

# **Water Reuse Secures Social and Economic Development**

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Media Summit Siemens Water Technologies

Singapore, December 14, 2006

## Siemens Water Technologies: Agenda

Competences: The Portfolio

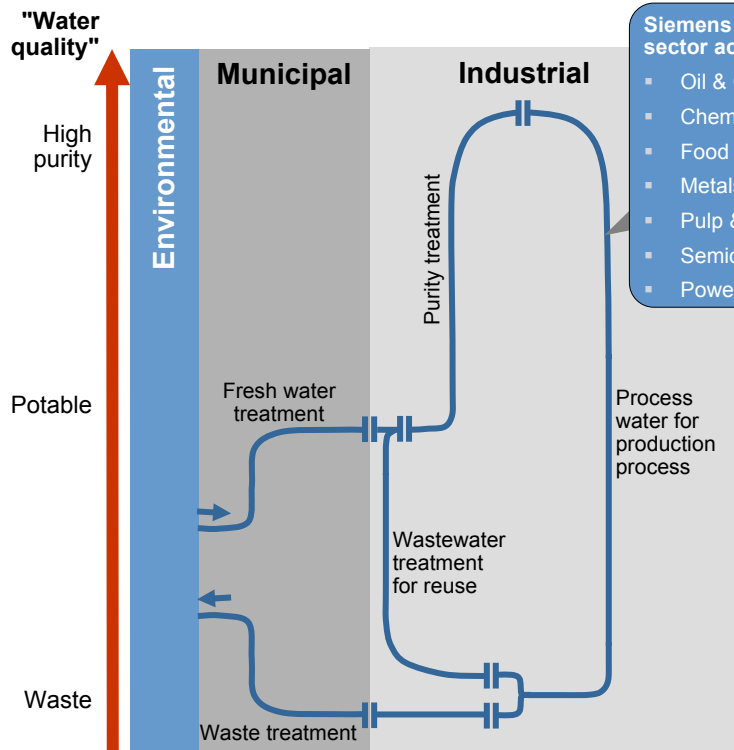
Challenges: The Market

Passion: The Strategy

# Our portfolio of products, systems and services covers the entire water cycle

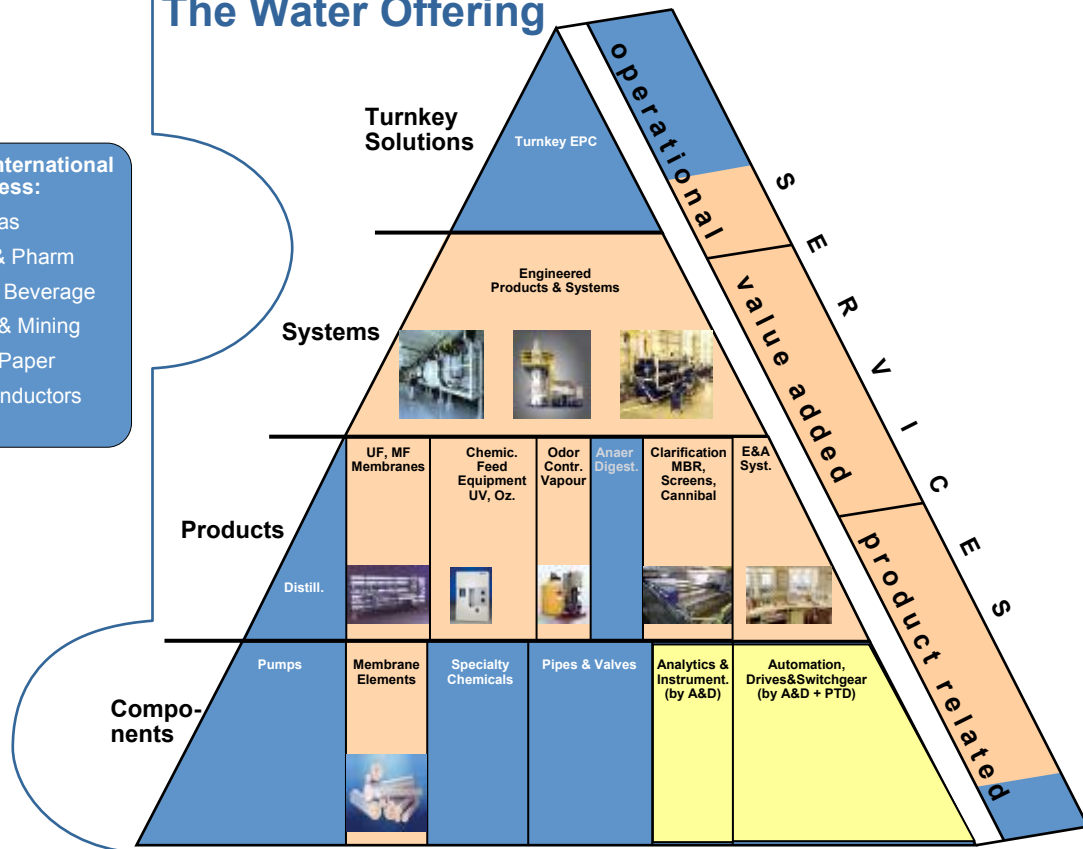


## The Water Cycle



- Siemens international sector access:**
- Oil & Gas
  - Chem & Pharm
  - Food & Beverage
  - Metals & Mining
  - Pulp & Paper
  - Semiconductors
  - Power

## The Water Offering



# The technological process chain – Water & Wastewater Business

**SIEMENS**



**Screening/  
Grit Removal**



**Sedimentation  
Clarification**



**Biological**



**Clarification**



**Filtration**



**Disinfection**



**Thickening  
Digestion**



**Dewatering**



**Odor Control**



**Service**



**Instrumentation  
& Control**

Water is essential for life and is the basis for the development of cities and industries. We supply a broad and innovative range of products for water treatment, covering almost all processes and techniques – for municipalities or industry, for drinking water, wastewater or process water or for medical needs.

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# Global Megatrends pose challenges and provide opportunities for Siemens



## Global Megatrend Urbanization

- Today: 280 million people in megacities (> 10 million)
- 2007: First time in human history more people living in cities than in rural areas
- 2015: 350 million people in megacities

→ **Challenge for infrastructure**

## Water

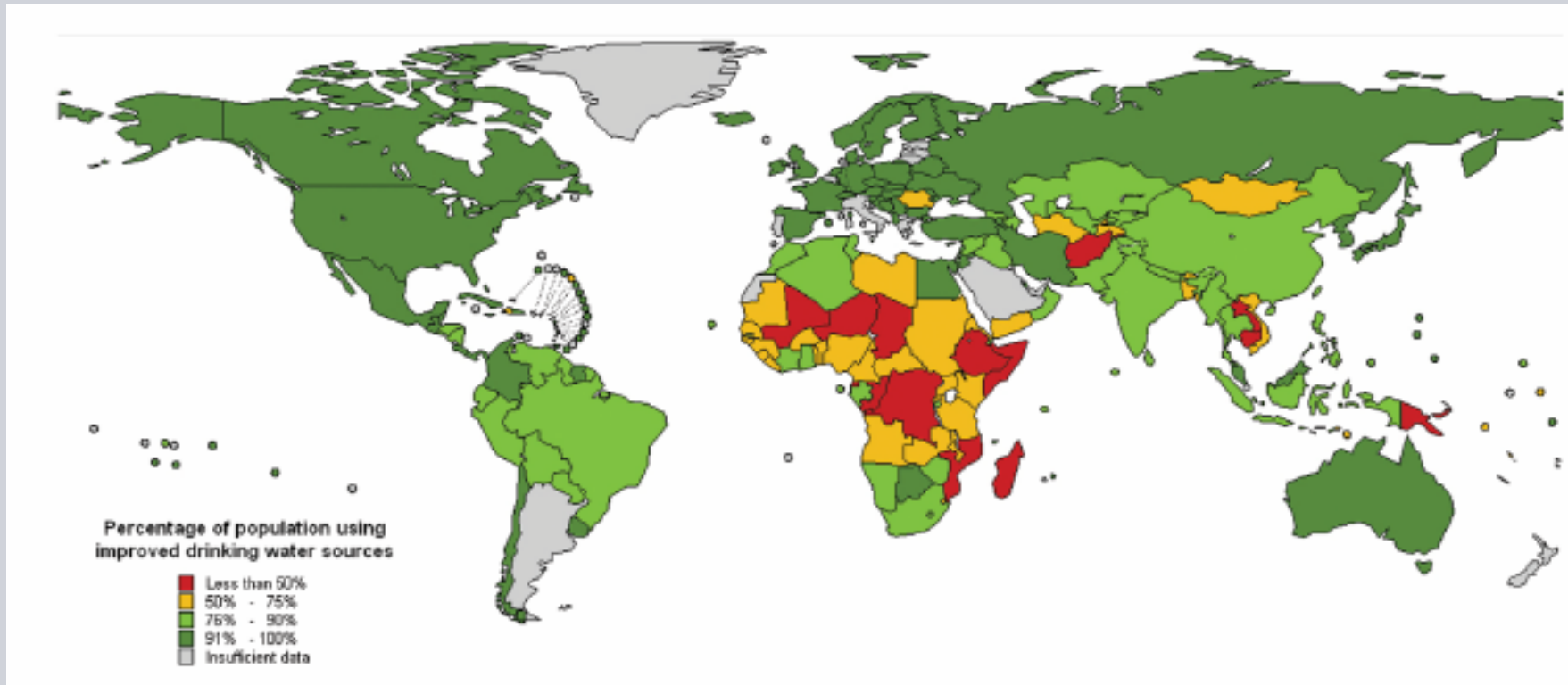
- 1.6 billion people without drinking water
- 2.4 billion people not connected to waste water systems
- 40% increase in water consumption by 2025

Siemens today

- **Drinking water treatment**
- **Water distribution**
- **Wastewater treatment**



# Coverage with improved drinking water resources, 2002

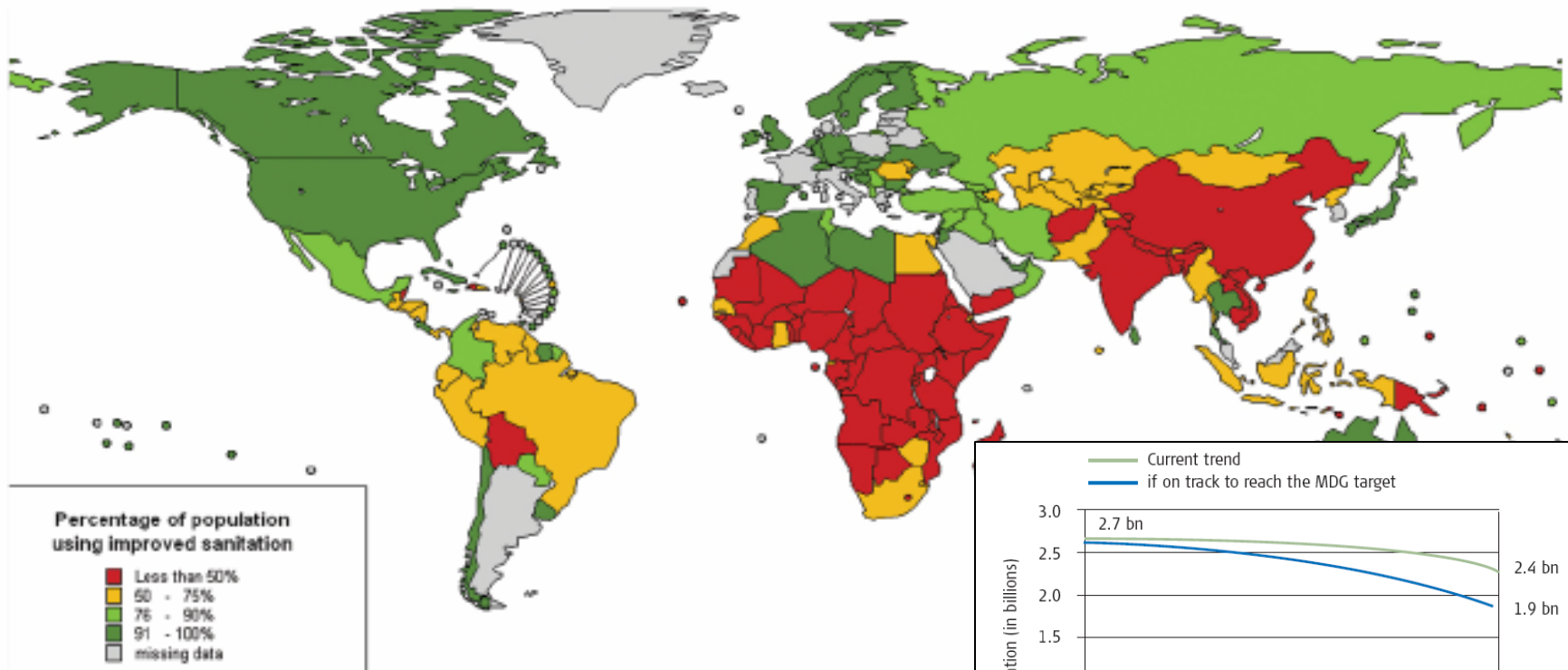


Source: WHO/Unicef, 2004 (The United Nations World Water Development, Report 2)

The Millennium Development Goal of the United Nations is for 2015, that 75 percent of the worlds population are using improved drinking water sources.

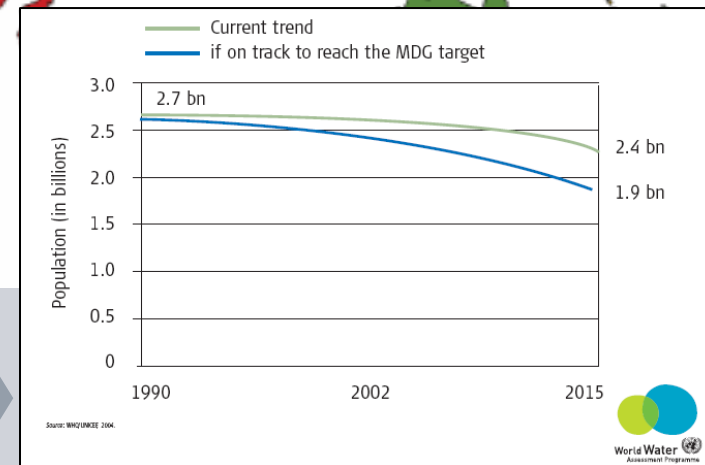
## Coverage with improved sanitation, 2002

Close to 2,4 billion people will be without improved sanitation in 2015.



Source: The United Nations World Water Development, Report 2

Projected population without access to improved sanitation





## The State of the Resource

Country	Population (1.000.000s)	TARWR per Capita 2000 (m <sup>3</sup> per year)	TARWR per Capita 2005 (m <sup>3</sup> per year)
Afghanistan	24,926	2,986	2,610
Australia	19,913	25,708	24,170
Bangladesh	149,664	8,809	8,090
China	1,320,892	2,259	2,140
India	1,081,229	1,880	1,750
Indonesia	222,611	13,381	12,750
Malaysia	24,876	26,105	23,320
Philippines	81,408	6,322	5,880
Singapore	4,315	149	139

Total Actual Renewable Water Resources (TARWR) is an index that reflects the water resources theoretically available for for development from all sources (surface water, ground water, rivers and lakes) within a country. Source: FAO Aquastat 2005

# The Trend: Towards improved Water Productivity and Zero Effluent Discharge



Water recycling and reuse has far reaching benefits to bridge the gap

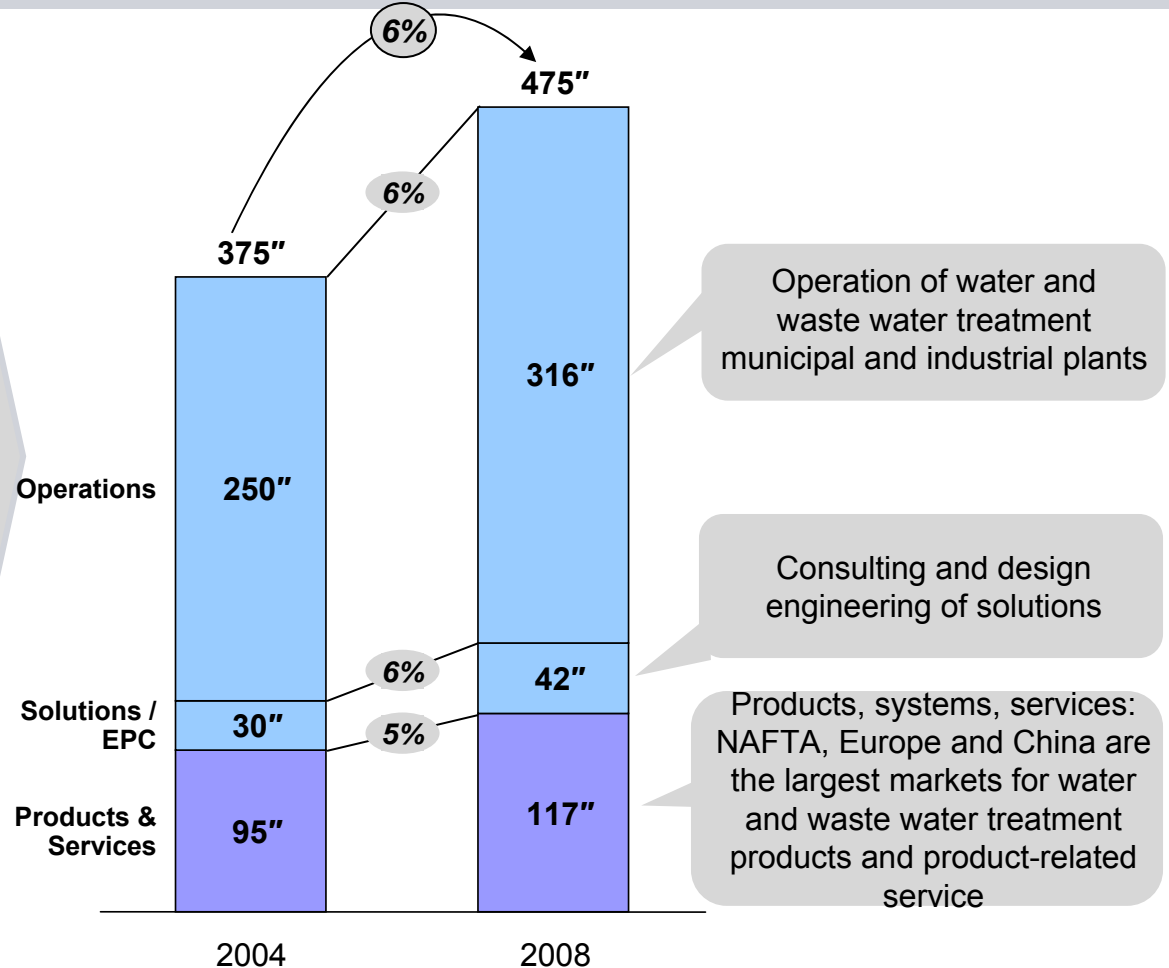
1. Reduction in freshwater withdrawal and consumption
2. Minimization of wastewater discharge, thereby reducing clean-up costs and discharge liabilities
3. Recovery of valuable by-products
4. Improvement of the profit margin by cost reduction
5. Positive corporate image and environmental responsibility.
6. Water recycling is an option to desalination

## The world water market grows at 6% p.a. Siemens is focused on Products, Systems and Services

World water and waste water market 2004 - 2008, in USD

### Global facts

- Less than 1% of Earth's water is usable
- Population increase of 2.5 billion by 2035 mainly in regions with water shortage
- 1.58 billion people do not have safe water supply; 4 billion in 2025



## Regional Markets

Country	Volume Siemens WT Market in million	Growth rate Market	Growth rate Siemens WT
Australia	350	3,5%	5,3%
China	3,700	9,1%	12,7%
India	350	6,2%	11,8%
Indonesia	480	4,9%	7,4%
Malaysia	230	7,1%	8,1%
Philippines	160	5,9%	8,0%
Singapore	60	8,1%	7,3%
Thailand	250	6,1%	8,8%

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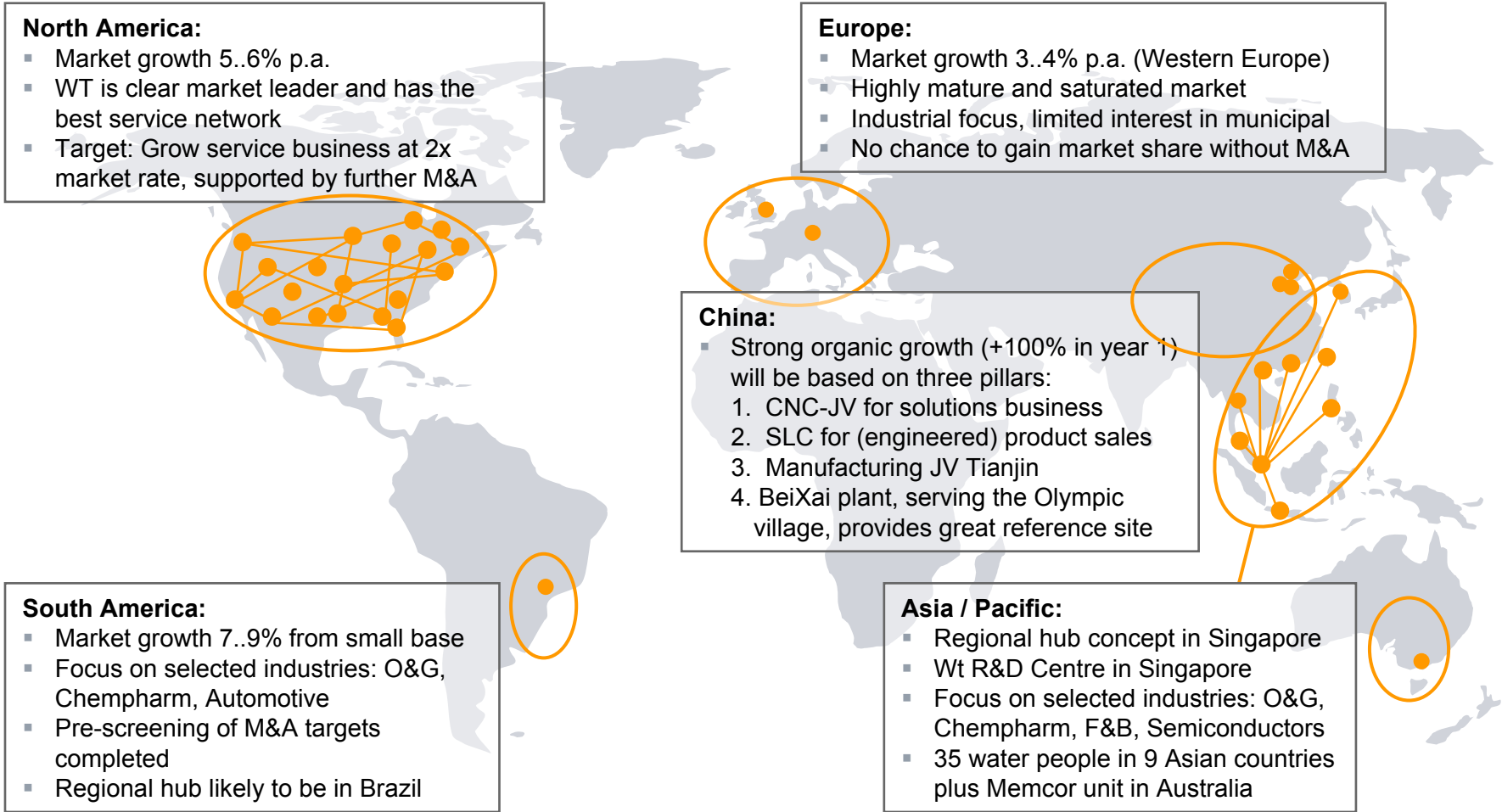
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## FY 06 Was a Year of Change . . .

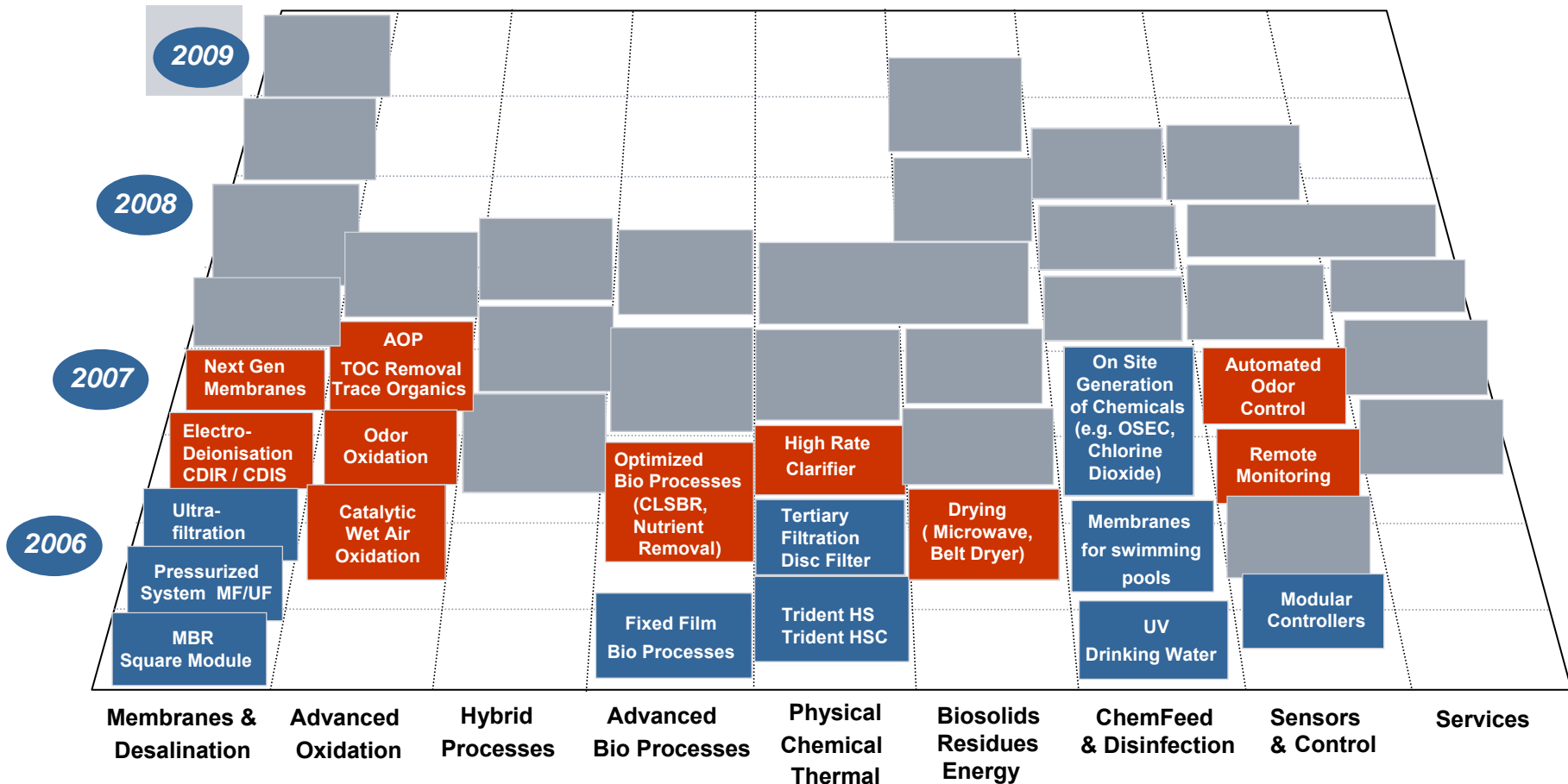
- Clear Focus of our Business Segments
- Acquisition of Monosep, Alivia, Sernagiotto and CNC-JV, Manufacturing Platform Tijanjin, Singapore-Hub
- Established the Integrated Solutions Platform
- Expanding services offering by leveraging installed base, Siemens global presence
- Announced the Oil & Gas Platform
- Established the Food Platform

# Our growth concept is based on tailored approaches for key regions



## Innovation Drives our Business

### I&S WT Technology Roadmap



- Project finalized, Product Launched
- Project in process
- Project in roadmap



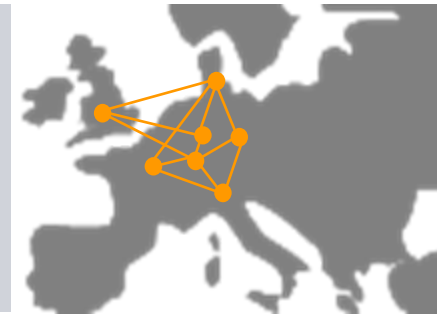
# Accomplishments in FY 2006

## New Global Innovation Partners

### *Cooperation with external partners*

**Europe**  
**Siemens**  
**Corporate**  
**Technology**  
**Universities**

- Co-development with I&S (e.g. Ballast Water, Mining)
- TU Berlin (AOP and MBR)
- Dansk TU (MTBE)



**Israel**  
**Mekorot**

- Water Security
- RO concentrate minimization (Zero Liquid Discharge)
- Water technology incubator advisor

**Singapore**  
**PUB**

- Reduced Energy MBR
- PAC coated membranes
- TropiCannibal
- International Advisory Panel



## Asia/Pacific Highlights

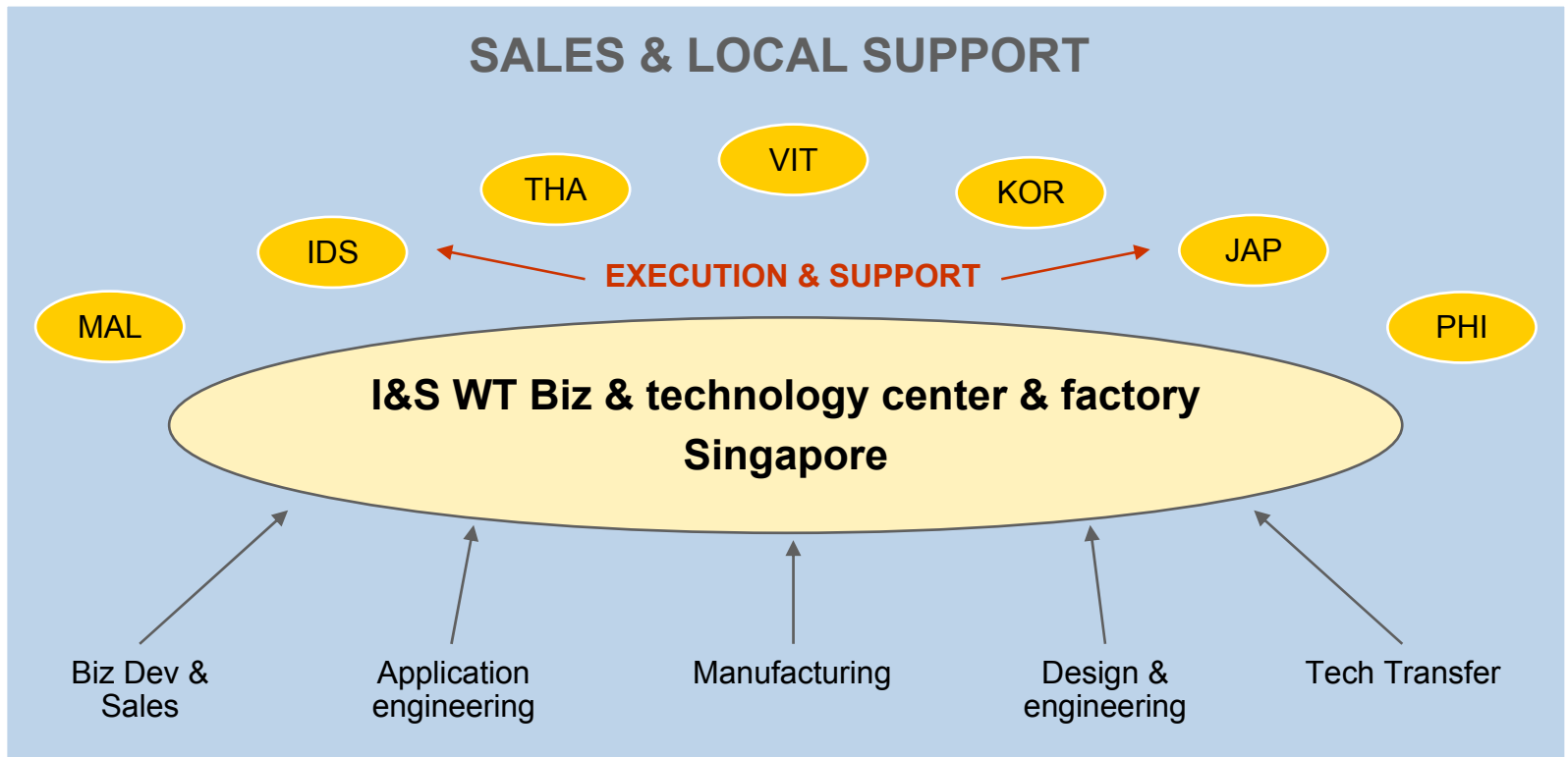
- Strong growth in bookings
- Ramped up own business in China and acquired Beijing-based CNC
- Successfully integrated WT's business into RCs Australia and Singapore
- Have established partnership with Public Utility Board (PUB) in Singapore
- Screening of further acquisition targets ongoing
- Established R&S Centre in Singapore
- Established Singapore Hub

# Siemens Water Technologies Business model & serving the region



A combination of trained sales teams in the region and detailed WT competencies in Singapore should enable us to harness the business

SINGAPORE





SINGAPORE

## Process Technology Range (in Blue – specific focus)

- Municipal Drinking and Sewage Water Treatment
- Oil and Gas – Onshore and Offshore
- Hydrocarbon Process Industry
- Chemical Processing Industry
- Micro-electronics and Electronics
- Pharmaceutical
- Food and Beverage
- Minerals and Mining
- Pulp and Paper
- Power Generation



SINGAPORE

**With the focus on water technologies for the O&G industry (Refineries, Petrochemical plants, offshore production platforms and FPSO's) a 100% technology transfer of the following product lines to Singapore has been done**

## Oil & Gas

- HPI / CPI process water treatment
- HPI / CPI Waste water treatment
- Onshore / Offshore produced Water treatment
- Water injection systems



SINGAPORE

**With the focus on water technologies for ultra-pure water (pharmaceutical, micro-electronics, Food & Beverage plants, etc) a 100% technology transfer of the following standard product lines to Singapore has been agreed upon**

## Pure water technologies

- Multi media filters & softeners
- RO (Reverse Osmosis) systems for different capacities & types
- Continuous de-ionization systems (CDI) for high purity water
- Execution of customized systems (including validation)

## Siemens provides water solutions from one source

