

WaterSign and the Agricultural Irrigation

Agriculture is a major user of water, as much as 30% of available water is used to irrigate crops. (see attached PDF) Growing needs for food and biodiesel with global water shortage and growing awareness increase the need for sophisticated irrigation technologies (drip irrigation, micro sprinklers and Pivots). It is amazing that only 3% -5% of total irrigated area is irrigated with sophisticated systems but this number is growing rapidly.

Efficient management of the water sources, the irrigation and leakage control enable the user to save significant amounts of water and energy (and as a result save \$'s). A common wisdom is that leakages and bursts are in the range of 15-30% of total water used for irrigation (see attached PDF).

If we look at numbers: in Israel* 1.2 billion m³ are used for irrigation 50% for drip irrigation. The average cost of 1 m³ is 1.5 shekels → 900 million shekels. If we calculate the loss as 10-15% the financial loss is 135 million shekels. Israel is the world leader when it comes to drip penetration and therefore the percentage is lower than in other countries.

In the USA the amounts are staggering (100 billion gallons per day are used for irrigation, mostly flood irrigation!!). 15% are 15 billion gallons per day!!**

The actual cost is even higher since electricity is used to pump water and water companies are among the largest users of electricity.

The WaterSign system responds to the needs of irrigation systems:

- Monitoring of irrigation systems, flow control, leakage and bursts. The only system that can monitor and alert in case of a "problem" using low cost markers and one central water meter – eliminating the use of sensors and transmission and at a fraction of a cost of the traditional control system.
 - Saving water will cover the cost of the system – the business model can be shared revenue on a yearly basis and initial sale of the system. the penetration rate will be quick.
 - Every irrigation system requires accurate monitoring so the challenge is cost (and simplicity). The HydroSign system requires less monitoring water meters and sensors. One water meter at the head control and low cost markers at the distributing lines instead of costly water meters and transmission devices in "standard" control systems.
- Monitoring Center pivots and travelers (a very popular irrigation method in the USA)- there are 150,000 pivots in the USA. each is fed by a large diameter pipe- a burst in the feed pipe will waste large amount of water and will also flood the area. Hydro Sign can offer its system to the Center pivot users at a cost of 5,000 us\$ with large margin and still it is a fraction of the cost of a pivot).
 - Potential market in the USA alone is a 750 million us\$ a target market.
- Drip /Micro irrigation is even a bigger market- It is already a 2 billion \$ market and is expected to grow rapidly.
 - The best indication is the entry of international very large scale companies to the irrigation industry (Permira purchased Netafim for 1 billion US\$, John Deere purchased Plastro and the Indian giant Jain purchased Naan Dan.
 - Netafim are currently selling 800 million US\$ a year and expect to reach 2 billion in less than 5 years. Other giants like NDJ, JDW and others expect to double their sales as well.
 - Currently water meters already stand for 2-3% of cost of a drip system, excluding CMT (control systems) that bring the numbers to 8-10% of the total cost, those numbers will grow simply because water monitoring is becoming a must!!
- Detecting water supply and water source (the system can detect from which source water are supplied and the quantity supplied from that source)- Using different water sources, some are non- potable, is growing all over the world. Due to safety reasons the authorities need a device that will detect and alert when non potable water enter the system – the HydroSign technology enable to monitor, control and alert – **It is the only system that respond to this need.**

To summarize- The WaterSign technology has a unique features at a much lower cost than conventional control systems that do not cover those needs. **(Affordable and simple).**

These ,so far, unmet needs represent a market of hundreds of millions dollars and in the high end irrigation markets. Countries like Australia, Spain ,Italy are struggling to save water and energy and use the water wisely.

The system we offer is based on a patented algorithm and a central point sensor and markers.

We will manufacture various sizes of markers for the irrigation market. 16 mm for the drip /micro laterals or for a cluster of laterals (at a very low cost of up to 0.5 \$- (NETAFIM already commented it is viable and they are willing to cooperate) , to larger sizes for distributing lines and main irrigation lines- ALL of them connected to the same main point.

Business Model

We intend to join forces with at least one of the leading irrigation companies offer through its marketing channel the system as a standalone control and monitoring system or as an add on system.

Revenues will come from selling the system, and from the data we will be able to process and offer the end user (A detailed cooperation model will be built).

A Special case is the Golf courses irrigation - see attached page.

Golf irrigation will be the first step towards Turf and Commercial irrigation (public areas using a lot of water and do not have a system to monitor their water usage and losses)- The growing awareness , especially in countries with high standard of living and shortage of water ,(USA, Australia, SPAIN),make our technology a winner .

The system is also applicable in developing countries that take a larger role in the sale sof irrigation equipment (Mexico ,Brazil,India and China). All will be a target market for a sophisticated yet simple to operate technology that monitor the water consumption and used as a tool to save water.

- <http://library.thinkquest.org/26823/agriculture.htm>
- http://www.nationalatlas.gov/articles/water/a_wateruse.html