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WHITE PAPER

# Transformational technologies and the future of Utilities

How digital will reshape the industry

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## Executive summary: The challenges and opportunities ahead for Utilities

Around the world, digital transformation of the electricity, gas and water sectors is underway. Companies are motivated by opportunities to drive service and operational improvements, from automating business processes and demonstrating exceptional transparency to enabling new communication channels for customers.

While many organizations depend on transformational technologies for their success, just how powerful a force digital transformation will be remains to be seen. Much will depend on the extent to which Utility companies embrace these technologies and when.

To better understand the industry's approach to digital transformation, this white paper includes results from surveys conducted with Utility companies in deregulated markets around the world, highlighting Australia and the United Kingdom as examples.[1] The results show that, regardless of geography, the sector is optimistic about the impact that digital innovation promises to have on competitive positioning for companies and value creation for customers.

However, despite the expected benefits, the road to transformation is not without challenges. Companies have work ahead of them to create a comprehensive digital strategy for their businesses, facing a tough environment in which investment is hard-won and key policy and regulatory frameworks are in flux. In addition, many Utilities companies continue to grapple with inflexible legacy systems and rigid organizational structures that are not suited to iterative change.

Whether the digital transformation journey is abrupt and disruptive or methodical and incremental, Utilities companies have a bright digital future—if they are ready to reach out and grasp it.

1 The Which-50 Digital Intelligence Unit and OpenText, *Digital Transformation in the Australian Utilities Sector,* 2018
UtilityWeek and OpenText, *Understanding Digital Transformation in UK Utilities,* 2018

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**"If digital transformation is going to happen in this industry, it will happen in the next five years, not the next 15, and companies that have been too slow will be left behind."**

Charles Grey
Head of technology
Hudson Energy

## Digital transformation: Have we reached a tipping point?

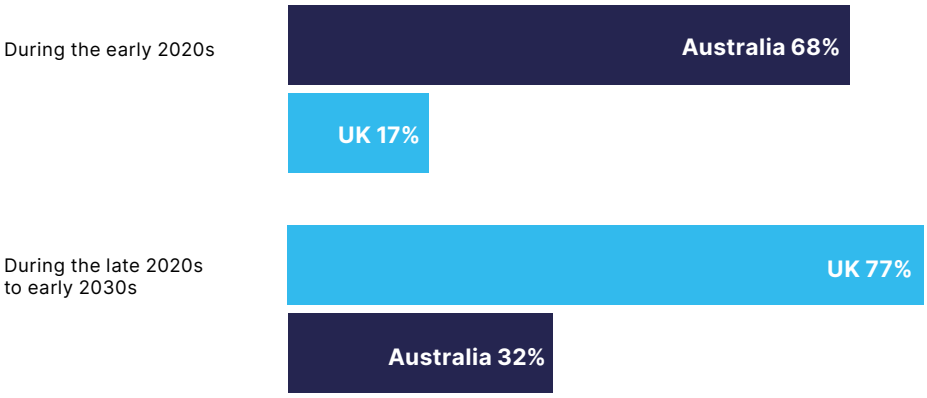
The Utility industry has changed very little over the past 100 years. But, suddenly, change is all around as companies are forced to deal with the impact of deregulation, managing distributed energy resources, as well as the need for enhanced customer engagement and other market disruptions.

Digital transformation promises to provide solutions to Utilities organizations grappling with these challenges and, in general, companies seem hopeful. Yet, the industry struggles to embrace a radical view of the future. While some segments anticipate faster growth and perceive the current dynamics as a tipping point, others foresee change continuing at a pace consistent with the history of the industry.

While this paper highlights survey findings showing high expectations for digital transformation to drive radical change in Utilities, these tend to be longer term views. Respondents were largely reluctant to suggest that sweeping change is at the doorstep.

However, just how quickly transformation is expected to take place may depend on location. For example, the majority of Australian Utility companies surveyed predict that digital disruption will happen sooner rather than later, while a small minority of UK Utility companies hold that same view.

**When do you expect your business to be radically transformed by digital technologies?**

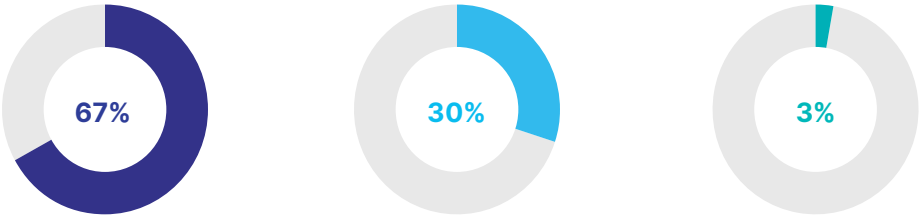



Some believe companies that take the longer view may find themselves at a disadvantage.

"It really surprises me that so many respondents pushed out their horizon for radical change to the early 2030s," said Charles Grey, head of technology at Just Energy's UK subsidiary Hudson Energy. "If digital transformation is going to happen in this industry, it will happen in the next five years, not the next 15, and companies that have been too slow will be left behind."

Respondents' opinions about when digital transformation will happen depend in part on how much they believe innovative technologies will change their organizational structures.

**Do you expect your organizational structure to alter as a result of digital transformation before 2025?**




Yes, digital technologies will have some impact on organizational structure, will be driven by other factors, too

Yes, digital technologies will drive significant changes in organizational structure

Digital technologies will have no impact on organizational structure

James Houlton, chief technology officer at UK gas distributor Cadent, maintains that the 30 percent group should be larger. He argues that digital technologies will cause a rebalancing of workforce capability away from low-skilled transactional roles and towards highly skilled jobs that require significant technical knowledge. Digital technologies will drive a "decentralization" of IT functions, Houlton added, placing developed capabilities closer to live operations, and that digital uptake will influence wider industry supply chains and contracting structures.

"For example, we currently outsource a lot of our HR requirements, like payroll, as well as things like invoicing and purchase order processing," said Houlton. "But we are working to build automation and machine learning into our own enterprise systems and part of the strategy behind this is to remove the need for such contracts."

**"We aim to be the first to be second."**

CIO
US Utility

Of course, the pace of digital change will also depend on Utilities' appetite for adopting new technologies. 73 percent of Utility respondents to one survey identified themselves as "fast followers" when it comes to adopting transformative technologies, versus "pioneers" or "slow followers," who require technology to be mainstream before considering investment. "We aim to be the first to be second," is how one CIO of a U.S.-based utility described the company strategy.

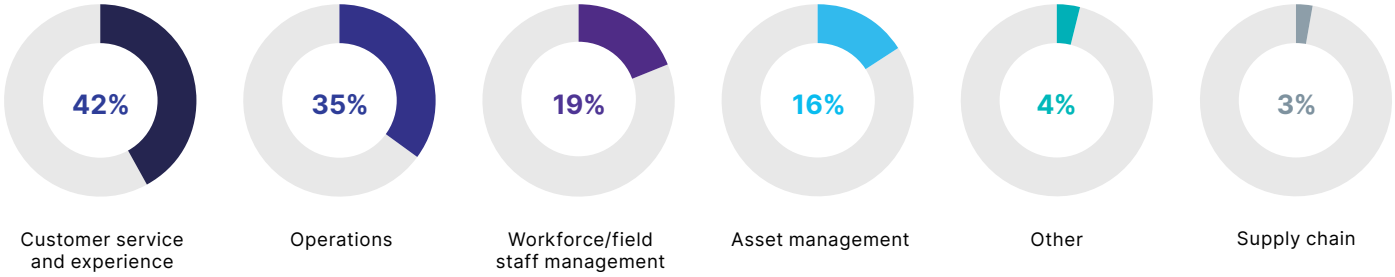
But some feel respondents' self-assessment as "fast followers" is overly optimistic. "There are some tremendously well-run organizations in this sector, but to be a fast follower you have to fundamentally understand the DNA of those you are following, and that is difficult," said Greg Jackson, chief executive of challenger supplier Octopus Energy in the UK. "You can't just copy the outside results."

Among respondents, an overwhelming majority said dramatic cultural changes will be required in their organizations to accommodate digital transformation, and none said they felt their current culture is up to the challenge.

## Expected business benefits

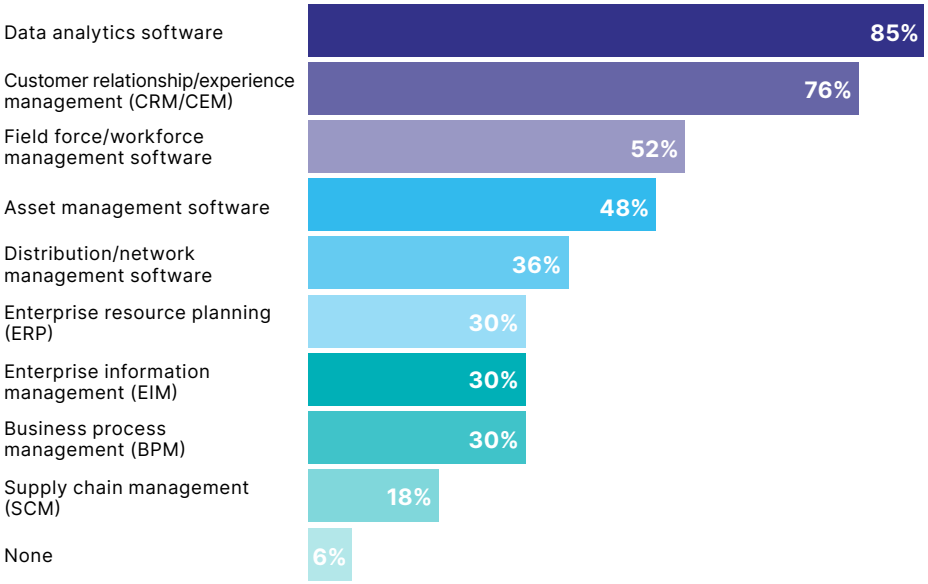
It came as little surprise that survey respondents identified customer service as the business function most likely to be transformed by digital technology in the coming years. This response was likely influenced by the large number of Utility retailers among the respondents, whose success is dependent upon providing a high level of customer service.

**What is the business area most ripe for digital transformation?**




Operations and asset management were also highlighted by respondents as areas that digital transformation is expected to impact. Indeed, leveraging technology to achieve what has come to be known as operational excellence is a goal for companies in many industries around the globe today. That goal is typically defined as integrating and optimizing the processes and data that run the business. The path to get there involves reducing costs and improving efficiency, balancing supply and demand, as well as enhancing customer experience. Many organizations expect that applying innovative technology to tackle the challenges posed by operations and asset management will unlock new efficiencies and drive success.

**By 2023, do you expect your organization will invest significantly in any of the following software solutions to support its digital transformation strategy?**




Respondents identified data analytics as the technology their organizations would significantly invest in over the next five years, along with cybersecurity, cloud computing, IoT and customer facing systems.

However, for some, this focus on data analytics is too strong, and they believe Utilities would be better off investing in improving their core IT systems before embarking on more ambitious data analytics projects.

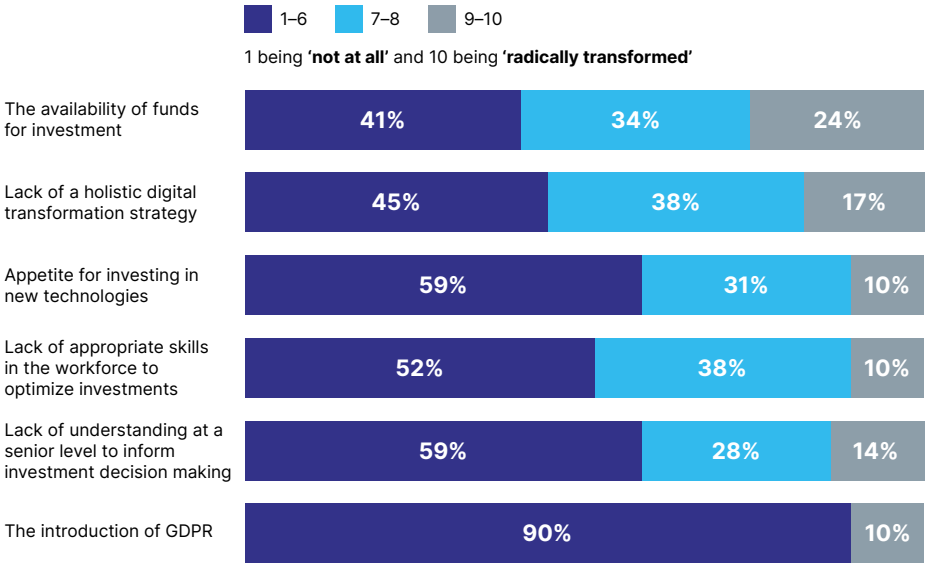
“Data analytics, predictive analytics and alerts. I think that is at the far edge of the customer journey,” said Brian Ebdon, director of retail operations at Water Plus in the UK. “There’s a lot more that almost all businesses could do in terms of improving their core platform before they go about trying to leverage predictive analytics or try to delight customers in a different digitally led way.”

Greg Jackson of Octopus Energy agreed. “Data is a beguiling area. The more data you get, and the more you get insights from it, the more you want. And it’s certainly true that modern IT systems are throwing up so much data nowadays, and storing it, that it’s easy to feel overwhelmed by the idea that you are sitting on stacks of data and not getting enough value out of it.”

## Barriers and risks

Utility respondents cited several barriers that could impact their ability to achieve digital transformation, with the availability of funds and a lack of a holistic digital transformation strategy as top concerns.

**How highly would you rate the following as barriers to achieving the digital transformation you want to see in your business?**




It is worth noting that there were differing opinions between asset-heavy Utilities and retail-focused organizations on how high of a barrier the struggle for investment is, with just 12 percent of the former citing investment as a critical barrier.

Ebdon said securing a stronger combined force for investment in IT and digital infrastructure was a key driver behind the joint venture between Severn Trent and United Utilities, which created the UK organization.

"Creating a fantastic self-service experience is expensive," said Ebdon. "It is definitely worth it in terms of business case, but it is expensive and bringing our two businesses together was one way to ensure we would be able to do that in the way we both wanted."

Some interpreted the investment challenge as a particularly vexing issue for larger incumbent organizations with inflexible legacy IT systems.

"A lot of the ability to transform in the sector—and elsewhere—boils down to legacy systems where, commonly, everything is dependent on everything else and it's difficult to efficiently plug in multiple sets of change at the same time," said Octopus Energy's Jackson. This explains why smaller suppliers, that tend to have more modern, cloud-based systems are notably agile when it comes to turning on their technology landscape and bringing digitally enabled products and services to market, he added.

Others believe that companies large and small should not view investment as a hurdle to innovation at all.

"There is no reasonable reason why investment should be difficult to get for digital transformation," said Hudson Energy's Grey. "You just have to work on your business case. In all my conversations with peers in Utilities organizations, everyone is worrying about and talking about how they do this digital transformation thing. I'm surprised therefore that so many people are finding digital investment difficult to secure."

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## Conclusion: A bright digital future

The digital transformation process, whether fast or slow, will have far-reaching implications for Utilities around the world.

The adoption of digital technologies will drive a rebalancing of workforce skills towards higher skilled and technology-dependent roles and away from low-skilled transactional work. Other structural impacts on Utilities organizations could include decentralizing IT functions and shifting outsourcing and contracting arrangements.

To successfully navigate such shifts without negatively impacting morale, brand or compliance, Utilities need to ensure there is executive understanding of the implications of digital transformation and a clear line of ownership for managing digital change. They also need to demonstrate a strong business case to build confidence that the funds required for transformation will be forthcoming.

As many of the opinions represented in the surveys referenced in this paper show, the potential for Utilities to live up to their digital ambitions is high, and the outlook is bright.

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