

**Bringing Smarter Sprinkler Clocks to Market**  
Doug Bennett, Southern Nevada Water Authority  
Jenna Smith, Seattle Public Utilities

Changing a Market

Strategies to increase water use efficiency usually focus on changing the end user's behavior. Either by developing messages or prompts, or by offering incentives and requirements, customers and their motivations are the primary target of most conservation programs. In some cases though, to understanding why a conservation measure or a combination of measures is not utilized by the end user and or various market players, a more comprehensive approach is needed.

In the case of automatic irrigation control technologies, a thorough examination of the market and its players is necessary because efficient irrigation depends on so many factors: good design and installations, state of the art components, continuous maintenance and expert management. Without much plumbing experience, it is fairly easy to replace a 4.5 gallon per flush with a 1.6 gallons per flush toilet and have water savings without any difference in performance or service. In the toilet market, there are fewer market players: maybe a plumber, a retail outlet and the consumer. In the landscape, in order to use water efficiently, a person needs expertise in the plant, soil, and water relationship and developing irrigation schedules based on daily weather changes. The market relies heavily on the relationship between the irrigation contractor and the consumer, though manufactures and distributors also play a role.

Irrigation control technologies, like evapotranspiration controllers (ET controllers) that more closely monitor weather changes have been around for many years but mostly for the agricultural or large commercial sectors. Until recently, all were priced out of the residential sector. A few manufactures produce ET controllers more affordably for the residential sector but their market share is very small compared to the traditional controller market.

Water providers are in a position to help ET controllers gain a larger share of the market by using strategies to overcome some of the barriers to success. Two methods that can be used to shape a strategy are called: Market Transformation and Social Marketing.

**Market Transformation**

Market Transformation is a method of designing strategies to increase market share. Market transformation strategies can be used to influence a market by enhancing the demand for a product, in this case a product that uses fewer resources than the more commonly used types. For example, determining savings potential, understanding how the market players interact, creating testing protocols and providing incentives for ET controllers, are components of a market transformation.

Key elements of a market transformation strategy include<sup>1</sup>:

- Research and demonstration (R&D)
- Education and technical assistance
- Demonstration projects

- Utility incentives
- Manufacturer incentives
- Education and training
- Consumer incentives
- Building codes, policy development and regulation
- Equipment efficiency standards
- National collaboration efforts

### **Social Marketing**

Another method, social marketing, works to change people's behaviors by identifying the barriers in a specific situation that cause an unwanted outcome and then designing prompts to overcome the barriers by altering behaviors. For example, identifying the barriers that keep the end users or irrigation contractors from adjusting irrigation schedules to more closely follow weather changes, then creating a strategy to address those specific barriers.

Key elements of a social marketing strategy include<sup>2</sup>:

- Analyzing the situation
- Selecting targets
- Determining objectives and goals
- Identifying barriers and benefits
- Developing behavior change tools - strategies to overcome the barriers and increase benefits using the 4 P's (product, price, place, promotion)
- Piloting
- Evaluating

Each of these methods uses a process of research, evaluation and feedback to design programs using a scientific approach verses personal assumptions.

In the last few years, some water providers have partnered with the irrigation industry to understand the controller market and design strategies to overcome market player barriers and increase the market share of ET controllers with both market transformation and social marketing techniques. The following is an overview of their activities:

2002, AWWA Conference in Las Vegas

At this conference, water providers met to discuss partnership opportunities with the irrigation industry and to share information about issues related to the inefficient use of water in urban landscapes. The Irrigation Association (IA) was identified as an organization that is key to a successful collaboration towards a common goal. The IA was receptive to efforts that would be beneficial for both water providers and the irrigation industry. IA staff worked with some of the water providers to organize and host an event for water providers and irrigation manufactures to meet and discuss some of the issues.

2002, Irrigation Association Conference in New Orleans

The IA roundtable event was held at the IA's annual conference and tradeshow. Those present at the roundtable event included 10 major irrigation manufactures and 10 water providers who represented various regions in the US. The objectives of the summit focused on establishing a relationship between water agencies and the irrigation industry by increasing understanding of critical water supply and demand issues, defining the challenges of the market for increasing the sales of new technologies and developing a framework for mutual beneficial strategies. The agenda consisted of six questions aimed at guiding the discussion to gain insight into the issues related to more efficient irrigation control technologies:

- Is there a broad and significant need for efficient irrigation control technologies in residential and light commercial markets?
- How would water agencies, the irrigation industry, and the public benefit from the application of efficient irrigation control technologies?
- What obstacles or impediments must be recognized and overcome to fulfill the market's needs and to create desired benefits?
- How can the obstacles be overcome by the industry and stakeholders?
- Specifically, are the following types of criteria applicable to the ongoing development of efficient irrigation control technologies for residential and light commercial markets?
- What next steps are needed to advance planning and implementation process?

The roundtable discussion identified two important topic areas that would need to be developed to continue collaborative efforts for furthering the success of more efficient irrigation control technologies in the market. The next steps included developing product testing protocols and criteria for efficient irrigation controls and developing a market transformation strategy.

2003, Center for Irrigation Technology

In February, the Center for Irrigation Technology (CIT) at California State University in Fresno hosted an all day event for water providers and irrigation manufactures to discuss continuing partnership activities for improving irrigation scheduling technologies. The meeting covered two topic areas: developing and standardizing testing protocols for new technologies and market transformation (MT) strategies.

CIT guided the first half of the meeting through identifying the testing procedures and which procedures need standardization, how types of irrigation technologies will be grouped for testing and whether performance standards can be set and measured within a reasonable timeframe and cost. CIT was tasked with developing a lab testing protocol for ET based controllers to see how well they follow a baseline ET. They expect that testing will take about one month. A funding stream will need to be developed for the testing facility.

The second part of the meeting covered issues related to developing a market transformation strategy to support more efficient control technologies. After this event a MT sub-committee was formed, tasked with: identifying market barriers to customer preference for water efficient sprinkler controllers/sensors, creating a proposal for a nationwide marketing strategy to overcome these barriers and reporting to irrigation manufacturers/water purveyors group at the Irrigation Association's annual conference in November 2003. The group also decided to

develop a list of marketing professionals with social marketing skills that should be contacted to help develop a market transformation strategy with social marketing components.

**Current and Future Actions:**

In March CIT posted draft protocols on their website for review. Ed Norum from CIT just completed a review of the comments and will provided answers to the comments with the second draft. He is very appreciative that the water providers were willing to review the protocols because it adds a layer of review that isn't often a part of their research. Once the second draft is release, there will be a couple of months review before the final is developed. Next steps will be discussed at the Irrigation Association's conference in San Diego in November and will include: determining how the testing facility will be funded and how to support product testing and ET controllers in the market.

The MT sub-committee has pulled consultant and barrier information to help with developing a market transformation strategy to bring more efficient control technologies to the market. The following is a preliminary summary of barriers for each of the market players.

**Barriers for utilities:**

- Cheap rates but people think they're paying too much for water (political barriers).
- Some higher cost technologies are not cost-effective.
- Customers have no sense of urgency.
- It is difficult to identify customers who use too much water for irrigation (water use compared to sqft).
- The products don't have efficiency standards; need more information on the level of maintenance and measure life.

Barriers	Suggestions for change
End customers balk	penetration will be difficult without informed & incentivized customer.
Management would rather sell water than conservation	Cavalier options are running out - conservation is cheapest option.
Less water saved than predicted	Technology capabilities will be known from testing prior to broad applications.
Product failure	Protocols should separate out the weakest performers. Major manufacturers enter market.
Company/supply failure	The unexpected is always possible-success will breed success.
Need to create demand, incentivize	Agency/government/industry will share creation demand. Added cost should be recovered by all parties.
Desire to control system operation	Eliminate image of freewill: Controlling delivery technique with authority to decide where to modify will create a very .
Reluctance to recommend specific products – legal issues	Create product recommendations or technology recommendations based on findings from CIT controller tests Recommend products that meet a “seal of approval labeling for water conservation”, which qualify for rebates.

**Barriers for manufacturers:**

- More scheduling training programs.
- Consumers don't know what the payback is.
- There is no market.
- Lack of a marketing message to contractors and homeowners.
- Contractor has no motivation to sell more expensive control technologies.
- No regulation, no efficiency standards.

Barriers	Suggestions for change
Obsolete existing products	New product opportunities.
Identifying right technology	Balanced approach-business & marketing calculation.
Market conversion cost	Partners in conversion. Gradual implementation by region.
Product failure risk-early	Normal business risk.
Capitalization of major manufacturing and marketing effort	High first cost but high potential gain with early success.
Crowded field of competitors	competitive field, likely to be similar to existing market.
Conservation doesn't become major market force	Real possibility unless industry/agencies and government cooperate.
Others having control over technology- who supplies signal or controls off/on	Real concern- best situation would have independent multiple suppliers of any needed signals- paid by the manufacturers, purveyors, and public.
New business of weather info & signal transmission	Existing weather providers both public and private.
Reluctance to offer ET-based controller without proven market demand	Test market by companies? Gauge acceptance and popularity of ET controller products already on the market. Water providers can develop criteria for products that meet water conservation goals. Water providers could offer product rebates for defined technologies.

**Barriers for the residential homeowner:**

- Unaware of the technologies.
- Think they are using the right amount of water.
- Water is relatively cheap.
- Lack of information about existing systems.

Barriers	Suggestions for change
Cost	Offer reduction in water bill or other incentives.
Apathy	incentives/marketing & raise fees without passive sensor services.
Inertia	Time incentives & disincentives to deadline.

Availability	inform of products, contractors and distributors who have products, testimonials from 1st time users.
Choices too many- Reliability	Protocol adherence- testing.
Don't understand need	PR marketing. Testimonials- Examples.
No desire to change/update	Incentives, understand results & costs.
Consumer confidence that landscapes will receive enough water with climate-based or soil moisture sensor-based technology	Public education from water purveyors, news media, extension service about plant water requirements. Explain that most homeowners and property owners are over-watering as much as 50 percent.
Consumer belief that no manual override is available. Control by "big brother."	Existing products already have manual override. Consumer still has ability to adjust most products up or down on water. Big Brother is not watching.
Equipment Cost	Possible rebates from water purveyors. Provide customer with expected water savings information using local water purveyor water rates. If there is a monthly usage fee, possibly have water purveyor absorb or provide credit on water bill for using climate-based or moisture-sensor based technology.
Consumer already has new or older controller. No way to retrofit existing product	Some products could have retrofit capability. Explanation that decrease in water usage would pay for installation of new technology. Stay focused on just new irrigation installations, but encourage consumers to replace controllers as they wear out.

**Barriers for the landscape and contractor professionals:**

- Unaware of the technologies
- Think they are using the right amount of water
- Lack of skill or desire to learn mechanics
- Lack of time available to monitor current systems
- Cost of installation
- Cost to upgrade - Currently old systems aren't compatible with newer systems
- Time to install / research / monitor per customer
- Effort needed to convince customer to install a system

Barriers	Suggestions for change
No incentive to install	share portion of incentive with contractor.
Untrained in technique	Irrigation Assn., Manufacturers, Distributors and agencies can offer classes and certification.
No customer demand	water agencies create incentives & disincentives.
Comfortable with older techniques	Need incentive- share in charged dollars- Feel pressure.
No demand pull- regulation	water agencies needs to have customer incentives and disincentives, update and inspect devices annually.
Little service opportunity	customer doesn't need scheduling help but may need replacement.

High probability of callback	High labor on call backs. No recovery- testing evidence no hassle return, manufacturing incentive to replace if failure.
Controller brand loyalty by irrigation contractors	License technology to major irrigation equipment manufacturers.

**Barriers for distribution:**

Barriers	Suggestions for change
Additional SKU's	More now, less later. Opportunities to replace all controllers.
Customer, contractor & end user education	Great opportunity to train contractor on product carried IA class, IA certification, possible EPA support.
Precursor to regulation	Just the opposite- way to ward off regulation by being more proactive.
Different products specified in different jurisdictions	Test protocols should help sort out best from worst Normal business- goal is to have a variety of prequalified products.
No incentive to be early adapter	Establish reputation as leader & innovator. Water conservation new lead market driver.
Bias in other areas of the United States against technology introduced in the West. "This isn't California mentality."	Product testing with case studies published in different regions of the country. Promotion by irrigation equipment manufacturers. Promotion of technology by regional sections of AWWA. Need partnership with universities such as Texas A&M, University of Florida, University of Arizona, etc.

## Marketing Recommendations

Who recommended	Contact Information	Marketing specialty
Doug Bennett, Las Vegas Water Authority	Cooney, Watson and Associates 2201 San Pedro Drive NE Suite 204 Albuquerque, NM 87110 505-293-2000	CWA has been a long-time contractor to the City of Albuquerque. They are extremely knowledgeable about water use and conservation techniques. They have a lot of experience with public agencies, non-profits and social issues. They are versatile, with resources to do market research, produce advertising campaigns, educational information, technical information (print, video, web) and special events.
Robert Reaves HydroPoint Data Systems, Inc. Phone: 512-491-7777	Tom Ash Landscape & Conservation Consultant Irvine Ranch Water District Special Projects 20 Monrovia Irvine, Ca. 92602 IRWD office: 949.453.5550 Home office: 714.389.9115 Email: <a href="mailto:tomh2o@cox.net">tomh2o@cox.net</a>	Tom knows water conservation well and has strong experience in monitoring customer satisfaction with irrigation technology.
Jenna Smith, Seattle Public Utilities Jill Hoyenga, Eugene Water & Electric Board	McKenzie-Mohr Associates 35 Castleton Court Fredericton, N.B., Canada E3B 6H3 <i>Workshops:</i> <a href="mailto:info@cbsm.com">info@cbsm.com</a> <i>General:</i> <a href="mailto:dmm@cbsm.com">dmm@cbsm.com</a>  506.455.5061 voice 506.455.0550 fax	McKenzie-Mohr Associates provides several services to assist organizations in designing effective environmental programs. Social Marketing expertise in surveys, program design, piloting, evaluation and advising. Book, <i>Fostering Social Marketing</i> .
Jenna Smith, Seattle Public Utilities	Social Marketing Services Nancy Lee	Nancy Lee has more than 20 years of professional marketing experience, with special expertise in Social Marketing, Marketing Research and Marketing Communications.
Robert Reaves HydroPoint Data Systems, Inc. Phone: 512-491-7777	Chris Brown Phone: 210-829-8374 Email: <a href="mailto:cbx3@aol.com">cbx3@aol.com</a>	Chris was formerly with the San Antonio Water System and has been doing private consulting for a number of years. He's highly respected here in Texas. He's done consulting for the Edwards Aquifer District and city of Waco.
Jill Hoyenga, Eugene Water & Electric Board	Marc Sanders Manager, Residential Sector Northwest Energy Efficiency Alliance phone: 503-827-8416 ext.245 <a href="http://www.nwalliance.org/">http://www.nwalliance.org/</a>	They are still marketing resource efficient washers under the Energy Star umbrella. They currently are managing a weather based irrigation program for ag as well. They are looking at saving water with an eye toward keeping water in the river for hydro and fish.



## References

<sup>1</sup> The Role of Market Transformation Strategies in Achieving a More Sustainable Energy Future. Steven Nadel and Linda Latham, March 1998. American Council for an Energy-Efficient Economy.

A Theory-based Approach to Market Transformation. Carl Blumstein, Seymour Goldstone and Loren Lutzenhiser.

<sup>2</sup> Fostering Sustainable Behavior, An Introduction to Community-Based Social Marketing. Doug McKenzie-Mohr and William Smith. New Society Publishers, 1999.

Social Marketing, Improving the Quality of Life, Second Edition. Philip Kotler, Ned Roberto, Nancy Lee.