
Business Models in Europe



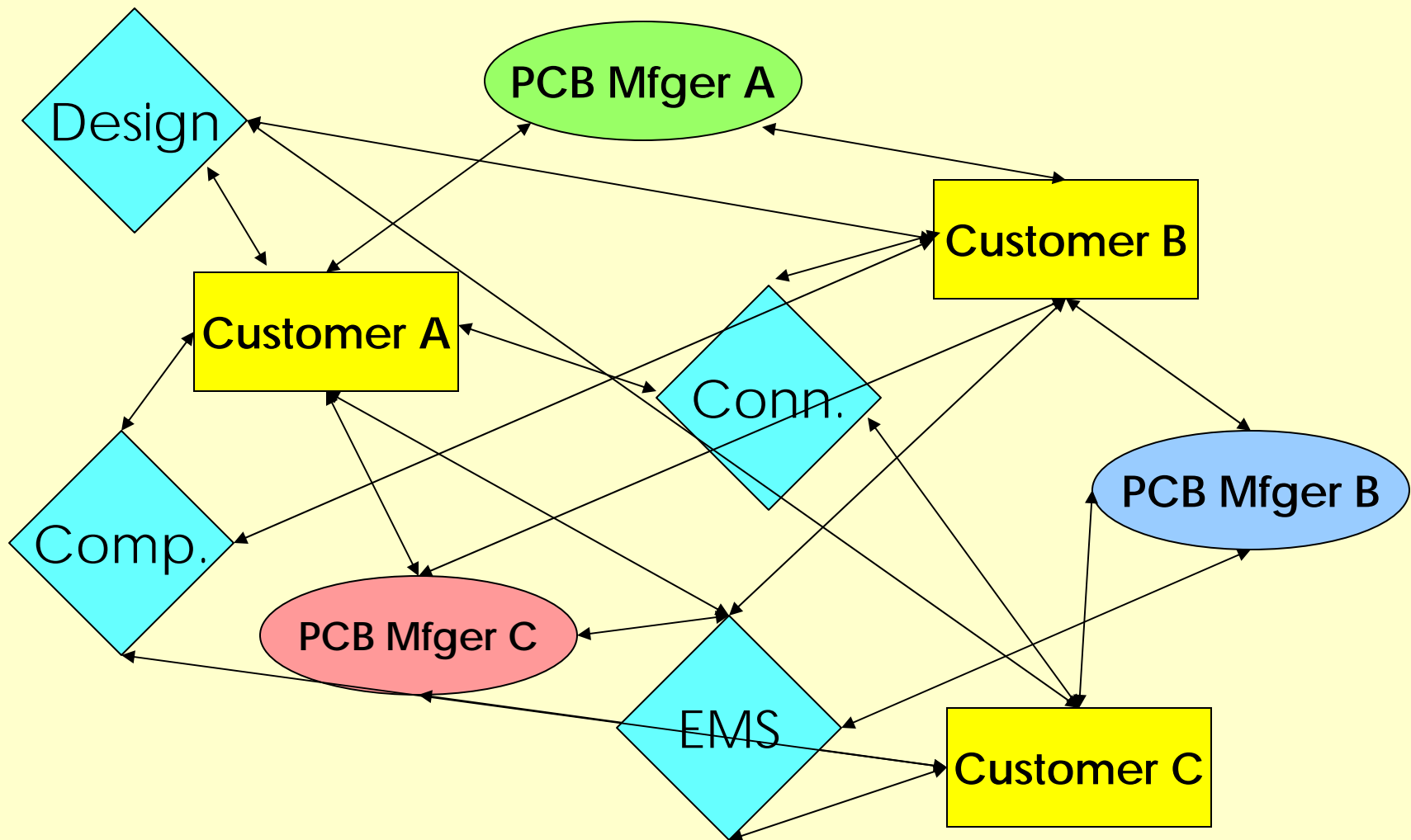
Niche Player / Special Technology

- Quickturn, especially high-tech QTA
- Cutting-edge products
- Low to medium volumes
- R & D work
- Niche products
- Special materials/mixed materials
- Military

Business Models in Europe



Today

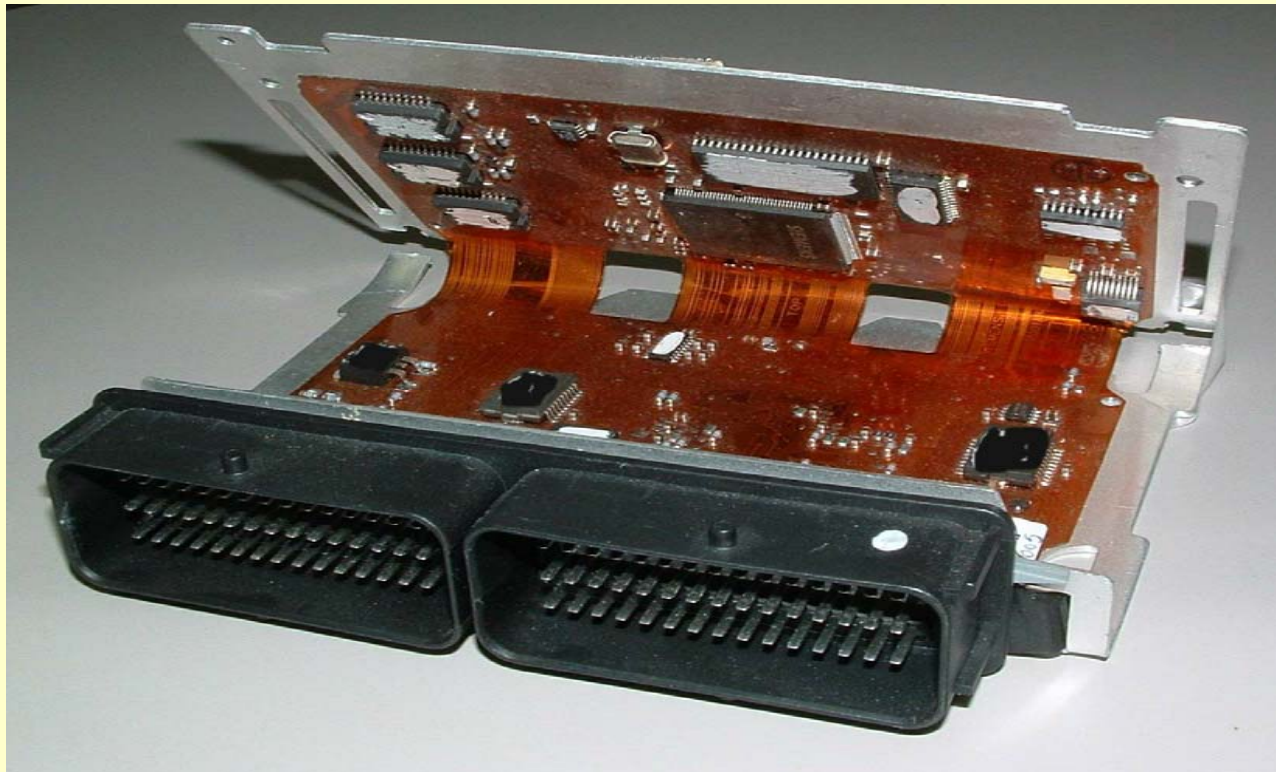


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4. Growth Industries in Europe

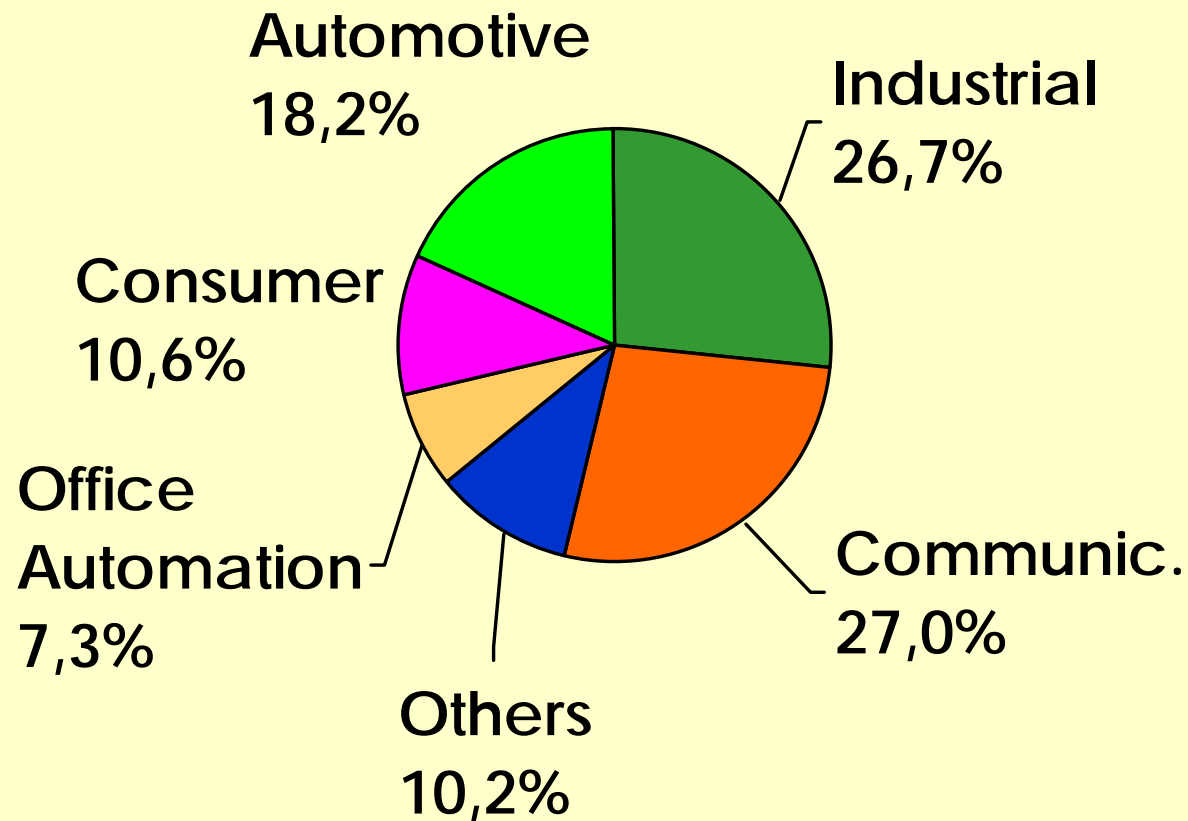


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PCB Production Europe 2004

by business areas, rigid + flex



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8 Rules of Success

1. Stay with the Winners!
2. Keep Long Term Partnerships
3. Technological Leadership
4. One Stop Shop
5. Taylor made Service package
6. Global Presence
7. Supply Chain Management
8. Value Added Services

Good luck on the „right course“
in stormy oceans...

2005++



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