McGOVERN CAPITAL LLC

Global innovation through alliances.

IP Strategist: Disruptive / Platform Technologies

“Catch the Current” ®

Relationships: Entrepreneurs, Corporations, Universities and Governments
McGOVERN CAPITAL LLC

NANOTECHNOLOGY NOW ... 

• ANGSTROM PUBLISHING -- JV with FORBES
  – The Forbes/Wolfe Nanotech Report
  – Leading Nanotechnology Research and Newsletter

• WATER TECHNOLOGY
  – Patented, microbiological water filter technology
designed to defeat one of the world’s greatest killers:
Water-Born Diseases (WBD)

• NANO-FIBER TECHNOLOGY PORTFOLIO - broad applications
  in many industries worldwide / negotiating joint ventures

• AQUEA SCIENTIFIC: Micron / Nano encapsulated “wash on”
  additives
Nanotech & Water...

EVOLUTIONARY AND REVOLUTIONARY SUCCESS

- Nanotechnology’s solutions to the world’s water issues are both EVOLUTIONARY AND REVOLUTIONARY

- HOW BIG IS THE GLOBAL WATER MARKET?
GLOBAL WATER MARKET

- Water is a $400 billion global business
- Demand for drinking water is expected to grow another 40% by 2025
- Global consumption of water is doubling every 20 years, more than twice the rate of human population growth
- According to the United Nations, 1.3 billion people already lack access to “safe” drinking water
GLOBAL WATER MARKET

• More than **97%** of the world’s water reserves are salt water, contained in the Earth’s oceans

• Just a small proportion of the **1.3 billion** square kilometers that make up the world’s water reserves is fresh water

• Only **0.4%** of those reserves is accessible

Source: www.forestinfo.org
Water Scarcity and Stress

![Bar chart showing population in water-scarce and water-stressed countries from 1995 to 2050.](image)

**Figure 5. Water Scarcity and Stress**

Population in water-scarce and water-stressed countries, 1995-2050

- 1995: 0.46 billion, 31 countries
- 2025: 2.8 billion, 48 countries
- 2050: 4.0 billion, 54 countries
Figure 4. Rising Water Use
Global Annual Water Withdrawal by Sector, 1900–2000

Source: Abramovitz 1996 (1)
Conflicts

• In 1985 Dr. Boutros Ghali famously said that "the next war in the Middle East will be fought over water, not politics"

• "If the wars of this century were fought over oil, the wars of the next century will be fought over water." Ismail Serageldin, former vice president for sustainable development at the World Bank.
Results of Lack of Water

• Water-related diseases kill millions of people each year, prevent millions more from leading healthy lives, and undermine development efforts. About 2.3 billion people in the world suffer from diseases that are linked to water.

• An estimated 3 billion people lack a sanitary toilet

• An estimated 4 billion cases of diarrheal disease occur every year, causing 3 million to 4 million deaths, mostly among children
Results of Lack of Water

- Some 6,000 children die every day from diseases associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene – equivalent to 20 jumbo jets crashing every day.

- In Zambia, one in five children die before their fifth birthday. In contrast in the UK fewer than 1% of children die before they reach the age of five.
Results of Lack of Water

• At any one time it is estimated that half of the world’s hospital beds are occupied by patients suffering from water-borne diseases.
Types of Pollutants

• **Particulate matter** – particles of minerals and organic material that cause turbidity in water.

• **Chemical pollutants** – includes pesticides and industrial wastes dissolved in solution

• **Disease causing agents** – bacteria, virus’ and parasitic organisms.

• **Truly safe drinking water must address all three of these categories.**
Water Treatment Methods

- **Boiling**: Effective when done properly. Ineffective against particulate matter and chemical pollutants, expensive and energy intensive.

- **Chemical Disinfection**: Effective against most pathogens. Some pathogens resistant. Environmental and end-user risks. Ineffective against chemical pollutants.

- **Solar**: Simple and low-cost. May be ineffective against certain pathogens or through turbid water. Ineffective against chemical pollutants.
Water Treatment Methods

- **Filtration Devices:** Vary greatly depending upon pore size and composition. Can be very effective against particulate matter and chemical pollutants. Traditionally ineffective against many pathogens.

- **UV:** Effective against many pathogens but perceived as complicated and expensive. Ineffective against particulate matter and chemical pollutants.
Water Solution: Product Issues

- Filter: Bacteria and Virus'
- Gravity Flow / Point of Use
- Flow Rate
- Separation / Elimination
- Durability
- Security / Knock-Offs
- Price
- Commercial Feasibility
Water Solution: Distribution

Issues

• Base of the Pyramid
• Pilots / Pyramid of Influence
• Channels of Distribution
  – Private Enterprise / JV
  – NGO’s
  – Government
• Demographic Considerations
  – Geographic Homogeneity
  – Middle Class
  – Urban vs. Rural
Future of NanoWater

- International Phenomenon
- Evolutionary and Revolutionary
- Alliances are Key