The Path to Intelligent, Integrated Utilities

From data to decisions: adopting a holistic, smarter approach to support sustainable services, products and assets

The value of using integrated systems to enable seamless data flow is well-proven. Now, utilities are asking how the systems can go further to intelligently support proactive decision-making around business planning, to identify bottlenecks, and orchestrate the actions required.

This executive summary examines how the utility sector can look forward with intelligent systems that leverage technology, automation, AI, machine learning and more.

1. A changing focus: business intelligence

Over the last five years the utility sector has been acutely aware of the need to eliminate data silos and optimize data flow by bringing systems together. Many are already planning, or have already embraced, integrated systems using APIs, or a single industry-honed solution such as IFS, recognizing the agility conferred with a composable (flexible, component based) enterprise approach and digital transformation.

Recent global events mean the focus has shifted. Since 2022, global supply chain issues coupled with an unprecedented talent shortage sees utilities forced to compete for a finite supply of resources. Both the physical assets and the skilled workforce they need to deploy, maintain and operate them are under threat.

But organizations need more than just integrated systems. Instead, **they must look to create intelligent systems that can help them to look forward, understand and accurately forecast potential energy demand**. The reactive scheduled plan of their operations must move to a predictive approach – one that is capable of modeling often complex 'what -if' scenarios. Companies need the capability to project requirements such as contractor utilization, resource and skills required to manage the workload. Distributed energy resources (DERs), microgrids and behind-the-meter generation mean revenues are declining. Organizations need accurate business intelligence to decide which new service offerings can maintain profitability while sustaining statutory supply obligations. Estimating for demand planning is equally challenging, with new usage patterns and consumption demographics resulting from changes such as work-from-home and electric vehicle charging – both passenger vehicles and medium and heavy-duty commercial vehicles.

2. Operational and supply chain intelligence

The industry challenges demand tightly integrated systems that can deliver not only operational intelligence, but also supply chain intelligence. In the current global supply shortage, understanding the status, availability, lead time and whereabouts of stock and inventory is business critical, both for maintenance and investment planning. For example, provisioning a new substation or bringing renewables onto the grid requires sourcing myriad component assets, and also provisioning the contractors and resources for construction.

The ability to orchestrate highly complex decisions and timings around procurement, finance, logistics and planning requires artificial intelligence (AI) and machine-learning-enabled technology to deliver an intelligent integrated system.

3. Predictive solutions

Clearly, embracing integrated systems with embedded automation and AI provides the potential to generate and leverage predictive solutions - for example moving from scheduled and reactive to predictive maintenance. But knowing that an asset is predicted to fail in three months creates further fundamental questions: should it be repaired, or completely replaced? And, if repaired, is the workforce appropriately skilled and available? And is the inventory and parts available to undertake the work? If an asset is to be replaced, should a renewable asset be substituted? And can it meet the expected demand profile?

In the face of microgrids and self-generation, the utility business model must also evolve. Services, for example installing and maintaining electric vehicle (EV) charging infrastructure, present a valuable new revenue stream, offering the potential to maintain profitability and provide capital to invest back into the grid. Yet to deliver service contracts requires a dedicated field service management system that will allow the utility to completely transform.

4. Complex variables need a holistic system

Such complex sector variables demand a solution that not only addresses enterprise asset management, predictive maintenance and workforce management; the organization also needs a schedule optimization engine that is tied into its HR resourcing, inventory management and supply chain and vendor management, and service management.

Historically, some utility players have resorted to developing bespoke solutions in-house to address different elements of the jigsaw. Others have opted for traditional monolithic ERP solutions. **However, faced with the need to rapidly transition their business model, both are now recognizing the lack of a holistic approach leaves too many gaps** – be it managing workforce skills, managing service, optimizing supply chain or another component.

Learn more

To find out more about the ways connected assets, projects, and service with IFS Cloud empowers utility companies to stay ahead of the competition.

Contact us today

An intelligent approach: Stockholm Exergie

Stockholm Exergie, Stockholm's energy company, uses IFS Cloud as the intelligent solution to support systems across finance, supply chain, HR, project management, asset management, and maintenance, also leveraging IFS Cloud EAM to support asset design and engineering. The system:

- Contributes to sustainability goals with precise asset management capabilities
- Optimizes business analytics and informs strategic business decisions by consolidating data across the operation and beyond
- Supports introduction of new products and services to reposition the company as a primary energy partner

Conclusion

Changes in legislation and consumer demand have put sustainability and diversification into sharp focus.

Organizations are keen to transform their business models to achieve best-in-class customer service, ensure smart asset management, and continually optimize a connected workforce. As a composable ERP, EAM and field service management solution provider, IFS is actively working with a utility customer advisory board to shape and create the holistic integrated intelligent platform that will support the 'utility of the future' business model.