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ABB Corporate Research China



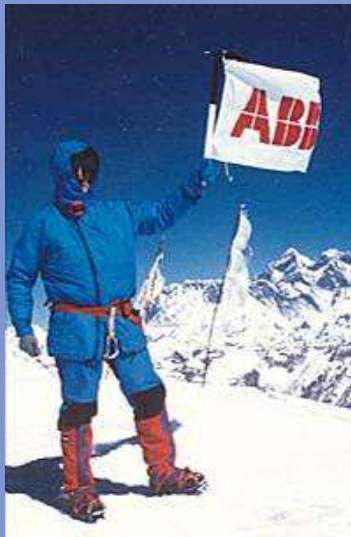
**Why moving R&D to
China ?**



ABB

Facts about ABB

- ❑ Headquarter: Zurich, Switzerland
- ❑ About 102,000 employees in around 100 countries
- ❑ Orders in 2004: \$21.7 billion
- ❑ Revenues in 2004: \$20.7 billion
- ❑ Listed on stock exchanges in Zurich/London, Stockholm, Frankfurt and New York



- ❑ A leading power and automation technology company with strong market positions in its core businesses
- ❑ Core business organized into five divisions for
 - ❑ Power Products
 - ❑ Power Systems
 - ❑ Automation Products
 - ❑ Process Automation
 - ❑ Robotics



ABB in China

- 1907** First steam boiler delivered to China
- 1974** First office for China established in Hong Kong
- 1979** Permanent office established in Beijing
- 1992** First manufacturing joint venture company established
- 1995** China holding company established in Beijing
- 2003** Ranked in top 10 of Best Employer Survey by Watson Wyatt, Fortune China and Sohu
- 2004** Major 3G orders
- 2005** New Corporate Research Center
- 2006** Move of Global Robotics Headquarter to Shanghai



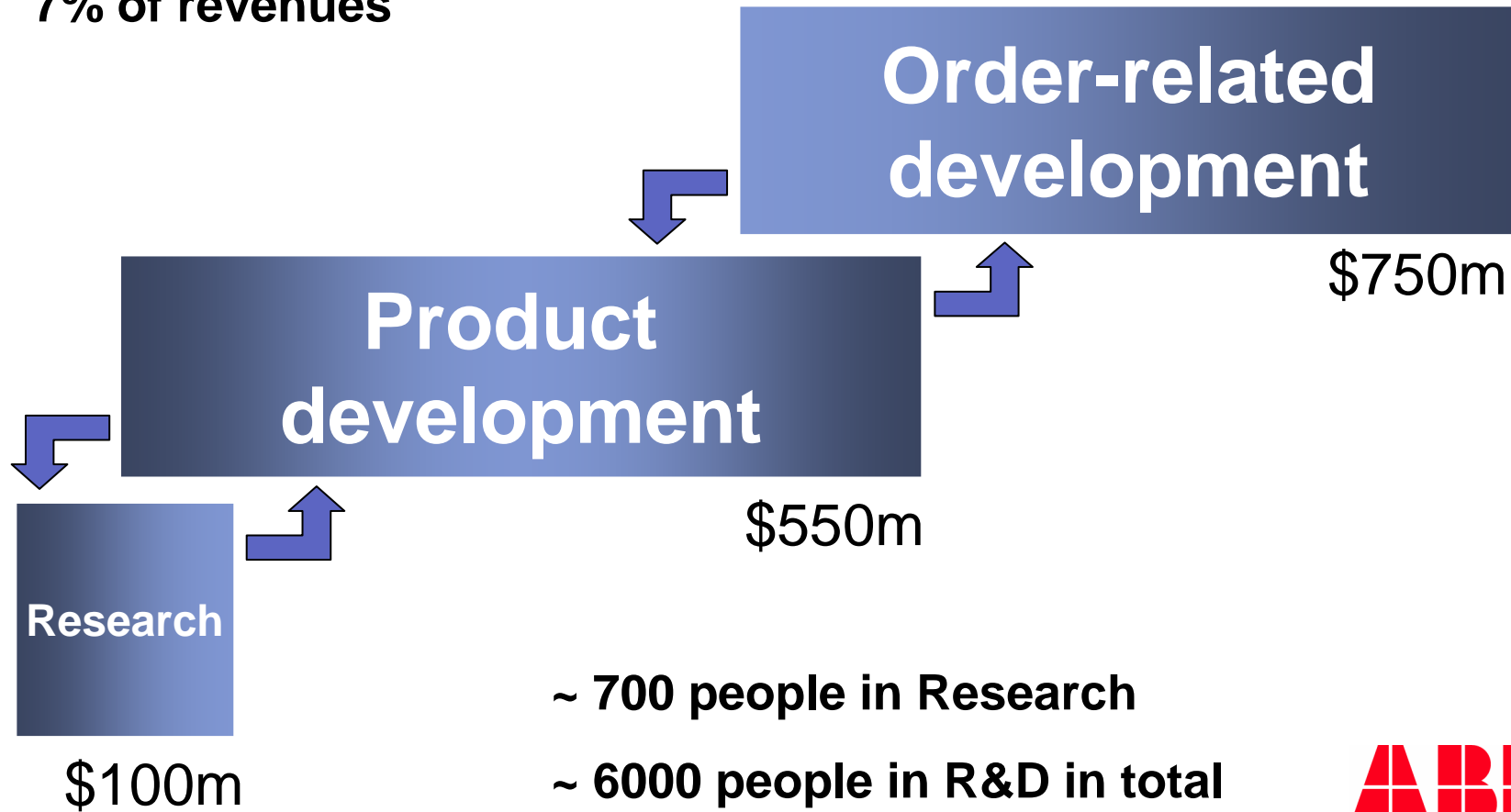
30	Sales offices
> 20	Companies
8,500	Employees
2.0 B\$	Revenue (2004)
●	Manufacturing units
●	Sales offices



ABB's yearly R&D Investment

Creating the technological platform for ABB's future

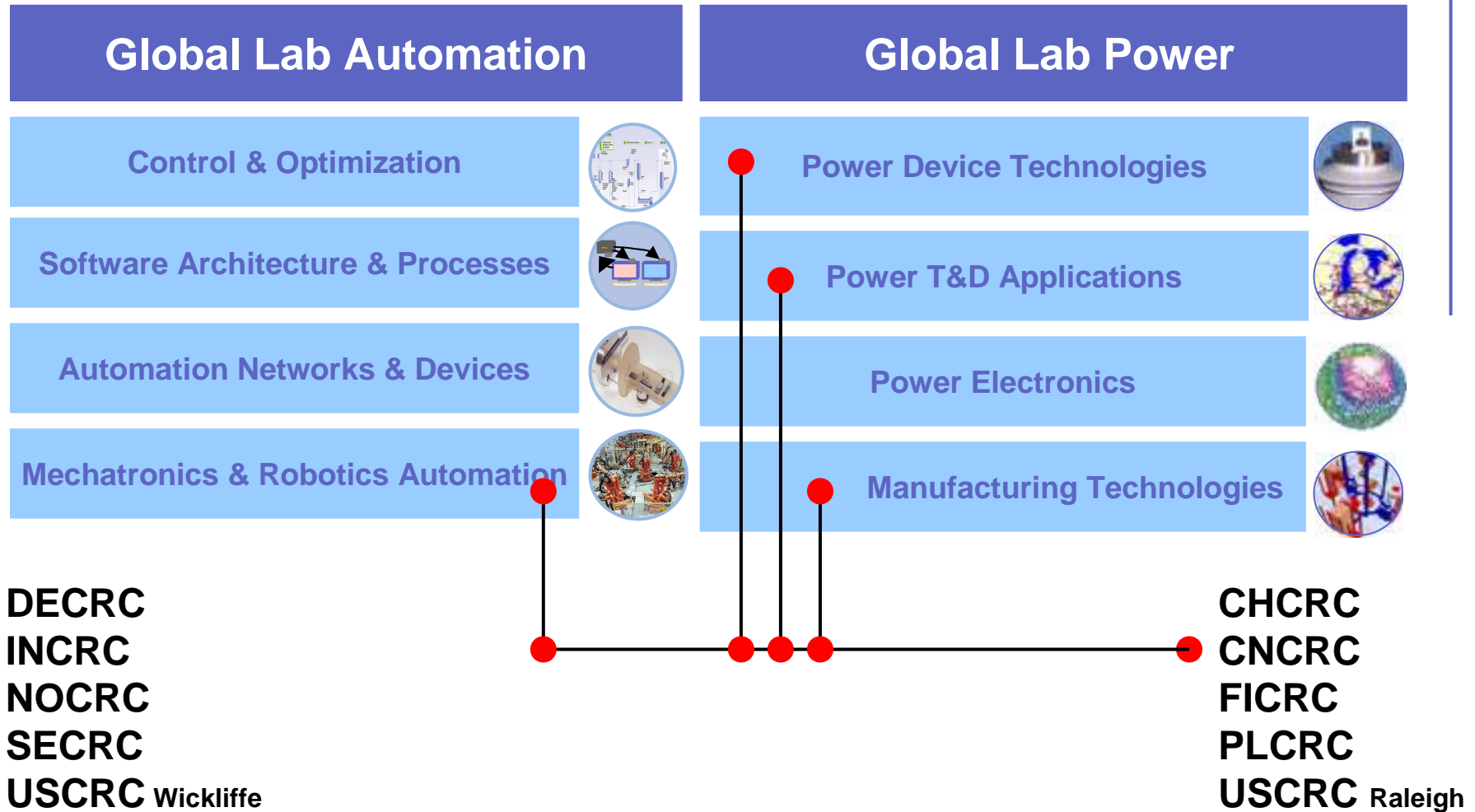
- 1400 MUSD (2004)
- 7% of revenues



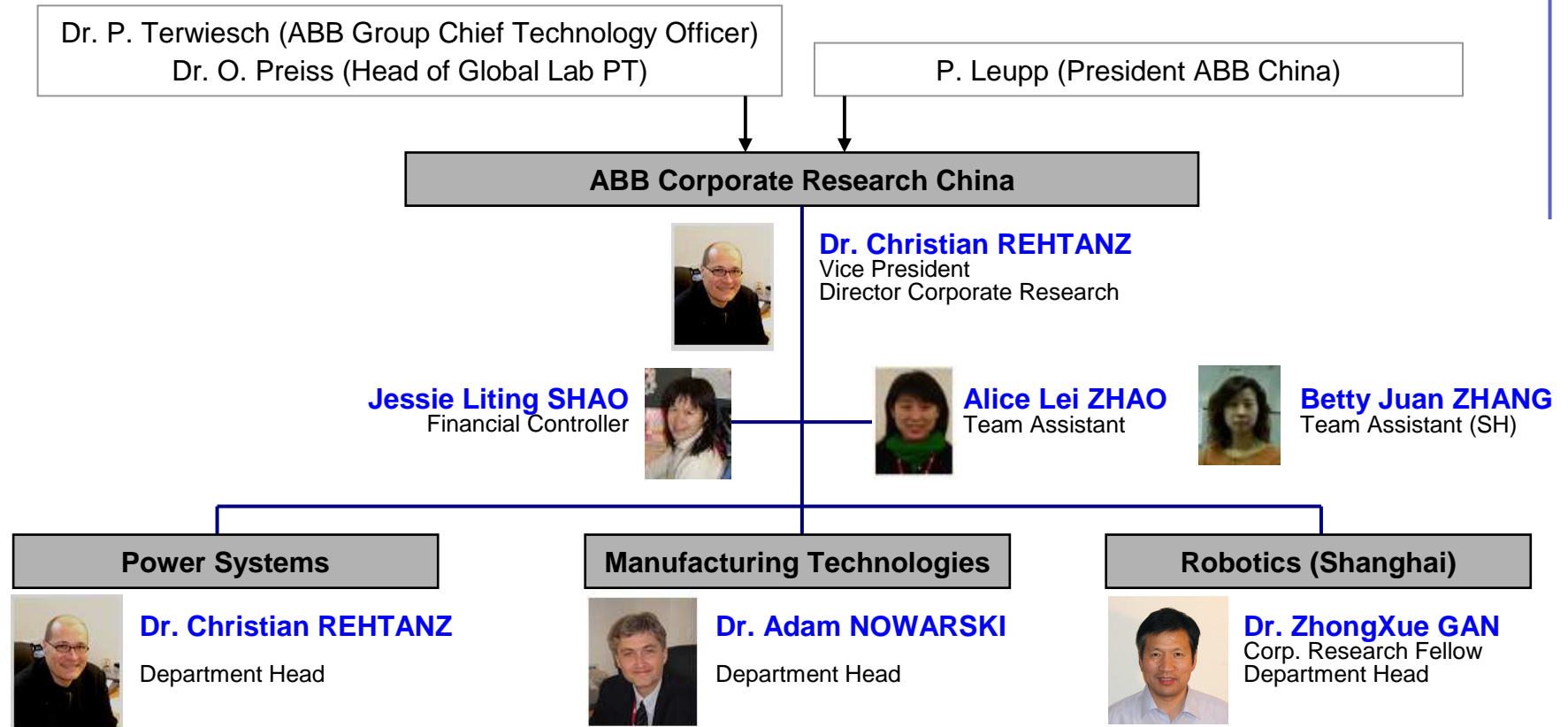
Locations of ABB's R&D Centers



Research Organization



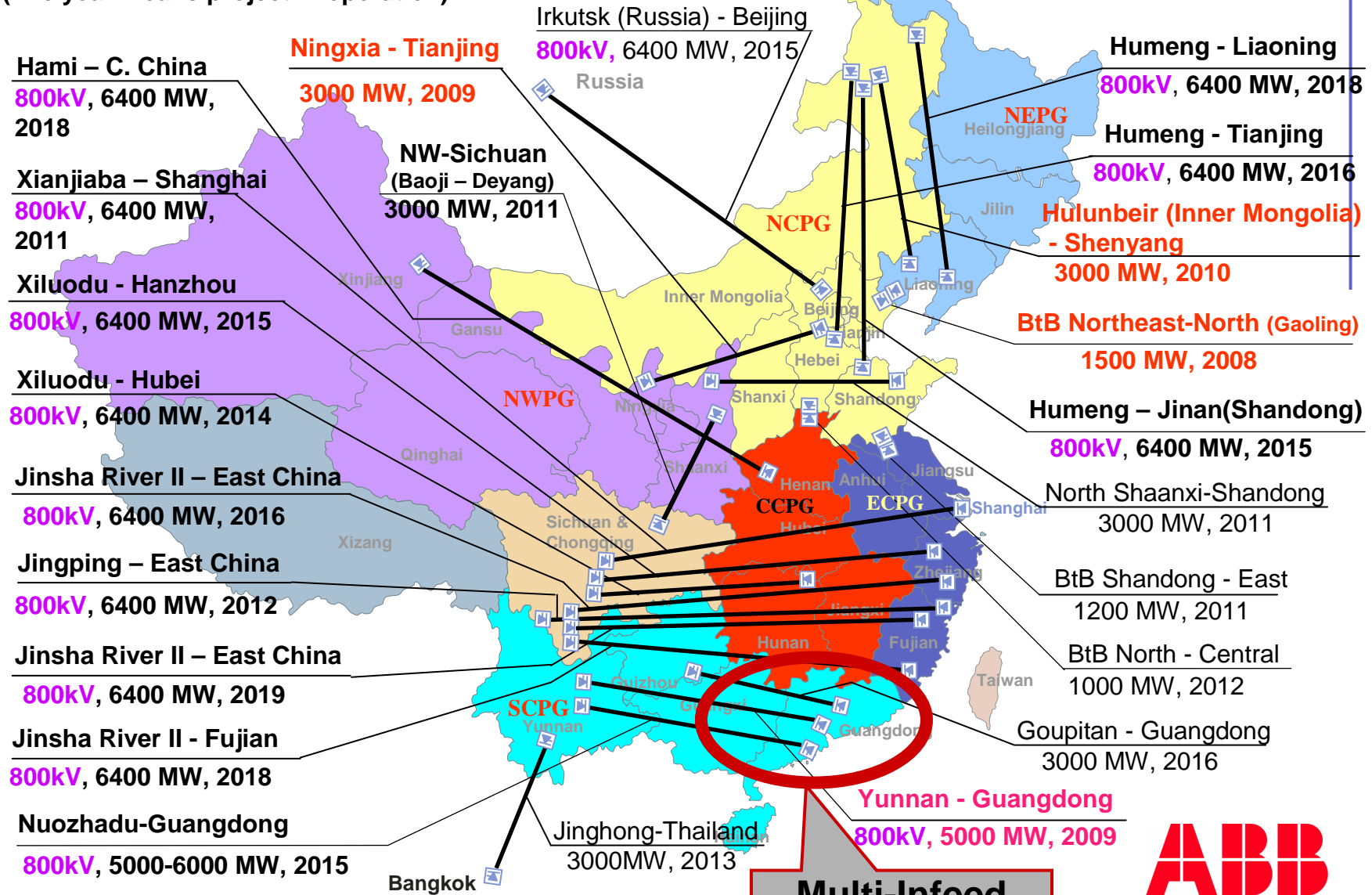
Corporate Research China



Planned Future HVDC Projects by 2020 in China

(The year means project in operation)

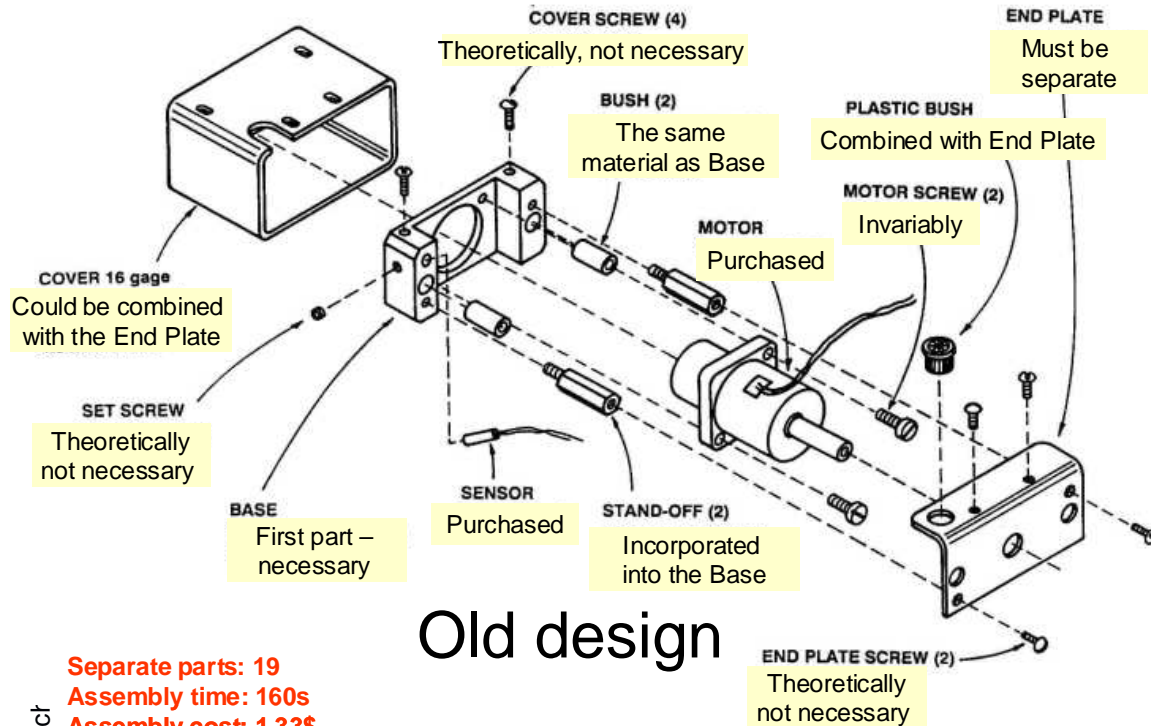
Updated 2005-09-15, CNABB-PTSG



Multi-Infeed Study



Design for Manufacturing



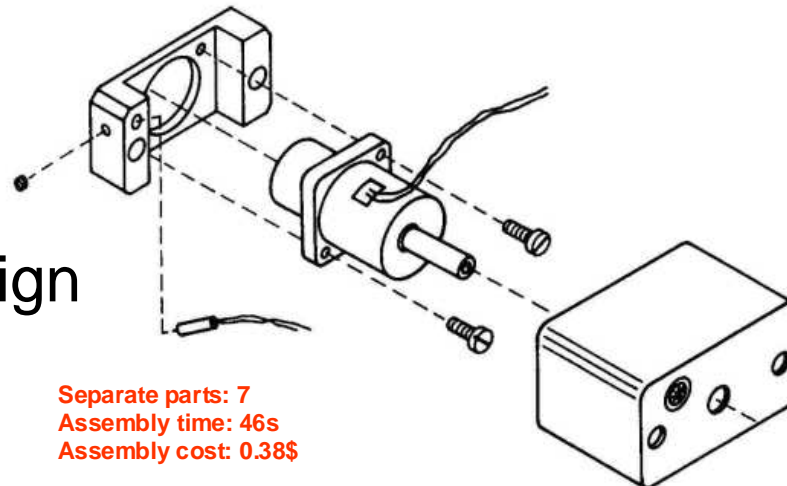
Old design

Separate parts: 19
Assembly time: 160s
Assembly cost: 1.33\$

Develop and conduct new projects in the area of **Manufacturability:**

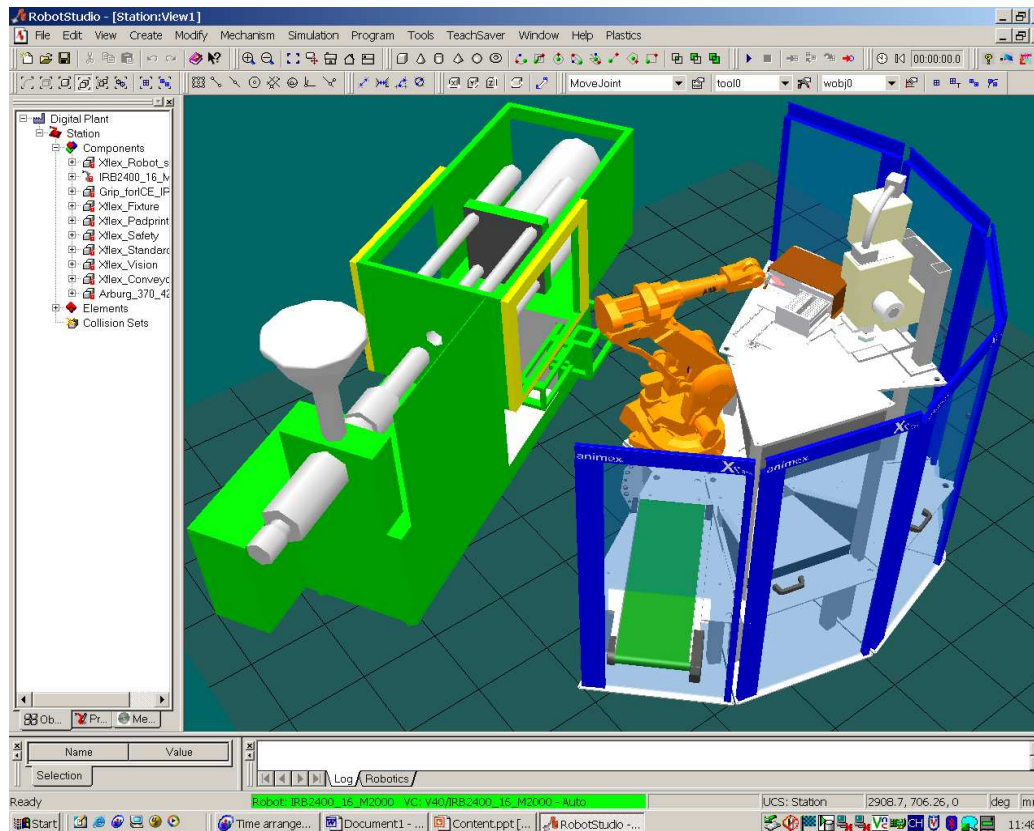
- ➔ Design for Manufacturing and Assembly for Low Costs Countries

New design



IRC5 Plastics PowerPack

- Software product for **easy simulation** of ABB robot for **machine tending**.
 - Provide easy-to-use tool for sales and process engineers
 - Sales tool for simulation



R&D Strategy

- **Why do we need technical experts in China ?**
 - Can you imagine a 2-3 billion USD business without technical experts ?
 - Can you imagine that a Chinese customer is calling in Europe for a technical question ?
 - How quick can we react from outside China when we have a technical problem and installed products need technical support ?
 - Numerous high level decision makers and politicians are engineers, what do our business people talk to them ?

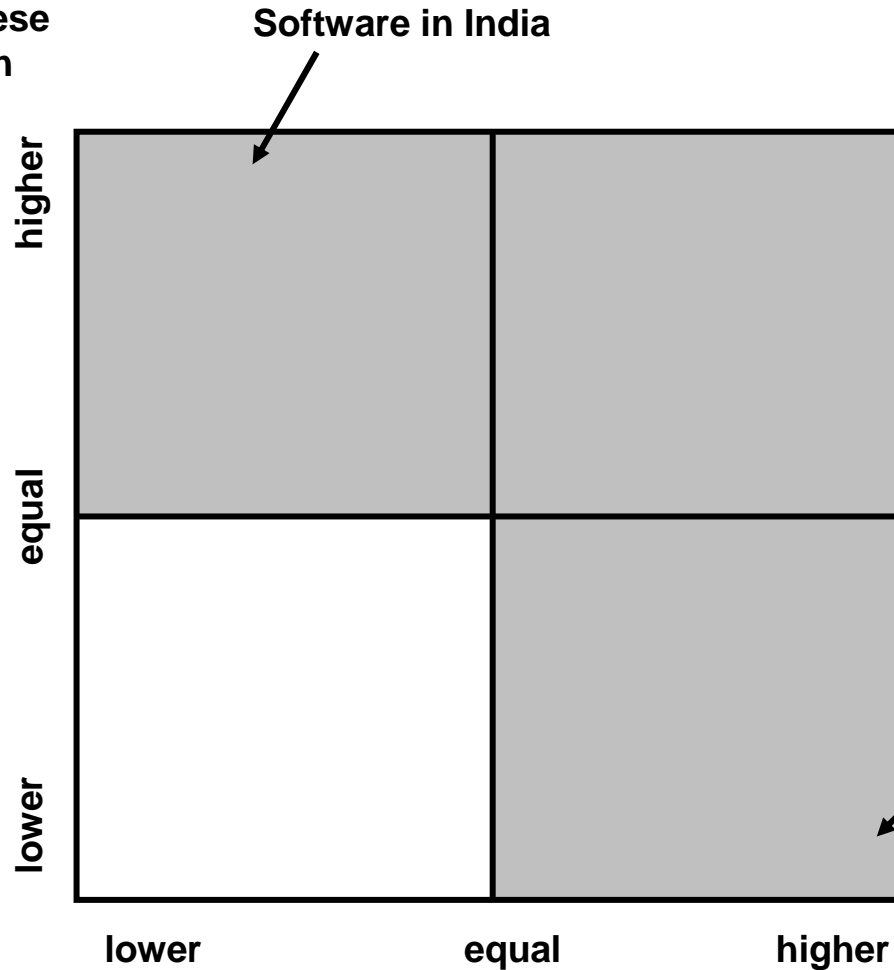
R&D Strategy

- The marketing approach
 - "We want to have 100 people in CNCRC for marketing purposes, reputation, extended business license, etc."
 - CRC and R&D experts serves as market intelligence concerning technical requirements. Results are communicated to development centers.
 - Sales people need R&D experts to join them in technical discussions.
- The technology approach
 - Which technology will be shifted to China and when ?
 - Which technology does ABB want to market and develop in China ?
 - Which research do we need to support development ?
- The people approach
 - In which areas do we find experts in China ?
 - In which areas are nowadays already the best educated people in China ?



R&D Strategy

Competence in Chinese
R&D community in
comparison to other
parts of the world
(outside ABB)

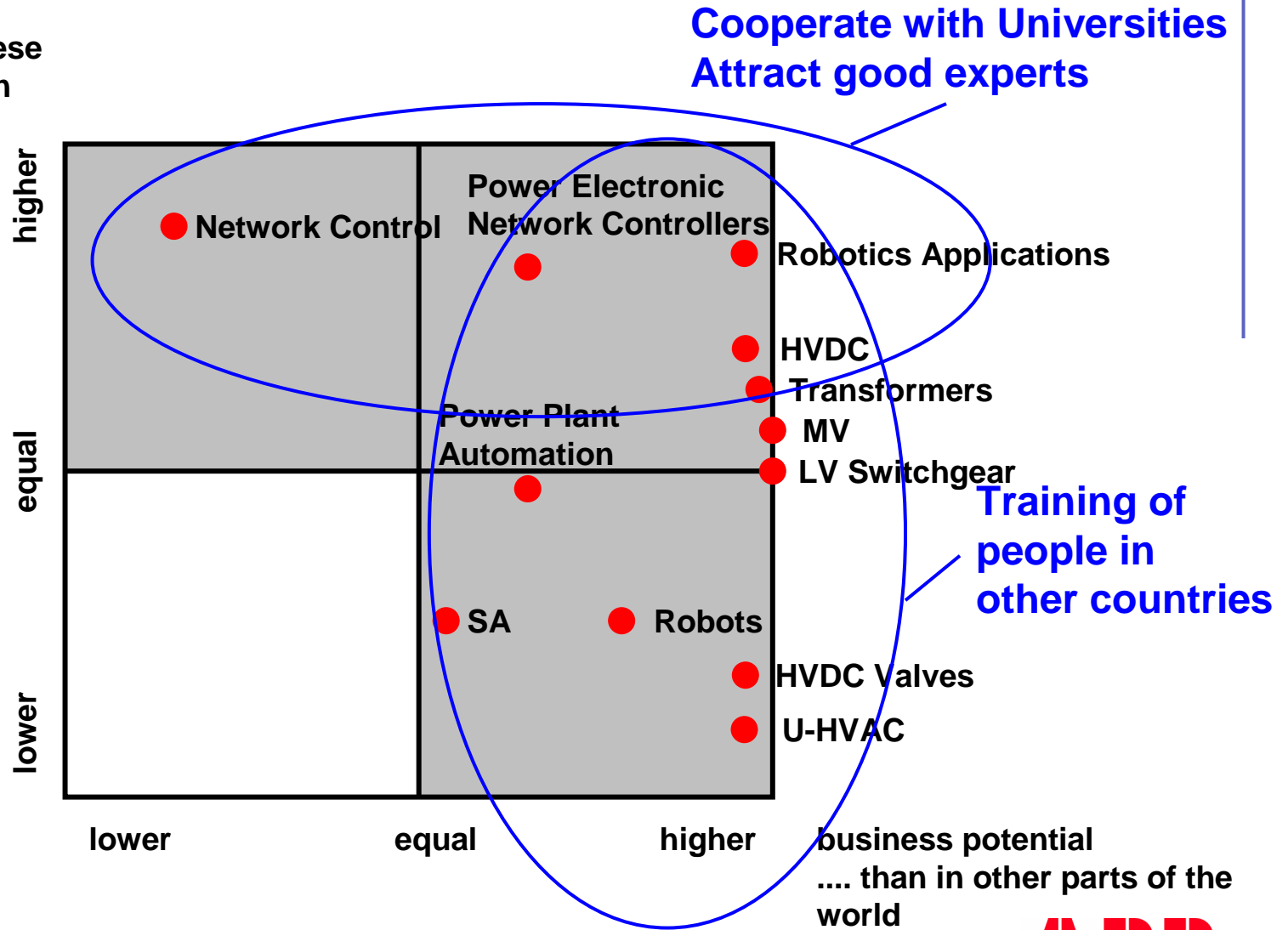


business potential
.... than in other parts of the
world



R&D Strategy

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Managing Knowledge



- ❑ **Global organization with**
 - ❑ research programs
 - ❑ global development coordination
 - ❑ global career path & training
 - ❑ job rotations

- ❑ **Local presence of R&D in China**
 - ❑ **Visibility and marketing of ABB in China**
 - ❑ **Establish links to Chinese research community**
 - ❑ **Attract high level employees, create local experts**

 - ❑ **Evaluate market requirements in China**
 - ❑ feedback to global product, manufacturing and R&D strategies
 - ❑ **Execute China specific research topics**
 - ❑ **Execute global research topics**



**Power and productivity for
a better world**

ABB