

## **Business Model**

### **A Concept for the Western PWB Hemisphere?**

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#### **Abstract**

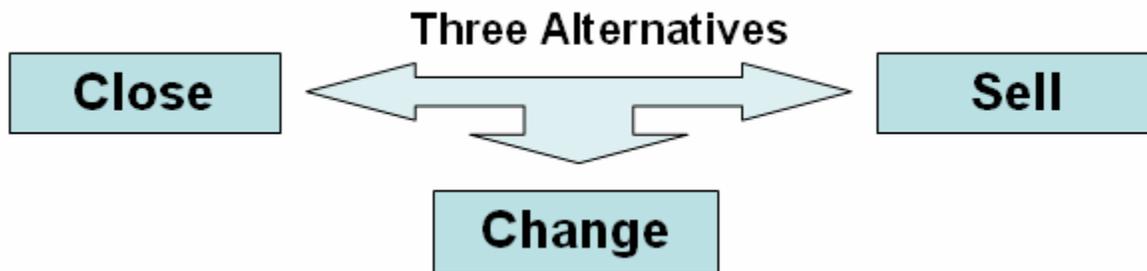
The dramatic economic downturn of the PWB industry starting in the fourth quarter of 2000, which resulted in a reduction of 1/3 of the demand and corresponding supply chain within one year, has changed our industry fundamentally. There is now a slow recovery, however, it does not take place worldwide but is concentrated in low cost regions. Many of the established PWB companies in the Western World are confronted with the question: "Is there a business model enabling a Western company to survive and be successful again?"

AT&S, almost bankrupt at the beginning of the nineties, was given a new direction by the new owners and management with the MBO in 1994. This direction consisted mainly of changing from a low price supplier dependent on one big customer to a competent partner for locally and globally acting companies. We followed a total cost approach according to the principal "Who can afford to buy cheap?" or "Paying a higher price for a product is often the less expensive solution, no matter whether it is a component or a finished product".

Essential for this business model is to find the right balance between the factors: quality, technology, supply chain, optimization of customer solution, responsiveness and proximity to customers. The intent is not to focus on one of them following just a temporary trend. These items are decisive for building up customer confidence and trust to become a partner of competence. Their right balance leads to a total cost approach with the aim to offer the customers the best solution for their final products in order to enable them to meet competitive price levels for their own products.

#### **Introduction**

After the dramatic downturn in the PWB industry starting in the fourth quarter of 2000 and the recovery in 2003, which took place primarily in the Asian hemisphere, the Western World was confronted with the decisive question: *Is there a business model enabling a Western PWB company to survive and be successful again?* The company found itself in the position of evaluating three basic alternatives.



**Figure 1 - Company Overview**

As a background on the company, AT&S is PCB manufacturing company with over 3,600 employees with 2,270 employed in Europe. Annual revenue in March of 04 was €316 million with € 246 million from European business. The company's Industry Focus includes: Telecom (mobile and infrastructure) and Industrial including: *Medical, Aviation/Aerospace, Defense, Automotive and Consumer.*

Changes in the global marketplace required the company to change their way as of approaching business. Previously, the company trend would focus on thick PWB's – manufactured with conventional processes. New Directions for the company included: 1. Following the conviction in the upcoming trend towards thin boards even though the industry is investing in thick products; 2. Investing in horizontal wet process to guarantee a continuous product flow and 3. Changing the corporate philosophy to not act in the "me too" way.

The second change required was to no longer be the low cost producer for a single customer. A new direction for the company in this area was to focus on European customers. Also, to diversify into industry segments with high growth rates

with the intent to become a supplier of specific niche segments. The change in philosophy here is to go from a cheap low-tech PWB producer to a reliable high tech solution provider.

The third change was to change the relationship with the customer and break out of the limitation to produce and sell on daily request. The new direction entailed the establishment of a partnership concept with both customers and suppliers. This new partnership included Annual presidents' meetings, quarterly functional meetings and defined project meetings – with team members and targets. The goal was to handle the changing global business models and be prepared for trends in volume, technology, and other aspects. The philosophy was to work toward finding win-win opportunities on a broad and long-term basis

Change number four required privatizing a state-owned company. This change created the environment to allow the company to become profitable and successful through quick decisions lean structures. We could not act more entrepreneurial and change from a slow, paralyzed state-owned company to a lean, flexible organization

Change number 5 was to break away from continuous cost reduction on customer request. The new direction established was to search for solutions to reduce total cost of final products. The company would take pro-active actions to optimize products together with the customer including: redesign of interconnection system, application of state-of-the-art wiring techniques and when advantageous introducing new materials. The mandatory requirement was to ensure process/equipment optimization with high yield/no scrap. The change allowed the company to provide the best solution for the customer at reasonable pricing.

We also had to reevaluate having manufacturing facilities in Europe only. The conclusion was that it was necessary to have manufacturing plants in regions with extraordinarily growing demand. These regions offering the necessary infrastructure, well-trained people, globally operating suppliers and customers, excellent cost structure and financial / business environment comparable to Western standards. The intent was to be able to produce PWBs where the customer needs them. Along with this came a required change from sourcing activities exclusively in Europe. We evaluated local sources for equipment raw material / semi-finished products process material. The corporate goal was to find equivalent & exchangeable end products that would allow the company to source and sell where the product where it was produced.

The company had to react to the mismatch supply vs. demand Europe. The philosophy was to maintain European plants for European demand. Plants could be specialized to be of greater service to the local customers. Front end assistance was added for global European customers as was production for niche segments. We also established a tech-center to assist the customer.

### **Business Wheel**

Businesses tend to go through a cycle beginning with management change and going through reorganization (Figure 2). It is important to break out of the cycle. The changes noted above allowed us break the cycle.

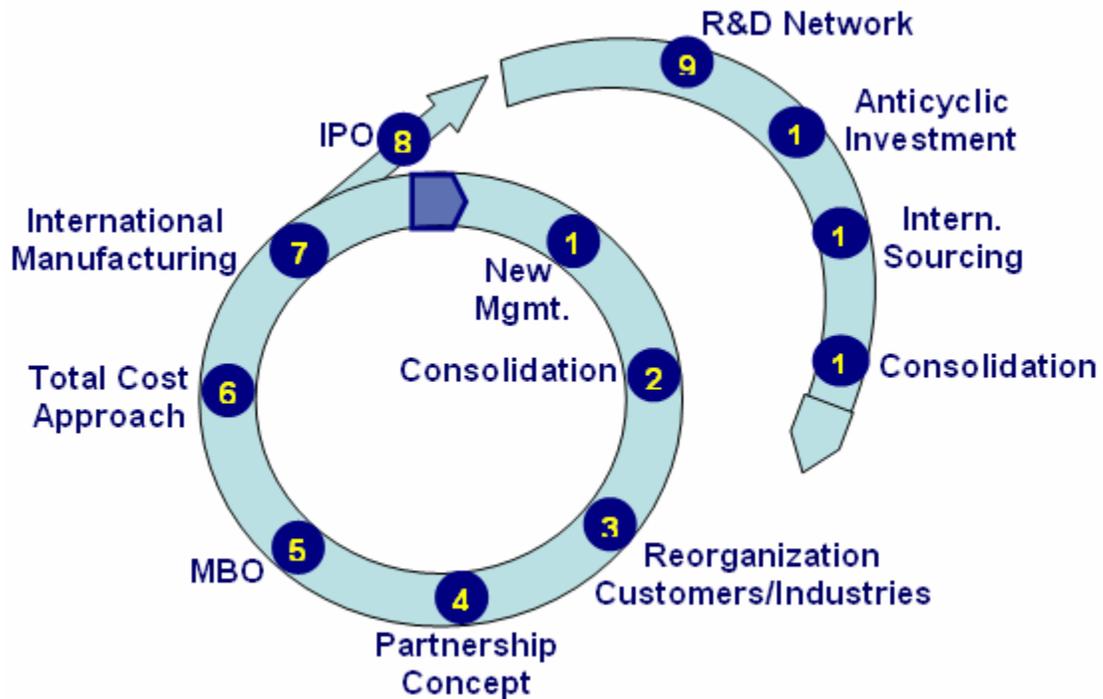


Figure 2 - Business Cycles

**Globalization / Consolidation**

Companies must recognize and accept that globalization is a fact. Circumstances/conditions in different regions are different and companies must be prepared to react to these differences. It should also be recognized that the PWB Industry is highly fragmented and consolidation will most likely continue to take place in the future.

**Summary / Conclusion**

The global marketplace has undergone significant change over the last few years. If they are to succeed companies have to evaluate their business model. Essential for the success of a chosen model are the right balance of strategic success factors. In this process the consequences of implementation must be recognized and considered. Participants in the evaluation must maintain open minds and be willing to change processes. The entire process is made easier with highly motivated, competent, flexible employees. For any company undergoing this process, I offer the advice: do not follow short-dated fashion trends.

## Introduction

After the dramatic downturn in the PWB industry starting in Q4 2000 and the recovery in 2003, which took place primarily in the Asian hemisphere, the Western World was confronted with the decisive question:

Is there a business model enabling a  
Western PWB company  
to survive and be successful again?

# ***AT&S Business Model***

## ***- A Concept for the Western PWB Hemisphere? -***



## AT&S Overview

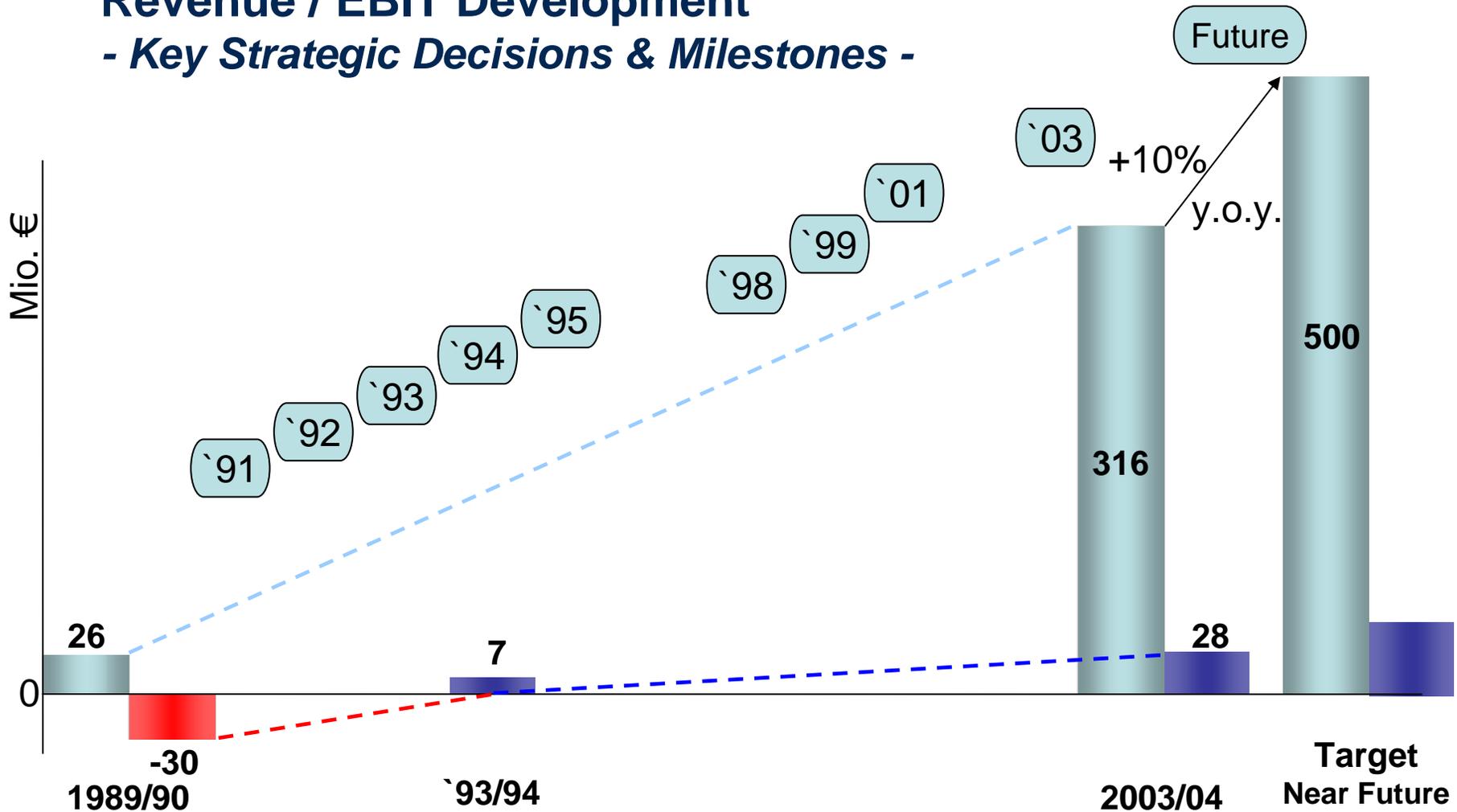
Headquarters:	Vienna
Plants:	Austria 4
	India 1
	China 1
	China 1 (under construction)
Logistics Center:	Nörvenich (Germany)
Design/Consulting Center:	Nörvenich (Germany)
	Leoben (Austria)
Technology-Center:	Leoben (Austria)
Procurement Center:	Vienna, Hong Kong

## AT&S Overview

Industry Focus:	Tele <sub>mobil</sub> Tele <sub>infrastructure</sub> Industrial <i>incl. Medical, Aviation/Aerospace, Defense</i> Automotive Consumer
Employees `03/04*):	3.600
<i>thereof Europe</i>	<i>2.270</i>
Revenue `03/04*):	€ 316 Mio.
<i>thereof Europe</i>	<i>€ 246 Mio.</i>

\*) Fiscal Year from April 1<sup>st</sup> to March 31<sup>st</sup>

## Revenue / EBIT Development - Key Strategic Decisions & Milestones -



## Key Strategic Decisions & Milestones

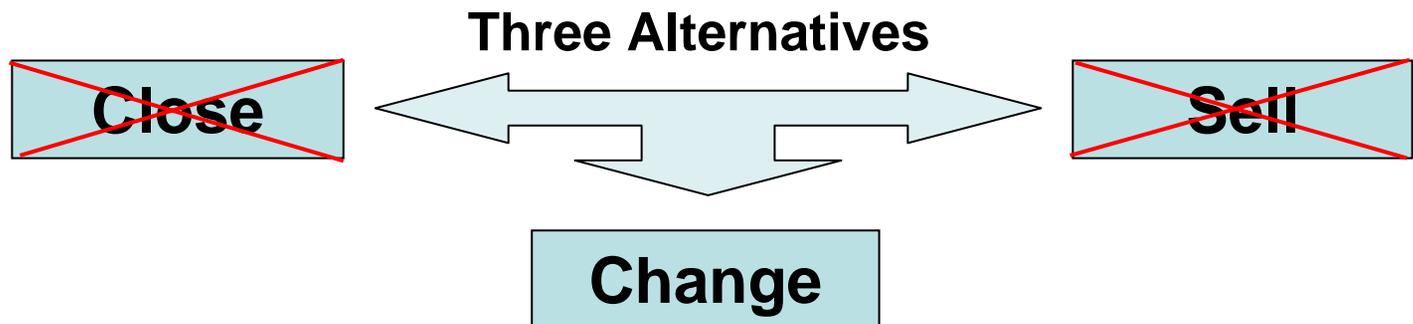
- '91 Consolidation – three local companies to one in Austria
- '92 Reorientation in Technology
- '93 Reorganization Customers / Industries
- '94 Partnership Concept  
Privatization thru MBO
- '95 Total Cost Approach
- '98 International Manufacturing – Start with Nanjangud/India
- '99 R&D Network – Foundation ATP (*Austrian Technology Platform*)  
Product Diversification thru take-over Augsburg  
Capital Increase thru IPO

## Key Strategic Decisions & Milestones

- '01 Anticyclical Investment – Groundbreaking Shanghai I  
Reaction to significant changes in Market Environment
  - closure of plant Augsburg
- '03 International Sourcing – Set-up Sourcing-HQ Hong Kong
  - Future
    - Refocusing, Organic Growth
    - Acquisition, Diversification
    - Participation in Consolidation of PWB Industry

91 **Consolidation – three local companies in Austria**

- Starting point:
  - *negative earnings higher than revenue* –
- New management established
  - Consolidation of three independent companies to one group
  - Introduction of new company philosophy and directions



## 92 Reorientation in Technology

➤ Starting point:

– ***thick PWB`s – conventional processes*** –

➤ Directions:

- Follow the conviction in the upcoming trend towards thin boards even though the industry is investing in thick products
- Invest in horizontal wet process to guarantee a continuous product flow

➤ Philosophy:

- Do not act in the “me too” way

## 93 Reorganization Customers / Industries

- Starting point:
  - ***low cost producer for a single customer*** –
- Directions:
  - Focus on European customers
  - Diversification into industry segments with high growth rates
  - Supplier of specific niche segments
- Philosophy:
  - From a cheap low-tech PWB producer to a reliable Hi-Tec solution provider

## 94 Partnership Concept

- Starting point:
  - ***limitation to produce and sell on daily request*** –
- Direction:
  - Establish a partnership concept with customers and suppliers
    - Annual presidents` meetings
    - Quarterly functional meetings
    - Defined project meetings – team members and targets
    - Goal: handle the changing global business models  
be prepared for trends in volume, technology, other aspects
- Philosophy:
  - Win-win situation on a broad and long-term basis

## 94 Privatization thru MBO

- Starting point:
  - ***state-owned company*** –
- Direction:
  - Make the company profitable and successful thru
    - quick decisions
    - lean structures
- Philosophy:
  - Entrepreneurial acting
    - From a slow, paralyzed state-owned company to a lean, flexible organization

## 95 Total Cost Approach

- Starting point:
  - ***continuous cost reduction on customer request*** –
- Direction:
  - Search for solutions to reduce total cost of final products
    - Pro-active actions to optimize products together with the customer
      - Redesign of interconnection system
      - Application of state-of-the-art wiring techniques
      - Introduction of new materials
    - Given is: process / equipment optimization, high yield, no scrap
- Philosophy:
  - Best solution for the customer

## 98 International Manufacturing – Nanjangud/India

- Starting point:
  - ***manufacturing facilities in Europe only*** –
- Direction:
  - Manufacturing plants in regions with extraordinarily growing demand
    - Regions offering the necessary infrastructure
      - well-trained people
      - globally operating suppliers and customers
      - excellent cost structure
      - financial / business environment comparable to Western standards
- Philosophy:
  - Produce where needed (at point of sale)



## 99 R&D Network

- Starting point:
  - ***limited know-how on technology trends*** –
- Direction:
  - Set-up an R&D network to bundle available resources of the individual groups of
    - Customers
    - Suppliers of raw and process material and equipments
    - Institutes / Universities
    - Competitors, being a second source to customers
- Philosophy:
  - Best technical solution in the right volume and time



## 99 Product Diversification thru take-over Augsburg

➤ Starting point:

**– *limited M/L capabilities for Telecom Infrastructure* –**

➤ Direction:

- Expand product portfolio for Telecom by high-layer count products
  - Total solution provider for Telecom industry
  - Additional customers

➤ Philosophy:

- Serve Telecom in total “out of one hand”

## 99 Capital Increase thru IPO

➤ Starting point:

– *privately owned company* –

➤ Direction:

➤ Raise additional funds for future growth

➤ Philosophy:

➤ Be fit for the future

## 01 Anticyclic Investment – Groundbreaking Shanghai I

➤ Starting point:

**– 20% decline in w/w PWB demand –**

➤ Direction:

➤ Prepare for largest single market in the world

➤ Focus on products for the hi-tech consumer market

➤ Offer of state-of-the-art technology

➤ Production for the local market

➤ Follow global customers in the portable products` sector

➤ Philosophy:

➤ AT&S standard worldwide

## 01 Market Changes – Closure Plant Augsburg

➤ Starting point:

***– Infrastructure industry withdraws from Europe –***

➤ Direction:

➤ React to foreseeable long-lasting market trend by withdrawing from high layer count segment

➤ Philosophy:

➤ Produce where needed

## 03 Intern. Sourcing – Set-up Sourcing HQ Hong Kong

- Starting point:
  - ***sourcing activities exclusively in Europe*** –
- Direction:
  - Achieve European sourcing level for Asia in Asia
    - Evaluation of local sources for
      - equipment
      - raw material / semi-finished products
      - process material
    - Goal: equivalent & exchangeable end products
- Philosophy:
  - Source and sell where produced

## **Future** Refocusing, Growth, Diversification

➤ Starting point:

**– *mismatch supply vs. demand Europe* –**

➤ Direction:

➤ European plants for European demand

➤ Specialization of plants

➤ Front end for global European customers

➤ Production for niche segments

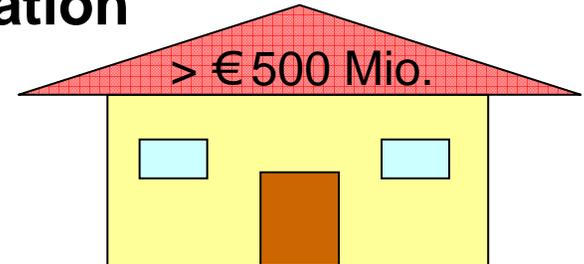
➤ Tech-Center

➤ Philosophy:

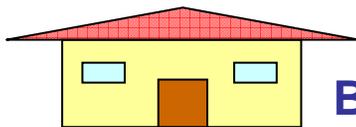
➤ Our roots are in Austria / Europe



**Future** Refocusing, Growth, Diversification

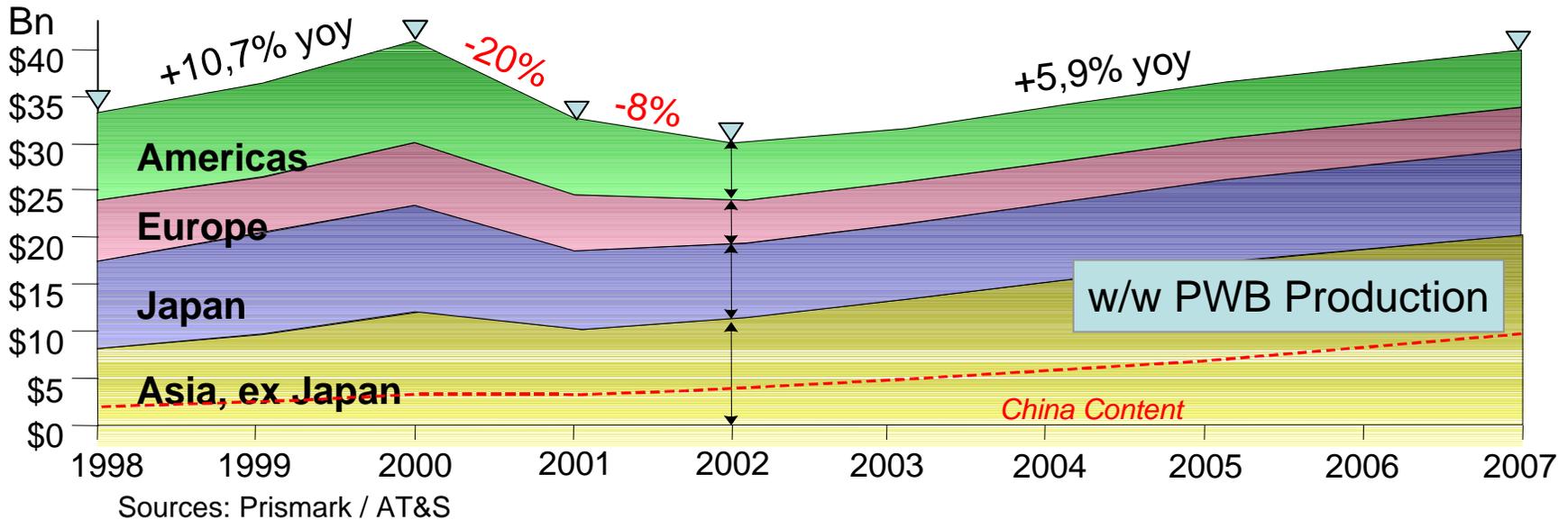
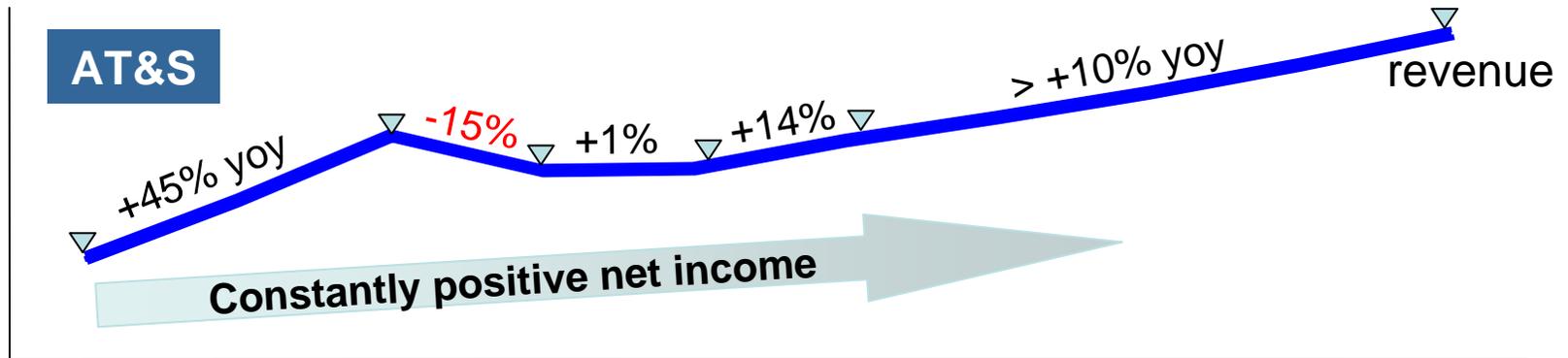


Successful thru  
Management Directions  
& Philosophy

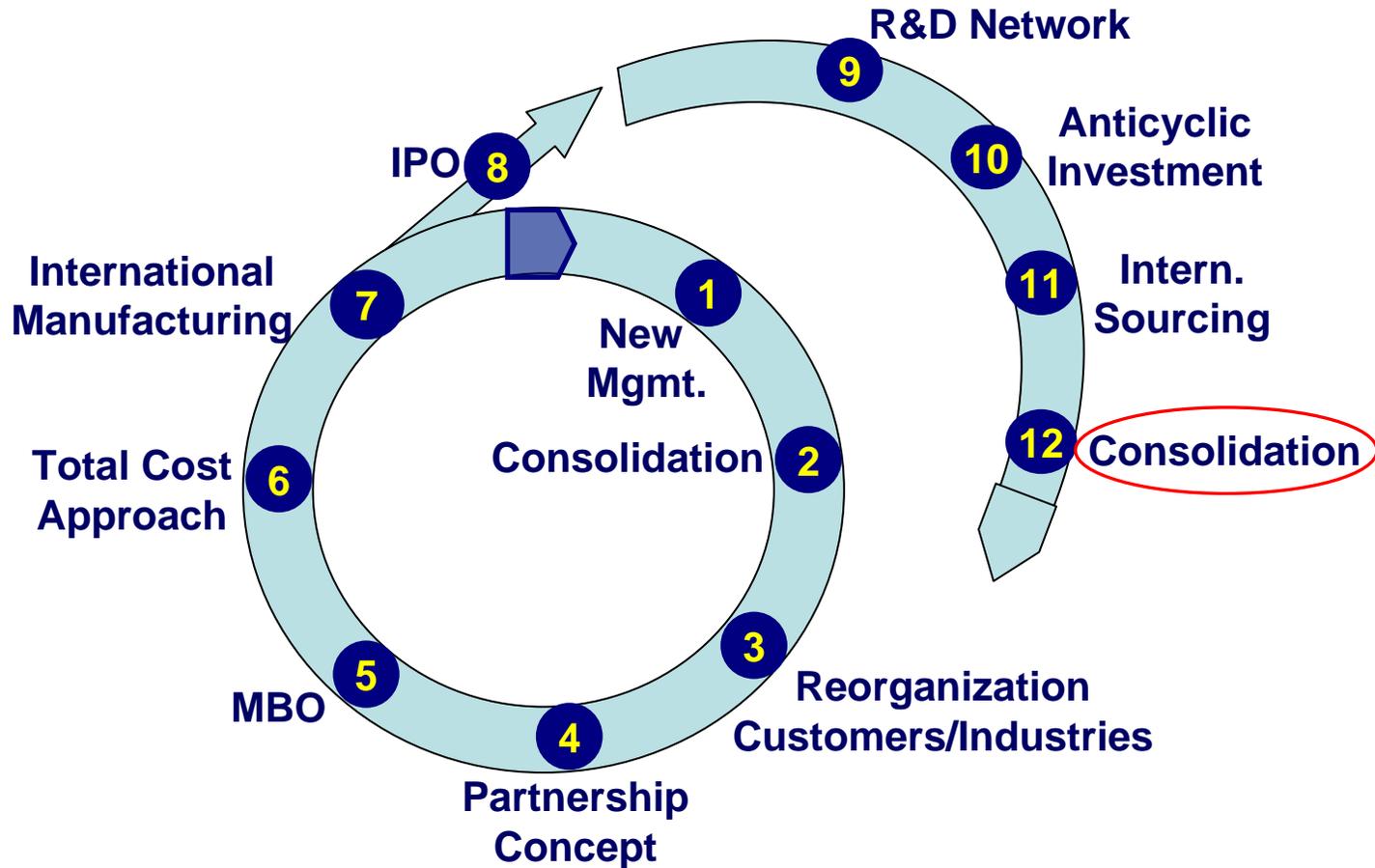


**Base: Core Business, Cost-Sensitive & Efficient Organization**

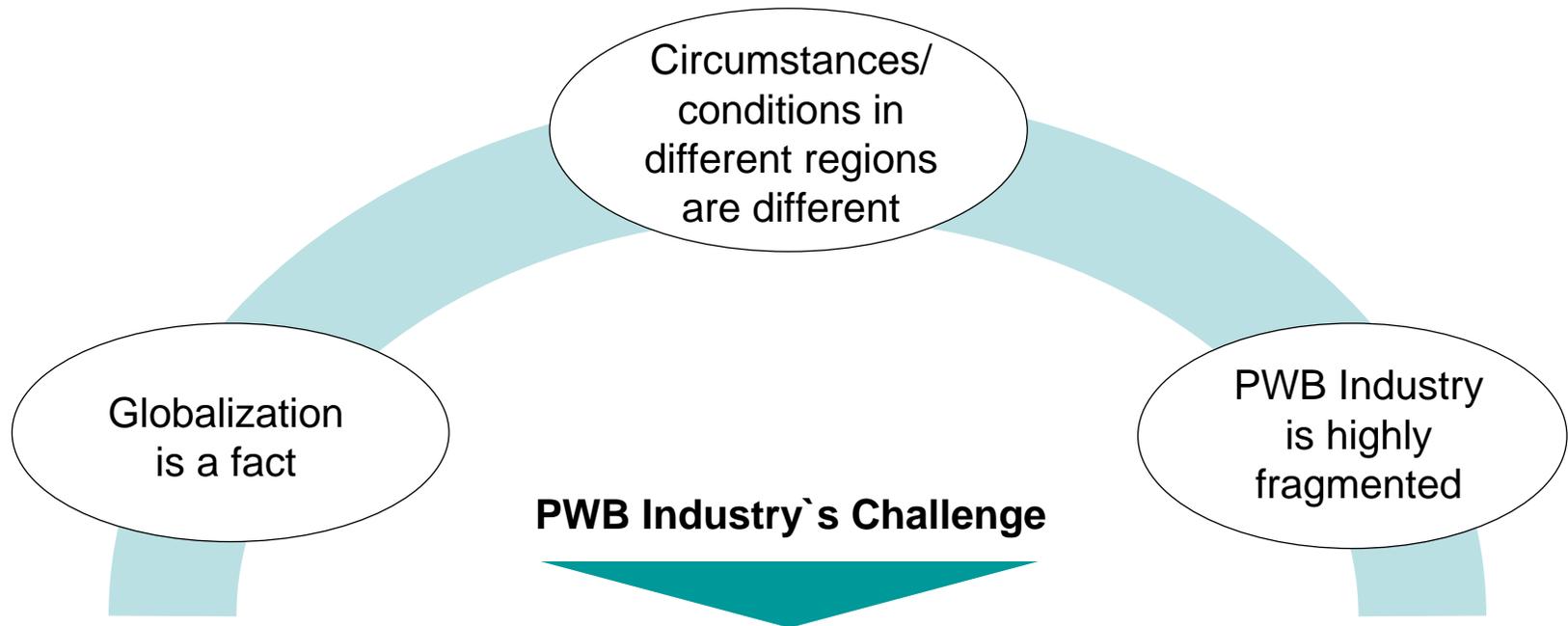
## PWB Production w/w vs. AT&S



# Business Wheel

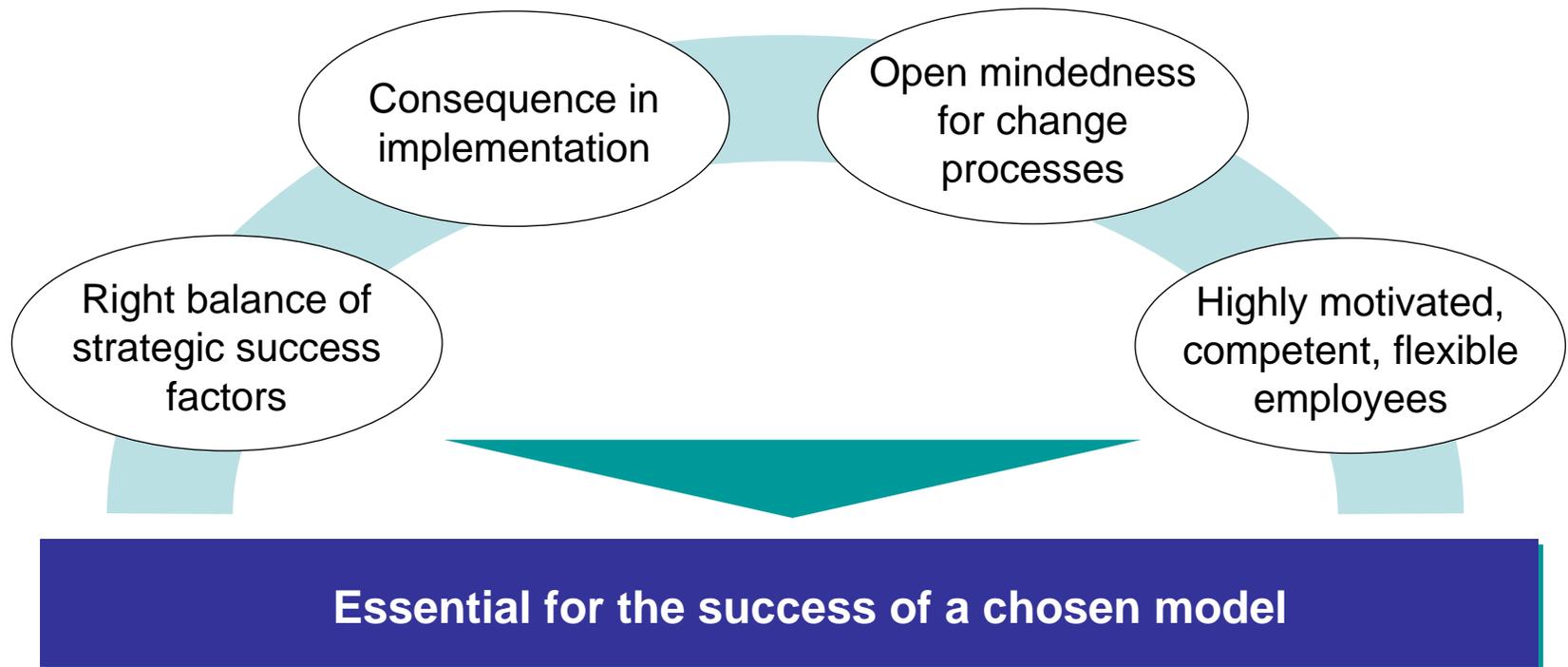


## Globalization / Consolidation



**Be prepared for a consolidation process on a regional and/or global base**

## Summary / Conclusion

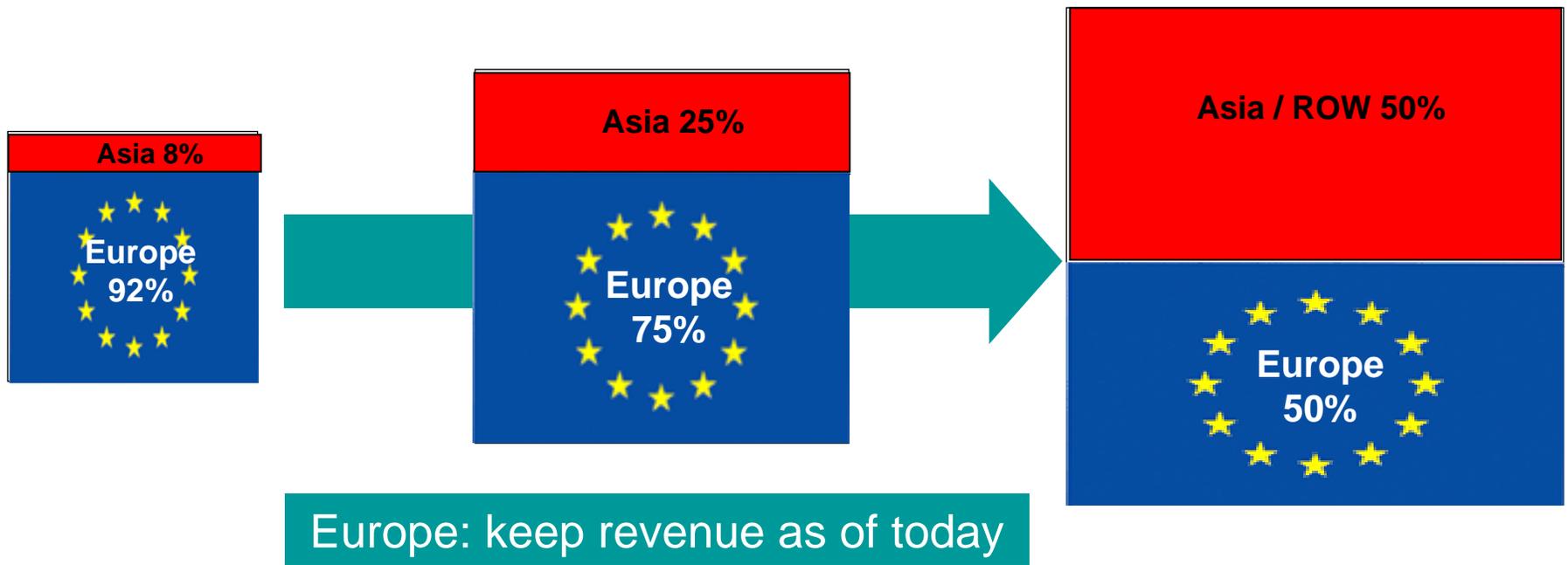


**However: Do not follow short-dated fashion trends**



# BACKUP

# International Manufacturing



Nanjangud

Organic growth  
Nanjangud & Shanghai

Organic growth and  
acquisitions

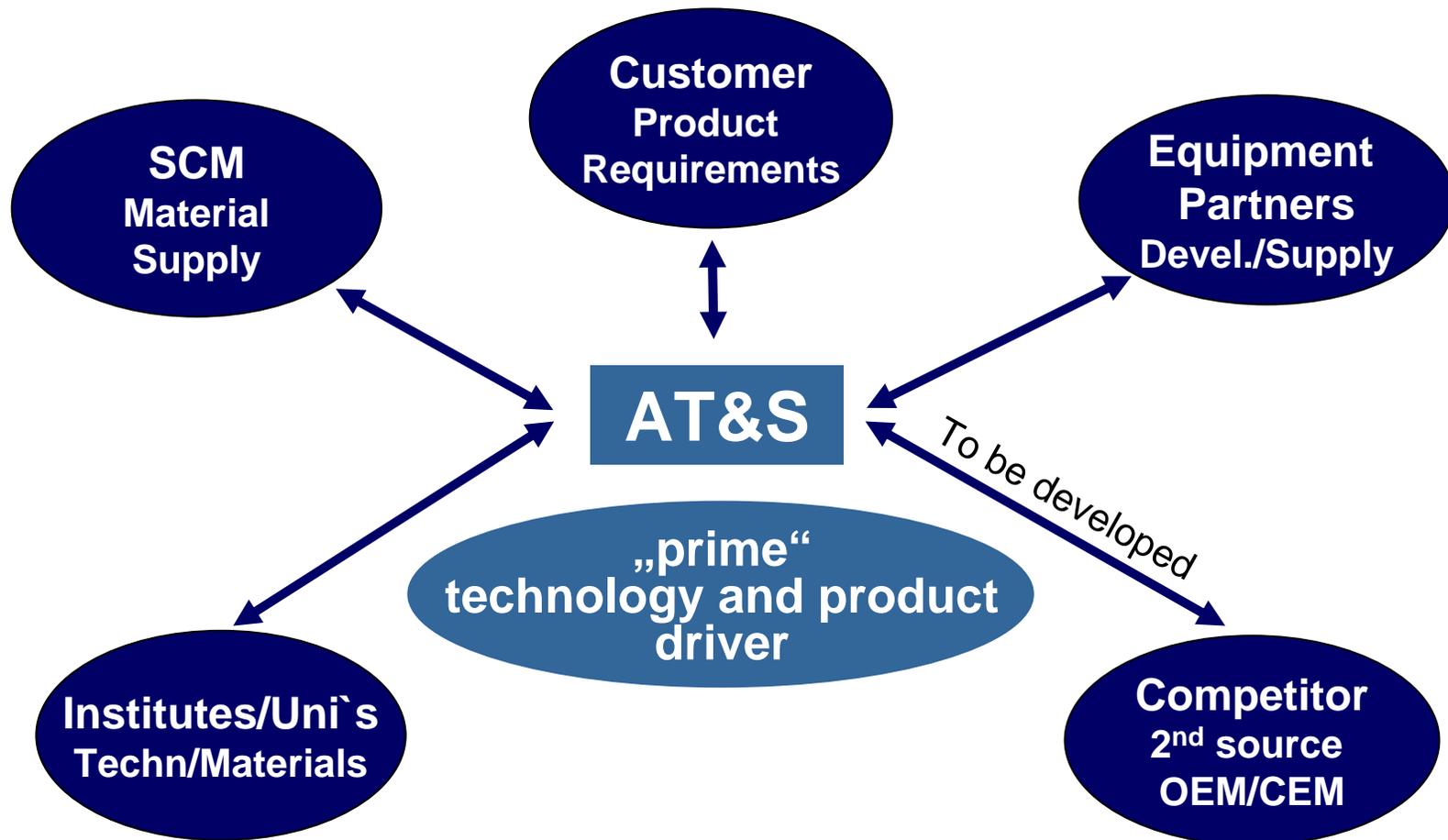
1999/00

End 2003/04

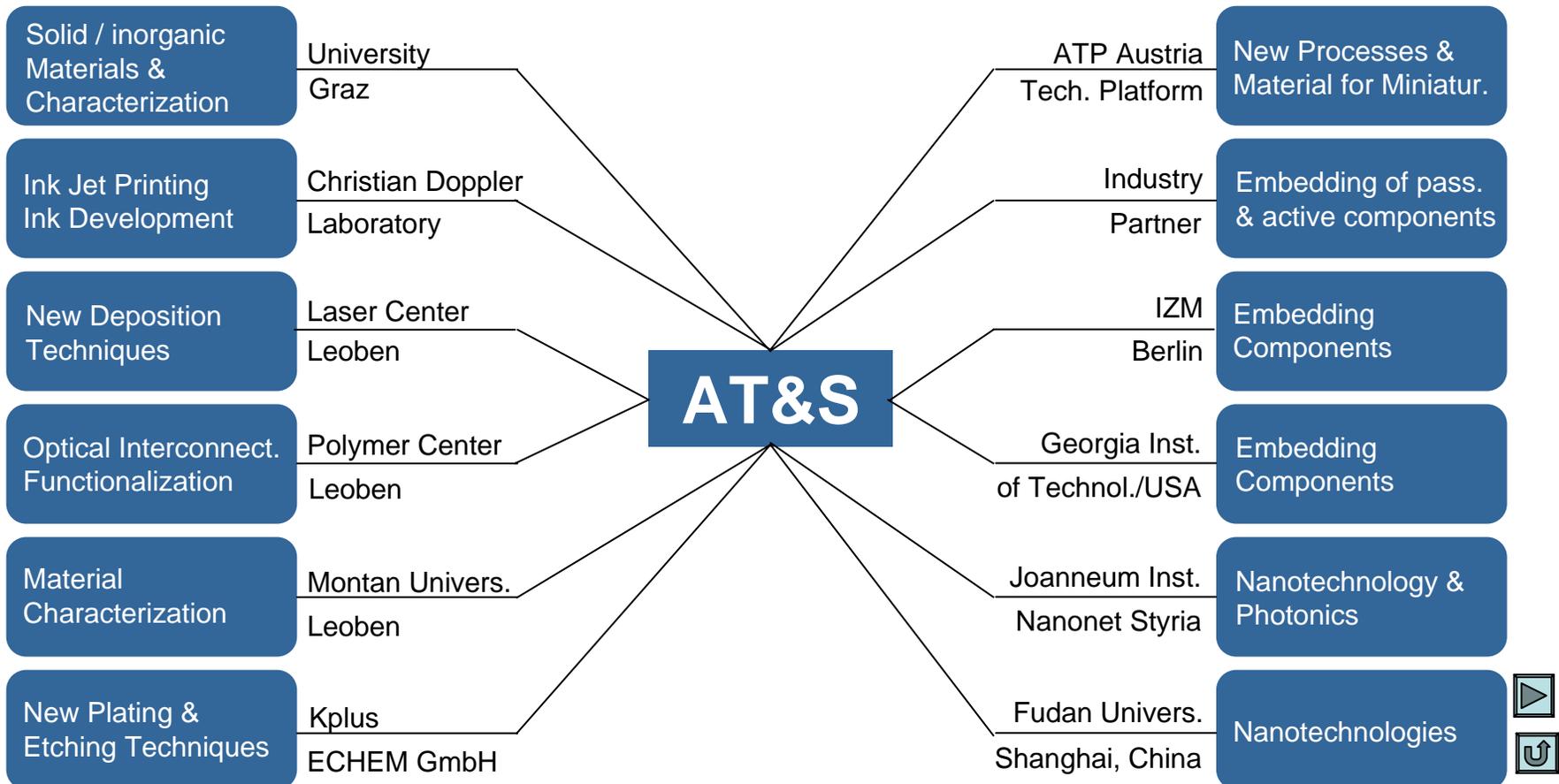
2007/08



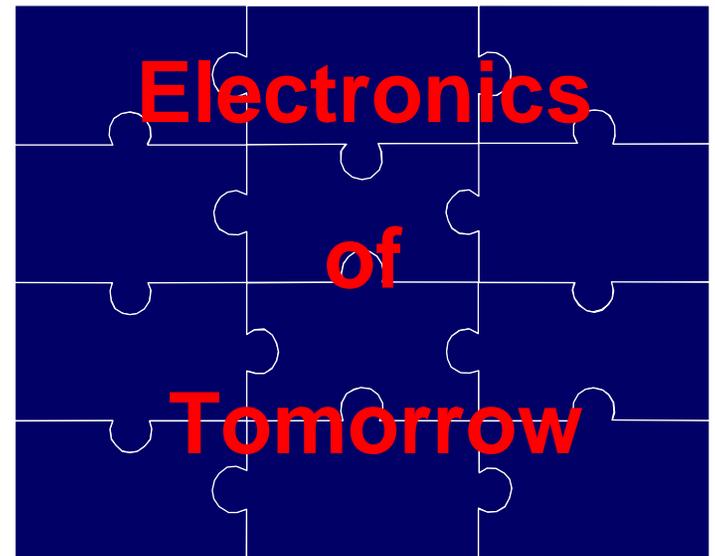
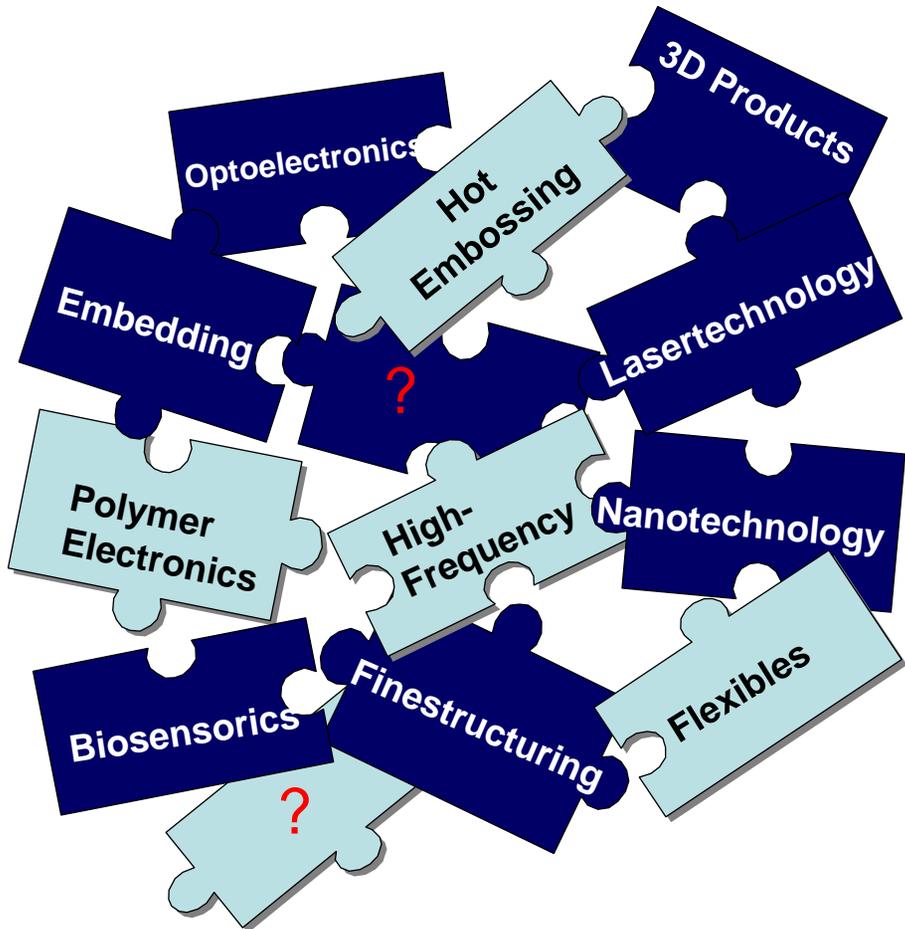
## R&D Network



## R&D Network



## R&D Network



The network will  
compose the puzzle



**Future Refocusing, Growth, Diversification**

