

# PROGRESS<sup>®</sup> SAVVION<sup>®</sup> ENERGY DEMAND RESPONSE

## INTRODUCTION

Energy demand is growing worldwide and so are energy prices. Supply is not keeping up with the increase in demand, and reserve margins are alarmingly low. This results in considerable pressure on utilities and system operators to focus on real-time balancing of supply and demand to optimize their operations.

Some utilities have had to resort to rolling blackouts and brownouts as an unpopular, but necessary, strategy to make sure their electric transmission grids do not collapse during the peak demand periods. Some providers also offer consumers incentives like a 20% reduction in their rates if their consumption is 20% lower than the same period during the previous year. However, these solutions lack real-time agility, complicate the billing process, alienate customers and are, ultimately, very inefficient in delivering the desired result of capacity leveling.

With regulatory commissions moving towards smart meters that monitor energy usage and provide two-way communication between provider and consumer, the goal is to operationalize their demand response strategy. Demand response (DR) allows consumers to voluntarily reduce their energy consumption during peak demand

## HIGHLIGHTS

*The demand response solution from UISOL, built on Progress<sup>®</sup> Savvion<sup>®</sup> BPM, provides a very cost-effective solution. It can be deployed in a short time and provides enterprise-class reliability, availability and performance. It delivers high ROI and is standards-based and extensible to ensure low total cost of ownership.*

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periods in return for financial incentives. It is like bidding in real-time to empower the consumer to reduce their consumption in return for financial benefit.

This is similar to optional high-speed toll lanes on a highway where you can choose to pay a premium for access during the peak hours. This capacity management strategy is also similar to car pool lanes where there is an incentive to drive in a shared car to be eligible to use the fast lane and to manage road capacity.

DR is an effective means of managing peak demand and price volatility, in addition to ensuring that the grids do not collapse during the peak hours. The key benefits of DR include:

- > Cost savings by service providers for peak-time generation during high demands
- > Reduction in price volatility by introducing price elasticity (decrease in demand when price is higher and vice versa) in the real-time ancillary service market
- > Improved grid reliability and operability

## CHALLENGES

A number of studies have validated that DR results in improved energy management and reduced prices. Despite the proven value of this measure, it has not been widely adopted by utility and service operators, mainly because a DR solution also presents a multitude of process and operational challenges.

Protocols and processes have been established for enrolling customers in these programs and managing how to communicate with them in an emergency. However, these systems are often highly manual and very cumbersome. Delays in providing information to customers on an impending shortage of energy negatively impact control of consumption. Instead, in the case of an emergency, operators still need to implement involuntary load balancing and brownouts.

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Another hurdle is managing the real-time bidding. This requires a sophisticated system for automating this process, including communication, accurate billing, and providing confirmation mechanisms.

In addition to these problems, there is a huge challenge simply managing and tracking the sheer volume of transactions between customers and service providers. Hundreds of thousands of transactions generated each day of peak season result in significant hurdles in billing, accounting, aggregation of discounts, etc. Millions of real-time event instances generated per hour can prove to be overwhelming.

Smart meters with two-way communication are just one part of the solution. They generate the required events, but the challenge still remains to intelligently process these events, define business rules for each one, and provide visibility to operations managers, who can then actually act on the massive data generated. Additionally, all of this needs to be captured through a highly scalable and reliable system.

The last, but not the least, challenging problem is attracting and enrolling residential users to opt-in for this program. There not only needs to be an effective process to get consumers to sign up for the plan, but the process needs to be standardized, well-understood and well-documented for DR to be successful.

## THE SOLUTION

With these problems and challenges in mind, Utility Integration Solutions, Inc., ([www.UISOL.com](http://www.UISOL.com))—a leading DR solution company—has developed its Demand Response Business Network (DRBizNet) solution on top of the industry-leading Progress® Savvion® Business Process Management (BPM) suite to manage DR in real-time. UISOL DRBizNet software enables market operators and utilities to efficiently, reliably, and securely manage DR processes end-to end, by:

- > Defining and managing custom DR programs for any market
- > Managing customer sign-up and program registration processes

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- > Gaining real-time visibility into available DR resources and interruptible demand
  - > Automatically notifying customers, aggregators, and distribution/grid operators
  - > Automatically triggering any type of intelligent load control devices over any network
  - > Tracking event participation and actual demand reduction for settlement
  - > Seamlessly interfacing with other corporate applications

Progress Savvion BPM provides the platform to model, simulate, optimize and execute the DR processes. Its integration framework allows tying disparate systems into a single end-to-end process via a wide range of adapters. Progress Savvion BPM also provides rules management and events correlation to manage the business rules governing the DR process. Service operators can define the business metrics that are important to them and monitor the whole DR process and its performance based on performance metrics through user dashboards. This system provides unprecedented visibility into the process. To meet regulatory requirements the system also provides a full audit trail of each user activity and system event.

DRBizNet can be deployed as a single software application to provide the functionality of a DR exchange. It also can be utilized as a highly automated and flexible network of collaborative applications and intelligent agents that enable efficient DR programs by leveraging modern, distributed business process integration technologies and open standards.

In a DR business network, many entities such as the independent system operator (ISO), DR service providers and aggregators, distribution utilities, metering agents, settlement agents, billing agents and customers collaborate in real-time to efficiently execute demand response business processes. DRBizNet provides a foundation for this type of DR value network.

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## CONCLUSION

Demand response can provide a solution to current energy problems, but implementing a workable DR process is not without challenges in itself. Visibility, flexibility and reliability are crucial for a DR process solution. The DR solution from UISOL built on Progress Savvion BPM can provide a cost-effective solution for the challenges. Such a solution can be deployed in a short period of time and provides enterprise-class reliability, availability and performance.

The solution delivers high ROI and is standard-based and extensible to ensure low total cost of ownership.

To find out how much you can save with BPM, visit: [web.progress.com/roi-calculator/index.html](http://web.progress.com/roi-calculator/index.html) and use our ROI calculator.

For a free 30 day evaluation of Progress® Savvion® Process Modeler download, visit: [secure.progress.com/login/savvion-landing/downloads/savvion-process-modeler-eval.html](http://secure.progress.com/login/savvion-landing/downloads/savvion-process-modeler-eval.html)

## WHY PROGRESS SAVVION?

As the BPM trailblazer, Progress Savvion moves enterprises beyond ordinary BPM with proven business-critical software, solutions, and services that make organizations more competitive and cost-efficient.

Progress Savvion is an all-in-one, streamlined BPM solution for continuous business process improvement, enabling business users and IT to collaboratively deploy process improvement initiatives in as few as 30 days while delivering a return on investment as high as 300 percent. We provide business users and business analysts with easy-to-use, yet very powerful continuous improvement tools. Line-of-business managers can now responsively manage their operations, receiving continuous feedback on performance and recommended corrective actions to optimize their operations.

Progress Savvion BPM also provides the unique capability of establishing a foundation for process optimization with an integrated path to operational responsiveness through the Progress® Responsive Process

Management™ (RPM) suite. Leveraging leading Progress business event processing (BEP) and business rules management (BRM) capabilities, enterprises can further automate their processes through smarter decision management. Together, Progress RPM™ takes visibility and control beyond BPM to deliver an intelligent business operation (IBO) solution that allows organizations to sense and respond to changing conditions as they occur. The enhanced capabilities of Progress RPM mean that businesses can now analyze **what is about to happen** to proactively capitalize on opportunities, driving enhanced profitability and reducing risk.

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## PROGRESS SOFTWARE

Progress Software Corporation (NASDAQ: PRGS) is a global software company that enables enterprises to be operationally responsive to changing conditions and customer interactions as they occur. Our goal is to enable our customers to capitalize on new opportunities, drive greater efficiencies, and reduce risk. Progress offers a comprehensive portfolio of best-in-class infrastructure software spanning event-driven visibility and real-time response, open integration, data access and integration, and application development and management—all supporting on-premises and SaaS/cloud deployments. Progress maximizes the benefits of operational responsiveness while minimizing IT complexity and total cost of ownership.

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