



IBM Water Management Pains Report: Survey Findings and Recommendations

January 2009

Introduction

Today's water management systems are under enormous pressure to deliver a higher quality of service and improved risk management whilst reducing costs, meeting tighter compliance and security mandates, dealing with new uncertainties linked to climate change, and addressing aging and failing infrastructure. In order to better understand the major issues and challenges in water management operations, IBM conducted an online survey in the fourth quarter of 2008 to test awareness and perceptions among water management professionals and corporate sustainable leaders in the United States on the overall challenges they are facing today.

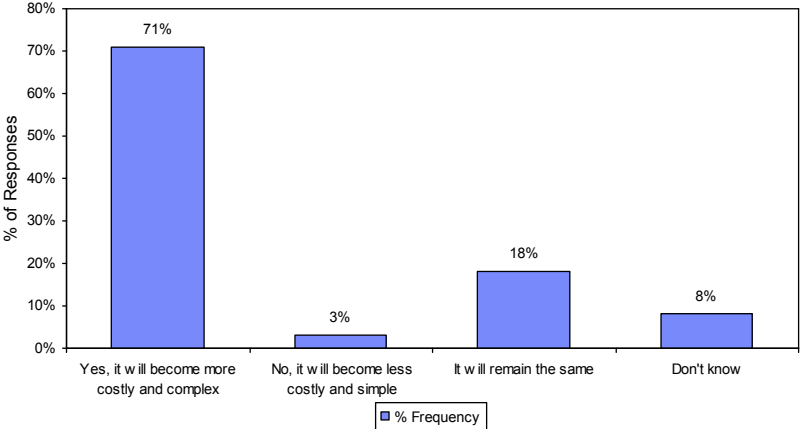
Based on the survey of 103 leaders from the US public and private sector, and follow-on conversations we have had around the world, it appears incontrovertibly true that water management is emerging as a vital piece in the sustainable growth strategy for individual enterprises and entire economies. It's equally true that the more advanced view of water management will demand significant long-term commitment, improved forms of internal and external collaboration, and smarter technology-enabled decision support infrastructures to deal with increasing threats and complexity ahead and help optimize the way we collectively manage and protect one of the planet's most precious natural resources.

Summary of Key Findings

Water Management Operations are Growing in Importance and Complexity

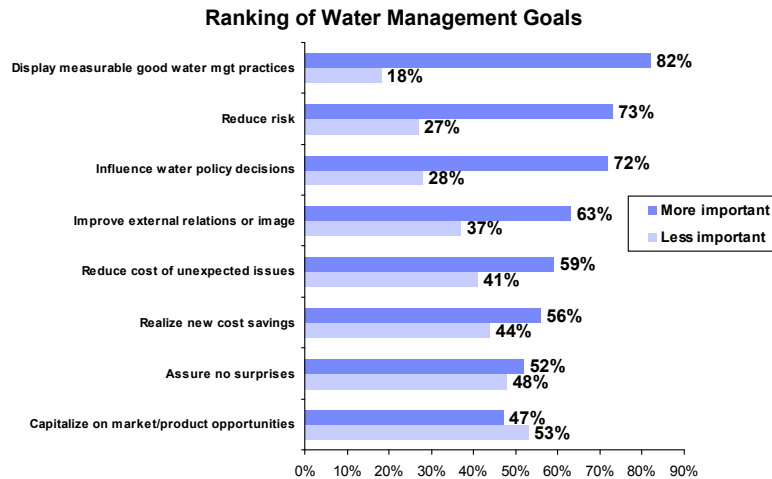
Respondents rated how important reliable and effective water management was to their operations with 80% indicating it was important or extremely important. Only 5% of the respondents rated water management as unimportant. Respondents also strongly indicated that water management challenges will continue to rise – more than 70% of the respondents indicated that costs and complexity has grown over the last five years and that they also expect that this trend will continue over the next five years.

Expectations of Water Management Becoming More Costly and Complex in the Next 5 Years



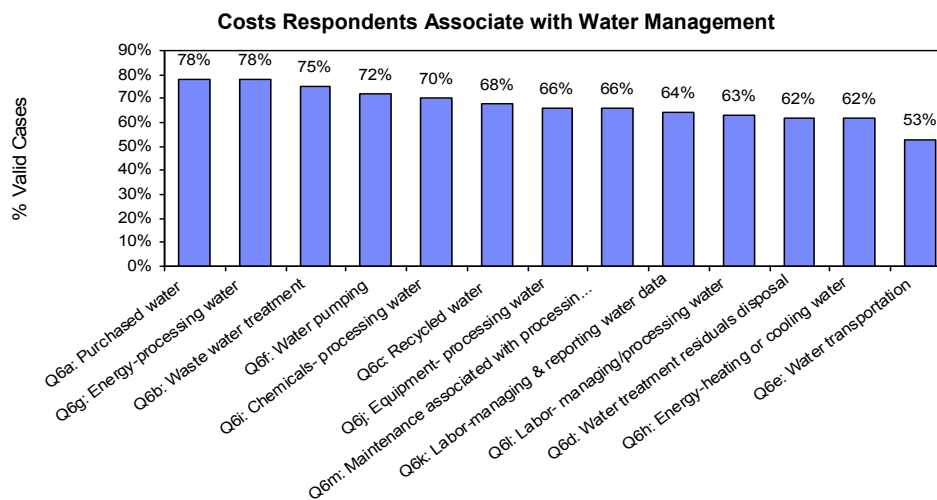
Performance and Risk Management Tools Are Instrumental and Lacking

Respondents indicated that displaying measurable results, reducing risk, influencing policy were most important water management goals. However, when asked if their company actually had a formal written set of principles, guidelines, and key performance indicators surprisingly 45% of the respondents said such policies and tools did not exist. Another 7% indicated they were not sure any such policies or tools existed suggesting that a lack of awareness could also be an issue for some management systems.



Top Cost Factors Include Related Energy Usage and Treatment Costs

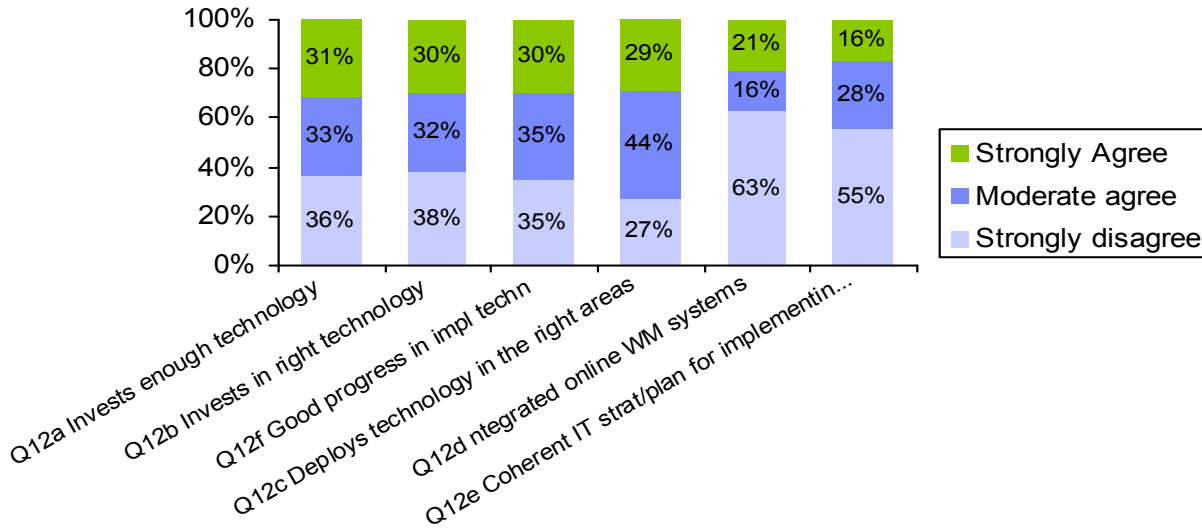
Respondents were asked a series of question to determine what costs they associate most with water management. Along with the direct cost of water, energy cost needed to transport and process water and water treatment costs were the leading cost associations. Future water availability, quality, and energy costs concerns were rated as the issues that will drive increased investment in water management programs moving forward.



Information Management Systems Lack Integration and Investment

The respondents were asked a series of questions to assess the state of their current information management practices and supporting technology infrastructures. Only 44% of the respondents indicated the right information was getting to the right person on time. Not surprisingly, nearly 80% of the respondents indicated the volume of information has increased over the last five years. However, it was revealing that nearly a third of the respondents suggested that their operations' ability collect and process information had not improved over the last five years indicating that technology adoption and progress has been sluggish. Furthermore, a staggering 63% said they lack the integrated online systems needed to deal with the ever increasing volumes of information and only about one third of the respondents felt strongly that their organizations invest enough in the right technologies.

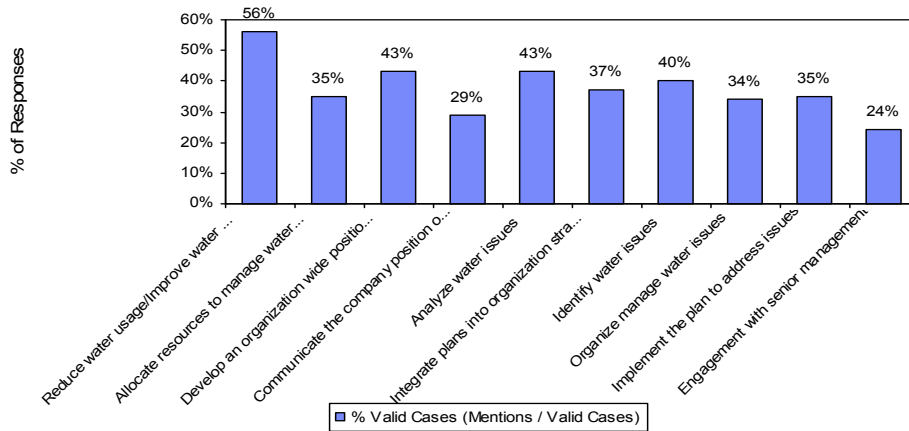
Perspectives of Current State of Water Management Technology Infrastructure



Water Management Systems Frequently Run in Isolation

Respondents were also surveyed to understand what degree water management had been integrated into their organizations' overall activities. There was large agreement among the respondents that water management was not tightly integrated across departments or part of an organization-wide position - only 44% of the respondents indicated their organization addressed water management issues with any central control and 25% indicated it was managed without any kind of organization-wide coordination. Respondents cited the most important places their organizations needed to drive improvement are in establishing overall water efficiency/conservation efforts, developing organization-wide positions on water management, and improving their overall ability to analyze water issues. Operations, legal, and community affairs were the functions most often cited as members of cross-functional teams responsible for addressing water management – however, surprisingly only 25% indicate direct involvement by CSR.

Areas of Water Management Requiring the Most Improvement



Conclusions and Recommendations

Water managers everywhere are quickly approaching crisis situations if they are not there already. Change must be made; the choices left to the stakeholders are when and how. If they wait too long to act or do not act decisively enough, their systems could “hit the wall” – in other words, be unable to continue on the current path – and then, require immediate and major forced restructuring. This is an alarming, but very real prospect. Increasing complexity, economic constraints, societal expectations and norms, the lack of alignment in incentives, short-term thinking, and the inability to access, analyze, and share massive volumes of information in a timely manner inhibit the willingness and ability of water management systems to become more cost effective and cope with increasing water-related socioeconomic risk. If the willingness and ability to change cannot be fused, we believe the result will be a deteriorating situation for virtually all stakeholders. We have several general interrelated recommendations to help enterprise and government agencies begin this journey.

Communicate the Urgency for Addressing Water Management Issues

Climate change, carbon management, and energy management are commonly referred to as top global issues, but water management is just as critical and is directly correlated to the aforementioned challenges. In order to drive the level of change and integration required to better manage water related risks, we suggest that managers begin by engaging and educating all part of the organization to better understand the related economic and societal impact.

Establish Specific Measurements and Strategic Outcomes

In order to drive collaboration and innovation across the organization and move from a state characterized by ad-hoc, fragmented, and limited coordination, we suggest that managers begin by developing an overarching protocol to guide efforts. The protocol should include definition of key performance indicators tailored to your organization’s operational environment, industry, and business.

Improve Interoperability and Maturity of Water Information Infrastructure

The majority of respondents in this survey, as well as many other water management professionals IBM has interviewed recently, indicate that the information they need is currently managed across a wide variety of systems and tools. The lack of information integration invites many types of compliance and decision-support risks because of unreliable data inputs, missing data inputs, overly time-consuming data collection, and a lack of sophistication in analytical tools. We recommend all organizations develop a strategic roadmap that enables them to maximize return on their technology investment and implement open standards to improve interoperability across internal systems and external systems.

Drive Convergence of Water, Energy, and Carbon Management Systems

Management of water resources and related costs is spread among a number of departments. Better coordination is needed to ensure effective management. All future water-management investments and decisions must take into account their energy and greenhouse-gas implications, with a focus on identifying actions that can improve water efficiency, reduce associated energy use and emissions, and avoid otherwise wasted water treatment expenses.

Enable Collaborative Governance Models to Support Strategic Innovation

One of the biggest keys to innovation in water management is collaboration. Improved collaboration relies on defining and enabling effective governance mechanisms. Be careful not to try to “boil the ocean” by defining governance for everything in water management all at one time. Instead, begin by focusing on issues that will make a critical difference most immediately. Identify the components that are directly related to the water management strategy and those components that are most critical to change now. Improve governance of these hot components first. Once you have established good governance practices for each hot component, begin planning for continuous improvement. Ensure that your water management organization needs to review performance and outcome metrics and clarify desired behaviors on a continual basis - then improve the provision of information required for decision making, including governance tools such as models, dashboards and standards.

Acknowledgments

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About IBM Advanced Water Management

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