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The Advantage of Sourcing Combined Technologies



There is a reason certain idioms endure. It is because the wisdom contained within it consistently applies to many different situations and remains relatively unchanged over time.

The idiom “Too many cooks spoil the broth,” attributed to originating in the 16th century, is defined failure because of too many opinions on how to do something.

While we’re supposedly not cooking up broth per se in the Water Treatment profession, the underlying point rings true today for designing and building municipal wastewater treatment processes.

It All Starts with Project Fulfillment

It is increasingly common for municipal WWTP construction projects to move beyond a traditional Design-Bid-Build model to efficiently and effectively renovate or create a brand new treatment facility. On the heels of the American Recovery and Reinvestment Act (ARRA) in 2009, one result was the impetus to move quickly and efficiently implementing infrastructure projects. The Design-Build model really began to take off. In Civil & Structural Engineering Magazine, the article [Design-Build for Water and Wastewater](#), the benefits of going to this new project fulfillment model allow for a more agile design process. By combining engineering and construction disciplines along with project owners, Design-Build minimizes unnecessary layers and overcomes bottlenecks in linear timing.

In the 10 years that have elapsed since the ARRA was passed, the idea of alternate project delivery has expanded. This expansion has also included a rapid increase in the entrance of private investment to continue to drive growth in the water sector and to help offset municipalities’ resource stress. Private investment provides a pivotal addition for accomplishing the needed infrastructure improvements in the water treatment sector without needing to raise public funds.

Status-Quo is Not Always the Best

The idea behind Design-Build projects is primarily to minimize unnecessary hurdles that can slow or complicate an already complex

operation. The focus on vetting and qualifying the design team as a whole is the critical due-diligence that opens the door to improved project management. As the last decade in the water industry has demonstrated, Design-Build, along with other new project delivery methods has been useful in making significant and measurable improvements in the speed and quality of advancing improved infrastructure.

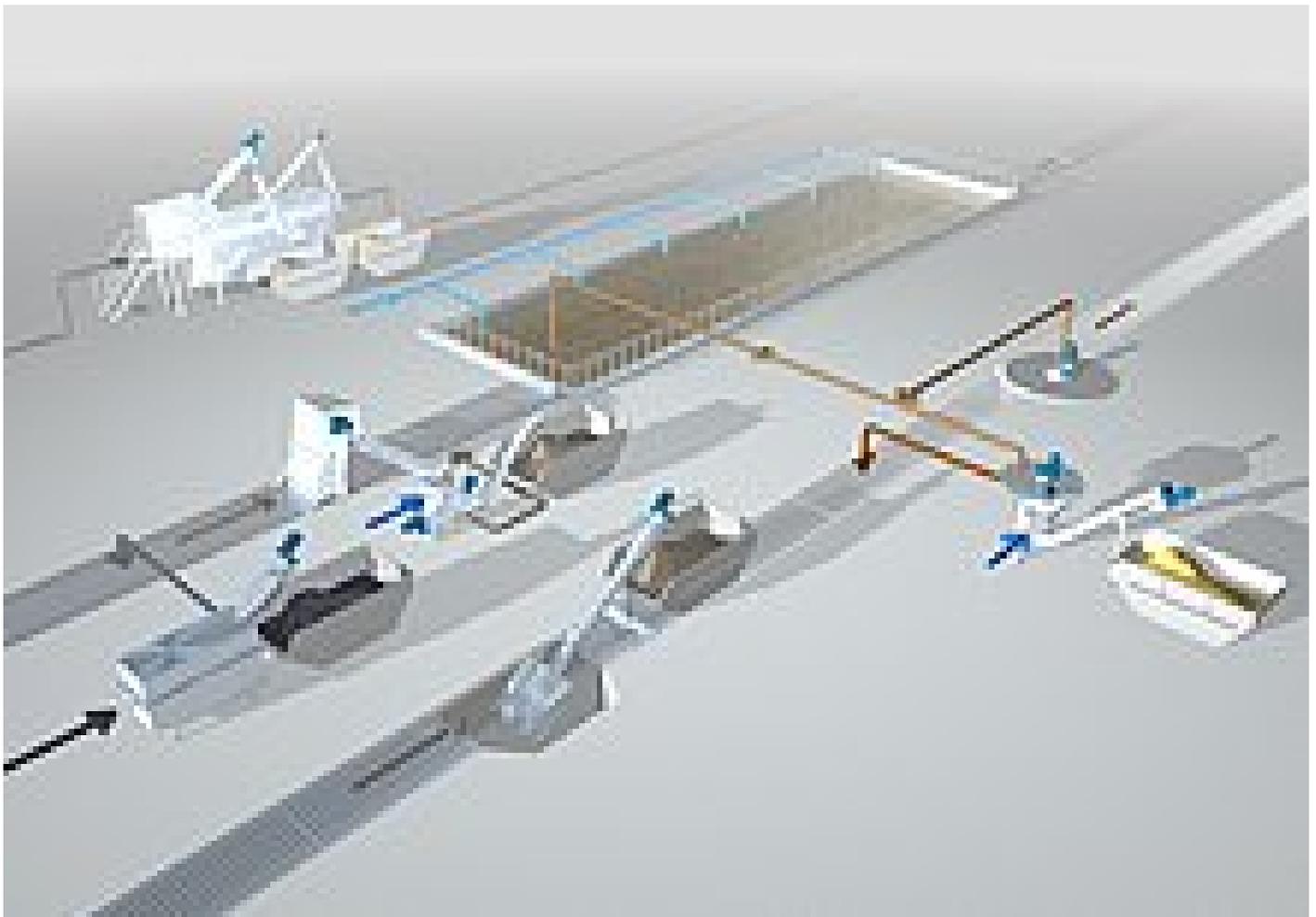
This same, open approach should also be considered for the actual technology being integrated into new Wastewater Treatment Facility designs. Matching-up technologies within a specific treatment process objective provides an optimized and smooth functioning treatment step. Interestingly enough, especially in a Design-Bid-Build environment, the idea of combining components under the responsibility of an adequately vetted manufacturer is resisted. Viewing equipment sourcing holistically is different from what is commonly known as sole-source procurement. Instead, by applying the same principles of selecting Design-Build teams to these new forms of project fulfillment, this approach allows the vetting of the manufacturer's expertise and experience, thus enabling the ability to provide complete solutions. Increasing performance requirements underscore this approach.

A good example illustrating how a straight-forward project can get complicated really quickly was explored in the article [FrankenSpec - How Projects Can Go Awry](#):

"A few years back, our company had the opportunity to work closely with an engineering firm to assist with the design of the headworks portion of a substantial plant upgrade. Our extensive experience with all the major components that made up the working parts of the screening and grit design made it possible for us to provide targeted support resulting in a holistic, well-functioning design.

Additionally, we could develop specifications for the project that would accurately describe the performance expectations as well as the essential machine descriptions that would assure that the correct technologies were employed. As the design neared completion and was advertised for tender, the specifications came under tremendous fire from late-arriving competing technologies that wanted to participate in various components of the plan.

Under pressure, the design engineering firm was instructed to "open up" the specifications. The logic used for this decision was based on the competing vendor's assertion that they did not have all of the components and felt that this was the reason that they were not allowed to participate. Assurances were made that their offering met the intent of the design. The tragic culmination of this project was the selection of mismatched technologies that did not function well together. This resulted in extreme embarrassment to the engineering firm, loss of time and money to the construction group, as well as the plant operations having to make do with a substandard installation."



Systems concept: centralized mechanical pre-treatment

Partnering with the Designer

A wastewater treatment plant is commonly divided up into categories of treatment, including headworks, clarification, biological, sludge,

tertiary, reuse, etc. The first step in determining a technology partner is to investigate specific categories the manufacturer focuses on. An ideal question would be: What is their expertise and experience in that given category of treatment? An interesting exercise would be to conduct a Google search using the phrase “[name of company] patents.”

Solid qualifiers should be expertise as well as the ability to produce and support the technology. A company with a solid record of research and development is a good indication they have spent the time to understand the application and surrounding processes. Additionally, it is essential for the company being considered to have the ability to produce technology reliably. The more directly the manufacturing is handled, the less vulnerable the supply chain becomes. It is one thing to know how something works; however, the ability to deliver is essential to the success of a specific project.

In the article [Considering the Manufacturer as a Strategic Success Partner](#), it was pointed out that, “The basic premise of a successful strategy is rooted in knowledge-based solutions and long-term support.” The article went on to say, “A competent, qualified manufacturing partner has control of key aspects of the technical solution, starting with research and development, design and sizing, manufacturing, prototype testing, and market implementation. Ideally, the company will service the equipment and solution throughout its entire life-cycle.” As with any decision that has long-term consequences, a view should be kept on the full life cycle of that solution.

Holistic Arrangement Simplifies Responsibility

There is a place for segmenting in complex processes. Vetting and selecting a competent technology partner with the capability to assemble individual technologies to produce a defined performance result simplifies and speeds up the process. By looking at the performance and not just the product, accountability is also simplified.

As newer project fulfillment strategies emerge (Design Build, Design Build Operate, Design Build Operate Finance, Public-Private Partnership), technology partnering with a design and construction team makes solid business sense. Embracing a complete solution with shared performance risks and including a technology partner on your side from the very onset of the project, is both valuable and wise.

Related Solutions:

- [HUBER Solutions for Centralized Wastewater Treatment](#)
- [HUBER Solutions for Mechanical Pre-Treatment](#)

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