The 2019 Guide to the Ultimate Utility Customer Information System

A Technology Roadmap for Reaching Your Utility's Customer Experience Goals

vertexone™

Introduction

For utilities, serving your customers goes beyond supplying the service they've contracted. It means providing those customers simple and frictionless interactions with your utility. And given today's connected online world, customer expectations for even basic interactions with their providers are high. It's not just customers who expect excellent interaction, though. Regulators do, too, and they are using standards of customer service as a factor in rate cases.

Online retailers have made consumers accustomed to seamless online experiences. They expect intuitive interfaces to place orders for products, request services, track their shipments, view service providers' arrival times, view and pay their invoices, and, yes, tell all their friends about a good—or a bad—experience. So why shouldn't they expect to do the same with their utility providers?

Often, though, a utility's customer information systems (CIS) have lifespans that go well beyond a decade, sometimes even two. Because of this, keeping up with changes in technology and customer expectations doesn't—and can't—mean implementing a whole new system every few years. While some utilities are indeed ready for a CIS replacement today, others have to take incremental steps to improve the systems they currently have.

Every utility out there has a unique path in its journey to provide the ultimate in customer experiences, and each is at a different stage in that journey. Yours is no different. But because it can be a long journey, you can't just think about what changes you need to make today. You need to have a plan for the future, a roadmap to achieve that ultimate goal. Because that goal may be years away, your plan needs to be flexible, to adjust to changing times, to new technologies, new capabilities, and new expectations—so you can react quickly to better meet your customers' needs.

This guide provides you a framework for defining your own unique roadmap. By following it, we think you'll be better able to navigate the road to reaching the ultimate customer information system.

Roadmap Planning Considerations: Challenges and opportunities of the road ahead

Let's look at four broad areas you should be thinking about in defining your technology roadmap:

- Customer expectations and demands
- Technology applications to support those expectations
- Technology infrastructure to support those applications and business demands
- Skillset and resources to manage those application and that infrastructure.

Customer Expectations

Researching, discussing, and documenting the capabilities your customers demand from your utility is simply a best practice for defining requirements for a customer experience project. But the main reason is that customer expectations of how they interact with each other, merchants and yes, utility providers, have evolved.

While utilities live and breathe provisioning, truck rolls, transmission lines and pipes, consumers don't live in that world. They live in a world dominated by Netflix, Apple, Google, Amazon, and a myriad of other service providers whose online experiences have reshaped our expectations of information delivery and customer service.

Customers want information available at their fingertips on mobile devices—not just a paper billing statement, not just a downloadable PDF, and certainly not via a phone call. If they can view and change any aspect of their order, billing, and service request on major retailer websites and apps, they expect to be able to do it for any provider—and that includes their utility companies.

The days when you could tell a customer that "someone will be there between 12 and 6 pm" are all but gone. Today's customers can track the exact location and ETA for an Uber car or even a service technician coming to replace their auto windshield. Ordering one of these services, of course, isn't quite the same as a service connection request that requires

a truck roll, but in a customer's mind there's little distinction. They also expect to see in real time exactly when the utility technician will arrive to fix their meter, so they don't spend their whole day waiting around, unable to attend to anything else.

And their expectations go beyond self-service features. Customers also want utilities to tell them how they can lower their bill, something that can only be done when utilities have consumption data and customer analytics. They want utilities to suggest how they might improve their situation, based on their past behaviors and their own preferences.

Below is a checklist of capabilities that your utility should either currently have in place or should have a plan to accomplish in the future.

- ☑ Emergency and billing/payment notifications – by text, email and social media
- ☑ Ability to contact customer service from the channel/device that they use most, both for simple and complex needs (New user sign-up, service needed, paying a bill, viewing bill/usage, etc.)
  - Mobile App
  - Tablet
  - Computer
  - Phone
  - Social media – Facebook (via chat and on page posts), Twitter, Instagram
  - Email
  - Chat on website
  - Mobile Apps
  - Through voice command services like Siri and Alexa
  - Text
- ☑ Consistent Personalized experiences online and on the phone
  - Giving the call rep the ability to quickly find the user and already have insight to the problem they are calling about, and provide opportunities tailored for those customers
  - Self-service that is a personalized experience, showing the customer exactly what they want to see easily and quickly
- ☑ Ability to solve the problems before they become a problem
  - Utilize analytics and machine learning to provide programs that fit customers' wants and needs
  - If there is a problem, empower the customer to easily solve the problem without having to engage with a CSR
- ☑ Seamless integration between different technology, sites and offerings that improves the user experience for both agent and customer
- ☑ Regular communication with the customer through the channel of their choice to provide key information for scheduled service, outages, new programs, etc.
- ☑ Providing the opportunity for customers to see real-time usage analytics, and exactly how it will affect their bill - and suggestions on ways to lower their bill
- ☑ Ability to pay bill online, prepay, or by mail, text, Paypal or Venmo, kiosk, or phone, with payments immediately applied to the account

Technology Applications

The next consideration is the applications you need to deliver on these customer expectations. Your customer information system (CIS) should meet your customers' present and future expectations of delivering a consistent easy customer experience through multiple channels and real time data, whether you implement a new CIS or integrate such capabilities into your existing solution.

Your employees are your customers, too

Remember that as far as your CIS applications are concerned, your company's employees are customers too. A big consideration is delivering business value, and that means making your internal customers more efficient in their jobs.

Just like end consumers, your employees use dozens of apps on their smartphones and tablets with access to millions of data points at any time. Their work apps need to be well integrated and be responsive with real-time information. In other words, they should give workers a same seamless experience, so they can do their jobs quickly and efficiently.

Process-driven, not feature-driven

Further, your customer service applications should be process-driven rather than functionality-driven. They should improve your business—not just support it. That means app usage should flow naturally within your business processes, rather than something that requires multiple disjointed steps. In other words, the applications should make your business processes faster, more efficient and less error-prone.

Future-proof to prolong your investment

Finally, your technology applications need to be future-proof. Technology changes rapidly, and your applications must be flexible and adaptable enough to keep up. Your utility can't afford to continue operating on a years-old platform that is barely maintained, or even a newer system based on a closed proprietary platform. In either case, you won't be able to quickly adapt or extend the system as customer expectations, regulations, or internal business processes change.

Technology Infrastructure

Of course, no technology roadmap can ignore the underlying infrastructure. Infrastructure provides the computing power, storage, connectivity, applications, databases, networks, automated processes, security and more—all of which is necessary to support both internal users and your end customers.

While there are many infrastructure needs any CIS project should consider, we will touch on just a few key elements here.

Security

In today's world of cyberattacks and data theft, it goes without saying that your infrastructure must be secure. That includes firewalls, intrusion monitoring and detection, and other breach-thwarting components. In addition, you and your customer's data must be securely encrypted, rendering it useless in the case of an actual breach. Ensure that your datacenter will identify threats early-on, and they routinely scan systems to detect vulnerabilities before they are exploited. They should also have external intelligence that provides an overview of current and emerging risks as well as your overall cyber security posture.

Responsiveness

If you are going to provide more and more of the tools your customers want and expect to manage their own services, your infrastructure must have sufficient computing and other resources. The last thing you want is to promote new capabilities—either to your end customers or your internal users—then disappoint them with lackluster response times, which can lead to the new capabilities falling quickly into disuse.

Scalability

While there are exceptions to the rule, urban utility providers usually experience a slow but steady rise in customers Whether fast or slow, your infrastructure must be capable of handle the increased number of customers and the corresponding volume of customer service requests. Besides the backend servers, your web servers, network, and databases must scale to handle more and more connections, as more customers take advantage of the new self-service capabilities. (Of course, the major software applications for your CIS must also scale to handle the increased volume.)

Reliability

While security, responsiveness, and scalability are important, reliability is about making sure that the applications are up, available, and working properly no matter what. For example, the growing incidence of storms impacts utilities by increasing the number of service and repair requests and corresponding workloads and could possibly shut them down completely. Your infrastructure should have well-defined and tested disaster recovery and business continuity (BC/DR) plans to ensure you can resume operations in a timely manner to handle such quick changes in demand.

Data centers are divided by tiers or levels from 1 to 4. The higher the tier the more advanced the data center, with tier 4 being the highest. You need at least a Tier 3 data center to run an application as critical as a CIS. With a Tier 3 data center you get power and storage redundancies that will provide 99.982 percent availability, or annual downtime of less that 2 hours a year. The CIS is the cash register for your business: If it goes down, then you can't get bills out and revenue into the business.

By working with an established, trusted tier 3 or 4 data center, your utility can ensure that not only will you have the best availability with minimal downtime, but also the best protection over your valuable data.

Resources/Skillsets

While you might have a skilled IT team, how are they handling their current workload? And will they have the skills they need to support new technology in the future?

Many utilities are seeing long-time employees retire, and this will only increase over the next five years. Not only are they losing resources with deep experience in how utilities operate, they are also struggling to attract new employees, especially in technology-related areas.

These are factors to consider when you think about the newer technologies needed to support your customers in the future. If you can't easily maintain a team with a deep understanding of both utilities and the latest technology, you might need to look for a partner that does have that knowledge and experience. A partner that can both support your existing systems and help plan for future technologies to meet your utility's future business goals and customer expectations.

Your Starting Point: Evaluating where you are today

Now, where do you begin?

Unfortunately, it's not as easy as simply asking a vendor to walk in and deliver the latest technology. What's more, to paraphrase an old saying, just because can have a technology doesn't mean you should have it. You need to understand how a technology will impact your business in a positive way.

For example, say your customers want more self-service options. You don't want to go implement a new customer self-service portal, or a new mobile app, or an automated voice assistant, without evaluating if indeed those will help your business.

- Will it lead to improved customer satisfaction and retention?
- Will this solution lead to greater self-service adoption, resulting in less calls coming into the call center?
- Are customers more likely to use the portal on their desktop or an app on a mobile device?
- Which feature(s) are they more likely use on one platform or another?

These are just a sample of the questions you need to be thinking about. The self-assessment worksheet below will help you to understand where you are today, so you can begin putting together your plan on how to plot your roadmap for the future.

Worksheet: Self-assessment of your current state & TCO

Here are a few self-assessment questions to start from.

- What are your business objectives?
- Are you meeting them?
- Is the technology enhancing your business or holding it back? Why?
- What factors are driving your technology decisions? Budgets, available skillsets, previous investments?
- How can you improve? Do you need to make changes to your people, processes, and/or technology?

You can download a more comprehensive self-assessment worksheet here. As you complete it, you will find that other items unique to your current state will present themselves. Don't be afraid to add them to your evaluation.

Calculating total cost of ownership

One of the biggest challenges utilities have is calculating the true total cost of ownership (TCO) of their systems. It's as difficult to assess your current costs to operate as a business as it is to understand the benefits and added efficiencies new technology makes possible.

We've created a separate worksheet that will help you identify costs involved with your current CIS system.

DOWNLOAD
SELF-ASSESSMENT WORKSHEET

Some of the costs that you will analyze in the worksheet include:

- Implementation costs for replacing a CIS
- Ongoing software maintenance
- Ongoing Application Managed Services
- Application Support
- Upgrades
- Hardware/Infrastructure Management
- Operations Management

Download the worksheet. Once complete, you'll better understand the total cost of ownership of your current CIS solution and whether you are spending your technology budget in the right places.

Your Roadmap: Where do you want to go (and how do you get there?)

Now that you have analyzed your current state, how far are you from where you are now to where you would like to be right now? And how far are you from where you need to be tomorrow? The answers depend, of course, on where you are in the journey. Not every utility is ready to replace their technology platform. Not every utility needs to. There are a few factors that usually drive how you improve your technology.

Enhance a business process

As we mentioned earlier, it isn't enough to consider changing your technology to add a new feature—or an entire new CIS—for the sake of the technology itself. True, newer technology can simplify future projects, but you must also consider the impact on the business and how the users will use it tomorrow. The last thing you want is to invest in such a large purchase, only to have the internal users or customers not take advantage of its capabilities.

You must also think about how you will measure success of a technology project. Newer technology may outperform its predecessors in many ways, but you need to ensure the business gains more benefits than speed. Will the new technology decrease call handling time, increase customer satisfaction up, or lower total field service costs? In short, a successful technology upgrade is more than a low defect count or the total gigaflops per core in the servers. You need to be able to anticipate and measure the impact it has on the business.

Enhance the technology

Can you incrementally make a few changes to the technology to get more out of the current applications or infrastructure? While a business process change should take full advantage of your technology to optimize operational efficiency, a technology enhancement can increase the capacity of an existing systems, add more processing power, support more users, add on missing functionality—or just extend the applications life for another year or two.

A technology enhancement might involve an infrastructure change or adding a new capability to existing technology. As such, it might involve only a few people from the business and IT to determine what the change is, the impact, and the plan to execute. This can take anywhere from a few days to a few months.

Add new technology

Adding new technology can take anywhere from 6 months to 3 years, depending on the impact to the business and the procurement processes of your company.

Both software and hardware technology are constantly evolving, along with customer expectations enabled by those technologies. For example, only a few years ago, most people didn't think twice about going to the bank or an ATM to deposit a check—now everyone deposits checks using their smartphone camera and a mobile banking app. Choosing a technology that is future-proof is critical in today's world. The technology should be flexible and adaptable enough to accommodate the next "big thing" that comes along, without starting over from square one. The technology needs to constantly evolve whether that be through new updates/releases or through additional modules that can easily integrate.

Replace technology

If you can't enhance your current technology, you might need to replace it. This is the proper option when the technology can no longer scale to support the business needs or meet customer demand. It is also appropriate when the cost of new technology is less than the cost of trying to prop up the old systems or infrastructure.

Unless you've already identified the replacement technology, the selection process alone can take six to 18 months. The implementation which follows can be anywhere from four months to 2 years. Both the selection process and implementation usually require the help of a third party, so the costs are significant. However, for utilities at least, a CIS replacement project comes around only once every 10 to 25 years. This investment takes a strong business case and many internal sponsors and champions. And these timelines don't necessarily include the weeks or months it could take to build up the backers needed to make a wholesale technology change.

A few more questions to round out your technology roadmap

Now you're aware of the various types of changes you might make to your technology over the next two, five or even 10 years, let's answer a few more questions, so you can construct your technology roadmap.

Can your technology support the changes and/or additions your business needs?

Improving the applications that drive the customer experience is one thing, but is it enough? If your infrastructure can only support your legacy systems and business processes as it is, adding new capabilities will put a further strain on its resources. If your infrastructure costs aren't reflective of their impact on the business, consider infrastructure alternatives (see table below).

Which type of infrastructure is best suited for you?

Infrastructure Type	Pros	Cons
On-Premise	• Control over all components – In-house resources	• Additional resources • Possibly outdated tech • No SLAs • Costly updates • No predictable TCO – Lengthy deployments
IaaS	• Control over application/ development • Shared infrastructure costs • Flexibility and Customizations	• Need to manage resources and upgrades/patches to application and infrastructure – Application must be kept up to date with infrastructure changes
PaaS	• Control over application/ development • Shared infrastructure costs – Always have the latest OS patches	• Need to manage application upgrades • Application must be kept up to date with infrastructure changes
SaaS	• Guaranteed Service Levels • Shared application and infrastructure costs • Quick deployments	• Don't own the solution – Lack of control over application development – Rely on a third party for support of the application
VertexOne (BPaaS)	• Guaranteed Service Levels • Shared application and infrastructure costs • Quick deployments • You own the solution • Customizations can be made	• Vertex support resources are not on-site at your company

Don't Forget: It's not just technology, it's your business

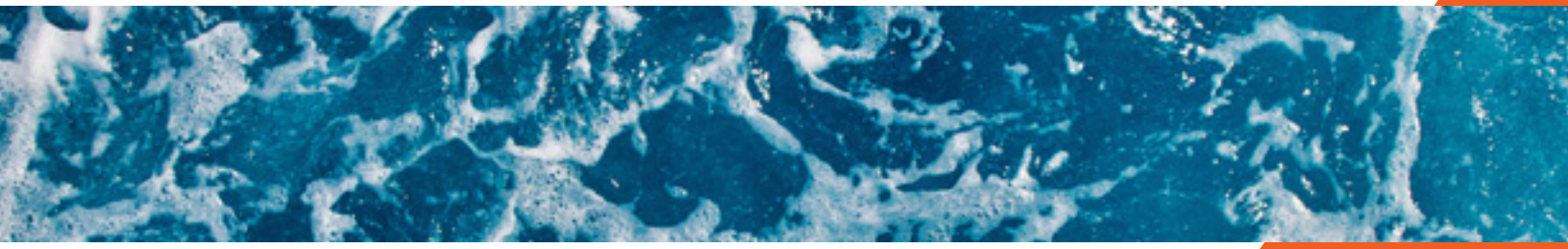
Where is your utility in its technology journey? Don't worry if you aren't quite ready to jump to the latest in technology. Not every utility is at that point in its journey to the ultimate CIS, nor should it be. For example, you might be at any of these stages of the journey with your CIS:

- You are ready to move to a cloud CIS but need education on how to implement one and what to expect.
- You know you need to replace your CIS, but you're not quite comfortable with "the cloud." Perhaps an on-premise CIS is the right choice for you.
- You need to improve your customer facing website and mobile capabilities. Perhaps finding a vendor that can build, integrate, and manage these with your existing CIS is the right course.
- You need to upgrade but not fully replace a legacy CIS, such as adding the latest reporting and analytics to better optimize and analyze your customer data.
- You want to improve productivity of your field service teams, assignments, and jobs by implementing Mobile Workforce Management.
- Or you simply need improved support and management of your existing systems.

In more than 20 years, we've seen several utilities who get excited about the possibilities of change and charge up the mountain, when the reality is that they aren't ready for that kind of climb. Heading into a big technological change, it's important that companies are prepared for what's to come. These are just a few examples of possible steps on your road to providing the ultimate customer experience. Some of them can be implemented in months, others may take a year or more, but all them fall within one of the following categories.

Some utilities want to implement the latest technology now because they can't upgrade (much less replace) their CIS technology very often. As a result, they want to implement not what they need now, but what they will need in five years. They worry if they don't implement the technology now, they will again be behind in five years. And that is probably true if you lack the resources you need to keep you up to date. This is another reason to choose a CIS platform that is future-proofed—that is, it is always updated with the latest and greatest capabilities by the vendor.

Finally, always remember it's more than technology that's changing. Your business and customers are always changing, too, so your business processes should be upgraded to fully utilize the technology. Why continue producing a report that no one has used for years, just because you "might" someday need to see it again? Why allow your dispatchers to go back to the



way they've done things for the last 10 years, after you implement a new mobile workforce management with scheduling optimization? Create new optimized processes that take advantage of the technology, so you can realize the efficiencies the new technology can enable.

Wherever you are today, your technology roadmap should be about more than just implementing the latest and greatest technology. Just like winning a football championship, it takes more than one perfect pass and a run to the end zone. It takes experienced coaching, multiple carefully executed plays, and a series of smaller wins. It's about taking the right steps for your organization, at the right time, with the right measure, until you reach the ultimate goal.

Just like any ball player, no matter how talented, your utility shouldn't have to go it alone. That's why it's so important to find a technology partner that's selling more than just an end game solution—whether you are ready for it or not—but rather a full plan to get you to the end goal. Yes, you do need to look at where you want to be in five or more years, but you also have to keep your eye on the ball, today.

The right vendor can help you with both aspects of a technology transition. They can help you build out the right infrastructure and applications, so you get the technology right. But they should also help you assess your current and future business needs, so the new technology actually helps you operate more efficiently today and tomorrow.

To do all that, while still keeping an eye on the ultimate prize, you need a partner that lowers risk, not adds it. One that simplifies your business, rather than complicates it. One that's in it for the long haul—the whole journey. That's why Vertex offers technology roadmaps that include solutions your utility needs and can execute today, plus all the future steps your need to reach your ultimate CIS goal, on a schedule that's right for you.

Next Steps

Need help with your technology roadmap?

Vertex is ready to help you plan your journey to the ultimate customer information system.

Vertex provides services throughout your technology roadmap to guide you towards an efficient and enhanced customer engagement platform. Not every utility is ready to replace their existing CIS, and not every change you make has to be large and costly. When you are ready for your next step, Vertex is there to help you.

We will meet you where you are today and where you will be in 5 years, 10 years and beyond. Let us be your expert guide to exceptional technology and service, while you remain the expert on your business.

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