

The Case for Water Investing – 2007

The Economic Paradox That Spawned A Compelling Investment Theme

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Background

Water, the most essential life-sustaining substance on earth and the most critical input to economies around the globe, is now at crisis levels of supply when compared to the unrelenting demand for this most basic and necessary resource. Paradoxically, water remains absurdly undervalued. In most cases, the price paid for water comes nowhere near the actual cost to provide it. We rage when our water bill increases slightly, and yet we happily pay exorbitant prices for non-essential products such as cable television. This price-to-value inequality will most certainly correct itself as the characteristics of supply and demand become more divergent, and as the knowledge of this divergence becomes more wide spread among the general public.

So how valuable is water? Ponder this: water has no substitute, regardless of price – the only commodity in the world of which this is true. This most fundamental of facts creates the inexorable and intractable demand for water that will not abate with time. Couple this demand-side certainty with the reality that our planet has a finite yet rapidly diminishing supply of usable water, and you have the underlying conditions that spawned a compelling investment theme across a diverse and expansive group of product and service providers which we define as the global water industry.

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This massive industry is comprised of companies involved in the processes of collecting, treating, delivering and disposing of water and wastewater. From the water utilities that incessantly deliver potable supplies; to the myriad of technology companies involved in the treatment and analysis of water and wastewater; to the pipe, pump and valve providers involved in moving water from place to place; to the countless other businesses involved in ensuring consistent and continuous supplies of water for a multitude of purposes – all of these entities benefit from a series of interrelated and unwavering demand drivers that create consistently growing sales and earnings, irrespective of market conditions. These demand drivers and the resultant trends, which have tended to intensify as time passes, have heightened the prospects for water investing – providing (in many cases) low-risk, non-cyclical, consistent returns for public equities that fall within the water investment theme.

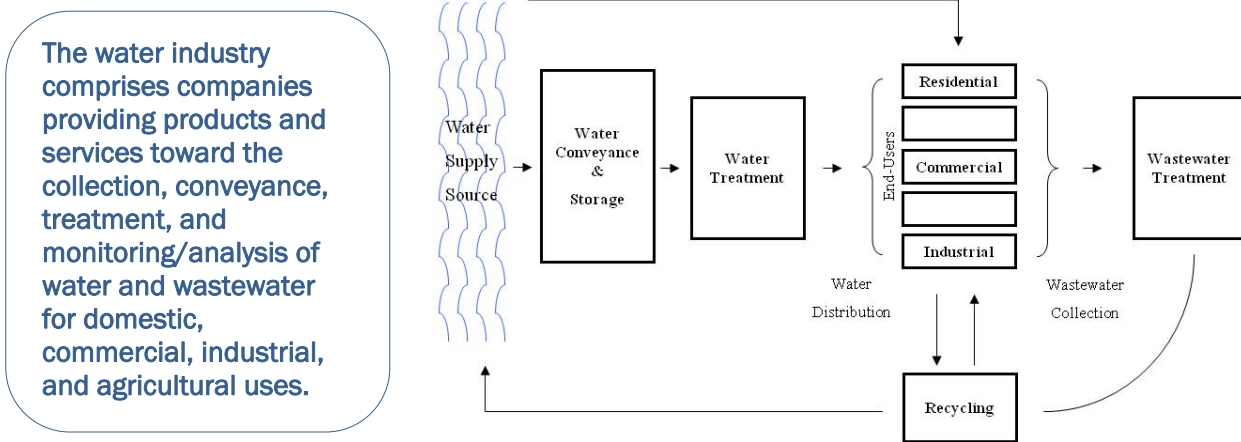
While the disparity between supply and demand for clean water is clearly the fundamental basis for stimulating water investment opportunities, a number of additional drivers have bolstered the argument for water investing. Around the globe, aging and dilapidated water and sewer infrastructure is in dire need of repair, and new infrastructure must be built to meet the needs of growing populations in both developed and developing economies. These infrastructure needs in the U.S. alone are expected to cost up to \$1 trillion over the next 20 years. To exacerbate this problem, massive human migrations are underway by peoples inhabiting water-stressed arid regions, who are now relocating to urban centers to avoid water scarcity issues. These unfortunate circumstances only serve to accelerate the already dire situations being observed globally, and keen water investors are positioning themselves to benefit from the heightened need for water companies that are providing solutions.

Human destruction and/or depletion of non-renewable groundwater supplies, along with the climatic changes observed with global warming, add to the critical water scarcity issues currently being faced around the world. These critical issues have become harder and harder to ignore and are now beginning to show up in mainstream media, bringing such matters to the public's attention and informing them of the severity of the problem. This attention is causing governments at all levels to address the numerous and far-reaching tribulations of water scarcity and resultant water quality issues faced by their constituents. As a result, increasingly more stringent regulatory practices take stage, forcing cash-strapped municipalities and small privately owned water systems to succumb to the one and only available life raft – privatization, which once again benefits water investors monitoring roll-up strategies.

To summarize, the disparity between supply and demand for clean water is an inescapable problem; yet the relentless human demand for an uninterrupted supply makes water by far the most stable of all commodities – unaffected by cyclical influences which constantly badger other more typical input commodities. Again, water, unlike other commodities, has no substitute at any price, and therefore it must be delivered for a variety of end-uses on a continuous and consistent basis, irrespective of market conditions. This global theme of water insufficiency relative to unrelenting demand, along with all the related trends and opportunities it has spawned, continues to benefit the prospects of a broad range of public companies which help to provide solutions to this supply/demand dilemma. A diverse global universe of investment opportunities exists within the theme of water investing; all the while eliminating the typical traits of sector fund investments, which are far more limited in scope and susceptible to cyclical influences. Water investing is clearly a broad and deep global theme, and is far too diverse to be considered sector investing.

The Water Industry – An Extensive and Diverse Global Universe of Investment Opportunities

The water industry is enormous, on par with oil & gas and electricity in terms of embedded capital. However, the water “industry” remains ill-defined by the general investing public when compared to the more traditional and well-followed sectors of our global economy. Spanning a varied and extensive list of industrial sectors, the water investment universe is perhaps best characterized as a wide spectrum of companies providing products and services around the flow of water from source, to use, to disposal (as depicted in the graphic below). The global market for these products and services is estimated to be at or near \$500 billion per annum.



The water industry comprises companies providing products and services toward the collection, conveyance, treatment, and monitoring/analysis of water and wastewater for domestic, commercial, industrial, and agricultural uses.

Summit Global Management’s proprietary universe of companies included in the water theme currently stands at 319 names traded on various exchanges around the world. Notice in the table below that only one-third of the companies defined in the Summit water universe are U.S. companies: This is truly a global industry, although it has not been perceived as such by most investors. The over-emphasis on U.S. companies as representing the majority of the water industry is certainly disputed by the depicted statistics. Moreover, the valuation numbers for U.S. water equities are well above, while the overall returns are well below, those of the rest of the world. This disparity will diminish with time as more capital is deployed into the global water investment theme, rationalizing its merits.

Summit Water Universe – January 2007

Regional Breakdown of Water Theme Companies

Region	Market Cap	# of Companies
Asia & Pacific Rim	\$111,536,345,126	103
Europe & Africa	\$403,770,970,757	79
Latin America & Canada	\$39,977,145,619	26
United States	\$179,257,516,250	111
Total	\$734,541,977,752	319

Note: All information from Bloomberg. This table does not include GE, MMM or HD.

Water Utilities – The Incessant Resource Suppliers

Water utilities have long been considered the industry stalwart by the water investing community – and rightly so. Taking into consideration the fact that water is very much a localized resource, unlike electricity or natural gas which can be distributed over large areas, these entities enjoy a virtual

monopoly with insurmountable barriers to entry. Their business is simple: To provide a 24/7, uninterrupted and consistent supply of potable water to a growing demand demographic. Combine this uninteresting, and certainly not sexy, enterprise with the fact that water is absolutely essential and has no substitute, and what you are left with is a low-risk investment providing solid returns with the added benefit of being unaffected by cyclical market conditions.



U.S. water utilities have generally been the largest core investment group for most water investment portfolios for the simple reason that they have been a leading stock market performer for many years. In addition, dividends have played a large part in these total return figures, a fact which tends to dampen market volatility for these shares.

U.S. Water Utilities Outperform

Comparing the Returns of Water Utility Stocks Against the Major Indices

	5 Year Summary 12/31/01 – 12/31/06		10 Year Summary 12/31/96 – 12/31/06	
	Total Return	Annual Return	Total Return	Annual Return
*Water Utility Stocks	104.40%	15.37%	383.06%	17.06%
Dow Jones Industrial Average TR	38.98%	6.81%	135.19%	8.93%
S&P 500 Index TR	34.99%	6.19%	124.40%	8.42%
Nasdaq Composite Index	27.56%	4.99%	95.85%	6.95%

Data Source: Bloomberg Analytics – All returns are with dividends reinvested

*An equally-weighted list of all publicly traded U.S. water utility stocks that existed as of 12/31/06.

A striking and very illustrative fact is that in any randomly examined five-year period in the last 25 years (1982-87, 1993-98, 1979-84, etc.), water utilities topped the list of the best performing industry groups in the U.S. stock market on a total return basis. Why? The simple answer again is that water utilities have always done very well in good times and bad. When compared to any other industry, water utilities have a more obvious and compelling business model with the most persistent and predictable demand.

The table above depicts how water utility stocks have clearly outperformed the major indices over the past five and ten year periods. What is even more amazing is that the water utilities included in this table are in fact negatively-selected: some public water utility stocks were acquired during the years depicted, and the returns on those acquired companies, normally purchased at large premiums to market prices, are not included herein. Thus, if this compilation included the returns of all water utility stocks that were trading at the beginning of these periods, the returns would have been substantially higher.

In addition, regular dividend increases tend to keep water utility stock prices moving ahead on a very consistent and predictable basis. Such regular dividend increases are a hallmark of the group, and are perhaps the best indicator of the quality and stability of any enterprise. It also says a lot about the cash generated by these businesses.

Aqua America (WTR), formerly known as Philadelphia Suburban Corporation, is presently the largest investor-owned water utility in the United States. Its dividend history is not only impressive, but also quite instructive. In February 2007, the company announced a March dividend payment which was 8% above the previous year's March dividend payment. Aqua America has paid a dividend for more than 60 years and has increased it 16 times in the last 15 years. This stellar record led the company to the number two spot in the performance table depicted above

Similarly, in December 2006, Southwest Water Company (SWWC), another American water utility, announced that it had raised its quarterly cash dividend by 10%, representing the 11th consecutive annual increase. This is the kind of news that Southwest Water investors have regularly enjoyed.

Blue Chips or Water Utilities?

Returns of Water Utilities vs. Traditional Investment Icons

Name	1996-2006	
	Total Return	Annual Return
<i>SJW Corp.</i>	576.84%	21.07%
<i>Aqua America Inc.</i>	417.77%	17.87%
<i>Pennichuck Corp.</i>	376.63%	16.90%
<i>Southwest Water Co.</i>	374.23%	16.84%
<i>York Water Co.</i>	351.39%	16.27%
Walmart Stores	337.88%	15.91%
American Express	300.39%	14.88%
<i>American States Water</i>	294.44%	14.71%
Exxon Mobil Corp.	294.15%	14.70%
<i>Artesian Resources</i>	291.83%	14.63%
Home Depot	285.87%	14.46%
<i>Middlesex Water Co.</i>	233.71%	12.81%
Johnson & Johnson	211.59%	12.04%
<i>California Water Services</i>	187.44%	11.14%
Procter & Gamble	187.39%	11.13%
General Electric	176.69%	10.71%
International Business Machines	176.38%	10.70%
<i>Connecticut Water Services</i>	157.24%	9.91%
Dow Jones Industrial Avg.	135.19%	8.83%
S&P 500 Index	124.40%	8.42%
McDonalds Corp.	120.57%	8.23%
Kellogg Co.	101.58%	7.26%
Nasdaq Composite	95.85%	6.95%
Disney Co.	60.91%	4.87%
Merck & Co.	51.59%	4.25%
Coca-Cola Co.	8.59%	0.83%

Data Source: Bloomberg Analytics – All returns are with dividends reinvested

Note: U.S. water utilities in **bold italics**.



Blue Chips or Water Industrials?

Returns of Water Industrials vs. Traditional Investment Icons

Name	1996 -2006	
	Total Return	Annual Return
Danaher Corp.	530.00%	20.21%
Roper Industries	456.39%	18.72%
ITT Corp.	429.26%	18.13%
Franklin Electric	388.40%	17.19%
Walmart Stores	337.88%	15.91%
The Gorman-Rupp Co.	317.78%	18.93%
American Express	300.39%	14.88%
Exxon Mobil Corp.	294.15%	14.70%
Home Depot	285.87%	14.46%
Ameron International	276.10%	14.16%
Insituform Technologies, Inc.	250.64%	13.37%
Idex Corp.	215.11%	12.16%
Johnson & Johnson	211.59%	12.04%
Valmont Industries	208.63%	11.93%
Procter & Gamble	187.39%	11.13%
Watts Water Technologies, Inc.	177.54%	10.75%
General Electric	176.69%	10.71%
International Business Machines	176.38%	10.70%
Pentair, Inc.	157.24%	9.91%
Dow Jones Industrial Avg.	135.19%	8.83%
S&P 500 Index	124.40%	8.42%
McDonalds Corp.	120.57%	8.23%
Mueller Industries Inc.	112.74%	7.84%
Kellogg Co.	101.58%	7.26%
Nasdaq Composite	95.85%	6.95%
Disney Co.	60.91%	4.87%
Merck & Co.	51.59%	4.25%
Coca-Cola Co.	8.59%	0.83%

Data Source: Bloomberg Analytics – All returns are with dividends reinvested
 Note: Water industrials in **bold italics**.

Consider this: Every water utility, whether owned by a municipality or stockholders, must buy the goods and services necessary to provide uninterrupted service and a regulatory-compliant product. Every water utility is a steady customer of the water industrials, simply because the services of the utility must remain uninterrupted. Therefore, the business order flow to the industrials also has a stable and non-cyclical quality. Indeed, there is a pronounced “trickle-down” effect in the water industry, not only with respect to consistency, but also with respect to revenues – as illustrated in the graphic shown to the right. In the case of the water industry, the catbird seat for revenues would seem to be at the bottom of a money cascade. As the utilities pass through a portion of the revenues they receive to the industrials, the industrials often further benefit by receiving additional purchase orders directly from the utilities’ customers, such as agricultural and thermoelectric water users.

Over the last 25 years, we have found that companies who sell mainly to water utilities have a much more persistent, predictable, and stable business profile than those similar companies who might be selling into more cyclical industries. Thus, a valve maker selling to water utilities is likely to have a much better business than a valve maker selling to the oil or aircraft industry. Much like utilities, many segments of the water industrial sector tend to be highly localized and fragmented, offering fertile prospects for the benefits of consolidation.

The long-term total return of water utilities continued to be a leader in the U.S. stock market through 2006. The table on the previous page compares the ten U.S. investor-owned water utilities to a list of popular investment icons. The same is done in the table to the left with respect to water industrial stocks.

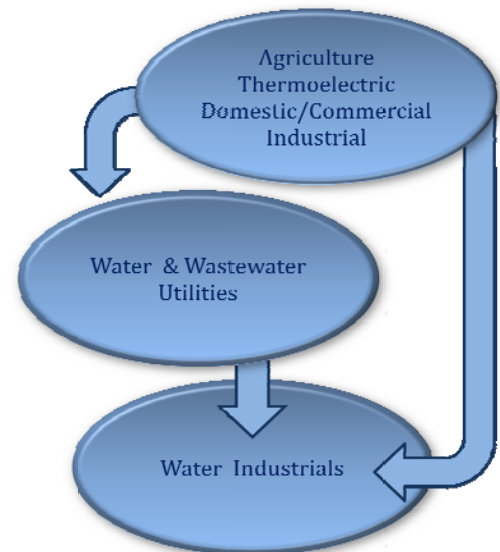
Water Industrials – The Essential Solution Providers

Although water utilities have been the focus of discussion up to this point, it must be strongly emphasized that water utilities represent only a small portion of the overall water investment theme. Indeed, the Summit-defined water stock universe stood at 319 companies on 12/31/06, however only 10% of that list was water utilities. The emphasis on water utilities was intended to illustrate the remarkable stability at the basic delivery point of the industry, and how all companies participating along the industry’s value chain are positively influenced by this persistency.

The majority of non-utility companies in the water theme are basic water industrial stocks: pump, pipe, and valve manufacturers, filtration and treatment companies, and testing equipment and instrumentation providers. There are also service businesses: design-engineering and construction firms, operations and maintenance companies, and analytical testing laboratories. Many of these businesses, which sell to water and wastewater utilities, have profited from the consistent buying patterns of these entities.

Money Flows

The Source and Flow of Water Revenues



The Underlying Drivers for Water Investing

No other industry rivals the global water industry in terms of the strong and credible drivers propelling its growth. While each of the manifest drivers are worthy of detailed discussion, it would require a great many pages of information to do so. Thus, in the interest of brevity, we have labored below to reduce the discussion of the drivers to an outline that gives the reader a good basis for understanding why we believe the global water industry will be an investment leader for decades to come.

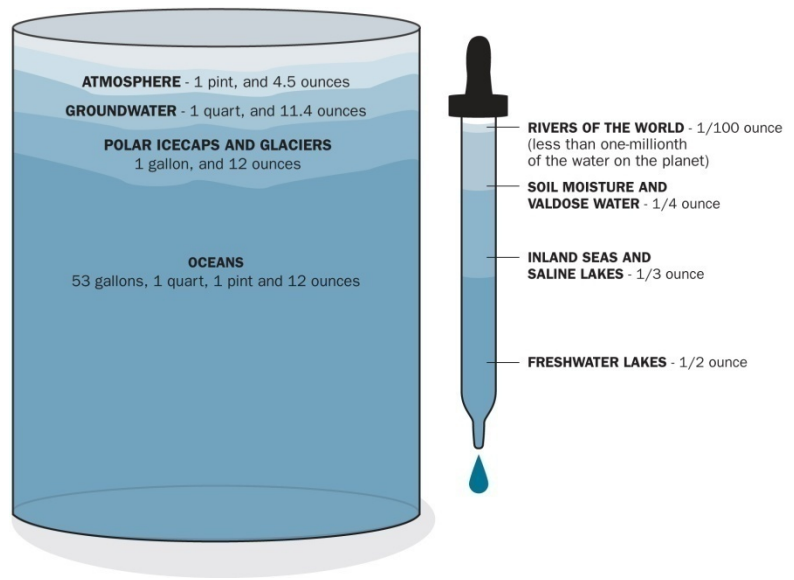
The increasing dominance of the drivers listed below will continue to create enormous investment opportunities in water infrastructure firms, water and wastewater utilities, and water industrials of all types.

Diminishing Water Supplies Confronted with Exploding Demand

- The available supply of fresh water to meet all human (and the ecosystem's) needs amount to only one half of one percent of all water on earth. Amazingly, rivers and lakes make up less than 1/100th of this already minute amount.
- Fresh water supplies are being destroyed at an alarming rate as surface water supplies are polluted and groundwater supplies, which make up 99% of available freshwater, are mined beyond their natural rate of replenishment. In Northern China for example, the water table is dropping by 3 meters per year.
- Global warming further exacerbates the supply issue as climatic changes disrupt weather patterns causing drought and desertification.
- It took mankind 10,000 years to reach a total population of 1 billion. One hundred fifty years later (1950) the population had doubled. In 2000, the global population stood at 6 billion people. By 2025, it is estimated that the global population will reach 8 billion. This exponential population growth and ensuing industrial expansion will continue to place an unrelenting demand on an already scarce and fixed water supply.
- Not only are more people demanding water, but they are demanding more of it. In 1900 the global annual water use per capita was 350 cubic meters. In 2000, that number had grown to 642 cubic meters.
- Global water usage increased six-fold during the 20th century, twice the rate of population. In the U.S. alone, water demand tripled in the past thirty years, while population growth has been just 50%.
- To feed the growing population, the world will need 55% more food by 2030. This translates into an increasing demand for irrigation, which already claims nearly 70% of all fresh water currently used on a global basis. It takes 1,900 liters of water to produce 1 kg of rice. It takes a whopping 15,000 liters of water to produce 1 kg of beef.

Global Water Supply

The world's water as represented by a fifty-five gallon drum. Not to scale.



Source: U.S. Department of Commerce – National Oceanic & Atmospheric Administration

Geographic Imbalances Exist Between Water Sources and Use

- Water is not evenly distributed around the globe: Fewer than 10 countries possess 60% of the world's available fresh water supply. China for example makes up 21% of the world's population, but possesses only 7% of the renewable water resources. Or consider the situation in Africa, a water-stressed continent whose population doubles every 20 years.
- Half of humanity currently lives in towns and cities. This number is however increasing as populations from more rural and arid areas migrate to these urban hubs to escape water scarcity. By 2030, it is expected that nearly two-thirds of the world's population will exist in these urban areas, resulting in dramatically increased water demand on an already overstressed infrastructure system.



- Water Stress occurs when the demand for water exceeds the available supply during a certain period or when poor quality restricts its use. Currently 25% of the world's population is experiencing water stress. Another 8% is experiencing more severe water scarcity issues, whereby less than 1 cubic meter of water exists on a renewable basis per person per year.
- As water resources become scarce, tensions among different users may intensify, both at the national and international level. Over 260 river basins are shared by two or more countries. In the absence of strong institutions and agreements, changes within a basin can lead to trans-boundary tensions. When major projects proceed without regional collaboration, they can become a point of conflict, heightening instability.
- Currently, 20% of the world's population (1.1 billion people) does not have access to an adequate supply of drinking water and some 2.6 billion do not have access to basic sanitation. By 2025 it is estimated that one-third of the world's population will not have access to adequate drinking water. By 2050, more than 4 billion people – nearly half the world's population – are expected to live in countries that are chronically short of water.

Insufficient and Dilapidated Infrastructure

- Developed countries are struggling to maintain their aging infrastructure, while developing countries still need basic water and wastewater systems.
- In the U.S. alone, the network of drinking water pipes extends more than 700,000 miles – more than four times the length of the National Highway System. This aging infrastructure, much of which is more than 100 years old and has long exceeded its useful life, is in a state of utter disrepair. One need only turn on their television to see the local news reporting on yet another water main break. The American Water Works Association (AWWA) estimates that domestic water utilities will need to invest \$250 billion over the next 30 years to replace aging pipes. The cost of pipes for new developments, security upgrades, advanced treatment methods, and other needs may raise that bill to \$500 billion.
- In order to meet the Millennium Development Goals to “halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation”, an enormous investment in water and wastewater infrastructure will be necessary. China alone, in its recent 5-year plan, cited \$128 billion in water infrastructure needs.
- In order to meet future infrastructure development needs, it is estimated that total spending on water infrastructure by developing countries will need to increase by a staggering 140% from the current level of around \$75 billion annually to around \$180 billion annually, of which \$99 billion is required for Asia and the Pacific.

Increasingly Stringent Regulatory Environment

- Legislation in the U.S. such as the Clean Water Act and the Safe Drinking Water Act continue to increase regulatory standards, driving new capital investments in monitoring and treatment technologies and services.
- While many countries around the world have since developed regulatory standards similar to those of the U.S., some are only now beginning to enforce them.

Heightened Awareness and Perception of an Impending Water Crisis

- From television, to newspapers and magazines, to the internet – the level of attention being given to water issues is at an all time high. Both conservative and liberal media alike are feverishly reporting on the global water situation.
- The financial/business world is beginning to come up the learning curve on water investment opportunities.
- As of recent, the global warming dialog has also aided in extending the exposure of water knowledge to the general public.

Current Global Trends Shaping Investment Opportunities in Water

All of the above mentioned drivers represent the core forces influencing water-related trends, which are in turn shaping the landscape for investment opportunities – both today and into the future. These trends are related to the privatization of municipal water and wastewater utilities, technological solutions to water supply and quality issues, valuation/performance disparities among global water stocks, and desperate region-specific impediments to economic prosperity. While the list of resultant trends is expansive, we have chosen to focus on only a few of the more prominent for the purposes of this discussion.

Water Utility Valuation and Performance Disparities

Perhaps as a direct result of the heightened awareness of global water issues, valuation and performance disparities within the water theme are askew. An astute investor understands that investing in the water theme entails much more than haphazardly buying a broad collection of water utilities and water industrial equities. Indeed, most so-called



“investors” eyeing water stocks over the last few years have employed this unsophisticated approach, paying little attention (if any) to value. Many have focused heavily on water utilities, specifically the U.S. water utilities – causing a run-up in valuations that are not only unjustified, but clearly the result of reactions to overzealous media headlines like: “Water – The OIL of the 21st Century”. While headlines of the sort can in fact quite accurately depict the core drivers behind water investing, they are not instructive as to the intricacies of water-specific stock selection and valuation modeling. The result has been the attraction of money managers to the water theme who fear being left out of this seemingly new and compelling investment opportunity, but which fiduciaries have no real experience per se in water investing. This trend (in and of itself) of largely uninformed money entering the water industry is perhaps best illustrated by examining the disparity between the performance and valuation figures of U.S. versus international water utilities.

About this time last year, we commented on the how the P/E ratio of the largest American water utility was averaging 3.7 times that of a select group of water utilities from Britain, Spain, and Brazil. Undoubtedly, the run-up was due to the flood of uninformed money entering U.S. water utility stocks, as alluded to above. The table below illustrates a similar comparative analysis of the U.S. and international water utilities, however, this time it focuses on performance. What is clear is that the international peers handily beat their U.S. counterparts by a wide margin on total returns and stock appreciation over the three year period ending December 31, 2006. Even more interesting is that while the U.S. utilities underperformed, on average they commanded a premium of more than 100% over the international group (excluding Pennon) on a price to equity basis (as of 12/31/06).

International Water Utilities Outperform the U.S.

Comparative Global Water Utility Performance: 12/31/03 – 12/31/06 (in U.S. Dollars)

Utility Name	Country	Stock Price Appreciation	Total Return	Annual Return
SJW Corp.	USA	160.57%	180.51%	41.08%
American States Water Company	USA	54.48%	69.21%	19.18%
California Water Service Group	USA	47.45%	62.53%	17.59%
Aqua America, Inc.	USA	37.44%	45.54%	13.34%
Southwest Water Company	USA	26.74%	32.89%	9.95%
*Average – U.S. Utilities		65.34%	78.14%	20.23%
Average – U.S. Utilities w/o SJW Corp.		41.53%	52.54%	15.02%
Nothumbrian Water Group Plc	UK	188.22%	239.57%	50.36%
Pennon Group Plc	UK	151.30%	220.67%	47.52%
Companhia de Saneamento Basico do Estado de Sao Paulo	Brazil	143.81%	199.93%	44.26%
Sociedad General de Aguas de Barcelona, S.A.	Spain	153.86%	171.93%	39.62%
Aguas Andinas, S.A.	Chile	47.77%	77.86%	21.18%
Average – International Utilities		136.99%	181.99%	40.59%
Average – International Utilities w/o Aguas Andinas, S.A.		159.30%	208.03%	45.44%

Data Source: Bloomberg Analytics – All returns are with dividends reinvested

*The top five largest publicly traded U.S. water utility stocks that existed as of 12/31/06

It would seem that investors around the globe will begin to question their money managers’ strategy of paying premiums for substandard returns within a specific peer group, especially when the writing was on the wall by such simplistic valuation measures. These gaps in the utility sector should continue to narrow throughout 2007, as experienced water investors take a strict valuation approach to seeking out the better investment opportunities within the water theme.

Privatization and Consolidation Persist

Influenced by tightening regulation, more strict enforcement measures, and capital-intensive infrastructure needs, municipalities across the globe are either considering or actively participating in the privatization and consolidation of their water and wastewater utilities. Faced with these costly measures and a general lack of funds, governments around the world see the monetization of their water assets as a rational solution to eliminating a serious financial burden on the treasury coffers.

Global water utilities currently have the lowest percentage of investor ownership of all forms of utilities, but municipal ownership and fragmentation is steadily declining as privatization and consolidation advances. As it stands today, less than 10% of the customers in the U.S. are served by an investor-owned utility. That number is estimated to be about the same internationally, however, some analysts expect that the number of people served globally by investor-owned water companies may rise by as much as 500% over the next 10 years.

Numerous opportunities exist around the globe for consolidation. In the U.S. alone, a high level of decentralization and fragmentation exists with some 54,000 community water systems and another 16,000 wastewater treatment facilities. Water “roll-up” strategies offer growing economies of scale and enhanced returns for investors as they seek to acquire solid assets that provide excellent cash returns at a fraction of replacement value.



The Ownership Revolution in the Water Industry

Over the last 15 years, the U.S. water industry seems to have been a testing ground for those entities positioning themselves to be among the dominant global water players of the future. This grouping of leaders, in our opinion, has yet to emerge – even after several years of jockeying, not a single company has proven to have the necessary staying power.

A revolution of sorts, with respect to the ownership of water companies, began several years ago and continues today as new participants begin their journey into the water industry by way of initial platform acquisitions. The new entrants are betting that they will prove to be better suited than their counterparts along the M&A spectrum in creating a sustainable position to lead the water industry.

In 1990, the first big ownership turmoil in the water industry began to take place (mostly) in the U.S., when a then-46 year old Prudential stockbroker saw an opportunity to roll-up a highly fragmented collection of water treatment companies and create a “one-stop-shop”. During the summer of 1990, he purchased a small private water treatment company (\$17M in revenues), renamed it U.S. Filter Corp., completed an IPO inside of 12 months, and 9 years and 260 acquisitions later, after a huge share-price run-up, he sold the company for \$6.2 billion to French conglomerate Vivendi. By most standards, this seemingly massive roll-up strategy should have greatly impacted the level of fragmentation among U.S. water companies, yet here we are less than 10 years later and the industry could just as easily support another such consolidation of even greater magnitude.

The purchase of U.S. Filter by Vivendi in May of 1999 set the stage for a series of subsequent acquisitions by other large European conglomerates targeting U.S. water companies. In June of 1999, French company Suez Lyonnaise des Eaux struck twice, purchasing Calgon Corp. and Nalco Chemical Co. Not to be outdone by the French, Kelda Group plc of Leeds England acquired Aquarion Company. In 2002, German multi-utility RWE announced its purchase of the largest U.S. investor-owned water utility, American Water Works Corporation. Also in 2002, Dutch multi-utility Nuon purchased Utilities, Inc. The European appetite for U.S. water businesses seemed insatiable, but just as quickly as the feeding frenzy began, the tides turned and new buyers entered the arena to take over the assets from their former owners – who seemed all too willing to sell.

As early as 2002, many of the European buyers had become sellers and an unraveling of water assets created opportunities for large U.S. industrial corporations and private equity groups alike to enter the water industry. Names like General Electric, 3M and ITT are now on their way to building a substantial footprint in water alongside a growing number of private equity groups. GE alone has purchased several desalination and filtration businesses, including Osmonics, Ionics, and Zenon between 2002 and 2006. A broad range of private equity firms, including but not limited to, the Carlyle Group, Blackstone, and HIG have now purchased some of the most well known names in the water business such as Thames Water, Utilities Inc., Nalco, Culligan, and numerous components of the former U.S. Filter Corporation.

So who will ultimately become the undisputed behemoth of the global water industry? Only time will tell. The one certainty that we can rely on as investors is that the water business is highly unique and to be successful it takes time, experience, and the understanding that new entrants must adopt to the industry and not vice versa. Trying to assimilate former success strategies from other industries into water is like forcing the proverbial square peg into a round hole.

Unique Attributes Specific to Water Investing

When compared to any other industry, water has a more obvious and compelling business model with the most persistent and predictable demand.

- There is no substitute for water and users cannot postpone purchases; price-inelastic demand.
- Conveyance and resource assets create a natural monopoly with huge barriers to entry.
- Demand is unaffected by inflation, recession, interest rates, changing preferences, or inventory loss.
- A history of strong and consistent growth under all market or economic conditions.
- Price of water does not yet reflect real economic value: Huge room/need exists for asset price expansion.



Global IPO's Expand Water Universe

As the capital markets' appetite for water businesses increase, new public equities have propped up around the world. Countries such as China, Malaysia, Brazil and the Philippines have all IPO'd a portion of their water and wastewater assets. In addition, a rising number of water industrials from around the world have also successfully completed initial public offerings over the last few years.

It is expected that the pace of IPO's on the water utility side of the industry will continue at a brisk pace as the costly pressures of infrastructure improvements and regulatory compliance, as mentioned above, compel governments to turn to the public markets for financial relief. Two of the more prominent IPO's expected in the very near future are that of Thai Tap Water and the return of American Water to public trading in the U.S., only a few short years after having been acquired by the German giant RWE in early 2003.

Each new IPO, expanding the water universe, should be reviewed carefully by investors. The political and economic stability of the region must be given great consideration with respect to new utility issues, and it should always be remembered that better-faster-cheaper is not necessarily a winning combination for new water industrials entering the industry. Knowledge of budget cycles along with sales and distribution channel relationships are the keys to success for these businesses. Understanding the intricacies of these processes will give investors a great advantage over others in finding the true gems amongst the newly minted public equities.

Technological Solutions to Water Quality and Supply Issues

It doesn't take a rocket scientist to determine which components of the water theme are likely poised for future success. It is however extremely difficult to determine which individual businesses will turn out to be the sustainable water darlings for years to come. Quite simply, companies involved in reducing water demand and/or expanding water supply will help to address the global water dilemma at its core, but other businesses are also well positioned for success as they provide solutions to a variety of issues pertaining to water quality. So which technologies will be best suited to accomplish these goals?

Let's first examine the issue of water supply. As already discussed, the world is dealing with a small and finite supply of renewable freshwater resources. Thus, the issue becomes how can more freshwater be created and/or how can we manage the renewable cycle. It turns out both can be accomplished and there are a number of companies helping to provide these solutions.

In the case of creating more freshwater, the desalination of sea water to create potable supplies is the likely solution for coastal regions around the world dealing with water stress. Distillation and membrane technology companies are constantly working to drive down the overall costs of desalination. To date, the power costs associated with initially purifying and subsequently transporting the product to where it is needed has been the Achilles heel to the technology's ability to gain a broader level of acceptance as a source of potable supplies.

Another way to virtually expand the water supply is to deal with the high levels of inefficiencies that exist in the distribution and delivery systems for potable water. It is estimated that many water distribution systems are losing up to 30% of the water captured due to cracked/leaking infrastructure. Companies involved in the relining and rehabilitation of canals and pipelines are helping to provide these solutions. Yet another



The China Situation

China is a perfect case study supporting everything we are attempting to convey with the information presented in this paper. China has the largest population of any country in the world: 1.3 billion people representing 21% of the global population. In addition to being the most populous country, it is also one of the fastest growing economies on the planet. While markets have avidly bid most "China plays" to premiums, little attention has been paid to the most basic and compelling requirement for the sustained growth of the Chinese economy: Adequate water and sanitation facilities.

The water situation in China is truly in crisis. While **representing 21% of the world's population, China possesses only 7% of the globe's renewable water resources.** China's per capita water reserves are only about 1/4 the global average. The UN has identified China as one of the 13 countries with the lowest water per capita in the world. What's worse is that the majority of the country's already limited freshwater supplies are horribly polluted. In China today, half of the rivers and lakes and one-third of the aquifers are classified as polluted. Of the 669 cities in the country, 440 suffer water shortages, and 110 of these cities are considered to have reached the critical level.

Approximately 25% of China's population lacks access to safe drinking water and most of the country's cities have no centralized sewage treatment facilities. The once mighty Yangtze River is now a sickly version of its former self, absorbing nearly half of the country's wastewater, which is almost entirely untreated before it enters the river system. Top off all this bad supply news with the fact that rapid industrialization and urbanization is escalating the demand side of the equation, and it is easy to understand how intense the need is for water and wastewater infrastructure, both currently and into the future.

The Chinese government is keenly aware of the severity of its water problems and is dedicated to its reform. In its 11th 5-year plan, released in 2006, **China cited the need for \$128 billion in water related investments through 2010.** As China prepares itself for the upcoming 2008 Beijing Olympics and the 2010 World Expo in Shanghai, a massive undertaking with respect to the constructing of adequate water and sanitation facilities is underway. The Companies that can help solve the massive water problems in China are looking at strong demand for years to come.



practice gaining attention as a way to bolster supplies is to capture and recycle wastewater back to potable supply standards. Water reuse, however, has met serious public resistance, often due to popular media's coining of such phrases as "toilet-to-tap", which sent the public into a close-minded stance of opposition to such proposals. As population centers become more water stressed and the public begins to understand that clean water is clean water, no matter where it recently came from, this practice will likely gain increasing exposure as compelling scarcities will override earlier concerns.

Finally, due to the fact that precipitation is seasonal and longer-term weather patterns (el Niño, droughts, etc.) tend to be cyclical, methods of capturing water during wet times to be used during later dry periods will likely be a favorable bet for water investors. Here we may be talking about the construction of dams for the purpose of creating surface water reservoirs, and the development of groundwater (underground) banking programs.

On the demand side of the equation, resource productivity leads the way. Water productivity refers to the amount of measurable output per unit of water input. As the water supply situation becomes increasingly dire, the demand for technologies that enhance water productivity will be highly sought. Clearly, the demand for these technologies should be expected to rise in many water-stressed regions of the world. More efficient farming irrigation equipment, slow release nutrient-rich fertilizers, and technologies providing alternative non-potable water supplies to non-food crops are all good examples of water productivity enhancement.

When it comes to water quality, perhaps the most prevalent areas expected to be addressed in the near term are homeland security and tightening regulatory requirements. In order to secure water supplies and thus the public they serve, governments around the world will need to employ measures to protect their existing supply systems as well as to detect any abnormalities in the quality of such supplies. This will positively affect those water companies supplying in-line remote monitoring systems and early warning detection systems capable of identifying both chemical and biological agents. While there is a quite a number of regulatory matters having a direct effect on the spending habits of utilities, the "Stage 2 Disinfection Byproducts Rule" handed down by the U.S. Environmental Protection Agency in 2006 is likely to benefit UV disinfection companies over the next five years. This new rule, much like its predecessor, is focused on reducing exposure to potential cancer-causing chlorine disinfection byproducts such as trihalomethanes. Because UV disinfection does not create any byproducts, it is being adopted to replace the more traditional methods of chlorine disinfection in utilities all over the world.

[The Essential Investment Thesis of Water Investing](#)

The global water industry combines the best underlying business model with the most inexorable demand future of any existent industry, and this fundamental fact is not likely to change. Indeed, the water industry has more wind in its sails than any other industry, period. Choosing the best stocks from within this select universe further enhances return potential.

In our view, if one concentrates wholly on a stock universe that represents the highest quality and most dominant investor-owned water stocks in the world (our stock universe of 319 companies) and if one constantly monitors this universe for the best values, the chances for investment success are very good, and the odds for unsatisfactory performance are quite low.

We have been water investors for a very long time, and we still have never seen an investment theme that comes remotely close to providing the risk-reward characteristics of the global water industry. The industry has certainly evolved over the last 25 years, and the changes are virtually all positive. The outlook for water stocks today is much better than it was 25 years ago, and we have never been as optimistic as we are today about the future of our chosen investment arena.

JOHN DICKERSON IS CEO AND ROB ANFUSO IS A PRINCIPAL WITH SUMMIT GLOBAL MANAGEMENT, INC. ©MARCH 2007

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