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Direct Testimony and Schedules
Wendall A. Reimer

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in Minnesota

Docket No. E002/GR-20-723
Exhibit___(WAR-1)

Business Systems

November 2, 2020

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Wendall A. Reimer. I am currently serving as the Director of AGIS for Xcel Energy Services Inc. (XES), the service company affiliate of Northern States Power Company, a Minnesota corporation (NSPM or the Company) and an operating company of Xcel Energy Inc. (Xcel Energy). I have been in my current position for over four years, since May 2016.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have almost 40 years of experience in Information Technology (IT), with over 25 of those years in various management roles. I joined Xcel Energy and NSPM in August 2009 as a Program Manager for major IT infrastructure projects across Xcel Energy, including the implementation of key network programs such as Wide Area Network (WAN), Field Area Networks (FAN), a complete remodel of two large data centers, and implementation of many other projects and technologies, such as satellite, wireless, and Voiceover Internet Protocol. I was also responsible for financial oversight and management of large capital and expense budgets including forecasting, trending, capital asset accounting, and accrual processing for large, multi-year projects. I was later the Director for Network Services, which was a senior leadership position that oversaw all telecommunications and network operations for Xcel Energy.

In my current role, I am responsible for a $1.8 billion corporate initiative to deploy advanced grid technology for Xcel Energy. In this role, I have led technical design for all components from software to infrastructure to network components, including the participation as a key member in large vendor

contracts for technology and services. As part of this initiative, I have built and led cross-functional teams and developed tight alignment with impacted business unit leadership and teams. I have also had executive oversight of multiple IT programs. In addition, I am a management advisor to the network and infrastructure leadership team and I have represented Xcel Energy on several Edison Power Research Institute programs as an advisor and co-chair.

Before I joined Xcel Energy and NSPM, I spent almost five years at Midwave Corporation, where I served in multiple senior IT management roles related to major infrastructure strategy and projects. Prior to that experience, I held several IT leadership roles for Accuware Inc., Fair Isaac, Cargill Incorporated, and 3M Company, where I began my career in 1981.

My résumé is attached as Exhibit___(WAR-1), Schedule 1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I present and support the Company's capital and operation and maintenance (O&M) budgets during the period of the 2021-2023 multi-year rate plan (MYRP) for the Business Systems area.

Q. PLEASE PROVIDE AN OVERVIEW OF THE BUSINESS SYSTEMS AREA WITHIN XCEL ENERGY.

A. Business Systems provides IT services across Xcel Energy. Like all utilities, Xcel Energy must invest in computers, software, networks, mobile devices and other IT services each year in order to (among other things):

- Coordinate work in the field;
- Interact with customers;

- Operate and dispatch generation facilities;
- Run our transmission system;
- Provide information to our state and federal regulators;
- Purchase fuel;
- Bill and collect efficiently;
- Develop budgets and track expenditures;
- Manage vendors and vendor contracts; and
- Pay employees.

Each of these activities is necessary to provide reliable electric service and a positive customer experience.

Q. CAN YOU PROVIDE AN OVERVIEW OF THE WORK BUSINESS SYSTEMS WILL BE PERFORMING OVER THE NEXT FEW YEARS?

A. Yes. Over the next three years, Business Systems will continue much of the fundamental IT work described in our 2016 Minnesota electric rate case (Docket No. E002/GR-15-826), including replacing aging technology; protecting customers and the Company against cyber security risks and attacks; and strategically enhancing our IT capabilities to improve our customer and employee experiences.

This ongoing, fundamental IT work is necessary because technology changes constantly. With typical asset lives ranging from three to seven years (depending on the system), the average lifespan of IT assets is considerably shorter than it is for assets in many other business areas. Although we have been able to return great value from our larger systems, IT assets need frequent attention in order

to keep up with changes in technology and corresponding changes in customer expectations. We will continue to be flexible and nimble, working within the resources available to us, to address new technologies and needs as they emerge.

With respect to replacing aging technology, we not only continue to focus on making sure our employees have the technology tools necessary for the provision of electric service to customers, but we invest in projects that will transform business areas. While some of these tools (e.g., desk and laptop computers, mobile phones, software versions) need to be patched, updated, or replaced on a reasonably regular basis, in other areas we have been able to strategically harvest maximum value from older systems and delay investments. In the 2016 rate case, Company witness Mr. David C. Harkness described how our capital investments and O&M expenditures would increase during the MYRP period in that case and into the future because we had previously delayed new investments to the maximum extent. For example, we waited to update to the Windows 10 operating system (which was released in 2015) until 2019. We have also replaced our General Ledger (GL) and work and asset management systems and have now begun replacement of some of the other systems discussed by Mr. Harkness. Looking forward, our Human Resources Core project (which has been planned for several years) will bring in current technology and transform our Human Resources area and processes for years to come.

In addition to keeping technology updated, we need to maintain the security of data belonging to our customers, our employees, and our business. Knowing that we will continue to identify new cyber security risks over the next several

years, we must proactively make the necessary investments to ensure data security.

Moreover, we also have the opportunity to enhance our capabilities and become more efficient. As an example, in 2018 we implemented Blue Prism Process Automation in the financial operations area, which leverages automation technologies in order to streamline workloads. This helps ensure a better, more efficient, and faster financial close process by leveraging technology to maximize our employees' time.

Additionally, in an era when customers' expectations are higher than they have ever been, we are turning our attention to enhancing our customers' experience with their utility and electric service by leveraging data, as well as interactive technology through the web and digital interfaces, to improve our customers' options for energy usage, monitoring, and services. We are embarking on an enterprise-wide effort to advance and modernize the Xcel Energy customer experience, including updating existing systems such as our website and MyAccount through our Customer Experience Transformation programs, and enhancing the electric distribution grid and associated customer services with an eye toward the future through our Advanced Grid Intelligence and Security (AGIS) initiative.

Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY.

A. In my Direct Testimony, I describe the Business Systems organization, as well as some of the IT and business continuity services we provide. I carry forward the discussion from our 2016 electric rate case, illustrating that our capital and O&M investments have increased in light the rising importance of IT in our

business. I explain the kinds of investments we are currently making, why they are important to meet our customers' changing energy needs, and how we work to ensure reasonable costs for those investments.

I present our proposed capital additions of approximately $105.1 million for 2021, $119.7 million for 2022, and $85.1 million for 2023 on a NSPM (Total Company) basis.[1] I provide support for the key investments during the MYRP term (2021-2023).

I begin by walking through the major capital projects that comprise these rate case budgets, organizing projects according to the following budget groupings: (1) aging technology, (2) cyber security, (3) customer experience, (4) enhancing capabilities, and (5) emergent demand.

I then discuss the Business Systems O&M budget for 2021 through 2023, which is driven by employee labor and non-labor costs, software maintenance, network communications, application development, and distributed systems such as servers, data storage, and desktop computer and printer maintenance. I explain why our O&M budget is reasonable and reflects the types of expenditures we must make to keep the technology side of our business running productively.

[1] All costs for capital additions in my testimony are stated on a NSPM (Total Company) basis, including electric and common unless otherwise noted. Capital projects that would be only assigned to the State of Minnesota Gas jurisdiction are not included. As discussed in more detail below, Business Systems O&M costs are presented for the NSPM Electric jurisdiction.

Q. HOW HAVE YOU ORGANIZED YOUR TESTIMONY?

A. My testimony is organized into the following sections:

- *Section II* – Business Systems Overview
- *Section III* – Capital Investments
- *Section IV* – O&M Budget
- *Section V* – Conclusion

II. BUSINESS SYSTEMS OVERVIEW

Q. PLEASE DESCRIBE BUSINESS SYSTEMS' KEY ROLES AND RESPONSIBILITIES.

A. Business Systems is the Company's centralized IT organization, providing technology services across all operating companies, including NSP-Minnesota. These services include support for the following business operations:

- *Foundational Technology Infrastructure.* Business Systems is responsible for providing support for each employee's hardware and software needs. This includes maintaining and updating the operating system used on employee computers and providing sufficient data storage capabilities. Business Systems is also charged with protecting the security of the Company's data from cyber attacks.
- *Systems Controls.* Business Systems provides technology support to our generation, transmission, and distribution units to help manage and operate the electric and gas systems. This includes providing and supporting software applications such as Supervisory Control and Data Acquisition (SCADA), which is used to monitor the health of the transmission and distribution systems.
- *Customer Support.* We provide support for infrastructure and software that

facilitate interactions with our customers. This includes maintaining the Customer Resource System (CRS), which is the Company's customer information system of record, which generates approximately 4 million billing statements to Xcel Energy customers on a monthly basis. We also support the Interactive Voice Response (IVR) software that enables interaction with customers via telephone keypad or speech recognition. Business Systems is also responsible for maintaining the technology used for the Company's website that provides valuable information to customers about their accounts and Company operations including outages.

- *Corporate Support.* We provide IT support for necessary corporate functions of the Company such as Human Resources and Financial Management. This includes providing and maintaining software applications that assist in the creation, tracking, reporting, and analysis of budget and forecast information.

Q. HOW DOES BUSINESS SYSTEMS SUPPORT THE SERVICES OR FUNCTIONS DESCRIBED ABOVE?

A. Along with our day-to-day work to support the IT we have deployed, Business Systems makes capital investments and incurs O&M costs to support other business areas and functions across Xcel Energy as discussed above. I will discuss our capital investments and O&M trends in more detail below.

Q. WHY IS BUSINESS SYSTEMS IMPORTANT TO THE COMPANY AND ITS CUSTOMERS?

A. Business Systems provides the technologies and supporting services necessary for system reliability and security, operational decision-making, and improved customer support and business capabilities. Technology is constantly advancing

and evolving as a foundational aspect necessary to help any business meet its goals and objectives.

To operate in such an environment, we must be smart and proactive by identifying and integrating technologies that will both advance our business and protect it from technological attacks. For example, the advancements in two-way communications, intelligent devices, and SCADA necessitate the integration of many systems to ensure effective use of information and enable operational capabilities of new technologies. Identifying new technologies and integrating them into our system supports a smarter grid, system optimization, a more effective workforce with better-enabled employees, and more informed stakeholders through closer connections with external parties. These developments increase the importance of technology, and in turn Business Systems, to the Company and each of our stakeholders.

III. CAPITAL INVESTMENTS

A. Overview

1. The Prior 2016-2019 Multi-year Rate Plan

Q. WHAT WERE THE DRIVERS OF BUSINESS SYSTEMS' CAPITAL INVESTMENTS DURING THE LAST MYRP PERIOD?

A. Through approximately 2015, Business Systems had a relatively steady level of IT investment. To a large degree, we had been continuing to make effective use of our then-current systems by focusing on targeted, incremental investments that would serve to maintain our existing IT assets and service levels. However, the aging nature of our IT systems, changing business and regulatory requirements, and evolving technologies, required the Company to

enter a phase of replacement and upgrade of these systems. The Company identified the need to invest IT resources in the following areas: (1) Asset Management, (2) Finance, (3) Human Resources, and (4) Customer Experience.

Q. TO MEET THESE NEEDS, WHAT WERE THE COMPANY'S KEY STRATEGIC GOALS GUIDING SYSTEM INVESTMENTS DURING THE 2016-2019 MYRP?

A. The Company had identified the following key strategic goals that informed Business System capital investment during the 2016-2019 MYRP:

- Replace *aging technology*;
- Address evolving *cyber security* threats and requirements;
- *Enhance the capabilities* of our business and our ability to serve customers;
- Implement the *Productivity Through Technology (PTT)* initiative; and
- Address *emergent demands* that arise in the course of managing changing technology needs for an adaptive business.

Q. WHAT SYSTEM UPGRADES AND REPLACEMENTS HAS THE COMPANY UNDERTAKEN SINCE THE 2016 RATE CASE?

A. Since we filed our 2016 rate case, we made strategic system investments in our asset management and financial systems areas through the PTT initiative. With PTT, the Company focused on replacing its GL (which was largely implemented by the end of 2015), as well as several different work and asset management programs across business areas to create an integrated, modernized Work and Asset Management (WAM) system. With the complete implementation of the SAP GL and WAM in 2017, the Company updated the core asset management and finance systems with an enterprise-wide application. As I will describe in a later section of my testimony, looking forward to 2021-2023, the next areas of

focus will be investing in our core human resources systems and updates to enhance the customer experience.

Q. What were the Business Systems actual capital additions for the years 2017-2019?

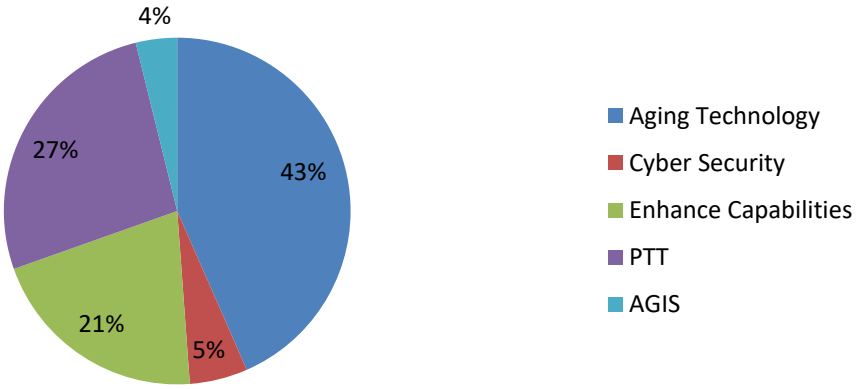
A. The 2017-2019 capital investments that the Company made to meet the five key strategic goals identified above are provided below in Table 1 and Figure 1.

Table 1

2017-2019 Actual Capital Additions

2017-2019 Actual Capital Additions (Dollars in Millions)			
NSPM	**2017**	**2018**	**2019**
Aging Technology	36.7	48.4	64.4
Cyber Security	7.8	5.7	5.1
Enhance Capabilities	14.1	22.3	35.0
PTT	91.0	0.3	0.1
AGIS	0.0	0.0	13.3
Total	**149.6**	**76.7**	**117.8**

Figure 1



Q. CAN YOU EXPLAIN WHY THE AMOUNTS OF INVESTMENT IN THESE CAPITAL BUDGET GROUPINGS VARIED OVER THESE THREE YEARS?

A. Yes. Our investments vary year over year depending on the needs of existing technology systems. In addition, one of the most significant recent undertakings during this period was the development of the new GL and Work and Asset Management system as part of our PTT initiative. The majority of the investments in the GL were undertaken in 2014 through 2015, with some preliminary work in 2013 and some post-implementation follow-up in early 2016. The GL was placed in service at the end of 2015. Most of the WAM implementation work was completed and placed in service by the end of 2017. As such, our 2018 capital investments were significantly lower than in the immediate prior years, and we stopped utilizing the PTT budget grouping in 2018 and beyond.

In 2019, there were several large project additions that drove up investment in aging technology and enhancing capabilities, including the Land Mobile Radio

(LMR) project $14.4 million, the Microsoft Next Generation project $8.0 million, and the Enterprise Service Bus (ESB) $7.5 million. Additionally, our AGIS initiative got underway in 2019, focusing on implementation of the Advanced Distribution Management System (ADMS) and associated components of the Field Area Network (FAN), as well as support for the Time of Use advanced meter pilot. I note that these costs are now approved for inclusion in the Transmission Cost Recovery (TCR) rider through separate filings and are therefore not included in this rate case, except for certain internal labor costs as discussed below.

Q. DO YOU HAVE ANY OTHER COMMENTS RELATED TO THIS CAPITAL INVESTMENT HISTORY FOR 2017-2019?

A. Yes, I have two comments related to how these numbers might compare to future budgeted amounts. First, as we turn to initiatives including the customer and distribution grid focus mentioned earlier, we will see a greater portion of our resources dedicated to those areas (the customer experience and AGIS) over the next few years. Additionally, as I will discuss later, Emergent Demand dollars are ultimately invested to support other categories' capital projects, and therefore appear as capital additions under those categories (rather than in Emergent Demand) for prior years.

Q. LOOKING AT THIS HISTORY, WHAT DO YOU CONCLUDE?

A. Business Systems' prior capital investments have supported the technologies needed to provide electric service to our customers. Without ongoing investment in technologies, we would lack the tools to operate reliably and securely, support functional decision-making, enable communications and "smart" resources, and protect such fundamentally important resources as our

grid, our customer information, our generation management, and our financial data.

Q. MOVING FORWARD, CAN YOU ADDRESS BUSINESS SYSTEMS' CAPITAL WORK IN 2020 SO FAR?

A. Yes. We have continued to invest in routine maintenance as well as projects to address outstanding business needs, with a focus on customer experience. Customer experience investments will continue to be a focus for the next several years, as changing customer expectations are requiring us to work to continuously improve and maximize the performance of the tools serving customers (such as MyAccount, our builder's call line, and other interfaces and support). The customer experience initiative got underway in 2019. Finally, we are continuing work on our AGIS initiative.

Q. HAS THE COVID-19 PANDEMIC AFFECTED BUSINESS SYSTEMS CAPITAL INVESTMENTS IN 2020 AND BEYOND?

A. COVID-19 has impacted IT priorities by requiring us to prepare staff to work remotely, necessitating increased network support and new work-at-home tools, and by thinking differently for projects that require in-person testing. In some cases, as with other business changes, this has required us to implement projects differently and/or has resulted in some minor delays. Of course, traveling has also been reduced due to new Company restrictions. The IT area has updated our financial budgets for 2020 and beyond to reflect our best estimate of these financial impacts, and will continue to adjust as more COVID-19 information is available. This is consistent with the approach we would take related to any of the various ways our business may evolve during a given period.

2. Overview of the 2021-2023 MYRP

Q. WHAT ARE YOUR CAPITAL ADDITION FORECASTS FOR 2021-2023 BY CAPITAL BUDGET GROUPING?

A. Our capital addition forecasts by budget grouping for 2021 through 2023 are set forth in Table 2 and Figure 2, below. Individual project capital investment additions are also listed in Exhibit___(WAR-1), Schedule 2.[2]

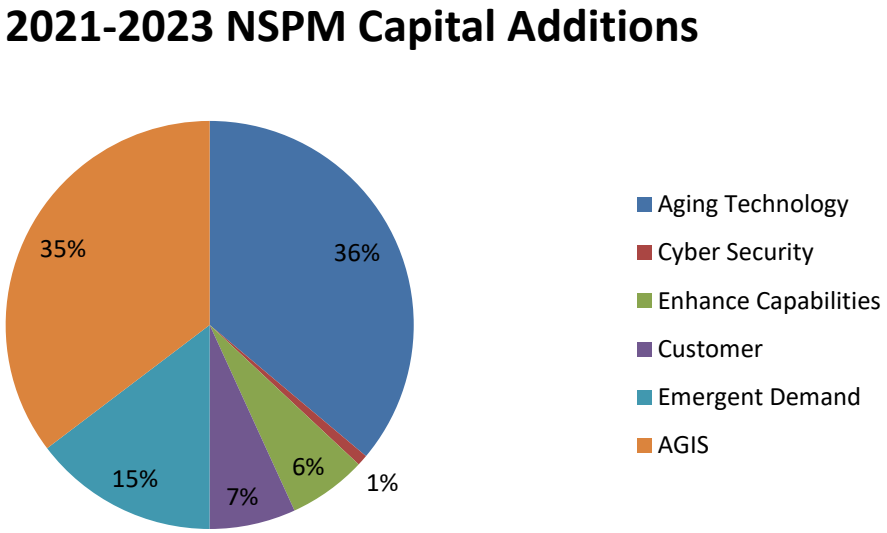
Table 2

2021-2023 Capital Additions (Dollars in Millions)			
NSPM	**2021**	**2022**	**2023**
Aging Technology	76.3	68.9	27.8
Cyber Security	4.1	0.1	0.0
Enhance Capabilities	17.8	7.3	4.6
Customer	19.4	12.1	1.2
Emergent Demand	-12.5	31.3	51.5
AGIS	64.7	59.6	45.0
Total	**169.8**	**179.3**	**130.0**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

[2] In some cases, rounding may result in a slight variation between some tables and Exhibit___(WAR-1), Schedule 2.

Figure 2



Q. WHAT KEY PROJECT AREAS WILL THE COMPANY INVEST IN DURING THE 2021-2023 TIME PERIOD?

A. As illustrated by Table 2 and Figure 2 above, Business Systems is devoting significant resources to address aging technology and the AGIS initiative through 2023 (with most AGIS costs begin considered in the Transmission Cost Recovery (TCR) Rider rather than in this case).[3] I note that we have also added a new capital budget grouping specific to the customer experience as this is one of our key areas of focus during this MYRP period. We are also continuing to manage for emerging needs.

Our aging network infrastructure is a key driver of increased investment and requires attention on an ongoing basis. Network connectivity is a critical operational foundation required for the Company to provide a safe and reliable

[3] The business case for the AGIS Initiative, including a comprehensive assessment of qualitative and quantitative benefits to customers, was provided in the Company's 2019 Integrated Distribution Plan (IDP) filing. The Company plans to address Commission requirements related to cost recovery for the AGIS initiative as part of a future TCR Rider filing.

product. Failure to replace aging network mechanisms increases the risk of component level failures resulting in systemic outages across service venues. I will discuss in more detail later in my testimony the specific Business Systems projects to address the replacement of aging network infrastructure.

Q. CAN YOU PROVIDE AN OVERALL PICTURE OF YOUR CAPITAL EXPENDITURES AND CAPITAL ADDITIONS TRENDS FROM 2017 THROUGH THE END OF THE MYRP (2023)?

A. Yes. Our overall 2017 through 2023 capital additions and capital expenditures are set forth in Tables 3 and 4 below.

Table 3

2017-2023 Capital Additions

2017-2023 Capital Additions							
NSPM	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
	Actual	**Actual**	**Actual**	**Actual/Forecast**	**Budget**	**Budget**	**Budget**
Business Systems	149.6	76.7	104.6	112.7	105.1	119.7	85.1
Business Systems - AGIS	0.0	0.0	13.3	11.5	64.7	59.6	45.0
Business Systems Total	149.6	76.7	117.8	124.2	169.8	179.3	130.0

Table 4

2017-2023 Capital Expenditures

2017-2023 Capital Expenditures							
NSPM	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
	Actual	**Actual**	**Actual**	**Actual/Forecast**	**Budget**	**Budget**	**Budget**
Business Systems	103.3	77.5	93.2	114.4	109.8	104.8	130.0
Business Systems - AGIS	13.6	11.3	14.4	18.5	17.7	58.6	44.5
Business Systems Total	116.9	88.8	107.6	133.0	127.4	163.4	174.6

Tables 3 and 4 illustrate that Company investments in IT vary depending on the specific work that is necessary for our business and our customers in a specific year. In the years when less investment is needed, we budget accordingly, and Company resources are used where they may be required in other business areas. Conversely, Business Systems capital expenditure levels necessarily increase in years when we are embarking on significant initiatives, and capital additions necessarily increase when those initiatives are placed in service. As can be seen in these tables above, a primary driver of the capital addition increases for 2021-2023 compared to previous years is the AGIS program. Overall, our investments are increasing as the utility industry, similar to many other industries, rely increasingly on IT to serve customers and enhance their experience.

Q. WHY DO CAPITAL ADDITIONS TOTALS DIFFER FROM CAPITAL EXPENDITURE TOTALS?

A. While the capital addition trend is directly affected by our capital expenditures, the capital additions (plant in service) trend may not mirror the capital expenditure (spend) trend and may fluctuate more depending on the length of time individual projects require to complete. The capital expenditure trend reflects the progress of the project through the months, whereas the capital addition trend reflects the total at the conclusion of the construction or implementation process when the asset is placed in service. Company witness Mr. Mark Moeller addresses how the Company's overall capital additions align with budgeted capital additions in any given year.

3. Challenges Facing the IT Business Area

Q. ARE THERE CHALLENGES UNIQUE TO BUSINESS SYSTEMS THAT CAN AFFECT THE COMPANY'S BUDGETING AND ACTUAL EXPENDITURES?

A. Yes. Technology changes constantly. As a result, issues with older software or equipment may not seem critical during budget creation but become critical if systems begin to show signs of issues or failure, or no longer serve their intended purpose. Additionally, cyber security threats are constantly in flux and may result in additional investment in a given year to ensure that cyber security tools and resources are responsive to new threats to our information systems. As IT has become increasingly critical to the business, the demand for IT solutions and fixes far outpaces the dollars available to meet those requests. As a result, it is necessary to constantly monitor, and sometimes re-prioritize, the percent of total dollars invested in each capital budget grouping.

Q. CAN YOU PROVIDE AN EXAMPLE OF CHANGES IN THE IT WORLD THAT MAY AFFECT BUSINESS SYSTEMS IN THE YEARS AHEAD?

A. Yes. As the technology landscape continues to evolve, cloud computing is becoming a more prevalent way for companies to provide information technology services. This presents unique decision-making requirements as we look to future IT solutions, and also can present financial challenges because some cloud solutions might be treated as O&M whereas the same solution would be capitalized (and therefore earn a rate of return) when owned by the Company. The utility financial and regulatory model does not work as cleanly in an era when the line between a company-owned asset and a cloud solution is blurred. However, the Company prefers to choose the best solution for the situation without having to give greater weight to the asset-based model. Scalability and flexibility will provide the Company the ability to choose the best option and make an efficient transition to cloud computing.

Q. MORE GENERALLY SPEAKING, SHOULD CUSTOMERS BE CONCERNED THAT SPECIFIC PROJECT NEEDS AND PLANS WILL LIKELY EVOLVE DURING A MULTI-YEAR RATE PLAN PERIOD GIVEN THAT TECHNOLOGY CHANGES CONSTANTLY?

A. No – in fact we make these adjustments to better serve our customers' and our businesses' most pressing needs in a cost-effective way. When the need arises to accelerate a project, we assess the situation to ensure we are doing so for the right reasons and in a prudent manner. Similarly, we assess potential project delays or cancellations to ensure we are still meeting business and customer needs in a reasonable way.

Q. EVEN IF YOUR CAPITAL INVESTMENTS FOR PROJECT NEEDS AND PLANS CHANGE FROM THE CURRENT BUDGET FORECAST FOR INDIVIDUAL CATEGORIES, WILL BUSINESS SYSTEMS STILL MANAGE ITS OVERALL CAPITAL INVESTMENTS TO ITS OVERALL BUDGET?

A. Yes, it will. Even if specific project needs and plans evolve over time, our overall budget supports our investments in technologies and supporting services as necessary to ensure system reliability and security, to facilitate operational decision-making, and to provide the necessary levels of support to our customer support and business capability functions. This holds true even if demand to implement new projects increases.

Q. WHAT DO YOU CONCLUDE ABOUT BUSINESS SYSTEMS' 2021-2023 CAPITAL INVESTMENT FORECASTS?

A. I conclude that our capital forecasts represent an accurate, reasonable, and representative picture of our investments over these years. History demonstrates that the Company will make the investments necessary to serve customers safely and reliably. Therefore, these forecasts can be relied on to set just and reasonable rates for our customers.

B. Business Systems Investment Needs

Q. WHAT ISSUES ARE DRIVING BUSINESS SYSTEMS' STRATEGIC CAPITAL PLANNING?

A. As I discussed above, the five key areas driving information technology investment going forward are: (1) replacing aging technology; (2) addressing evolving cyber security threats and requirements; (3) enhancing capabilities; (4) enhancing the customer experience; and (5) addressing emergent demands. I discuss each of these areas below. I also discuss our investment in the AGIS initiative, although these costs (except for certain internal labor costs, as

addressed by Company witness Mr. Benjamin Halama) are not proposed for recovery in this rate case because we anticipate seeking cost recovery in the TCR Rider. I will also explain how we are addressing emergent demands in the next section, Project Budgeting and Governance.

1. Aging Technology

Q. WHAT ARE THE PRIMARY ISSUES FACING THE COMPANY WITH REGARD TO AGING TECHNOLOGY?

A. Business Systems supports the operations of the Company with a large and growing IT infrastructure. Information assets are no different from physical assets, although IT assets have generally shorter lives. They are subject to aging, technological obsolescence, and increasing maintenance costs. Business Systems not only completes routine annual refreshes of technology, like replacing computers and printers, but also plans and places in service large IT projects that modernize the Company's IT and address the needs and experiences of our customers and employees. A reasonably up-to-date infrastructure is necessary for the Company to continue to meet increasingly demanding data security, reliability, and compliance requirements, as well as the service expectations of our customers. For example, some aging technologies are not equipped with the most current data security measures, meaning they are more vulnerable to cyber attack. In addition, the recovery of aging technologies after an outage can be compromised if those systems are no longer supported by their vendor.

Replacing or upgrading aging IT also affords the Company the opportunity to take advantage of certain enhancements or efficiencies of more modern IT, such as automating previously labor-intensive processes in order to reduce labor

costs and other employee expenses, such as travel time. Other upgrades make our systems more secure, make them more consistent with existing IT across the Company, or are implemented to maintain compliance with regulations.

Another area of IT that must keep pace with current needs is our Company's data storage capabilities. The increasing use of technology across the organization is resulting in the need to store, transmit, and manage ever larger amounts of data, and our systems must be able to keep up with these growing data storage needs. While solutions such as routine information purging and data warehousing can help reduce the impact of this data "explosion," they are not sufficient to fully mitigate it. As a result, we need to increase our storage capacities and the speed and flexibility of our networks, and improve our tools to cost effectively manage our data and information.

Q. HOW DOES THE COMPANY DETERMINE WHEN EXISTING IT NEEDS TO BE REPLACED?

A. Business Systems strives to maximize our technology investments by maintaining existing software and hardware until the risk and costs associated with keeping these aging technologies in place require attention. For instance, new software systems are often necessary when the existing software is no longer supported by the vendor.

A recent example is the Company's Distributed Energy Management System (DEMS) Upgrade. This plan leverages a long-term solution to keep our transmission system supported and secure, over multiple phases, to maximize value and minimize customer cost over time. The first DEMS project was presented in our 2016 NSPM rate case. At that time, we did a complete

replacement for the NSP Energy Management System (Dynamic EMS - DEMS) with the GE product that went live in May of 2016 for NSP. The project included completely new hardware, network, and software environment(s). This project started at the end of 2012 to allow appropriate time for implementation because EMS replacements are complex and there is no margin for error; they need to be 100 percent functional when placed into production.

The current DEMS project in the upcoming MYRP is driven by a contractual agreement to upgrade DEMS to a newer version within six years of the executed contract, given the pace at which the technology advances. The new hardware and network components with the upgrade project will enhance our cyber security posture and enable greater segmentation for this critical system. The new operating and application software will also help with security since they will remain in support by the vendors. But by completing the work in phases and not upgrading to subsequent operating systems and infrastructure until necessary, the Company is maximizing its initial investment and value to customers.

2. Cyber Security

Q. PLEASE SUMMARIZE THE CYBER SECURITY ISSUES FACING THE COMPANY.

A. There are four key cyber security issues the Company must address: (1) keeping hackers out of our systems; (2) detecting hackers if they attempt to gain access to our systems; (3) removing hackers that gain access to our systems; and (4) returning our systems to their original state if hackers gain access. As the number of cyber threats, attacks, and regulatory requirements continues to increase in volume and complexity, it is imperative that the Company establish and maintain the proper tools to protect the integrity and confidentiality of our

data and our systems. Given the unpredictability of these threats, it is important that these tools and resources continue to change in response to new threats to our information systems.

It is important to note that cyber security is not simply a matter of implementing a standardized base of security controls and processes that cover all the regulatory and legal requirements. Effective cyber security also requires filling the security gaps that would exist if we focused solely on regulatory and legal compliance. Many large financial companies that have had their data hacked in recent years were compliant with regulatory and legal requirements.

Q. WHAT IS BUSINESS SYSTEMS DOING TO ADDRESS THOSE CYBER SECURITY ISSUES?

A. The Company has taken great strides to address cyber security issues. This includes creation of a dedicated Enterprise Security and Emergency Management (ESEM) business area. The purpose of the ESEM is to enable the Company's vision, mission, and goals by proactively leading efforts to identify, protect, detect, and respond to all-hazard threats and events. The ESEM oversees all aspects of security, which includes: cyber, physical, and personnel; investigations and digital forensics; threat management; privacy (customer and employee); enterprise emergency management; and the enterprise North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP) program. There are multiple ways that the ESEM addresses new threats and solutions to cyber security issues.

First, ESEM exists to manage our overall cyber security posture, implement processes and plans to be able to quickly mitigate any adverse events, respond

appropriately and effectively to large scale events that would otherwise cause significant harm to the bulk electric system and/or natural gas delivery systems, and ensure regulatory compliance.

Second, to meet the needs and demands of today's security requirements, Business Systems has implemented multiple security systems and technologies. We have implemented technologies to date that include: Vulnerability Management; Advanced Threat Protection; Security Forensic tools' Advanced Firewalls' Intrusion Prevention Devices; and a Security Incident and Event Management system to correlate all the data and bring visibility to what is happening on our infrastructure.

Third, we have enhanced our partnerships with both regulatory and state and federal agencies to ensure we are tapped into the stream of information available regarding impending threats and attacks. These associations and agencies include Edison Electric Institute, National Infrastructure Advisory Council, American Gas Association, the Federal Bureau of Investigation, and the U.S. Department of Homeland Security.

Finally, our disaster recovery services have implemented an isolated infrastructure and computing platform to enable thorough testing of all recovery plans to ensure full recoverability. We have also revisited and revised the recovery plans for critical systems and continue to expand into secondary systems.

3. Enhancing Capabilities

Q. HOW DOES BUSINESS SYSTEMS ASSIST IN ENHANCING CAPABILITIES FOR THE COMPANY?

A. Technology can offer the opportunity to improve productivity, enhance communications between systems and between people, and use data more efficiently. As an example, mobile phones were not necessarily invented to solve a problem with land-based telephone lines or service. However, as they emerged and became increasingly sophisticated, they have changed our society. We have needed to adapt and learn how to derive as much efficiency as possible from what have become wireless mobile computing devices. Business Systems must constantly evaluate new technologies to help the business areas increase efficiencies and enhance communications between systems that benefit the Company and our customers.

Q. HOW DOES BUSINESS SYSTEMS DETERMINE WHICH CAPABILITY-ENHANCING TECHNOLOGIES TO IMPLEMENT?

A. The key is to identify new technologies and to implement only those technologies that can offer efficiency benefits that outweigh their implementation costs. Business Systems works prudently with various business units to evaluate new technologies to determine whether they can be used to improve efficiencies in the way tasks are completed, data is used, or in the way communications are conducted within the organization and with external stakeholders, including our customers. For example, adding land mobile radios at our nuclear facilities and, going forward, within the Twin Cities metropolitan area, enhances our ability to conduct secure communications between work crews across highly sensitive locations.

4. Customer Experience

Q. WHAT IS XCEL ENERGY REFERRING TO WHEN IT DISCUSSES A "CUSTOMER EXPERIENCE"?

A. The customer experience refers to the Xcel Energy customer's direct interactions with the Company, whether by digital platforms, through the call center, in person, or otherwise. To manage that experience, we must have in place both system tools and customer interfaces that work for the customer, supporting their satisfaction with our service and their overall experience with our company.

Q. PLEASE DESCRIBE EFFORTS BY THE COMPANY TO ENHANCE THE CUSTOMER EXPERIENCE.

A. While all of our work puts the customer front and center, it has been several years since we have invested significantly in our primary customer touch points and relationship management tools. In support of the enterprise focus on enhancing customer experience, we launched a new Customer Experience Transformation (CXT) program in April 2019 to help create smarter and simpler experiences for our employees and customers. This multi-year effort is designed to simplify our technology, transform customer experiences, improve customer satisfaction and employee engagement, and continue to drive more efficient operations.

CXT is a program with a defined budget and timeline developed to work strategically on enhancing our digital channels, developing a data fabric model and migrating our customer and business data into the model, and designing, building, testing, and deploying the foundational components to allow the first two to operate. More specifically, we are utilizing more modern technologies

that our customers have come to expect through experiences with other companies. This includes interactive websites, account management options, and smart phone applications.

As we utilize more modern technologies for our customers, we will simultaneously need to invest in new capabilities like data science, user design, and development. We are also utilizing our employees' innovative thinking to align with our customers' needs and expectations.

Q. HOW DID XCEL ENERGY INITIATE THE PROCESS OF IDENTIFYING THE NEED FOR THE CXT?

A. On a regular basis, we survey our customers to determine their satisfaction in how we deliver services and engage them in our market research studies to help inform opportunities for us to improve customer experiences. We also worked with one of our strategic partners to evaluate a number of potential initiatives against the ability to enhance customer satisfaction and the ability to make our employees more effective, as well as the cost and duration to complete these potential initiatives.

Q. PLEASE DISCUSS THE CUSTOMER RESEARCH THAT INDICATES THE NEED FOR IMPROVEMENTS IN THE COMPANY'S DIGITAL INTERACTIONS WITH CUSTOMERS?

A. Across Xcel Energy, we continuously capture customer feedback regarding their interactions with us to understand if we are meeting their needs and where we should focus to improve the customer experience. In 2016, we implemented a new customer experience measurement practice that is centered on capturing customer satisfaction on key customer service channels including our contact center, website and our mobile app. Since launching that practice, we have

captured over 502,000 customer responses that provides a clear understanding of satisfaction levels per channel and what factors drive customers to have lower satisfaction.

One of the key takeaways is that customers expect a seamless and simple interaction and that our digital platforms (such as our website, MyAccount, mobile app, and Customer Connection) are falling short of expectations. Customer satisfaction is low and/or has declined at the same time customer satisfaction with non-digital forms of interaction (contact center agents, IVR, and email correspondence) remains very high. We particularly noted declining satisfaction with respect to our billing and payment platforms, as well as new customer digital interactions and outage response digital communications. A September 2019 report on this data is attached to my Direct Testimony as Exhibit___(WAR-1), Schedule 4.

Q. WHAT BENEFITS AND GOALS WERE IDENTIFIED TO EVALUATE POTENTIAL WAYS TO ADDRESS THESE CUSTOMER INTERESTS?

A. We focused our core goals on four areas, set forth below:

A. **Customer Satisfaction**: An indication of the impact an initiative will have on our customer's satisfaction and contribution to their experience with Xcel Energy. *E.g. effort required for resolution, first contact resolution, outage restoration time.*

B. **Employee Satisfaction**: An indication of the impact an initiative will have on our employee's satisfaction with and contribution to Xcel Energy. *E.g. retention, project ownership.*

C. **Cost Efficiency**: Estimated cost savings resulting from each initiative. Estimates are reflected in long-term run-rate. *E.g. reduction in average time to completion, reduced call volumes, decreased manual intervention.*

D. **Customer Optionality**: Giving customers service options that meet their needs and give them choices in how they manage and utilize their electric services. *E.g. increased conversion rate, new product offerings, electronic scheduling and notification of progress.*

Q. ARE THERE BARRIERS TO MEETING THESE CUSTOMER NEEDS AND EXPECTATIONS UNDER THE COMPANY'S CURRENT CUSTOMER-FACING PLATFORMS?

A. Yes. Our current systems were not designed to be a customer relationship management system. Our legacy systems handle a significant volume of transactions on a daily basis and, over time, the amount of data that they store and manage builds and increases. The number of systems that they have to interact with has grown as well, as illustrated in the left-hand side of Figure 3 below (visually demonstrating the current state to future state). As a result, those interconnected systems have to work harder in order to stay reliable and responsive. As those systems were implemented and their connections built along the way, the integration and data technologies required to efficiently build out a more layered architecture in a cost-effective manner were not available.

The technologies and approaches that are available today allow us to more efficiently achieve the layered approach. An improved architecture, shown on the right side of Figure 3, allows us to offload the pressure that has been placed on those applications and the information they contain. The architecture allows us to organize and centralize relevant data so that it can be used in multiple ways

without directly impacting them. In doing so, we will simplify access to information and will be prepared to efficiently support increasing customer, business, and security demands.

Figure 3

Q. CAN YOU PROVIDE SOME REAL-WORLD EXAMPLES OF THE LIMITATIONS OF THE CURRENT CUSTOMER EXPERIENCE?

A. Yes. As one example, today a current builder customer will utilize our online form to request new service for a development of a new home or complex of homes. Once the application is completed and submitted, that application is received by our internal builder's call line representative, who will then manually input the same information into our ordering system to start the process. When the developer wants to get a status on the new order, she will need to call our builder's call line, but the customer service representative will only know what designer the work has been assigned to – no additional information. Once the designer starts to work on the order, neither the developer nor our builder's call line will know the status of the job. In the future, the developer will be able to create the order online, which will in turn automatically create an order in our system and provide the builder's call line representative with a view of the status.

That same status will be available to our customer, the developer, in any channel they choose to contact us.

As another example, today when a customer would like to report a problem that requires one of our technicians to come to their home, they are given a 3-4 hour window when the service technician will arrive but no ability to know the status. In the future, the customer will be able to utilize any one of our channels to choose the appropriate time, and during the window provided, the customer will be able to see information regarding the technician, including a picture and the current time period when the technician should arrive, providing more convenience for the customer and an additional level of security knowing who will be coming to service their request.

Another example relates to our online bill payment option for customers. When a customer wants to pay their bill online today, they must know the account number to log on and complete the transaction. In the future, we will be able to allow them to choose a more easily maintained user ID to access their account information.

Finally, today when customers call our contact center, they are directed to our automated system and are required to push buttons to choose among a variety of options. In the future, there will be natural language support to allow the customer to speak their options in normal spoken language to complete transactions.

Q. HOW DID THE COMPANY IDENTIFY APPROPRIATE SOLUTIONS TO ENHANCE THE CUSTOMER EXPERIENCE?

A. We worked with Ernst & Young, a company with years of experience helping customer design effective customer experiences across many industries, to evaluate which activities across the Xcel Energy service platform (from payment and billing options, new service start-ups, service help, mobile application options, and the like), affected which core service aspect and benefited our Company goals.

We utilized our customer survey results, as discussed earlier in this section of my testimony, to inform this evaluation. We also worked with customers and employees to rank the value versus the complexity of various aspects of the customer experience. In particular, based on feedback we received, we ranked which aspects were highest value and least complex (and vice versa) from both the customer and employee perspective. This information allowed us to prioritize efforts to improve the customer experience by identifying those with the greatest impact on our core goals, the highest value, and the least complexity (relatively speaking).

Q. WHAT AREAS RELATED TO UTILITY SERVICE ROSE TO THE TOP OF THIS ANALYSIS?

A. We identified that we could improve the customer experience in a timely manner, with high value to customers and reasonable complexity and cost levels by focusing on the following three areas: (1) Customer Assistance ("Get Help") platforms, including making it easier for customers to find information on their services, usage, billing and payment, as well as the ability to have multiple channels to address their needs, such as MyAccount, the Company website

(xcelenergy.com), and Xcel Energy mobile applications; (2) Service Initiation ("Start Service"), which relates to starting electric or gas service; and (3) Electric vehicle support. The Company's analysis is set forth in Exhibit___(WAR-1), Schedule 5 to my Direct Testimony.

As Company witness Ms. Kelly A. Bloch identifies in her Direct Testimony, electric vehicle support and advancement is already in development at the Company. Consequently, our CXT program focuses on the customer connection and customer service platforms. Ms. Bloch supports the electric vehicle budgets in her testimony.

Q. WHAT WORK DID THE COMPANY ULTIMATELY DETERMINE IS NECESSARY TO IMPROVE THE CUSTOMER EXPERIENCE IN TODAY'S UTILITY LANDSCAPE?

A. The CXT program is, ultimately, a series of foundational investments in platform infrastructure and data analytics and automation that are intended to improve the Company's digital interfaces with customers. Planned work and investments to improve the customer experience are divided into three project areas: (1) Digital Channel Platforms (including MyAccount, the Company's website, Xcel Energy mobile applications, and new customers and real estate developers' initial connections with the Company (Customer Connect); (2) the Customer Relationship Management (CRM) Platform (currently Salesforce); and (3) Platform Technology and Data Analytics. Most of this work is being completed during the MYRP period. I provide an illustrative summary of the work we have planned for the CXT program and examples of the value that components would provide in Exhibit___(WAR-1), Schedule 6.

Q. WHY IS IT WORTHWHILE TO INVEST IN MEETING THESE NEEDS NOW?

A. In today's evolving technology market, utility customers' expectations are not set exclusively by utility companies; rather, high expectations are being set by companies like Google, Apple, and Amazon, who show customers what is possible and lead them to expect responsive, integrated, and problem-solving interactions with their service providers. Living in an era where customer's expectations are higher than they have ever been, the Company must be prepared to meet our customer's needs to remain a trusted provider of their energy services.

Additionally, customer satisfaction in providing services is at the core of what we do at Xcel Energy. With evolving technological capabilities, we have an opportunity to enhance our relationships with customers, provide them new options, and create value they can measure.

Q. HOW IS THE COMPANY IMPLEMENTING THESE PROJECTS?

A. We are utilizing a multi-track process to enhance the customer experience. Our effort is based on integrating several considerations that are all central to our business:

- *Experience:* the customer experience.
- *Strategy:* the governance structures and processes necessary to guide the process.
- *People:* the internal talent and business capabilities that allow our people to work collaboratively.
- *Foundation:* the fundamental technology architecture necessary to carry out the vision.

- *Innovation:* forward-looking perspective that anticipates future needs to prepare our systems to the best extent possible.

Q. WHAT PROGRESS HAS THE COMPANY MADE ON THIS INITIATIVE TO DATE?

A. We are approaching this program in phases, with initial deployments occurring in 2020 and throughout the MYRP. We began by identifying enhancements that are important to achieving our goal of making it easier for customers to do business with Xcel Energy. We evaluated various current processes to document how our customers interact with us and identify possibilities to provide new value for the customer. As a result, we identified efficient and effective ways to deliver that value for our customers, with changes for services like new customer connection and our service channels. Xcel Energy has deployed the technology foundation in which new experiences are being built upon. Additionally, a new experience has been launched for Building and Remodeling customers, which streamlines the builder's interaction with Xcel Energy when requesting service to a new home or development.

After completing discovery pertaining to our current state and future requirements, we undertook planning and procurement of tools and software, and moved to designing, building, testing, and deploying the overall program. I highlight the following accomplishments to date:

- Designed, built, tested and deployed the cloud-based infrastructure for our web-based applications and data grid;
- Designed, built, tested, and deployed our data grid infrastructure and began the migration of data;
- Began the implementation of our Salesforce infrastructure;

- Designed, built, tested, deployed our new customer connection application;
- Built a series of integration points between our legacy applications and our new environment;
- Built a set of automaton testing tools to expedite our deployment of future applications in this space; and
- Updated our content on our FAQ pages.

Later in my testimony, I will walk through the individual components of this program in more detail for each year of the MYRP.

5. AGIS

Q. HOW IS BUSINESS SYSTEMS ASSISTING IN MODERNIZING THE DISTRIBUTION GRID?

A. Business Systems plays a key role in developing the IT systems and systems integration that are necessary to develop a more advanced distribution grid. We work hand-in-hand with Distribution and Customer Care to develop a plan that will bring our distribution grid into the future, making it more responsive, interactive, supportive of distributed energy resources, and informative to customers. We will also be utilizing data and information from the AGIS initiative to enhance our customer experience program.

Q. WHAT IS AGIS?

A. The AGIS initiative is a comprehensive plan that will advance the Company's electric distribution system, provide customers with more choices, and enhance the way the Company serves its customers. AGIS provides the foundation for an interactive, intelligent, and efficient grid system that will be even more reliable and better prepared to meet the energy demands of the future. The core components of AGIS are the Advanced Distribution Management System (ADMS); Advanced Meter Infrastructure (AMI); and the Field Area Network (FAN). The Company has also undertaken a Time of Use (TOU) Pilot program.

Q. DOES THE COMPANY PROPOSE TO RECOVER ANY AGIS CAPITAL COSTS IN THIS RATE CASE FILING?

A. Except for certain costs related to internal labor, the Company does not seek recovery of any AGIS capital costs as part of this rate case because they arebeing recovered or have been certified to be recovered through a rider. The AMI and FAN components of AGIS were recently certified to be included in the Company's TCR Rider in the Commission's July 23, 2020 order accepting the Company's Integrated Distribution Plan (IDP) filed in Docket No. E-002/M-19-666. ADMS and the TOU Pilot were also previously certified by the Commission and costs were approved for recovery under the TCR Rider. The Company proposes to continue recovery of these capital and O&M costs via the TCR Rider through the term of the MYRP. Company witness Mr. Benjamin Halama discusses the interplay between riders and base rates in his Direct Testimony.

Q. WHAT INTERNAL LABOR COSTS RELATED TO AGIS DOES THE COMPANY SEEK TO RECOVER IN THIS RATE CASE FILING?

A. Because the Commission has generally disallowed cost recovery of capitalized internal labor costs in riders, the Company proposes to recover these costs through base rates. These costs include labor costs for various positions that the Company is capitalizing because the costs are related to adding capital components for AGIS, such as director and management level positions, engineers, project managers that are responsible for deployment, analysts that support specific functions, field technicians that conduct various studies and mount devices, and labor costs for design work and business networking teams, including firewall support. In addition, internal labor costs provide oversight of work conducted by contractors that the Company also relies on to implement the AGIS program. Below, I also discuss certain internal labor costs that are expensed rather than capitalized, and are reflected in our O&M budget. In his Direct Testimony, Company witness Mr. Halama discusses how internal labor costs for rider capital projects are determined by his team for purposes of base rate-setting.

C. Project Budgeting and Governance

1. Methodology for Establishing a Reasonable Overall Budget

Q. HOW DOES THE BUSINESS SYSTEMS AREA ESTABLISH A REASONABLE CAPITAL BUDGET FOR A GIVEN YEAR?

A. The appropriate annual capital budget for Business Systems is based on a partnership between corporate management of overall finances and the business needs we identify for our constituents. Company witness Ms. Melissa L. Ostrom explains how the Company establishes overall business area capital

spending guidelines and budgets based on financing availability, specific needs of business areas, and overall needs of the Company.

The Business Systems area itself employs a "bottom-up" approach to planning for the needs our business area addresses. Business Systems will continue to use a portfolio prioritization and balancing process to determine the needs we must address and decide how to allocate limited funds according to the highest business priorities, including the greatest risks our IT systems face in each year. The portfolio is regularly prioritized and balanced to support established strategic objectives using predefined portfolio management criteria, the organization's desired risk profile, portfolio performance metrics, and capacity constraints. These projects are then rolled up to total budgeted costs by capital budget groupings. Often the desired initial budget exceeds the spending guidelines, which then requires review meetings with managers, directors, and vice presidents to assess the requested budget and determine the right course of action.

Because this happens throughout the Company, a higher or lower percentage of the Company's overall resources may be allocated to Business Systems in any given year, depending on the priority of needs throughout the Company. Ultimately, corporate leadership determines the amount of money to be allocated to Business Systems for each year, as part of the total budget development for the Company.

Q. HOW DOES BUSINESS SYSTEMS MANAGE ITS BUDGETED PROJECTS TO THE OVERALL CAPITAL BUDGET ALLOTTED TO IT?

A. Once the Business Systems allotment is known, the Technology Investment Council has final approval for either maintaining the portfolio "as is" or adjusting the portfolio within the established budget thresholds. The purpose is to determine whether the projects included in the budget are sound, viable, and worthy of funding, support, and inclusion in the Company's IT portfolio. The process of adjusting the portfolio may include:

- adding new projects that have been selected and prioritized for inclusion in the budget;
- identifying projects that are not authorized based on the review process; or
- eliminating projects to be suspended, reprioritized, or terminated based on the review process.

2. Project Budgeting and Development: the IT Governance Process

Q. HOW IS THE BUDGET FOR A PROJECT DEVELOPED INITIALLY?

A. Business Systems' budget development, project prioritization, and project management leverages an established IT Governance process. IT works with each business area to determine its specific IT needs, and then these needs are prioritized based on a particular set of factors. Specifically, each Business Systems area is responsible for partnering with a specific business unit within the organization to determine that area's long-term strategic objectives, and identify whether IT investments can enable achievement of those objectives. In turn, these priorities are converted into a proposed Business Systems budget.

The IT Governance process also monitors the end-to-end project implementation lifecycle for each proposed project, from its conception to in service, to help keep the project within budget and on schedule, and performs as expected for the specified business objective. The IT Governance process also oversees and must approve any changes in project scope or budget at the corporate level based on overall Company priorities and spending levels.

Q. HAS ANYTHING CHANGED IN THE IT GOVERNANCE PROCESS SINCE THE 2016 RATE CASE?

A. Yes. Since the 2016 rate case, the function of the former IT Governance process is in the process of being replaced by the Technology Investment Council. Our IT capital investments continue to be driven by the needs of Xcel Energy's business areas. Previously, Business Systems prioritized IT projects internally with some engagement from leadership. However, due to the rapid pace of technology changes, it was determined that additional focus would be beneficial for leadership across the Company to better understand technology, communication, and the decision-making process. The new IT Governance process established with the Technology Investment Council is intended to broaden the enterprise perspective when selecting the project portfolio and making the tradeoff decisions across all business areas.

Q. HOW ARE PROJECT IDEAS CONVERTED INTO THE BUSINESS SYSTEMS BUDGET?

A. From the idea stage, project ideas are grouped and evaluated, ranked, and selected based on a common set of filters. This process weighs a multitude of criteria including: (1) the financial and non-financial benefits of a project; (2) the potential for other existing technologies to address the business need; and (3) the degree to which the project is needed to meet regulatory requirements or to

ensure system reliability and security. This categorization process allows Business Systems to evaluate the benefits and risks associated with each project idea, and results in a list of ranked project ideas.

Q. WHAT IS THE NEXT STEP AFTER THE PROJECT IDEAS ARE RANKED?

A. The Technology Investment Council reviews the ranked project ideas to determine which projects should be implemented and included in the Business Systems budget. This process requires further refinement of the budget figures for each project, and prioritization of possible projects until a final budget is set.

Q. HOW ARE PROJECTS GOVERNED ONCE APPROVED FOR INCLUSION IN THE BUDGET?

A. Business Systems employs a gated approval process called the "Governance Gates Process" to oversee IT projects throughout their lifecycle. Projects move through specific gates or approvals from the Technology Investment Council and other stakeholders as they progress. The Governance Gates Process enables regular review of project metrics (schedule, scope, deliverables), and institutes corrective action plans or modification as appropriate.

Q. PLEASE IDENTIFY THE DIFFERENT GATES OR APPROVALS THAT ARE PART OF THE IT GOVERNANCE GATES PROCESS.

A. The five gates that each capital project must garner before it is initiated and ultimately placed in service are as follows: (1) Approval to Initiate; (2) Alignment to Design; (3) Alignment to Build; (4) Alignment to Launch; and (5) and Project Closure.

a. Approval to Initiate

Q. WHAT HAPPENS ONCE AN IDEA HAS BEEN INCLUDED IN THE BUDGET?

A. Once the Technology Investment Council determines that a project should move forward, the first governance gate is "Approval to Initiate," which is the official start of the capital project. Approval to Initiate includes a delivery checklist, a stakeholder identification and analysis, an official project plan, risk logs, and operational readiness.

b. Alignment to Design

Q. WHAT IS THE NEXT REQUIRED APPROVAL IN THE IT GOVERNANCE PROCESS?

A. The next gate is the "Alignment to Design." The purpose of this approval is to ensure that the initial budget and schedule have been adequately documented since the "Approval to Initiate" gate, and that the strategy is appropriately developed to move the project forward.

Q. WHAT HAPPENS WITH A PROJECT UPON APPROVAL OF THIS GATE?

A. Upon approval of this gate, the project profile, requirements, security project risk assessment, budget, and schedule are assessed and modified as appropriate.

c. Alignment to Build

Q. WHAT IS THE NEXT APPROVAL REQUIRED IN THE IT GOVERNANCE PROCESS?

A. The next gate is "Alignment to Build." This approval provides the final check of a project before construction begins to ensure that the proposed design meets the identified needs and any technical problems are resolved.

Q. WHAT OCCURS AT THIS STEP IN THE PROCESS?

A. At this gate, the detailed design of a project is reviewed and validated by an IT Technical Review Board to ensure that the project satisfies its intended business objectives. Overall project status, technical solutions, software products, documentation, and definitive estimates are reviewed to ensure completeness and consistency with design standards and to resolve any technical issues with the project. After approval is obtained at this gate, the project team will begin to build and deploy the project.

d. Alignment to Launch

Q. WHAT IS THE NEXT APPROVAL REQUIRED IN THE IT GOVERNANCE PROCESS?

A. The next gate is "Alignment to Launch." This is a formal inspection conducted by the IT Technical Review Board to determine whether the technology solution is ready to be placed in service. The business unit sponsoring the solution must also approve the project at this stage, and confirm that it meets the business unit's objectives, and that the operational procedures and tools (such as user training) are in place to ensure its successful and secure operation in the production environment.

e. Project Closure

Q. WHAT IS THE FINAL APPROVAL REQUIRED IN THE IT GOVERNANCE PROCESS?

A. The final gate is "project closure." This gate is the formal close out of the project verifying the solution has been transitioned to operational steady state and storing all project artifacts.

3. Changes in Planned Projects

Q. AS A PROJECT MOVES THROUGH DEVELOPMENT, DOES BUSINESS SYSTEMS TAKE STEPS TO MONITOR VARIANCES BETWEEN ITS ACTUAL EXPENDITURES AND ITS BUDGET?

A. Yes. In each key area of Business Systems, management monitors actual versus budget expenditures for both capital and O&M on a monthly basis. Any deviations are then evaluated to determine whether costs are appropriate. In addition, action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. DOES BUSINESS SYSTEMS ALSO ENCOUNTER TIMES WHEN IT MUST CHANGE PROJECT PLANS?

A. Yes. For some projects, the complex nature of the project implementation and long lead times mean we must plan for the project and carry it out over a long period of time. In these situations, we may need to adjust project cost expectations, timelines, or scope as the details and design of the project become more certain over time.

Other projects may have shorter lead times, a lower priority, or other reason why they are important but could be delayed if a higher priority comes to light. However, we remain obligated to manage to our budget and use the IT Governance process to re-prioritize projects within a year to stay within our overall budget.

Q. IF PROJECT PLANS NEED TO CHANGE, DO CHANGES IN PROJECT METRICS PRIOR TO IN-SERVICE REQUIRE APPROVAL FROM THE IT GOVERNANCE PROCESS?

A. Yes. Any change to the budget, schedule, or scope of a project must be approved by the IT Governance process to ensure that the change is necessary and well-documented and brought forward to the Technology Investment Council.

We must seek approvals in addition to the IT Governance process, including possibly Corporate Governance approval, if costs of larger projects exceed certain pre-approved levels.

Q. PLEASE EXPLAIN THE PROCESS TO ACCOMMODATE NECESSARY UNFORESEEN CAPITAL INVESTMENTS THAT OCCUR DURING THE PLANNED CAPITAL INVESTMENT YEAR.

A. We utilize the portfolio prioritization and balancing process to evaluate new demand or changes to existing project budgets and determine the most appropriate course of action. Newly identified projects must still proceed through the Gates process and may push other projects further down the priority list. In other situations, we may be able to accommodate a new project or expanded project scope or cost by approving an appropriate distribution of funds from Emergent Demand.

Q. WHAT IS EMERGENT DEMAND?

A. Emergent Demand is a capital investment category created to ensure we are able to meet the unanticipated aging technology, cyber security threats, and efficiency needs that inevitably emerge in each year. Given the ever-changing nature of technology and emerging risks, it is not possible to identify all projects

that may arise or become critical in a given year. For example, it is not always possible to predict what kind of security risk might be created by hackers as technology continues to develop. In other situations, as we develop a project with a particular scope, we may determine that additional benefits or long-term cost savings could be captured by expanding the scope of the project. Emergent Demand allows the Company to address such issues without necessarily delaying or cancelling previously-planned projects or otherwise absorbing unplanned work and costs.

Q. ARE THERE EVER INSTANCES WHERE THE COMPANY PLANS MORE PROJECTS THAN IT MAY BE ABLE TO COMPLETE IN A YEAR?

A. Yes. As I discuss in more detail later in my testimony, the demand for IT projects is significantly greater in any given year than the Company can fund. For 2021, the budget currently includes an adjustment to Emergent Demand to make our total Business Systems budget for the test year consistent with what we intended to place in service. This approach is beneficial to customers, as the Business System budget reflects the actual planned capital additions for Business Systems that the Company can currently fund, which the Company believes to be conservative compared to IT project demand. If the Company ultimately allocates more dollars based upon Company and customer needs, so that all projects can be completed, this will also benefit customers in that the Company would be funding projects above our cost recovery request in the 2021 test year.

4. Capital Cost Controls

Q. IN ADDITION TO THE IT GOVERNANCE PROCESS, DOES BUSINESS SYSTEMS UNDERTAKE OTHER ONGOING STEPS TO CONTROL ITS COSTS?

A. Yes. Business Systems is continually taking steps to control costs. These efforts may include: increasing or decreasing the scope of outsourced services increasing or decreasing the use of consultants; and changing service providers. We also use competitive bidding practices and a multi-vendor sourcing strategy where possible, which enables the Company to utilize a combination of internal and external resources to minimize costs and maximize efficiencies in running our systems. In addition, Business Systems actively interacts with other IT organizations to learn how they control costs.

Q. CAN YOU PROVIDE MORE INFORMATION ABOUT THE COMPANY'S COMPETITIVE BIDDING PRACTICES?

A. Yes. Wherever possible, for the Company's key capital projects, the project team used, or will use, a competitive bid process to ensure that: (1) costs remain in-line with the approved budget; (2) Xcel Energy receives quality service at a fair price; and (3) business value is delivered per the agreed requirements. In addition, the project costs and schedules for these projects were based on internal experience with similar implementations and, in most cases, coupled with input from third-party consultants who we commissioned to ensure that the projects will deliver functionality that supports organizational objectives.

Generally, the only times a competitive bid process cannot be used are: (1) during upgrades to software or hardware components already provided by a vendor, in which engaging other providers would require a complete system overhaul; or (2) the limited times when multiple vendors are not available to

undertake the necessary work or provide the necessary technology.

Q. CAN YOU IDENTIFY OTHER SPECIFIC COST CONTROL MEASURES THE COMPANY HAS UNDERTAKEN TO MANAGE COSTS IN RECENT YEARS?

A. Yes. In our 2016 rate case, we discussed efforts to renegotiate contracts with key vendors and our effort to use a multi-vendor sourcing strategy to maintain competition between them for our business. Those benefits are ongoing. One new example is our increased use of fixed bid versus time and materials agreements with vendors for project delivery activities. This improvement places a shared burden on the service providers to ensure costs remain within the expected totals.

Q. CAN YOU EXPLAIN IN MORE DETAIL WHY A MULTI-VENDOR SOURCING STRATEGY IS BENEFICIAL?

A. Yes. Business Systems relies on approximately 93 different vendors for the majority of the capital investments and O&M support, with our top ten vendors comprising approximately 75 percent of our total costs. By utilizing multiple vendors, we require these vendors to compete against each other for our business and create an incentive to keep the price of their services competitive. Also, having multiple vendors available minimizes the risks associated with relying solely on one vendor. Overall, we are constantly managing spending, ensuring alliance with our budget, and looking for opportunities to control or reduce costs.

5. Cost Allocation to the Company and Overall Reasonableness

Q. HOW DO CAPITAL PROJECTS EXECUTED BY BUSINESS SYSTEMS AFFECT THE STATE OF MINNESOTA ELECTRIC JURISDICTION FROM A COST ALLOCATION OR ASSIGNMENT PERSPECTIVE?

A. Many of the Business Systems projects are planned and budgeted at the Xcel Energy Services or operating company level, and implemented throughout our system. Most projects benefit multiple jurisdictions – as when we implement new software throughout Xcel Energy – and therefore must be allocated or assigned to the appropriate operating companies.

In instances where a project is more fully dedicated to the Minnesota jurisdiction, a greater portion of the project costs may be assigned to Minnesota. In some cases where projects are dedicated wholly to Minnesota, as with the land mobile radios we purchased specifically for our nuclear plants discussed in our 2016 rate case, those costs may be directly assigned to Minnesota. As I noted earlier in my Direct Testimony, capital additions in my testimony are stated at the NSPM (Total Company) level, including electric and common projects but excluding any gas-only projects. Overall, Xcel Energy cost allocations are discussed by Company witness Mr. Ross L. Baumgarten.

Q. IS THE OVERALL LEVEL OF BUSINESS SYSTEMS CAPITAL ADDITIONS REASONABLE?

A. Yes. In each year, Business Systems capital additions are necessary to maintain stability and reliability of the IT systems used by employees to serve Minnesota customers, efficiently manage business operations, protect company data and information, and meet evolving regulatory and legal requirements. Overall, they support important investment strategies that focus on the key IT needs of the

Company and our customers while balancing the need for overall cost containment and prioritization.

6. Major Capital Projects

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. This section of my testimony introduces the major capital projects Business Systems anticipates for the MYRP period 2021 through 2023 that I will describe in more detail in the following sections. It is my understanding that general descriptions of these major capital projects for 2021 through 2023 is also required by the multi-year rate plan statute, Minn. Stat. § 216B.16, subd. 19.

Q. WHAT MAJOR CAPITAL PROJECTS DOES BUSINESS SYSTEMS ANTICIPATE COMPLETING OVER THE PERIOD OF THE COMPANY'S MYRP REQUEST?

A. As shown Table 5 below, we anticipate undertaking six major capital projects from 2021 through 2023. These capital additions include:

Table 5:
2021-2023 Major Capital Projects
($ in millions)

Project	2021	2022	
Core HR Application (Payroll Benefits)	3.0	17.3	
CXT Cust Serv Console SW MN-10786	0.0	9.1	
DEMS Upgrade AKA Dynamic EMS (DEMS) Environment Phase 4	0.0	21.7	
DR Technology Refresh	5.0	5.0	
Strategic Fiber Deployment	6.8	4.6	
WAN NSPMN	3.7	2.3	
NSPM Total	18.6	60.0	

Some of these projects, including the Core HR Application and Strategic Fiber Deployment, will continue over multiple years, with portions of the projects placed in service as they are put to use each year. The major capital projects we expect to complete during the plan period, as well as the additional key projects we anticipate completing in 2021, 2022, and 2023, are discussed in more detail under each plan year below.

D. 2021 Capital Additions

Q. WHAT CAPITAL ADDITIONS IS BUSINESS SYSTEMS PROPOSING TO MAKE IN 2021?

A. The NSPM (Total Company) Business Systems 2021 capital additions included in our rate request are budgeted to be approximately $105.1 as show in Table 6 below. These investments are presented in the budget groupings aligning with the key investment needs described earlier in my testimony. This includes the Emergent Demand category that exists to support project changes in the other capital budget groupings. I will walk through the major projects for 2021 in each grouping in this section of my testimony, focusing on the capital additions.

Table 6

2021 Total Capital Additions

2021 Capital Additions	2021 Total
Aging Technology	76.3
Cyber Security	4.1
Enhance Capabilities	17.8
Customer	19.4
Emergent Demand	-12.5
NSPM Total	**105.1**

1. Aging Technology

Q. WHAT CAPITAL PROJECTS RELATED TO AGING TECHNOLOGY ARE INCLUDED IN THE 2021 PLAN YEAR?

A. We anticipate a total of $76.3 million in capital additions in 2021 related to aging technology. In addition to more routine annual refresh projects, we will be placing projects in service that will have a significant impact on our IT across the Company, such as our multi-year effort to replace software that comprise our core human resources system. The individual projects are shown in Table 7 below, and I discuss each of the projects in the following testimony.

Table 7

2021 Aging Technology Capital Additions

2021 Aging Technology IT Investments	2021 Total
Avaya Cloud Voice Deployment	8.3
Service Now	6.4
CRS Tech Stack Upgrade	5.0
DR Technology Refresh	5.0
CIP Substation Compliance Reporting Work Stream 2	4.7
MT Security Computer System Upgrade	4.4
Technology License 2021	3.8
WAN NSPMN	3.7
Annual Network Refresh	3.1
Oracle Exadata Refresh	3.0
Core HR Application (Payroll Benefits)	2.5
Bentley OpenUtilities Designer (BUD) Upgrade	2.5
Annual Server Refresh	2.4
NMS 2.X Upgrade Project	2.4
Nuclear Meridium APM Implementation	2.1
Planned PC Refresh	2.0
SharePoint - Nuclear	2.0
Customer Care IVR Upgrades	2.0
Annual Storage Refresh	3.1
Upgrade Corporate Financial Model (CFM)	1.5
NSP- MN System Replacement	1.0
Aging Technology Other	5.3
NSPM Total	**76.3**

*There may be differences due to rounding.

a. Avaya Cloud Voice Deployment

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will transition Xcel Energy to an Internet Protocol (IP)-based voice telephone system that will provide greater flexibility and enhanced user features over the current system for both employees and customers. This new telephone system will be cloud based, which will reduce on-premises IT infrastructure. It will also modernize and improve telephone services by upgrading communications features that will allow for better collaboration among employees, and will replace and upgrade the Company's existing voicemail system with Microsoft. The new telephone system will also enhance our improved customer experience efforts, as it will help deliver next generation customer contact center solutions.

Q. WHY IS THIS PROJECT NECESSARY AT THIS TIME?

A. The current voice systems at Xcel Energy are past end of life and cannot be upgraded.

Q. CAN YOU PROVIDE ADDITIONAL INFORMATION ABOUT THE BUDGET DEVELOPMENT AND STATUS OF THIS PROJECT?

A. Yes. The Avaya Cloud Voice Deployment provides an update to voice telephony services at a majority of Xcel Energy's locations, including corporate offices, service centers, and generation plants. This project upgrades the technology used to carry voice traffic by adopting Voice-over-IP technology resiliently hosted within the public cloud with the goal of providing standard voice services more economically and more reliably. The Avaya Cloud Voice Deployment project will eventually allow the integration of all Xcel Energy

locations including those that have been running on independent phone systems.

b. ServiceNow

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will help the Company provide better customer service by improving the Company's ability to route information more effectively through its system, and will provide analytical support in identifying, managing, and fulfilling service incidents or concerns that customers bring to the Company. The project will also help track performance in these areas, in an effort to continually improve in these areas.

c. Customer Response System (CRS) Tech Stack Upgrade

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will provide certification and deployment of the various software components necessary to maintain and upgrade stability, reliability, security, resilience, and efficiency of the Customer Response System (CRS) application. This type of effort happens approximately every three years, if not sooner, depending on various technology drivers. The CRS Tech Stack represents the various software components, that in concert enable the larger application to perform daily service orders, the posting of daily payments, the processing of a typical day's worth of meter reads, the calculating invoices and producing statements, as well as the providing of customer service through agents, the interactive voice response system, the Company's website www.xcelenergy.com, and MyAccount. This upgrade will ensure that the CRS Tech Stack remains supported by various vendors, receives necessary security

patches, and remains current with other major market components, such as AIX (UNIX operating system), Java (programming language), Oracle (database management system), WebLogic (web application server), and Genero (application server). This project will also refresh storage and server infrastructure related to this technology.

d. Disaster Recovery (DR) Technology Refresh

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will enable the Company to proactively test and implement a new methodology for system recovery during a disaster such as power outages and other system failures that can result in lost data and system issues. The project will help ensure business continuity, regardless of the circumstances. The DR Recovery Technology Refresh will replace aging disaster recovery hardware and will provide hardware and software solutions to ensure that the Company will be fully prepared to operate during a situation that could negatively impact the operation of the Company's primary systems. This is a multi-year project with various components that will be placed in service as assets are deployed.

e. Critical Infrastructure Protection (CIP) Substation Compliance Reporting Work Stream 2

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will replace complex, labor-intensive processes, with software automation in order to better support the Company's compliance with Critical Infrastructure Protection (CIP) standards. In particular, it will provide software automation in the areas of asset management, ports and services, security patch management, and daily management, quarterly inventory review, and annual audit discovery. The project also will reduce labor costs and travel time for

Company employees and will improve CIP-related processes as they become automated through document automation and password automation of equipment, which is anticipated to decrease reporting errors and improve compliance.

f. Monticello Security Computer System Upgrade

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Security Computer System (SCS) is the heart of physical security for the existing nuclear facility located in Monticello. It performs many of the security functions for the facility including door locking/control, hand-geometry verification, alarming to Security officers, video call-ups for alarms, etc. The existing SCS was installed in 2014. The life span for these systems is approximately 7-8 years based on hardware/software lifecycles. When the hardware and software components are end-of-life or unsupported, then the site will be unable to maintain the system to meet cyber security compliance and actual risk of a cyber security and/or physical security events.

To continue to maintain the system and remain in compliance with Regulatory Cyber Security requirements as set forth in 10 C.F.R. § 73.54, the system must be upgraded with supported hardware (Servers, Workstations, Network Switches, etc.) and software (Windows Operating System, ARINC's Advanced Information Management software, etc.). Not being in compliance with our Cyber Security Plan puts the Company at risk for actual security vulnerabilities as well as potential Nuclear Regulatory Commission (NRC) violations approved by the Cyber Security Plan is NRC per 10 C.F.R. § 73.54 regulation. Additionally, any time the system is in operation, it requires significant security compensatory measures and additional man-hours along with the actual

increased security risk. As the hardware and software are no longer supported, the likelihood of failures and potential recovery time increases.

g. Technology License 2021

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project provides software license support across enterprise infrastructure and operations for the 2021 test year. To ensure adequate coverage, the Company will purchase additional licenses to support new and increasing numbers of licenses for common systems, such as Microsoft and Oracle, with users usually not tied to specific projects. Prior year true ups were completed for Microsoft and Oracle. Updating software licenses ensures that system devices are not over purchased and are running up-to-date licensed software, which decreases support costs and increases the Company's cyber security profile.

h. Network Infrastructure Investments (WAN NSPMN)

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project includes the detail design, planning, installation and commissioning of equipment that comprises an expansion and privatization of the Company's corporate Wide Area Network (WAN) across our service territories. The Wide Area Network work includes network infrastructure investments to support connection between the Company's various locations together and providing the pathway to enable critical business services. Investments support communication services for our business and substations, including the SCADA connectivity for monitoring and control of the grid. In addition, enterprise services are delivered to enable end users to connect to corporate

applications like email, SAP (the GL and WAM systems), and internet access. For 2021-2023, the project focus is to support the NextGen Windows 10 upgrade, Analog circuit replacement (retirement of copper circuits), new substations, and new wide area network which supports virtual hosting and windfarms. This is a multi-year project, with various components placed in service as assets are deployed.

i. Oracle Exadata Refresh

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will deploy a new Oracle Exadata database platform that will replace the existing platform, which will reach the end of its life in 2021. Oracle Exadata is a software and hardware computing platform that runs Oracle Database for over 100 applications to store and organize data, which provides IT infrastructure for enterprise grid computing that manages information and applications for the Company in a flexible and cost-effective way. In addition, the Oracle Database will be upgraded to a new version in order to maintain vendor support and security patching. The Oracle Exadata platform also supports many other databases, including critical application databases.

j. Core Human Resources (HR) Application

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will replace the multiple existing core Human Resources (HR) software systems and vendors at Xcel Energy – PeopleSoft, TIME, myHR, Talent Management, Learning Management System, Workforce Planning, and Workforce Analytics – with a single, integrated software solution that will be determined upon finalizing the RFP for the project. These applications

comprise the core human resource system, provide payroll, benefits administration, workforce management, experience layer, and job record tracking to employees and retirees of the Company. This is a multi-year project with various components that will be placed in service as assets are deployed. The project is in planning stages and will determine which components and modules will be put in service as the vendors are identified and high-level design is completed.

Q. WHY IS IT NECESSARY TO REPLACE THESE SYSTEMS AT THIS TIME?

A. From a technology perspective, we are running HR systems that are no longer supported by the vendors. The version of PeopleSoft we are on has not been updated since 2010 and is no longer supported by the vendor, creating risk from a technology and security perspective. Our TIME entry system runs on the mainframe, which is targeted to be retired in 2023-2024. The TIME application, PeopleSoft, and internal HR processes are tightly integrated and not replacing each of them within the same program will increase risk and costs to the initiative.

Q. ARE THERE ADDITIONAL REASONS FOR COMPLETING THIS PROJECT?

A. Yes. Xcel Energy is required to maintain compliance with federal, state, local, and industry regulations through reporting, audits, and process controls. Selection of an integrated HR solution will provide Xcel Energy with the ability to process and analyze integrated workforce information from a single source. This will optimize data-driven workforce decisions and better support workforce planning to meet company objectives.

The integration and modernization of HR systems will also enhance the employee experience through a single personalized interface; provide self-service capabilities that are accessible from a desktop, laptop or mobile device; optimize HR service delivery capabilities; increase and provide more efficient options (chat, chatbots, incident tracking, knowledge base, etc.) for employees to obtain support; and provide capabilities to be more agile in aligning system functionality to evolving business processes. It will also allow us to gain efficiencies in onboarding employees by streamlining processes and eliminating paper forms, and by optimizing workforce decisions to better support workforce planning.

Q. WHAT IS THE BASIS FOR THE COST ESTIMATE FOR THIS PROJECT?

A. The primary work on the project will start in 2021 and run through 2023, when it will completely be placed in service. The project cost estimate is based on our work with a third-party HR consulting firm to assess various options from an information-gathering perspective, as well as internal cost estimates. We have utilized outside services to benchmark software applications and evaluate vendors. In December 2019 we conducted an RFP and final vendors are in the process of being determined.

k. Bentley OpenUtilities Designer (BUD) Upgrade

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will replace the existing Bentley OpenUtilities Designer (BUD), which is a distribution system design tool that creates and manages distribution system assets for electric and gas systems, and which is at end of life. The BUD will be replaced with the GE Smallworld Design Manager system, which will ensure that the system is completely upgraded, provide users with more design

capabilities, and enable the Company to maintain vendor support allowing for lower cost enhancements in the future.

l. NMS 2.X Upgrade Project

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Outage Management System (OMS) is the enterprise solution for the electric trouble distribution control centers outage event management. OMS is critical to outage restoration and generally critical to the Company's operations. Business Systems and Distribution Operations leadership has affirmed that the OMS, with its mission critical role, must be on a vendor supported application version. Oracle NMS version 1.12, which is the current version running at the Company, runs out of extended support in December 2021. To ensure the OMS remains on a vendor supported version, a project effort is needed to upgrade NMS from application version 1.12 to NMS 2.x. This upgrade to a more recent version of NMS will be a technical upgrade and will not include any customizations or extensive reconfigurations.

m. Nuclear Meridium APM Implementation

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will implement the existing GE Meridium Asset Performance Management (APM) software environment to provide the capability to monitor and analyze operating plant assets and systems related to nuclear operations, which is achieved by further integration of the nuclear environment into our other systems. GE's APM software provide plant asset or system risk-based analysis to enable conditioned based/predictive maintenance on plant assets instead of time-based preventive maintenance. This software also helps asset-

intensive entities like Xcel Energy maximize reliability and availability of assets as well as minimize operational risks and costs. Unlike other business areas, nuclear must comply with 10 CFR Part 810 regulations and therefore require separate instance and support models.

n. SharePoint – Nuclear

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will migrate the existing nuclear content on the Xen software platform in its present collaboration with Microsoft SharePoint to the Company's corporate Microsoft SharePoint online environment. SharePoint is a web application that enables employees to collaborate from across all business units and to work more efficiently by letting users share documents and data while maintaining security and version control. As part of this project, the Company's utilization of Xen software will be decommissioned. This project aligns with the Company's corporate technology strategy, provides for better compatibility among software environments, and will lower long-term maintenance costs.

o. Customer Care IVR Upgrades

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will provide a more resilient, current, secure, and low effort IVR This project will provide a more resilient, current, secure, and low effort IVR (interactive voice response) platform to continue servicing customer needs through the telephony (telephone) channel. The IVR will continue to leverage Avaya software for the customer menu system, Nuance for speech analytics, Verint for call logging, monitoring, and recording, and a few other dependent systems. IVR capabilities remain critical to our Customer Contact Centers, as

it helps customers, which choose the telephony channel, transact business with the Company at a lower cost channel, and helps customers get routed to a correct Contact Center agent, which all helps maintain Customer Contact Center labor costs at a high level of customer satisfaction.

p. Upgrade Corporate Financial Model (CFM)

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will upgrade the Corporate Financial Model (CFM) to Utilities International's (UI) B2 platform, which will make it consistent with UI's other components. With this upgrade, the Company will implement shared tables to more closely tie the CFM to the Regulatory Information System (RIS). In addition, the original CFM will be redesigned and updated. This project will also add and implement UI's PlannerDash and the Analytics Package. With this project, there will be more consistent data between modules, will need less reconciliation effort, and will have better analytics.

q. NSP- MN System Replacement

Q. PLEASE DESCRIBE THIS PROJECT.

A. This NSP-MN System Replacement project will complete the migration of Xcel Energy's aging analog radio systems to the digital standards and upgrade other system components that will be going out of support over this time period. Once completed, the MN Metro radio will be a system on a common digital platform with system cores that integrate sub-systems into a reliable, supportable digital network.

r. Annual Refresh Projects

Q. PLEASE DESCRIBE "ANNUAL REFRESH" PROJECTS.

A. Like any asset, our technology infrastructure must be routinely refreshed. We refresh smaller components on regular cycles and annually budget for these replacements as routine projects, as they are critical to our everyday functions. These projects include replacing aging equipment (like individual computers) based on a pre-determined rolling life-cycle, annual updates to software and hardware to meet demand growth, and replacement of equipment that fails or is unable to meet our needs. Like any asset, our technology infrastructure must be routinely refreshed. We refresh smaller components on regular cycles and annually budget for these replacements as routine projects, as they are critical to our everyday functions. These projects include replacing aging equipment (like individual computers) based on a pre-determined rolling life-cycle, annual updates to software and hardware to meet demand growth, and replacement of equipment that fails or is unable to meet our needs. A summary of the refreshes we plan to undertake is set forth in Table 8 below.

Table 8

2021 Annual Refresh Capital Additions

2021 Annual Refresh Capital Additions	2021 Total
Annual Network Refresh	3.1
Annual PC Refresh	2.1
Annual Printer Refresh*	0.1
Annual Server Refresh	2.5
Annual Data Storage Refresh	2.0
NSPM Total	**9.8**

**Included in "Aging Technology Other" because project size is less than $1 million.*

Q. CAN YOU DESCRIBE THE DIFFERENT TYPES OF TECHNOLOGY THAT ARE COVERED BY EACH OF THESE REFRESH WORK ORDERS IN TABLE 8 ABOVE?

A. Yes. These refreshes cover:

- *Annual Network Refresh:* Planned replacement of network devices (switches, routers, radios, channel banks and voice systems) due to aging technology, out-of-support equipment, security vulnerabilities, and to enable new required capabilities.
- *Annual PC Refresh:* Planned replacement of aging desktop and laptop computers, as well as those that are lost or inoperable.
- *Annual Printer Refresh:* Planned replacement of aging printers.
- *Annual Server Refresh:* Planned replacement of aging servers.
- *Annual Data Storage Refresh:* Replaces data storage hardware that is no longer cost-effective to support, or that presents significant risk to operations due to aging components or lack of vendor support.

Q. CAN YOU PROVIDE AN EXAMPLE OF HOW A REFRESH PROJECT WORKS?

A. Yes. An example of this type of project is our Annual Planned PC Refresh project. We use a "rolling PC Lifecycle refresh" approach, which replaces approximately 25 percent of the desktop computers annually based on the four-year average lifespan of a desktop computer. This lifecycle program was established in 2007 to ensure that the personal computers maintain their functionality and are compatible with existing software and other systems.

Within our Annual PC Refresh list, we also know that Annual Unplanned PC Refreshes will be needed. Unplanned refreshes cover PCs that must be replaced outside the pre-determined rolling life-cycle refresh. These are devices that may

fail prematurely. It also covers new business demand, such as increases in computer user headcount. The project budget is based on historical trends and forecast demand growth.

Q. HOW DOES BUSINESS SYSTEMS DEVELOP ITS BUDGETS FOR REFRESH PROJECTS?

A. While the budget methodology varies depending on the nature of the assets to be refreshed, generally a refresh budget is determined by one or more of the following factors:

- The number of devices or systems that will reach end of life during the budget period. This is typically based on an established lifecycle plan. For example, PCs, mobile data terminals, and portable meter reading devices have a four-year life. Thus, approximately 25 percent of them are replaced in an average year.
- The number of devices expected to permanently fail outside warranty, and in the case of portable devices, the number expected to be damaged, lost, or broken. This is based on historical trends.
- Planned incremental growth in demand (e.g., data storage, network bandwidth, number of computer users, new physical sites, etc.). This is based on Company and industry trends and known business plans.
- The devices or systems that must be replaced to meet new security, software compatibility, or business requirements.
- The devices or systems for which vendor support will cease or become prohibitively expensive.

2. Cyber Security

Q. WHAT CAPITAL PROJECTS RELATED TO EVOLVING CYBER SECURITY THREATS AND REQUIREMENTS ARE INCLUDED IN THE 2021 TEST YEAR?

A. We anticipate a total of $4.1 million in capital additions in 2021 related to cyber security as shown in Table 9 below. I discuss the projects that comprise the majority of the 2021 cyber security capital additions in the following testimony.

Table 9

2021 Cyber Security IT Additions

2021 Cyber Security IT Investments	2021 Total
Service Delivery Security Remediation	1.1
Cyber Security Data Lake	0.9
Cyber Security Other	2.1
NSPM Total	**4.1**

Q. WHAT IS THE SERVICE DELIVERY SECURITY REMEDIATION PROJECT?

A. The Security Remediation project is to keep and to make sure Business Systems' functions are compliant with Enterprise Information Security and Technology Standards. The Company anticipates undertaking a review and making any necessary upgrades in 2021.

Q. PLEASE DESCRIBE THE CYBER SECURITY DATA LAKE PROJECT.

A. The Cyber Security Data Lake Project will implement hardware and software to host infrastructure and services necessary to facilitate a Cyber Security Data Lake Solution. Implementing a data lake will provide an enterprise data security warehouse solution to reduce complexity and cost of data retrieval while increasing analytical capabilities through convergence and consolidation of all

security data, infrastructure and service management into an open and extensible platform to power and modernize all security tools, applications, and analytics

Q. PLEASE DESCRIBE THE CYBER SECURITY OTHER PROJECT.

A. This project includes investments that provide prevention, detection, containment, and corrective services to protect the company from security incidents, and assist in the recovery from any adverse events. It is imperative to refresh our technology to ensure continued compliance with regulatory requirements for customer data and overall corporate security objectives, while reducing our business's and our customers' exposure to evolving cyber security risks and vulnerabilities.

Examples of 2021 projects include the 2021 OT (operating technology) Monitoring Project which extends the platform that detects or causes a change, through the direct monitoring and/or control of industrial equipment, assets, processes and events. Another example is the Email Advanced Threat Protection project which will upgrade existing and implement new security solutions to defend against malware or hacking-based attacks. The project will protect Xcel Energy and NSPM against unknown malware and viruses by securing email. The large majority of targeted attacks start with email.

Cyber security investments support the availability, integrity, and confidentiality of our information systems, and help ensure that we meet our legal and regulatory obligations and risk management objectives. Continually evolving cyber security threats and associated regulatory structure require ongoing investment into annual security technology refreshes.

3. Enhancing Capabilities

Q. WHAT CAPITAL PROJECTS RELATED TO ENHANCING COMPANY CAPABILITIES ARE INCLUDED IN THE 2021 TEST YEAR?

A. We anticipate a total of $17.8 million in capital additions in 2021 related to enhancing capabilities. The individual projects are shown in Table 10 below, and I discuss each of the projects in the following testimony.

Table 10

Enhancing Capabilities IT Additions

2021 Enhance Capabilities IT Investments	2021 Total
Strategic Fiber Deployment	6.8
Transmission Asset Health Analytics	3.5
SAP Continuous Improvements Placeholder	2.3
Purchase Power Agreement Contract Management	1.3
Enterprise Synchrophaser Expansion Project	1.0
Enhance Capabilities Other	2.8
NSPM Total	**17.8**

Q. WHAT IS THE STRATEGIC FIBER DEPLOYMENT PROJECT?

A. Under this project, the Company will acquire dark fiber optic cable assets in order to support enterprise network connectivity. Dark fiber is unused (therefore unlit or "dark") fiber that allows for more control over technology resiliency, capacity, and architecture. This fiber network is built to sustain failures without impacting the operation of the network. The high availability design of the network makes use of diversity in a couple ways: fiber cabling enters the buildings via two physically separate entrances; and buildings have two fibers available to carry traffic, allowing for one fiber to be cut without an impact to the operation. The Strategic Fiber network design is based on a dual

entrance topology solution that will use existing and new dark fiber optic cables in order to maintain operational business partner requirements related to latency (speed of transmission), availability and bandwidth for transmission of information through cables.

Q. HOW WILL THE COMPANY IMPLEMENT THIS PROJECT?

A. The Company will procure and extend dark fiber optic cables to certain sites in the metropolitan Minneapolis area. These sites were identified as having high monthly recurring costs typically due to the lack of connectivity options at these locations coupled with the importance of these locations in Xcel Energy's operations, mandating their perpetual and expensive usage. The project will allow for substantial network growth due to the fiber lines being wholly dedicated to Xcel Energy's usage and are therefore not as dependent upon usage as leased/shared circuits. Another benefit of the Strategic Fiber Deployment project is to provide high speed access to various entities that Xcel Energy has relationships with, like public cloud providers such as Amazon Web Services, Microsoft Azure, Google GCP and various network partners like CenturyLink and Verizon. This is a multi-year project, with various components placed in service as assets are deployed.

Q. WHAT IS THE TRANSMISSION ASSET HEALTH ANALYTICS PROJECT?

A. This project will provide a Transmission Asset Health Analytics (TAHA) system that will combine different types of asset data and capabilities to perform data mining, predictive modeling, and advanced analysis that will assist the Company with accurately maintaining and replacing transmission assets.

Q. WHAT IS SAP CONTINUOUS IMPROVEMENTS PROJECT?

A. SAP is an enterprise application and continuous improvement and investment is needed to fully utilize the benefits of having an enterprise application. This is a multi-year project, with various components placed in service as assets are deployed. Examples of some of the components for this project include the Batch Management Tool that SAP supplied and released that allows for increased traceability of inventory and group management of inventory in our Energy Supply area, the Oracle Database upgrade, which is the primary database for SAP, and SAP scheduler was upgraded to improve scheduling to monitor and improve inefficiencies to optimize resources.

Q. WHAT IS THE PURCHASED POWER AGREEMENT MANAGEMENT PROJECT?

A. The Purchased Power Agreement Management Project will deliver a solution that will give end users the functionality to manage Purchase Power Agreements life cycle. The project will create a current technology solution with capabilities for contract end-to-end life cycle management and contract performance for Purchase Power agreements and processes and that will address Audit Services findings and recommendations. The project will meet the audit recommendations provided and reduce duplicative work and errors.

Q. WHAT IS THE ENTERPRISE SYNCHROPHASOR EXPANSION PROJECT?

A. This project will allow the Company to expand the collection of Synchrophasor data by installing Phasor Measurement Units (PMUs) and communication paths at various Company facilities. (Synchrophasor measurements are real time measurements to obtain useful information to operate the grid.) This expanded capability will impact business areas for Bulk Electric System analysis, voltage

stability analysis, NERC event analysis requests, generation model validation, and will improve wind farm response and voltage control. This project will reduce maintenance and replacement costs of transmission devices and will reduce costs to validate generator models as well as improve the operation of the Bulk Electric System overall.

4. Customer Experience

Q. WHAT CAPITAL PROJECTS RELATED TO ENHANCING THE CUSTOMER EXPERIENCE ARE INCLUDED IN THE 2021 TEST YEAR?

A. We anticipate a total of $19.4 million in capital additions in 2021 related to customer experience. The individual projects are shown in Table 11 below. I describe each subprogram and its components in the following testimony.

Table 11

2021 Customer Experience IT Additions

Project	2021 Customer Experience IT Investments	2021 Total
Digital Channel Platform	CXT-My Acct SW MN-10778	4.4
Digital Channel Platform	CXT-XE COM SW MN-10779	3.1
Digital Channel Platform	CXT-Mobile App PH1 SW MN-10780	2.5
Digital Channel Platform	CEC-Builders Call SW MN-10723	1.0
Customer Relationship Management	CXT-CIAM SW MN-10787	0.7
Platform Technology and Data Analytics	CXT-Cust API PH1 SW MN-10781	4.9
Platform Technology and Data Analytics	CXT-Cust Data SW MN-10782	2.8
	NSPM Total	**19.4**

a. Digital Channel Platforms

Q. PLEASE DESCRIBE THIS PROJECT.

A. Through this project, we will build out, enhance, and redesign several components of our customers' digital interactions with the Company

This work includes enhancing and modernizing our online digital platforms and underlying technologies, MyAccount, our mobile application, and our customer facing website, www.xcelenergy.com. It also involves building out our New Customer Connections channel, enhancing our Contact Center capabilities, and utilizing "Single Screen" technology.

Q. CAN YOU DESCRIBE THE MYACCOUNT, XCELENERGY.COM, AND MOBILE APPLICATION WORK IN MORE DETAIL?

A. Yes. This work will provide a new digital presence for our customer channels, improving optionality, providing more user-friendly interfaces, and offering more capabilities for customer data management. As part of the xcelenergy.com, mobile app, and MyAccount re-design and re-platform, we will conduct a content, user experience, and visual design heuristic assessment to identify pain points for the customer and optimize the experience for each individual. In addition to the functions the customers have today, the re-design will allow them to request additional services, see status of any requests, and make appointments for any service issues. The MyAccount re-platform will allow for customers to set up their preferences, pay their bills or set up automatic payment options, and receive information on their energy usage. Our goal is to share the same usage information a call center representative would see with our customers, to increase customers' options and to allow them to interact with Xcel Energy in the manner they choose.

Q. PLEASE DESCRIBE THE NEW CUSTOMER CONNECTION WORK.

A. Today, the New Customer Connection (NCC) applies to trade partners and Company customers who are building new construction and need to engage with the utility for net-new electric and gas services. An online form can be utilized, but will then need to be re-entered to begin the ordering process, with no ability to view the status on any automated channels.

We will be building out our Customer Connect channel, which will provide a better experience for builders, developers, and other larger Commercial & Industrial customers who engage with Xcel Energy to request new, resumed, or stopped service. Specifically, we will revamp the customer interface to provide better information to customers about the phase or status of their line extension process, improve the builders' call line, and improve the process for communicating with parties engaged in that process.

These improvements will allow the Company to better partner with developers, contractors and do-it-yourself homeowners as they manage their projects from start to completion. They will be able to receive and give updates on their projects in real time, giving them control and transparency to better plan their business needs. Through account preferences, timely and accurate notifications about status, as well as a flexible appointment capability, these enhancements will provide Company employees, trade partners and homeowners with a more seamless and collaborative experience.

Q. PLEASE PROVIDE MORE INFORMATION ABOUT THE CONTACT CENTER WORK.

A. This program involves redesigning our Contact Center for customers. Specifically, natural language processing will be inputted into the Interactive Voice Response (IVR) to field inbound calls and reroute the caller to the proper

call agent. This will assist customers to better resolve their issues without having to speak to a call agent and make it easy to interact with the IVR. It will also, if necessary, get to a subject matter expert regarding their issue and resolve the issue more quickly. This improvement will also reduce the number of times it is necessary for a customer service agent to have to engage or reroute calls. This work will also allow the customer service agent visibility into all the ways the customer has contacted Xcel Energy in the past and in trying to resolve the current request. Finally, this work will streamline the visibility of customer information to call center specialists, enabling them to respond to customer questions more immediately with necessary information at hand.

Q. PLEASE PROVIDE MORE INFORMATION ABOUT THE SINGLE SCREEN PROGRAM.

A. Currently, Company call center agents utilize numerous screens when communicating with customers on the phone. Combining numerous screens into one screen that contains all the information needed for our agents will simplify the experience for our employees and benefit customers who will receive the information they need more quickly and efficiently. The "Single Screen" work will also be integrated with Artificial Intelligence capabilities to help decipher what the inbound call is most likely about, and help identify the most immediate fix to the issue. In addition, the single screen will show the agent the current bill, history of payments, and payment plan options that are tailored specifically to the caller. Finally, this screen will suggest support offerings for the customer's home that can help save money or simplify their energy experience.

b. Customer Relationship Management (CRM) Platform

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project involves building out our existing Salesforce CRM tool and introducing new modules to better understand and serve our customers. The redesigned platform will enable us to track the different relationships with our customers, whether that is commercial, residential, industrial or on a different basis. It will allow for real-time business updates to mobile applications, automated updates to the customer mobile application without requiring customers to manually update the application itself, and updates to MyAccount with minimal development support, all supporting improved customer and employee experiences.

Better CRM management will enable us to both identify previous searches and efforts taken by Company employees on behalf of the customer, and support a 360-degree view of existing customer location(s), energy applications, and preferences, much of which will be available to the employee efficiently through the Single Screen program. It will also provide insight into customer billing patterns to allow us to serve customers better, by counseling and advising them on conservation options, management tools, and other service options. It will also give our customers the ability to have information on our technicians when it is necessary for them to visit the premise, including the technician's name and other pertinent information and also the status of the technician's location and approximate time he or she will arrive.

Q. IS THE COMPANY CONTINUING TO USE SALESFORCE FOR ITS CRM PLATFORM?

A. Yes. We went through a platform selection process to select Salesforce, as set forth in Trade Secret Exhibit___(WAR-1), Schedule 7. We evaluated several

solutions with similar capabilities, and noting improvements to the platform, ultimately chose to remain with Salesforce because it is our existing platform and therefore offers efficiencies in integration, time to market, and planning that would not be available by starting with a new solution altogether.

This is a multi-year project that was initiated in 2019, with the new system being placed in service during the MYRP period, which also includes some post-implementation and minor enhancement work.

c. Platform Technology and Data Analytics

Q. PLEASE DESCRIBE THIS PROJECT.

A. As noted earlier in my testimony, Xcel Energy's technological architecture has become increasingly intertwined, with core systems running at maximum capacity to support the need for emerging capabilities. To relieve the pressure from these critical core systems, new data layers will be added to aggregate key information and manage extra capabilities, while providing flexibility and added capacity. To accomplish this, we will develop an Automatic Program Interface (API), which is a set of routines, protocols, and tools for building software applications to ensure our software components can "talk" to each other. The API will personalize and save preferences for our employees and customers. This infrastructure also includes our operations model connectivity and security, and our data architecture and governance.

This work will allow the legacy applications to function in the manner they were designed, eliminating significant current customization that is very costly to maintain. When correlated to the CRM and other platforms, based on the customer data the home screen will be directly tied to the customer's needs from

Xcel Energy. For a green user (a customer wanting to have renewable sources available), their screen may highlight the ability to pay slightly more for renewable energy. Or cost-conscious consumers may highlight the ability to lower their bills based on energy consumption data. The personalized experience will help customers easily and efficiently access the information they need.

Q. PLEASE EXPLAIN HOW THIS PROJECT ALSO DEVELOPS DATA ANALYTICS.

A. This project develops the systems for data architecture and governance, analysis, metrics, and baselines for our customer platforms, as well as systems automation. The work will allow us to both automate processes that currently require manual intervention, such as eliminating manual removal of staging of code, as well as automating running of scripts and testing. Ultimately, with this work we will add a Customer Data Platform layer to the Company's technological architecture, which will act as a central repository of data from the Company's core systems and third-party vendors. It will also provide expedited consumption of data by other systems and eliminate more legacy point-to-point interfaces. For the customers, the data layer will be where the Company can store data in one location to use on all channels. The data will be accessible from all channels to eliminate the need for redundant input.

This work will also allow us to query and run analysis and reporting on information outside of our core applications, such as core ordering and billing systems, which allows core applications to conduct only the transactions they were designed to complete.

Additionally, we are investing in analytics to help understand customer personas, preferences, and previous issues of our customers. This will help our call center agents assist incoming calls in an expedited fashion with all the information they need, as previously noted with respect to our digital interfaces. Artificial Intelligence (AI) and Natural Language Understanding (NLU) will be used in conjunction with each other, and with data in the CRM, to simplify the customer call experience and reroute the caller to the correct department. This will also help gather all the required information, so that the right solution for the customer will be more easily recognizable to the Company employee.

5. Emergent Demand

Q. DOES BUSINESS SYSTEMS HAVE CAPITAL COSTS THAT SPREAD ACROSS ALL KEY BUDGET CATEGORIES?

A. Yes. Given the ever-changing nature of technology and emerging cyber security risks, it is not possible to identify all projects that may be needed in a given year. To ensure that we are able to meet our overall objectives, a number of years ago we created Emergent Demand as an efficient way to fund important and unexpected projects.

Q. HOW DOES EMERGENT DEMAND HELP ENSURE THAT BUSINESS SYSTEMS MEETS ITS KEY OBJECTIVES?

A. Emergent Demand provides Business Systems with the ability to assess and address, as appropriate, emerging technology needs as they arise.

For instance, we may identify a risk associated with existing technology that needs to be addressed earlier than initially planned. In other instances, we might begin implementing new software and then learn of a new function that is cost-

effective to adopt at the same time the project is implemented.

Whether the funding requirement is from a scope change to an existing project, or to address a new risk or a new identified need, Emergent Demand allows us to effectively ensure adequate funding for projects that cannot always be predicted in our fast-changing environment.

Q. IS THIS HOW BUSINESS SYSTEMS HAS ALWAYS MANAGED EMERGENT NEEDS OF THE ORGANIZATION?

A. No. Because our project budgets typically do not contain contingencies, prior to creation of the Emergent Demand account in 2013 we had to delay or cancel previously-planned projects or absorb unplanned work and costs when a new technology or critical need was identified. These changes would often disrupt the parts of the business relying on our original plan, and would impact other long-term plans that affect the Company, our customers, or both.

Q. WHAT PROCESS WAS USED TO ESTABLISH THE TEST YEAR EMERGENT DEMAND BUDGET?

A. Beginning with the timeframe of our 2016 Minnesota rate case, to develop the Emergent Demand budget, we reviewed our experience with emergent demand and tailored the budget for future years to forecasted spending levels. The 2017-2019 Emergent Demand funds were completely distributed to other projects.

Q. WHY IS THE BUDGET FOR EMERGENT DEMAND IN 2021 NEGATIVE?

A. For 2021, the Business Systems budget has been over-allocated to other capital project categories besides Emergent Demand, meaning that the 2021 Emergent Demand is negative so that the total 2021 capital budget does not exceed the

overall budget. This is occurring because the demand and need for IT solutions to address aging technology, address cyber security, and enhance our capabilities across the enterprise is so high, and increasing. Over the remainder of the year, either additional dollars will be allocated to Business Systems to allow all projects to go forward, or certain projects may be delayed to a future year such that the need for a net credit in Emergent Demand will reduce to zero. Either way, the Business Systems will be implementing, at a minimum, its overall capital budget.

Q. ARE THERE ADDITIONAL BENEFITS TO BUDGETING FOR EMERGENT DEMAND?

A. Yes. In addition to the needs and benefits I previously discussed, Emergent Demand allows us to more comprehensively vet requested changes in individual project scope than would be practical with a project-specific contingency arrangement. In order to utilize Emergent Demand funds, a project must again be reviewed and approved by the Technology Investment Council. In addition, including a contingency within every project budget for unforeseen circumstances assumes that every project will need a contingency amount. Rather than estimating an overall contingency to handle both project-specific and broader emergent issues that face the organization, we use Emergent Demand to distribute funding solely to those projects that require emergent funding.

Q. CAN YOU EXPLAIN IN MORE DETAIL HOW REQUESTS FOR FUNDING FROM EMERGENT DEMAND ARE REVIEWED?

A. Yes. Requests for funds from Emergent Demand , including any request that may arise for a new project or for more funding on an existing project, are reviewed to ensure need. Emergent Demand therefore provides another layer

of governance for existing projects, because they must receive an additional round of approval before being allocated funds from Emergent Demand.

Q. ARE THERE TIMES WHEN A CONTINGENCY IS NEEDED DESPITE EMERGENT DEMAND?

A. Yes, but only on a limited exception basis. For example, we included contingencies in both the Core HR Application project and the DEMS project to account for the size of the total project, the total annual budgets, identified risks, and understood scope and requirements.

Q. IS THE BUSINESS SYSTEMS BUDGET HIGHER THAN PREVIOUS YEARS BECAUSE OF EMERGENT DEMAND?

A. No. The 2021-2023 budget level was initially established by reviewing the capital plan and then creating an Emergent Demand funding level for each budget year based on business priorities, balanced by the overall business area capital spending guidelines. We continue to refine the Emergent Demand budget with each new budgeting cycle, removing dollars from this capital budget grouping and assigning them to projects that have become more definite in scope and planning. And whereas Business Systems previously funded emergent issues by reallocating dollars from existing, planned projects, with the establishment of Emergent Demand, we forecasted the level of 2021 funding knowing that we are addressing greater demand for IT solutions than we have actual dollars to fund. In sum, we are ensuring our budgets are managed carefully and are reasonable in the face of significant increasing demand.

E. 2022 Capital Additions

Q. WHAT CAPITAL ADDITIONS IS BUSINESS SYSTEMS PROPOSING TO MAKE IN 2022?

A. The NSPM (Total Company) Business Systems 2022 capital additions are budgeted to be approximately $119.7 million. This capital additions budget includes a number of projects that are categorized in Table 12 below according to the capital budget groupings described earlier in my testimony.

Table 12

2022 Total Capital Additions

Capital Additions	Total
Aging Technology	68.9
Cyber Security	0.1
Enhance Capabilities	7.3
Customer	12.1
Emergent Demand	31.3
NSPM Total	**119.7**

1. Aging Technology

Q. ARE ANY CAPITAL PROJECTS TO REPLACE AGING TECHNOLOGY INCLUDED IN THE 2022 PLAN YEAR?

A. Yes. We anticipate that $68.9 million will be spent to replace aging technology assets in 2022 as shown in Table 13 below.

Table 13

2022 Aging Technology IT Additions

2022 Aging Technology IT Investments	2022 Total
DEMS Upgrade AKA Dynamic EMS (DEMS) Environment Phase 4	26.8
Core HR Application (Payroll Benefits)	17.3
DR Technology Refresh	5.0
WAN NSPMN	3.4
Technology License 2022	2.6
Annual Planned PC Refresh	2.5
Annual Server Refresh	2.5
Annual Data Storage Refresh	2.0
Annual Network Refresh	1.6
Aging Technology Other	5.1
NSPM Total	**68.9**

There are three significant projects in 2022 that are continuing from 2021. These projects are the Core HR Application, the DR Technology Refresh, and the WAN NSPMN (Network Infrastructure). As previously noted, these projects are being placed in service as assets are deployed and are being used to perform their intended function. In addition, annual refreshes are ongoing in 2022, and are discussed in greater detail below.

a. DEMS Upgrade AKA Dynamic EMS Environment Phase 4

Q. PLEASE DESCRIBE THIS PROJECT.

A. DEMS is the Company's critical system for supporting transmission SCADA, Generation, Generation Dispatch, Market Participation and Reliability Coordination. The NSPM phase of this project is part of a five-year effort to replace the Energy Management System (EMS), which is a critical technology that is used for the monitoring and management of the bulk electric system by

our transmission system. The EMS interfaces with field devices that collect information about the health of the bulk electric system. This real-time, two-way communication provides Transmission and Distribution Operations the ability to remotely control the flow of electricity during outage and maintenance periods, which is a key driver of our ability to maintain efficient and reliable service to our customers.

The DEMS project is primarily driven by a contractual agreement with General Electric (GE) to upgrade DEMS to a newer version within six years of the executed contract. Without an upgrade, the Company's DEMS system will not evolve with the GE product, which may impact the Company's ability to get vendor support for any software system issues. Additionally, there is a known risk of hardware failure due to equipment and overall infrastructure being at the end of its life. The upgrade will also provide enhanced capability regarding the Transmission Security Model (TSM) to help reduce risk if/when field communications fail. The upgrade also provides an improved security posture and will employ the Company's new Operation Technology (OT) network and infrastructure. We have completed the Factory Acceptance Testing (FAT) and resolved the issues identified during that process. We are working to ready the new infrastructure and environments for deployment; once completed we will start the work through site acceptance testing (SAT), parallel testing, and resiliency testing. We anticipate the first operating company going live at the end of 2021 and the other operating companies, including NSPM, going live in 2022.

b. Core HR Application

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project continues from 2021 and will replace the multiple existing core HR software systems and vendors at Xcel Energy - PeopleSoft, TIME, myHR, Talent Management, Learning Management System, Workforce Planning, and Workforce Analytics – with a single, integrated software solution will be determined during an RFP for the project. These applications comprise the core human resource system, provide payroll, benefits administration, and job record tracking to employees and retirees of the Company. As I previously indicated, this is a multi-year project, with various components placed in service as assets are deployed.

c. Disaster Recovery (DR) Technology Refresh

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will replace aging Disaster Recovery hardware for VMware, Linux, and Windows environments. This technology refresh will enable the Company to proactively test and implement a new methodology of the Disaster Recovery environment. This project will provide engineering, infrastructure, and software to ensure that the Company will be fully prepared during a disaster. As I previously discussed, this is a multi-year project with various components that will be placed in service as assets are deployed.

d. Network Infrastructure Investments (WAN NSPMN)

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project continues the detail design, planning, installation and commissioning of equipment that comprises an expansion and privatization of the Company's corporate WAN across our service territories, as discussed

earlier in my testimony. The portion of this ongoing project that will be in service in 2022 includes deploying routers, switches, firewalls and wireless infrastructure. It also includes services for the design and implementation of these systems.

e. Technology License 2022

Q. PLEASE DESCRIBE THIS PROJECT.

A. As in 2021, this project provides software license support across enterprise infrastructure and operations for the 2022 test year. Updating software licenses ensures that system devices are running up-to-date licensed software, which decreases support costs and increases the Company's cyber security profile.

f. Annual Refresh Projects

Q. DO YOU ALSO ANTICIPATE UNDERTAKING REFRESHES IN 2022?

A. Yes. As discussed earlier in my testimony, we must refresh certain hardware devices on a regular basis to address end-of-life issues, maintain reasonably current technology, and replace systems that fail or break unexpectedly. Our 2022 budget for Annual Refreshes is set forth in Table 14 below:

Table 14

2022 Annual Refresh Capital Additions

2022 Annual Refresh Capital Additions	2022 Total
Annual Network Refresh	1.6
Annual PC Refresh	2.5
Annual Printer Refresh*	0.4
Annual Server Refresh	2.5
Annual Data Storage Refresh	2.0
NSPM Total	**9.0**

**Included in "Aging Technology Other" because project size is less than $1 million.*

Q. HOW WERE THE 2022 REFRESH BUDGETS ESTABLISHED?

A. Annual refresh budgets for 2022 are established based on previous years' expenses, to maintain an appropriate refresh plan year over year.

2. Cyber Security

Q. ARE ANY CAPITAL PROJECTS TO ADDRESS EVOLVING CYBER SECURITY THREATS AND REQUIREMENTS INCLUDED IN THE 2022 PLAN YEAR?

A. Yes. Our in-service cyber security investments for 2022 are expected to total $0.1 million, as set forth in Table 15 below, with minor projects continued from 2021. For 2022, the Security Technology Refresh project, which I described earlier in my testimony, is located in Emergent Demand. As noted previously, this project is being placed in service as the individual pieces of technology are refreshed.

Table 15

2022 Cyber Security IT Additions

2022 Cyber Security IT Investments	2022 Total
Cyber Security Other	0.1
NSPM Total	**0.1**

3. Enhancing Capabilities

Q. ARE ANY CAPITAL PROJECTS TO ENHANCE COMPANY CAPABILITIES INCLUDED IN THE 2022 PLAN YEAR?

A. Yes. Our investments to enhance capabilities and be placed in service in 2022 are expected to total $7.3 million as depicted below in Table 16.

Table 16

2022 Enhancing Capabilities IT Additions

2022 Enhance Capabilities IT Investments	2022 Total
Strategic Fiber Deployment	4.6
SAP Continuous Improvements	2.3
Enhance Capabilities Other	0.5
NSPM Total	**7.3**

Q. WHAT IS THE STRATEGIC FIBER DEPLOYMENT PROJECT?

A. This is a multi-year project, with the same explanation as 2021 and various components placed in service as assets are deployed. The Company will acquire dark fiber optic cable assets at certain sites in order to support enterprise network connectivity. This project is intended to remove O&M expenditures and associated growth in spending for existing and future network circuits.

Q. WHAT IS THE SAP CONTINUOUS IMPROVEMENTS PROJECT?

A. This is a multi-year project, with the same explanation as 2021 with various components placed in service as assets are deployed.

4. Customer Experience

Q. ARE ANY CAPITAL PROJECTS TO ENHANCE THE CUSTOMER EXPERIENCE INCLUDED IN THE 2022 PLAN YEAR?

A. Yes. We anticipate additional investments in 2022 for the customer experience effort that will total $12.1 million. The 2022 capital additions for these projects are set forth in Table 17 below:

Table 17

2022 Customer Experience IT Additions

Project	2022 Customer Experience IT Investments	2022 Total
Customer Relationship Management	CXT Cust Serv Console SW MN-10786	9.1
Platform Technology and Data Analytics	CXT-Cust Data SW MN-10782	0.8
Multiple	Customer Experience Other	2.1
	NSPM Total	**12.1**

Q. COULD YOU DESCRIBE THE CAPITAL ADDITIONS FOR 2022 FOR THE CXT PROGRAM IN MORE DETAIL?

A. Yes. For 2022, we continue building out the Salesforce CRM tool and introducing new modules to better serve our customers. As I previously discussed for the 2021 test year, the redesigned platform will enable us to track the different relationships with our customers, whether that is commercial, residential, industrial or on a different basis. Overall, these capital additions

reflect continuation of the Customer Experience projects identified for 2021. With a project of this size and scope, we also need to budget for post-implementation enhancements that play a critical role in supporting the overall CXT program, which will continue going forward through 2023.

5. Emergent Demand

Q. DOES BUSINESS SYSTEMS INCLUDE EMERGENT DEMAND IN ITS 2022 BUDGET, AS IT DID FOR 2021?

A. Yes, although the dollar amounts are not the same given the different IT needs of our Company in different years. At the time we developed our 2022 budget, Emergent Demand included $31.3 million allocated to NSPM.

Q. HOW DID THE COMPANY ESTABLISH THE EMERGENT DEMAND BUDGET FOR 2022?

A. The current budget is based on business priorities for the year, balanced by the overall business area capital spending guidelines. In other words, Emergent Demand represents the remaining capital available for IT projects after accounting for the specific projects that were previously approved for implementation.

Q. IS THE EMERGENT DEMAND BUDGET SIMILAR IN 2022 TO THE 2021 BUDGET?

A. Not at this time. The Emergent Demand category is significantly higher in 2022 than in 2021, as the budget was over-allocated in 2021 as I described above. Looking to 2022, the Company has such a high demand for IT solutions that we have left a larger portion of the budget in Emergent Demand to allow for full vetting of the sheer number and scope of project needs. Exhibit ___ (WAR-1), Schedule 8 to my Direct Testimony includes the list of potential IT

projects that have been identified so far based on business area requests and identified needs, and which we are vetting for possible approval or exclusion. In addition, it is always possible current projects will need to be advanced or delayed, depending on the emerging needs of the business. The individual Aging Technology, Customer Experience, Cyber Security, and Enhancing Capabilities projects that are identified in my testimony for 2022 and 2023 are those that have been approved and often require more advance planning; in addition to these, we will need at least the remaining Emergent Demand funds to meet a reasonable number of employee and customer needs in 2022 and beyond.

F. 2023 Capital Additions

Q. WHAT CAPITAL ADDITIONS IS BUSINESS SYSTEMS PROPOSING TO MAKE IN 2023?

A. The $85.1 million. This capital additions budget includes a number of projects that are categorized below in Table 18 according to the capital budget groupings described earlier in my Testimony.

Table 18

2023 Total Capital Additions

2023 Capital Additions	2023 Total
Aging Technology	27.8
Cyber Security	0.0
Enhance Capabilities	4.6
Customer	1.2
Emergent Demand	51.5
NSPM Total	**85.1**

1. Aging Technology

Q. ARE ANY CAPITAL PROJECTS TO REPLACE AGING TECHNOLOGY INCLUDED IN THE 2023 PLAN YEAR?

A. Yes. We anticipate that investments in aging technology for 2023 will total $27.8 million, as depicted below in Table 19.

Table 19

2023 Aging Technology IT Additions

2023 Aging Technology IT Investments	2023 Total
WAN NSPMN	7.8
SAS BookRunner Upgrade	5.4
Annual PC Refresh	3.3
Annual Server Refresh	2.5
Annual Network Refresh	2.1
Core HR Application (Payroll Benefits)	2.1
Annual Data Storage Refresh	2.0
Technology License 2023	1.5
Aging Technology Other	1.0
NSPM Total	**27.8**

Within the Aging Technology capital budget grouping, there are two significant individual projects beginning in 2023: SAS BookRunner Upgrade, and Technology License 2023. Additionally, there are two significant individual projects for 2023 that are continuing from 2022 and which I described earlier in my testimony – Core HR Application and Network Infrastructure Investments (WAN NSPMN) projects. As noted previously, these projects are

being placed in service as assets are deployed and are being utilized to perform their intended function. In addition, refreshes are ongoing as illustrated above in Table 19 and are discussed in greater detail below.

a. Network Infrastructure Investments (WAN NSPMN)

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project continues the detail design, planning, installation and commissioning of equipment that comprises an expansion and privatization of the company's corporate WAN across our service territories, as discussed earlier in my testimony. The portion of this ongoing project that will be in service in 2023 continues to include deploying routers, switches, firewalls and wireless infrastructure. It also includes services for the design and implementation of these systems. This is a multi-year project, with various components placed in service as assets are deployed.

b. SAS BookRunner Upgrades

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will upgrade the SAS BookRunner Energy Trading Risk Management (ETRM) application, which the vendor is no longer offering, with term license at Xcel Energy. It is a critical application used by the Risk Management area to measure, manage and report risk for energy trade transactions. SAS communicated in October 2019 that they will retire its product "Book Runner" by August 2021. This project is to implement a new solution that will provide Risk Management with the continued capabilities necessary to support the Commercial Operations to optimize risk management for Xcel Energy's trade model

c. Core HR Application

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project continues from 2021 and 2022 and will continue to replace the multiple existing core HR software systems and vendors at Xcel Energy – PeopleSoft, TIME, myHR, Talent Management, Learning Management System, Workforce Planning, and Workforce Analytics – with a single, integrated software solution will be determined during an RFP for the project. These applications comprise the core human resource system, provide payroll, benefits administration, and job record tracking to employees and retirees of the Company. This is a multi-year project with various components placed in service as assets are deployed.

d. Technology License 2023

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project is necessary to procure new technology licensing for Company infrastructure and operations. All Company devices must be running not only licensed software, but also current software versions and the most up-to-date software patches and upgrades. Updating licensing helps maintain Company IT costs and improves the Company's cyber security profile.

e. Annual Refresh Projects

Q. DO YOU ALSO ANTICIPATE UNDERTAKING REFRESHES IN 2023?

A. Yes. As discussed above, we must refresh certain hardware devices on a regular basis to address end-of-life issues, maintain reasonably current technology, and replace systems that fail or break unexpectedly. Our 2023 budget for Annual Refreshes is set forth in Table 20 below:

Table 20

2023 Annual Refresh Capital Additions

2023 Annual Refresh Capital Additions	2023 Total
Annual Network Refresh	2.1
Annual PC Refresh	3.3
Annual Printer Refresh*	0.6
Annual Server Refresh	2.5
Annual Data Storage Refresh	2.0
NSPM Total	**10.5**

**Included in "Aging Technology Other" because project size is less than $1 million.*

2. Cyber Security

Q. ARE ANY CAPITAL PROJECTS INTENDED TO ADDRESS EVOLVING CYBER SECURITY THREATS AND REQUIREMENTS INCLUDED IN THE 2023 PLAN YEAR?

A. Yes. As previously noted, the Security Technology Refresh project is currently included in Emergent Demand, and will be placed in service in 2023 as the individual pieces of technology are refreshed. Thus, while the Cyber Security budget presently reflects zero dollars for 2023, the Cyber Security budget amount is reflected in Emergent Demand and is expected to be spent and projects in serviced as technology is refreshed.

3. Enhancing Capabilities

Q. ARE ANY CAPITAL PROJECTS TO ENHANCE COMPANY CAPABILITIES INCLUDED IN THE 2023 PLAN YEAR?

A. Yes. Our investments to enhance capabilities for 2023 are expected to total $4.6 million, as depicted below in Table 21.

Table 21

2023 Enhancing Capabilities IT Additions

2023 Enhance Capabilities IT Investments	2023 Total
SAP Continuous Improvements	2.3
Strategic Fiber Deployment	1.4
Enhance Capabilities Other	0.9
NSPM Total	**4.6**

a. SAP Continuous Improvements

Q. WHAT IS SAP CONTINUOUS IMPROVEMENTS PURCHASE POWER AGREEMENT CONTRACT MANAGEMENT?

A. As previously noted, SAP is an enterprise application and continuous improvement and is needed to continue fully utilizing and obtaining the benefits of having an enterprise application. These improvements are intended to address such issues as implementing security patches and upgrades, and utilizing additional technology capabilities. This is a multi-year project, with various components placed in service as assets are deployed.

b. Strategic Fiber Deployment

Q. PLEASE DESCRIBE THIS PROJECT?

A. This project continues capital investments that will be going into service for the 2023 plan year. As I discuss above, the Company will acquire dark fiber optic cable assets at certain sites in order to support enterprise network connectivity. This project is intended to remove O&M expenditures and associated growth in spending for existing and future network circuits.

4. Customer Experience

Q. ARE ANY CAPITAL PROJECTS TO ENHANCE THE CUSTOMER EXPERIENCE INCLUDED IN THE 2023 PLAN YEAR?

A. Yes. For 2023, we continue post-implementation enhancements for the CXT program, as the online, application, data, and functionality needs of our customers will continue to evolve. We anticipate that 2023 investments in the customer experience effort will total $1.2 million.

5. Emergent Demand

Q. DOES BUSINESS SYSTEMS INCLUDE EMERGENT DEMAND IN ITS 2023 BUDGET, AS IT DID FOR 2021 AND 2022?

A. Yes, although the dollar amounts are not the same given the different IT needs of our Company in different years. The MYRP 2023 Emergent Demand budget includes $51.5 million based on forecasted business priorities for the year, balanced by the overall business area capital spending guidelines. We have not yet distributed funding from 2023 Emergent Demand to the specific budget categories where it may be spent.

Q. WHY IS IT REASONABLE FOR EMERGENT DEMAND TO BE THE HIGHEST BUDGETED CATEGORY AMOUNT FOR 2023?

A. As discussed throughout my testimony, technology continues to change and evolve at a rapid pace. At the same time, IT becomes increasingly critical to the core functions of our business. The farther we look into the future, the less certain we can be about specific IT project needs but at the same time it is clear our needs will continue to grow. In fact, Exhibit ___ (WAR-1), Schedule 8 to my Direct Testimony underscores project requests well into the future that exceed our total budgets. We have therefore allotted a larger portion of the

2023 Business Systems budget to projects that have not yet emerged or been approved.

Further, Business Systems consistently utilized the Emergent Demand budget in each of the last several years, and in fact over-allocated funds for 2020 and 2021 (as discussed earlier in my testimony). These factors underscore the need for these funds and that they are being used to fulfill important business purposes. Accordingly, the Emergent Demand budget for 2023 is a reasonable amount and portion of our overall Business Systems budget.

Q. WHAT DO YOU CONCLUDE WITH RESPECT TO THE OVERALL LEVEL OF BUSINESS SYSTEMS CAPITAL COSTS THE COMPANY IS SEEKING TO RECOVER IN THIS RATE CASE?

A. The overall level of Business Systems costs is reasonable, as shown by the above discussion, and is necessary to support an appropriate level of service to our customers. Finally, the costs included in our 2021 through 2023 capital budgets are representative of the types of work we must do year over year.

IV. O&M BUDGET

A. O&M Overview

Q. WHAT IS INCLUDED IN THE BUSINESS SYSTEMS O&M BUDGET?

A. The Business Systems O&M budget consists of costs related to the operation and maintenance of existing IT assets such as software systems, computers, printers, phones, radio systems, and servers. It also includes annual software contract and license fees, as well as maintenance agreements, for existing software and hardware. In addition, the O&M budget includes non-capitalized

costs associated with developing, enhancing, and maintaining new or existing IT systems.

Q. WHAT ARE THE OVERALL TRENDS FOR BUSINESS SYSTEMS' O&M EXPENSES?

A. Beginning in 2012, as we entered a new phase of capital investment, our costs began to increase – largely because new IT capital investments typically require additional licensing fees, other operational costs, and more complex maintenance. This was reflected our 2016-2019 MYRP request. From 2017 through 2019, Business Systems O&M costs increased largely due to our need to maintain new GL and WAM assets while also maintaining prior IT capital investments. Looking ahead to 2021 through 2023, we anticipate continued cost increases reflecting the addition of new capital investments, customer experience projects, and AGIS investments.

Q. HOW DO YOU RECONCILE THESE HIGHER BUDGETS WITH THE NEED TO ENSURE CUSTOMER VALUE FOR COMPANY INVESTMENTS?

A. Our customers have benefited from lower O&M and capital costs in previous years where we deferred and avoided technology investments by harvesting maximum value from our current systems. However, as previously discussed, we cannot defer investments to replace dated technology or old hardware indefinitely and need to make investments to continue to serve our customers and to protect them and our business from cyber security and system failure risk. Without making these investments, we could not provide reliable, quality service to our customers.

Q. WHAT IS THE COMPANY'S BUSINESS SYSTEM'S O&M BUDGET FOR THE 2021 TO 2023 MYRP?

A. The total Business Systems O&M budget for the 2021 test year is $98.1 million, for the 2022 plan year is $104.5 million, and for the 2023 plan year is $109.5 million (exclusive of AGIS). The basis for this budget is set forth in detail below, utilizing essentially the same categories of O&M utilized in our prior rate cases. I present the Business Systems O&M budget on a NSPM Electric basis.

Q. WHAT ARE THE BASIC CATEGORIES OF THE O&M BUDGET?

A. The three-year Business Systems O&M budget can be broken down into 14 categories: (1) Network Services; (2) Software Licenses and Maintenance; (3) Company Labor; (4) Distributed System Services; (5) Application Development and Maintenance; (6) Contract and Consulting; (7) Shared Assets; (8) Hardware Purchases and Maintenance; (9) Employee Expenses; (10) Mainframe; (11) Equipment Maintenance; (12) Donation, Dues, and Fees; (13) AGIS; and (14) Other. Like capital costs, however, most of AGIS O&M is not included in base rates. The remaining costs in the Business Systems O&M budget pertain to small individual costs, such as administrative and office supplies. Table 22 below shows the 2021-2023 Business Systems O&M budget by category:

Table 22

Business Systems 2017-2023 O&M Budget by Category

Business Systems 2017-2023 O&M Budget by Category ($'s millions) NSPM Electric							
Cost Category	**2017 Actuals**	**2018 Actuals**	**2019 Actuals**	**2020 Actual/ Forecast**	**2021 Budget**	**2022 Budget**	**2023 Budget**
Network Services	17.9	18.1	16.6	17.2	17.8	18.8	19.4
Software License and Maintenance	22.5	24.5	24.0	29.7	35.8	40.0	41.2
Company Labor	14.5	17.2	17.7	21.9	23.5	24.5	25.7
Distributed Systems Services	3.7	2.9	1.7	0.8	0.9	0.9	1.0
Application Development and Maintenance	8.6	7.8	8.4	9.5	9.6	9.4	9.4
Contract and Consulting	9.4	9.1	7.8	8.8	5.0	5.0	5.0
Shared Assets	-8.6	-1.6	1.8	-0.5	-1.4	-1.3	0.6
Hardware Maintenance and Purchase	1.6	2.8	2.9	2.6	3.0	3.1	3.2
Employee Expenses	1.2	1.3	0.8	0.5	1.0	1.0	1.1
Mainframe	0.8	1.1	1.1	0.8	1.1	1.2	1.2
Equipment Maintenance*	0.9	0.5					
Donations, dues, and Fees	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.1	1.9	1.7	1.9	1.7	1.8	1.8
AGIS**	0.0	0.0	1.4	8.0	11.7	17.3	26.1
Subtotal**	**73.6**	**85.7**	**85.9**	**101.2**	**109.8**	**121.8**	**135.7**
Total Excluding AGIS	**73.6**	**85.6**	**84.6**	**93.2**	**98.1**	**104.5**	**109.5**

** mapped to Hardware Maintenance and Purchase beginning in 2019.*

***included for illustrative purposes.*

Q. WHAT ARE THE MAJOR COST DRIVERS OF THE 2021-2023 BUSINESS SYSTEMS O&M BUDGET?

A. Of the categories listed above, I consider three as primary drivers of our Business Systems budget during the MYRP period: (1) Software License and Maintenance; (2) Company Labor; and (3) AGIS, which is a new initiative since our last rate case. However, most AGIS costs are included in the TCR Rider rather than through base rates in this case, as Company witness Mr. Halama explains. I describe each of the other budget categories later in my testimony, and explain why network needs, licensing costs, labor costs, and the ongoing security needs to keep our software maintenance up to date is increasing in the Company's business-as-usual IT costs.

Q. HOW DOES THE 2021-2023 BUDGET TREND OVER THE MYRP?

A. Excluding AGIS, the 2021 budget is 5.3 percent higher than the 2020 forecast; 2022 costs are 6.5 percent higher than 2021; and 2023 costs are 4.8 percent higher than the 2022 costs. The primary drivers of the increase are the escalating support costs for new software maintenance, ensuring existing applications have ongoing support as described in the software maintenance section of my testimony below, and insourcing efforts, which are offset by Contract and Consulting, Distributed Systems Services, and Application Development and Maintenance. AGIS also remains an overall driver of O&M expenditures for Business Systems, even though these costs are largely not included in base rates in this case.

Exhibit___(WAR-1), Schedule 3 also provides a breakdown of O&M costs.

Q. HOW HAS THE COVID-19 PANDEMIC AFFECTED THE BUSINESS SYSTEMS O&M LEVELS FOR 2020 AND FORECASTS FOR 2021 AND BEYOND?

A. While the coronavirus pandemic has at times changed how we conduct our business, as discussed earlier in my testimony, it has not materially changed Business Systems' O&M costs for 2020. Travel is down, but remains a small portion of our overall budget. Other work continues, and in some cases has increased as Business Systems works to serve employees working from home and in new ways due to the pandemic. Our 2020 budget reflects these limited changes, which are also incorporated into our budgets for the next few years.

B. O&M Budget Process

Q. HOW DOES THE COMPANY SET THE O&M BUDGET FOR THE BUSINESS SYSTEMS BUSINESS UNIT?

A. Our O&M budget process is similar to our capital budget process in that both are based on a partnership between corporate management of overall finances and the business needs we identify. Company witness Ms. Ostrom explains how the Company establishes business area O&M spending guidelines and budgets based on financing availability, specific needs of business areas, and overall needs of the Company. Overall, we establish a reasonable annual O&M level that allows Business Systems to complete priorities that are important to providing a reasonable level of services to the Company and our customers.

Q. DOES BUSINESS SYSTEMS EVER NEED TO CHANGE THE USE OF BUDGETED O&M FUNDS DURING THE FINANCIAL YEAR?

A. Yes. As mentioned earlier in my testimony, Business Systems adjusts for changing business impacts such as updates in technology, customer expectations, operating priorities of the business units across the Company, and

the Company finance area. There are times when O&M funds are shifted within Business Systems during the year, typically to address unplanned requirements. For example, during 2020, O&M spending was lower in the Operations and Infrastructure group, which allowed for some additional software maintenance and licensing expenses to be incurred while Business Systems in total remained within its anticipated forecast.

As another example, COVID-19 has impacted IT priorities by requiring us to prepare and support staff to work remotely, and by increasing the need for increased network support and new work at home collaboration tools. Specifically, when COVID-19 began we rolled out Zoom, Avaya, Skype and Microsoft Teams. After several months of using these applications in conjunction the Company determined that Microsoft Teams was the best collaboration option moving forward. To the best of our ability these and other plans at this time have been incorporated into our O&M budget.

Q. HOW DOES THE COMPANY DETERMINE CHANGES IN THE BUSINESS SYSTEMS O&M BUDGET FOR FUTURE YEARS?

A. As part of the Company's annual budget process, Business Systems performs a review of existing services and expected new services to determine budget needs for future years. This includes an evaluation of annual contract cost escalators for vendors, annual merit increases, changes in the quantity of services estimated to be consumed, and new services. This information is reviewed and evaluated through the budget process and a budget is established for Business Systems for future years.

Q DOES THE COMPANY HAVE A PROCESS FOR MITIGATING DEVIATIONS IN ACTUAL EXPENDITURES COMPARED TO BUDGETED EXPENDITURES?

A. Yes. As I previously described for the capital budget, Business Systems management monitors actual versus budget expenditures for both capital and O&M efforts on a monthly basis. Deviations are evaluated and action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

C. O&M Budget Detail

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section, I describe in detail the components of Business Systems that make up the O&M budget. I will describe each component, discuss any changes to O&M for that component over the course of the MYRP, and discuss ways that the Company mitigates O&M cost growth for that particular component.

1. Network Services

Q. WHAT ARE NETWORK SERVICES?

A. This category includes costs related to the maintenance of existing circuits, phones, microwave and radio systems, and other IT network infrastructure assets. Network activities provide operation and management of the Company's internal and external data transmission requirements. Network services are budgeted based on a price times a quantity. These costs are dependent upon Xcel Energy's service usage levels and the number of assets in use. As more IT infrastructure is put in place, network maintenance costs increase.

Q. WHAT NETWORK ENHANCEMENTS COST CHANGES ARE YOU ANTICIPATING DURING THE MYRP PERIOD?

A. Network system in 2021-2023 reflects the increased usage of the organization's network to support new applications and demand for greater speed and capacity to support existing systems. These usage and demand needs increase each year, as technology advances, new requirements or capabilities are identified and sites are added. Fortunately, the costs are relatively flat due to various actions taken by the Company, including the insourcing of work previously performed by IBM and terminating that contract and changing the vendor that manages our network circuits.

Network services also encompass the need to upgrade and replace aging components of the network. For example, the SCADA circuits that have been in place for many years for transmission and distribution purposes are based on analog technology. That technology is now digital and those new circuits require maintenance to keep current. Another example is the Company's investment in expanding the wireless network to aid productivity. This expansion places new assets in service that must be maintained.

Network services costs for the MYRP are $17.8 million in 2021 and increase to $18.8 million in the 2022 budget and to $19.4 million in the 2023 budget.

Cost savings have been achieved as a result of the elimination of the Company's contract with IBM in 2019. In addition, with our network projects identified in the capital section of my testimony we are purchasing dark fiber, which are dedicated leased lines and which allow for growth and the ability to better control future network costs, we have operated much of our older network

equipment without maintenance, opting for a time and material repair strategy as needed and thereby reducing costs.

2. Software Licenses and Maintenance

Q. WHAT IS SOFTWARE LICENSES AND MAINTENANCE?

A. This category includes expenses for payments to vendors for license agreements associated with various applications and desktop tools used by the Company to perform services. These payments cover updates, support patches, fixes and technical support.

Q. WHAT SOFTWARE LICENSE AND MAINTENANCE COST CHANGES ARE YOU ANTICIPATING FOR THE 2021-2023 MYRP?

A. There are three major drivers of increase to the 2021-2023 budgets, stemming overall from increasing costs in the industry. First, software costs are driven by net new projects, such as our CXT program, and other investment categories. Second, there are increased licensing costs driven by users, escalators in contracts, and upgrades. Third, maintenance and support must be updated to limit vulnerabilities, with cyber security threats increasing all the time it's more important than ever to keep software maintenance current and in support. Overall, software license and maintenance costs have increased from $35.8 million in 2021 to $40 million in the 2022 budget and to $41.2 million in 2023.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE INCREASES IN SOFTWARE MAINTENANCE COSTS.

A. There are several efforts used to reduce the growth in this category. First, we evaluate the need for maintenance support on applications that will be replaced. For example, as part of our upgrade to Windows 10 we are evaluating and

removing software applications that will no longer be needed or are not compatible. Second, we evaluate the usage of desktop software to determine if the usage justifies the continued need for a product. For example, if a computer user has not used a software product recently, we redeploy the license to another user, thereby avoiding the need to purchase a new license. Finally, we review contracts with vendors as part of the contract renewal process to reduce costs. For example, we might extend the term of a maintenance agreement in order to receive a larger discount, right size a contract to align to usage, or cancel a contract altogether.

3. Company Labor

Q. WHAT COMPANY LABOR COSTS ARE INCLUDED IN THE BUSINESS SYSTEMS O&M BUDGET?

A. Our labor costs include the cost associated with all employees in the Business Systems department.

Q. WHAT COMPANY LABOR COST CHANGES DO YOU ANTICIPATE FOR THE 2021-2023 MYRP?

A. Labor costs for the MYRP are $23.5 million in 2021 and increase to $24.5 million in the 2022 budget and to $25.7 million in the 2023 budget. From 2020 to 2021 labor is increasing by $1.6 million. The increases are due to two primary reasons. First, we are hiring to support new applications such as Customer, and were we need expertise in house to support new and existing applications which will be offset in Contract and Consulting. Second, salary and merit pay increases also contributed to the increase in 2021. For the years 2022 and 2023, internal labor increases are largely attributable to increases in salary resulting from earned merit pay increases.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE INCREASES IN COMPANY LABOR COSTS.

A. Company labor costs are based on the employee headcount required to provide IT services to the organization. The employee headcount is managed through a workforce plan process that monitors changes and includes attrition information as well as emergent needs. Changes to employee headcount for replacement related to attrition or for new headcount require assessment of the need for the personnel, the associated risks with not filling the position, and alternative options. This process has worked effectively and assures we have the correct resources in place with the right skills and allows us to manage costs.

4. Distributed Systems Services

Q. WHAT IS DISTRIBUTED SYSTEMS SERVICES?

A. This category includes expenses related to support and maintenance of servers, data storage, personal computers, printers, and similar components of the overall computing environment.

Q. WHAT DISTRIBUTED SYSTEMS SERVICES COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Growth in the number of servers is largely driven by growth and by capital projects that were placed in service in the past few years, such as the, GL, and others. As the number of servers grows, so does the amount of storage because each new server requires storage to function. Since the 2016 NSPM electric rate case, we had an increase in servers of 3,340, bringing the total to 5,580. Overall, distributed systems services costs are $0.9 million in 2021, $0.9 million in 2022, and $1.0 million in 2023. These costs are less than 2019 and in previous years due to insourcing of steady state work to Company employees.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE INCREASES IN DISTRIBUTED SYSTEMS SERVICES COSTS.

A. To reduce cost growth and implement savings in this area, the Company renegotiated server and storage costs as part of vendor contract renegotiation and has hired internal employees to manage this function, and has implemented data retention rules to curb storage growth. For example, all email is purged after 90 days in a user's inbox. Despite these efforts, however, storage growth increased from 3.75 PB since 2016 to 12 PB today, which is a 220 percent increase.

5. Application Development and Maintenance

Q. WHAT IS APPLICATION DEVELOPMENT AND MAINTENANCE (ADM)?

A. ADM includes costs of services to develop, enhance, maintain, and consult on new or existing IT software and hardware applications.

Q. WHAT ADM COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. ADM costs have remained relatively flat for the past several years, due largely to 2017 contract renegotiation offset by added programs such as SAP. In addition, we continue to thoroughly evaluate our application portfolio on a regular basis, to limit new development for those applications that will be replaced in the near future. Overall, ADM costs are flat at $9.6 million in 2021, $9.4 million in 2022, and $9.4 million in 2023.

6. Contract Labor and Consulting

Q. WHAT COSTS ARE INCLUDED IN THE BUDGET AS CONTRACT LABOR AND CONSULTING?

A. These costs consist of fees and expenses for professional consultants or

knowledge-based experts that are not employees of the Company. This category also includes staff augmentation through staffing agencies.

Q. WHAT CONTRACT LABOR COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Contract labor costs are expected to remain flat at $5.0 million annually for 2021, 2022, and 2023. The 2019 actuals and 2020 forecast are higher than the 2021-2023 budgets due primarily to continuing to bring steady state work to Company employees rather than outside vendors, which results in Company labor increases.

7. Shared Asset Allocation

Q. WHAT IS SHARED ASSET ALLOCATION?

A. This category reflects the allocation of Business Systems costs to or from the NSPM operating company, depending on where the asset was purchased and how an investment will be utilized between Xcel Energy operating companies. The dollars associated with this category are, in a sense, a true-up of costs related to a certain investment by assigning to the appropriate jurisdiction(s). This number fluctuates in part on the basis of the jurisdiction in which an investment is purchased, consistent with our cost allocation policy. For example, the dollars in this account will decrease when an asset is purchased in NSPM but is also utilized in other operating companies.

8. Hardware Purchases and Maintenance

Q. WHAT IS INCLUDED IN THE HARDWARE PURCHASES AND MAINTENANCE CATEGORY?

A. Our hardware maintenance costs relate largely to vendor contracts we maintain to support hardware systems. This cost category also includes miscellaneous

hardware equipment purchases, such as for batteries, memory cards, keyboards, headsets, and related technical tools. In 2019, equipment maintenance was remapped to rollup in the hardware purchases and maintenance category.

Q. WHAT HARDWARE PURCHASES AND MAINTENANCE COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Costs for this category are expected to fluctuate based on the work being performed and is budgeted for $3.0 million in 2021, $3.1 million in 2022, and $3.2 million in 2023. The overall costs in this category combined with remapping of equipment maintenance remain flat, with the major ongoing driver related to the maintenance costs required to support the new software.

9. Employee Expenses

Q. WHAT EMPLOYEE EXPENSES ARE INCLUDED IN THE BUSINESS SYSTEMS BUDGET?

A. These costs are primarily related to employee travel, occurring on an as-needed basis.

Q. HOW DO THESE COSTS RELATE TO THE OVERALL EMPLOYEE EXPENSES AS PRESENTED BY COMPANY WITNESS MR. WILLIAM KILE HUSEN?

A. The Business Systems department incurs the expenses included in my testimony, which follow the policy for employee expenses explained by Company witness Mr. Husen. Mr. Husen provides a broader description of our expense processes and adjustments for this rate case.

Q. WHAT EMPLOYEE EXPENSE COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Costs for employee expenses are budgeted at $1.0 million annually for 2021 and 2022, with an increase to $1.1 million in 2023. These amounts reflect additional travel in 2021 and 2022 as compared to 2020, based on anticipated business needs. The budget is slightly higher than the three-year average given that the pandemic materially reduced 2020 employee expenses for a portion of the year.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE EMPLOYEE EXPENSES COSTS.

A. We encourage employees to limit expense to the greatest extent possible. Simple efforts help contain costs, such as using technology like video-conferencing as a measure to reduce travel-related employee expenses. Overall, we encourage a conservative approach and limit approval of planned travel accordingly.

10. Mainframe

Q. WHAT ARE MAINFRAME COSTS?

A. These are costs for maintaining the centralized applications running on the mainframe computer, which serve multiple business needs such as batch processing for customer billing and meter reading.

Q. WHAT MAINFRAME COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Mainframe costs are expected to remain flat at $1.1 million for 2021 and $1.2 million annually for 2022 and 2023.

11. Equipment Maintenance

Q. WHAT EQUIPMENT MAINTENANCE COSTS ARE INCLUDED IN THE BUSINESS SYSTEMS BUDGET?

A. This category includes the usage costs of multi-function copier/printers used by all employees across the Company. In 2019 these costs were mapped to hardware purchases and maintenance to reduce a small category of expenses.

Q. WHAT EQUIPMENT MAINTENANCE SERVICES COST CHANGES DO YOU ANTICIPATE FOR THE MYRP?

A. Equipment maintenance is expected to remain relatively flat in 2021, 2022, and 2023 and has been mapped to hardware purchases and maintenance.

12. Donations, Dues, and Fees

Q. WHAT DONATIONS, DUES, AND FEES ARE INCLUDED IN THE BUSINESS SYSTEMS BUDGET?

A. These costs cover our participation in organizations that supply best practices guidance for IT. Also included are costs for fees paid to regulatory agencies for compliance related items.

Q. WHAT CHANGES IN DONATIONS, DUES, AND FEE COSTS DO YOU ANTICIPATE FOR THE MYRP?

A. Costs for the MYRP going forward are budgeted at less than $0.1 million annually, which is similar to expenses in past years.

13. AGIS

Q. WHAT TYPES OF IT O&M COSTS IS BUSINESS SYSTEMS INCURRING TO IMPLEMENT THE AGIS PROJECTS?

A. The types of O&M costs Business Systems is incurring and expects to incur for AGIS include hardware support, costs for the AMI head-end software (which is a shared asset), data storage, annual software maintenance, labor for software support and project oversight, and application support, which includes ongoing testing, review of processes, and application of security patches to respond to evolving threats. As I previously discussed, the Company proposes to recover internal labor costs through base rates, with Company witness Mr. Halama explaining how internal labor costs are calculated for purposes of setting base rates. Other O&M costs for AGIS are not being requested in base rates at this time, as the Company is instead seeking recovery through the TCR Rider. As a result, I identified these other costs in my testimony solely to illustrate more holistically how Business Systems is allocating O&M resources.

14. Other

Q. WHAT COSTS REMAIN IN THE "OTHER" CATEGORY?

A. This category includes very small purchases for administrative materials, fleet chargeback expenses, and internal building moves.

Q. WHAT CHANGES IN "OTHER" DO YOU ANTICIPATE FOR THE MYRP?

A. Costs in this category are $1.7 million in 2021, and $1.8 million annually in 2022 and 2023.

Q. WHAT DO YOU CONCLUDE ABOUT BUSINESS SYSTEMS' O&M COSTS OVERALL?

A. We have worked hard in recent years to contain O&M costs, which is reflected in the number of O&M categories with flat expense levels and budgets between past and future years. Where costs are rising, this is due to increased investment in capital, and increased demand for technology services such as network and data support. In turn, these increases in demand are consistent with the overall direction and rising needs for IT services in all types of businesses. As such, our O&M cost levels reflect prudent management and cost containment.

V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. I recommend that the Commission approve the Business Systems capital and O&M budget presented in this rate case. Our planned capital investments are managed appropriately and established to address aging technology, cyber security, customer experience, enhanced capabilities, and emerging demand for the Company. The budgets we propose are a reasonable representation of the activities we will undertake on behalf of the Company and ultimately our service to customers through 2023 and beyond.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

WENDALL A. REIMER

PROFESSIONAL PROFILE

Strong senior technology leader with over 40 years of experience in varied industries including Energy, Manufacturing Financial Services, Healthcare and Management Consulting. Possesses a comprehensive understanding of key, cross-functional business drivers and presents expertise in building and supporting relationships within organizations, defining key objectives and goals, aligning delivery expectations, ensuring operational readiness and developing and leading highly effective teams. Extensive experience in leading successful change and adept at working with all levels of an organization. Energetic leader able to bridge the gap between IT and Business stakeholders and to foster positive interaction with all levels of team members, from field personnel to executive decision makers. Strong communicator with a consultative style, instilling confidence with team members and sponsors by seeing a project's progress both from a visionary perspective, as well as detailed, day-to-day standpoint.

Accomplishments include:

- Led the formation of a technology delivery team for a large corporate initiative ($1.8B) at an energy company. This initiative involves multiple programs and is business led with heavy IT involvement and leadership. Program is now in successful deployment on schedule and on budget.
- Developed and oversaw deployment of an enterprise network strategy including architecture, technology selection, vendor alignment and secured the buy-in of business leaders and technical engineering for a large energy company.
- Was primary witness for technology components or multiple rate cases and riders across multiple states.
- Provided senior leadership over enterprise network services organization in newly formed role and provided executive oversight over multiple large outsourced contracts including direct management responsibility for operations.
- Developed and implemented a NOC (Network Operations Center) to monitor and manage all the communications infrastructure across a large energy company.
- Managed and delivered major projects on time and on budget entailing cross-functional systems teams across multiple business units and geographies.

AREAS OF EXPERTISE AND IMPACT

Strategic Planning and Execution, Leadership, Risk Management, Technical Architecture, , P&L Budget Management, Implementation & Deployment, Merger & Acquisition Management, Application Development & Implementation, Quality Assurance, Coaching and Mentoring

PROFESSIONAL EXPERIENCE

Xcel Energy Services
May 2016 – Present
Director – AGIS (Advanced Grid Information and Security) Delivery Portfolio

- Technology leadership position over major corporate initiative ($1.8B) to deploy advanced grid technology.
  - Lead strategy and delivery role for deployment of a converged network supporting multiple business units using mesh technology
  - Executive oversight of multiple programs including large software deployment, field device deployment, infrastructure deployment and back office integrations.
  - Led technical high- and low-level design for all components from software to infrastructure to network components. Including participating as a key member in large vendor contracts for technology and services.

- Provide financial budget oversight, forecasting and cross-business unit alignment with budgets visible to senior executives and Board of Directors.
- Built and led cross-functional teams and developed tight alignment with business unit leadership and teams participating in and/or impacted by the initiative.
- Developed/wrote regulatory testimony and guidance across 8 states on all technology aspects of the initiative that were relevant to that state.
- Provided leadership over security delivery for all aspects of the initiative and aligned security expectations, standards and deployment across all technology aspects of the program.
- Prepared teams for operational support for all aspects of the program in advance of deployment including field teams, network operations center, control centers, various support functions and multiple engineering functions.

Xcel Energy Service
August 2014 – May 2016
Director – Network Services

- Senior leadership position overseeing all the telecommunications and network operations for Xcel Energy.
  - Develop, socialized and gained senior leadership approval for network strategy across all of Xcel Energy including 5-year capital commitment and regulatory alignment.
  - Led the introduction of new technology to meet key requirements from various business units as they grew and expanded their business.
  - Oversaw significant outsource vendor contracts and performance for network, security, voice and other services.
  - Developed in-sourcing plans for network and voice services
  - Key member of IT senior leadership team

Xcel Energy Services
August 2009 – August 2014
Program Manager (Xcel Energy)

- Program and project management for major infrastructure projects across a major energy company. Projects included:
  - Implementation of a key network programs across entire organization including
    - WAN (Wide Area Network) backhaul over private fiber and microwave,
    - Field Area Networks in a distributed environment,
    - Operational Model via a NOC (Network Operations Center) and
    - Other technologies including satellite, wireless, VOIP (Voice Over IP).
  - Complete remodel of two large data centers including floor, walls, ceiling, power and cabling without incurring any major downtime.
  - Implementation of in-line cooling for high-density computing capabilities.
  - Virtualization project that migrated over 600 physical servers onto VMWare platform.
  - Complete upgrade of two-way radio systems in multiple operating regions for field operations, plant operations, distributed electrical, and gas employees.
  - Complete upgrade of microwave system in multiple operating regions.
  - Financial oversight and management of large capital and expense budgets including forecasting, trending, capital asset accounting and accrual processing for large, multi-million, multi-year projects and programs.

Midwave Corporation
2007 – 2009
Program Manager – Large Midwest Energy Company

- Led a large cross-functional team (infrastructure, data center, network, desktop, voice, helpdesk) in coordination the build out of a new headquarters facility.
  - Included leading design and layout of new data center and working with site construction in building, testing and equipment installation at new facility.
  - Separating OT computing services and infrastructure from IT infrastructure and services between 2 separate data centers.
  - Deployment of new technology, including involvement and support of LEED certification for new headquarters and coordinating moves of employees into the new facility.

Midwave Corporation
2005 – 2007
Director – Advanced Professional Services

- Provide senior management consulting on topics such as major infrastructure strategy and projects, information security, regulatory compliance, program management and IT strategy. Key projects included:
  - Data center build versus outsource study for multiple clients.
  - Data center build out
  - Multiple data center move projects
  - Information Security review and strategy development
  - Audit preparedness projects
  - PMO development and enhancement
- Develop and manage a business practice that focused on providing senior level IT consulting and project management to area businesses.

Accuware Inc.
2003 – 2005
Director – Security Services

- Provide senior management consulting on information security, regulatory compliance, program management and IT strategy. Key projects included:
  - Provide Information Security review and strategy development for a major international beauty products/services company.
  - Audit preparedness projects for health care, manufacturing and finance companies.
  - Information Security and Regulatory Compliance education

Fair Isaac
2000 – 2003
Director – Implementations

- Developed and led a team focused on design and development of complex marketing data base systems for major retail, insurance, finance and health care companies.
  - Hired and mentored a team of 60+ professionals including project managers, ETL developers, business analysts and data base administrators.
  - Refined processes to extract sales and product information from multiple sources including web sites, catalog sales, in-store registers and other data points to correlate data and provide marketing opportunities.

- Converted over 300 major applications running on mainframe to open systems including retraining project team and support personnel and reducing annual mainframe costs by over $4M.

Cargill Incorporated
1997 – 2000
Worldwide IT Manager – Animal Nutrition and Feed

- Led and managed the Information Technology organization for one of Cargill's business sectors with over 160 locations worldwide.
  - Led the revamping of core computing infrastructure from mainframe to distributed systems that resulted in increased processing capabilities, reduction in system down time and greater flexibility in customer management for field locations.
  - Led the introduction of sales force automation and automated order processing across organizations field locations that resulted in significant reduction in inventory loss as well as customer satisfaction.
  - Assisted in the pre-merger/acquisition phases for international expansion of the business.
  - Provided management and leadership to a team of over 50 professionals located in 6 countries.

Cargill Incorporated
1995 – 1997
Manager – Worldwide Technical Programs

- Led the development of a new organization focused on central leadership with local deployment for major technical programs across company.
  - Designed and deployed an information security program across the company resulting in fewer security incidents with loss.
  - Designed and deployed a disaster recovery and business resumption program across the company resulting in fewer major disruptions to operations due to large system failures.
  - Designed and deployed a systems management program across the company that resulted in stronger and tighter management of an ever-increasing distributed server environment.
  - Designed and deployed a consistent and standardized directory program across the company that reduced the number of directories in use from over 200 to fewer than 20.

3M Company
1981 – 1995

- Developed and managed the information security program and department at 3M including introduction of security awareness, policy development and administrative efficiencies.
- Developed and managed a mechanized warehouse system used across 3M's distribution and logistics sites.
- Designed, developed, coded, tested and moved into production multiple applications in both the centralized mainframe environment as well as distributed client-server environments.

EDUCATION SUMMARY

Concordia College – Business Administration with series in computer sciences and math
Moorhead, MN
1981 – Graduate

Breckenridge High School – Breckenridge, MN. 1977 Graduate.

Total	(All)
Version	(All)

Sum of Total				Activity Year		
Major category	**Project ID**	**Project Nbr Desc**	**Func Class Descr**	**2021**	**2022**	**2023**
Aging Technology	**D.0001783.024**	ITC-Verint Call Log SW MN-10777	Common Intangible Plant	$ 51		
Aging Technology	**D.0001792.040**	Peoplesoft Upgrade SW MN	Common Intangible Plant	$ 3,021,283	$ 17,344,034	$ 2,078,840
Aging Technology	**D.0001804.355**	CIP Substation Ph2 SW MN -10659	Common Intangible Plant	$ 4,730,223		
Aging Technology	**D.0001804.382**	Purch CIP Net Server GO MN	Electric General Plant	$ 665,003		
Aging Technology	**D.0002011.001**	Purch WAN HW MN-BSPRJ0001167	Common General Plant	$ 296	$ 4	$ 0
Aging Technology	**D.0002011.007**	ITC-2020-21 WAN Circuit HW MN	Common General Plant		$ 1,116,947	
Aging Technology	**D.0002011.008**	ITC-2020-21 WAN Black Dog HW MN	Common General Plant	$ 1,000		
Aging Technology	**D.0002011.011**	ITC - WAN HW MN	Common General Plant	$ 313,692		
Aging Technology	**D.0002011.013**	ITC - WAN Routine HW NSPMN	Common General Plant	$ 3,676,068	$ 2,324,788	$ 7,824,788
Aging Technology	**D.0002032.001**	Cash Management System SW MN	Common Intangible Plant	$ 353		
Aging Technology	**D.0002032.006**	ITC-Cash Mngmt Sys Replcmnt-SW MN	Common Intangible Plant	$ 859,606		
Aging Technology	**D.0002038.004**	DEMS Ph4 HW MN-10756	Electric General Plant		$ 21,667,949	
Aging Technology	**D.0002038.010**	ITC-Purch DEMS HW MN	Electric General Plant		$ 5,174,233	
Aging Technology	**D.0002085.005**	ITC-landworks upgrade SW 200122 MN	Common Intangible Plant	$ 704,951		
Aging Technology	**D.0002106.001**	Purch VOIP Refresh HW MN	Common General Plant	$ 427,999	$ 390,429	$ 375,214
Aging Technology	**D.0002107.007**	ITC-NMS 2.X Upgrade-SW-MN	Electric Intangible Plant	$ 2,439,599		
Aging Technology	**D.0002109.001**	Purch Rugged Tablet HW MN	Common General Plant	$ 50,000		
Aging Technology	**D.0002111.001**	SubTran Portal SW MN	Electric Intangible Plant	$ 153,682		
Aging Technology	**D.0002125.001**	DR Tech SW MN	Common Intangible Plant	$ 5,030,000	$ 5,030,000	
Aging Technology	**D.0002137.010**	ITC-CRS Tech Stack SW 200171 MN	Common Intangible Plant	$ 5,048,981		
Aging Technology	**D.0002151.001**	Tec Lic 2021 SW-MN	Common Intangible Plant	$ 3,845,641		
Aging Technology	**D.0002152.001**	Tec Lic 2022 SW-MN	Common Intangible Plant		$ 2,563,257	
Aging Technology	**D.0002153.001**	Tec Lic 2023 SW-MN	Common Intangible Plant			$ 1,523,457
Aging Technology	**D.0002164.002**	Sharepoint Nuclear EL SW MN only	Electric Intangible Plant	$ 2,042,749		
Aging Technology	**D.0002174.001**	BUD-Purch MT Security Servers Nuc M	Electric General Plant	$ 4,411,361		
Aging Technology	**D.0002194.012**	ITC-Purch VDI Nodes HW MN	Common General Plant	$ 2,500,000	$ 2,500,000	$ 2,500,000
Aging Technology	**D.0002210.001**	BUD-ITC-Purch 2020 IT INFS Ref HW M	Common General Plant	$ 134,502		
Aging Technology	**D.0002210.005**	ITC-IT INFS Ref Valkyrie HW MN	Common General Plant	$ 893,325		
Aging Technology	**D.0002210.011**	ITC-IT INFS Ref Non-Valyrie HW CO	Common General Plant	$ 448,744		
Aging Technology	**D.0002210.016**	ITC - IT INFS F5 Equip Pan HW MN	Common General Plant	$ 134,438		
Aging Technology	**D.0002213.001**	ITC-Purch 2020 Storage HW MN	Common General Plant	$ 2,000,000	$ 2,000,000	$ 2,000,000
Aging Technology	**D.0002223.006**	ITC-Customer Care IVR Up SW 200162	Common Intangible Plant	$ 2,029,649		
Aging Technology	**D.0002281.001**	ITC - NSP MN System Replacement	Common General Plant	$ 953,372		
Aging Technology	**D.0002281.002**	ITC - MN System Repl. Verint Call H	Common General Plant	$ 100		
Aging Technology	**D.0002283.009**	ITC - Avaya Ref Cloud Depl MN SW-10	Common Intangible Plant	$ 8,276,939		
Aging Technology	**D.0002284.001**	ITC-Emptoris Replacement-SW MN	Common Intangible Plant	$ 638,650		
Aging Technology	**D.0002302.001**	ITC-Smallworld Tech Stack- SW MN	Common Intangible Plant	$ 118,741		
Aging Technology	**D.0002305.001**	ITC-Primavera Upgrade-SW MN	Common Intangible Plant	$ 144,840		
Aging Technology	**D.0002308.001**	ITC-BUD Upgrade- SW MN	Common Intangible Plant	$ 2,517,892		
Aging Technology	**D.0002309.001**	ITC-MRAS Upg to 64 Bit OS-SW MN	Common Intangible Plant	$ 600,143		
Aging Technology	**D.0002313.001**	ITC-Archer 2020-SW MN	Common Intangible Plant	$ 305,691		
Aging Technology	**D.0002329.001**	ITC-Upgrade Corporate Financial M H	Common General Plant	$ 14,000		
Aging Technology	**D.0002329.003**	ITC-Upgrade Corporate Fina SW 20009	Common Intangible Plant	$ 1,467,808		
Aging Technology	**D.0002333.001**	ITC ISO Intrfc & Stlmt Rpl SW MN-20	Electric Intangible Plant		$ 4,275,034	
Aging Technology	**D.0002340.001**	ITC Oracle Exadata Refresh SW MN-20	Common Intangible Plant	$ 1,685,157		
Aging Technology	**D.0002340.008**	ITC - Oracle Exadata Refresh HW MN	Common General Plant	$ 1,407,408		
Aging Technology	**D.0002341.001**	ITC Watt Net Meter SW Upg SW MN-200	Electric Intangible Plant	$ 1,638		
Aging Technology	**D.0002345.001**	ITC Fleet Parts Rplcmnt SW MN-20012	Common Intangible Plant	$ 37,682		
Aging Technology	**D.0002346.003**	ITC-Legal Hold Custodian SW 200071	Common Intangible Plant	$ 133,545		
Aging Technology	**D.0002350.003**	ITC-SAS BookRunner Upgra SW 200134	Electric Intangible Plant			$ 5,427,072
Aging Technology	**D.0002352.001**	ITC-Nuclear Meridium APM Implemen S	Electric Intangible Plant	$ 2,353,168		
Aging Technology	**D.0002354.001**	ITC-PC Refreshes-Routine HW-NSPM	Common General Plant	$ 2,125,000	$ 2,500,000	$ 3,273,301
Aging Technology	**D.0002355.001**	ITC-Printer Refreshes-Routine HW-NS	Common General Plant	$ 125,000	$ 400,000	$ 625,000
Aging Technology	**D.0002356.001**	ITC - IT INFS Network Refresh HW NS	Common General Plant	$ 1,500,000	$ 1,625,024	$ 2,125,012
Aging Technology	**D.0002366.003**	ITC-Service Now SW 200074 MN	Common Intangible Plant	$ 6,368,082		
AGIS	**D.0001723.004**	ADMS SW MN	Electric General Plant	$ 47,606,312		
AGIS	**D.0001723.027**	Purch ADMS EL Net Server GO MN	Electric General Plant	$ 688,625		
AGIS	**D.0001723.039**	ADMS-BS-Chestnut-Workstation	Electric General Plant	$ 798,959		
AGIS	**D.0001723.040**	ADMS-BS-Rice Street-Workstation	Electric General Plant	$ 150,326		
AGIS	**D.0001723.044**	ADMS-BS-CentrePointe-Workstation	Electric General Plant	$ 151,180		
AGIS	**D.0001723.046**	ADMS Data - NSPM	Electric Intangible Plant	$ 1,834,919	$ 1,237,123	$ 3,062,786
AGIS	**D.0001723.052**	Chestnut Training Center Workstatio	Electric General Plant	$ 52,324		
AGIS	**D.0001900.049**	PURCH FAN HW CM COMM MN	Common General Plant	$ 1,750,732	$ 47,466,421	$ 13,148,028
AGIS	**D.0001901.008**	AGIS Meter Data Mgmt (MDM) SW MN	Electric Intangible Plant	$ 3,075,999	$ 1,777,179	$ 847,979
AGIS	**D.0001901.033**	Purch AMI Server HW MN	Electric General Plant	$ 700,000		$ 3,692,924
AGIS	**D.0001901.050**	AMI-BS-NSPM-HE License	Electric Intangible Plant	$ 7,851,129	$ 9,112,947	$ 6,363,256
AGIS	**D.0001908.018**	AGIS-BS-Capital-Comm-Contingency-NS	Common General Plant			$ 14,017,140
AGIS	**D.0001908.053**	AGIS-BS-Cap-SW-Cont-AMI-NSPM	Electric Intangible Plant			$ 3,860,741
Customer	**D.0002037.022**	CXT Cust Serv Console SW MN-10786	Common Intangible Plant		$ 9,104,351	
Customer	**D.0002246.001**	BUD-CXT NSPMN	Common Intangible Plant			$ 1,218,164
Customer	**D.0002247.003**	CXT-My Acct SW MN-10778	Common Intangible Plant	$ 4,389,067	$ 201,346	$ -
Customer	**D.0002248.003**	CXT-XE COM SW MN-10779	Common Intangible Plant	$ 3,089,239	$ 201,347	$ -
Customer	**D.0002249.003**	CXT-Mobile App PH1 SW MN-10780	Common Intangible Plant	$ 2,773,642	$ 201,346	$ -
Customer	**D.0002250.003**	CXT-Cust API PH1 SW MN-10781	Common Intangible Plant	$ 4,921,093	$ 672,325	$ -
Customer	**D.0002251.003**	CXT-Cust Data SW MN-10782	Common Intangible Plant	$ 2,500,951	$ 836,839	$ -
Customer	**D.0002253.003**	CXT-CIAM SW MN-10787	Common Intangible Plant	$ 744,617	$ 294,896	$ -
Customer	**D.0002273.003**	CEC-Builders Call SW MN-10723	Common Intangible Plant	$ 1,011,233	$ 322,530	$ -
Customer	**D.0002277.003**	CXT - Crew Time Entry App MN	Common Intangible Plant		$ 239,572	
Cyber Security	**D.0001771.014**	Cert Key CIP SW MN-10752	Common Intangible Plant	$ 520,888		
Cyber Security	**D.0001807.001**	Security Tech Refresh SW MN	Common Intangible Plant	$ 225,658	$ 71,446	$ 989

Northern States Power Company
Capital Investment Additions

Cyber Security	**D.0001840.108**	Purch Sec Camera HW MN	Common General Plant	$ 86,010		
Cyber Security	**D.0002008.019**	ITC EDS2-A2A SW MN-200074	Common Intangible Plant	$ 683,573		
Cyber Security	**D.0002146.005**	Purch SPAM Filter HW MN	Common General Plant	$ 200,000		
Cyber Security	**D.0002187.003**	Cyber Security Data SW MN-10743	Common Intangible Plant	$ 914,244		
Cyber Security	**D.0002187.007**	ITC-Purch Cyber Security HW GO MN	Common General Plant	$ 238,021		
Cyber Security	**D.0002206.003**	Security AMAG SW MN-10766	Common Intangible Plant	$ 5,124		
Cyber Security	**D.0002276.001**	ITC-Documentum 16.4 Upgrade-SW MN	Common Intangible Plant	$ 127,297		
Cyber Security	**D.0002296.001**	ITC Security Remediation SW MN-2000	Common Intangible Plant	$ 1,059,763		
Emergent Demand	**D.0001804.085**	BS-Fcst-BD-SW-CM-M	Common Intangible Plant	$ 4,462,800	$ 9,446,589	$ 9,460,805
Emergent Demand	**D.0002059.001**	BUD-IT Blanket-Net Strategy HW MN	Common General Plant	$ (2,270,587)	$ (3,187,705)	$ (1,091,516)
Emergent Demand	**D.0002060.001**	BUD-IT Blanket Core Tech HW MN	Common General Plant	$ (5,205,756)	$ (2,493,738)	$ (1,637,125)
Emergent Demand	**D.0002061.001**	IT-Blanket-Service Delivery SW MN	Common Intangible Plant	$ (9,510,081)	$ 27,510,270	$ 44,775,176
Enhance Capabilities	**A.0001704.008**			$ 532,388		
Enhance Capabilities	**A.0001707.008**	ITC-BUS SYS Dakota Range WIND SD	Electric General Plant	$ 359,539	$ 1,000	
Enhance Capabilities	**A.0001722.002**	ITC-Purch BUS SYS Net Eq Comm WIND	Electric General Plant	$ 4,000		
Enhance Capabilities	**D.0001826.370**	Purch Synchrophasor Net HW MN	Electric General Plant	$ 1,030,657		
Enhance Capabilities	**D.0002020.019**	ITC Operational Reporting SW MN-200	Common Intangible Plant	$ 2,275,788	$ 2,275,343	$ 2,275,984
Enhance Capabilities	**D.0002037.001**	CEC-Cust Service Console SW MN-1070	Common Intangible Plant	$ 74,701		
Enhance Capabilities	**D.0002073.006**	ITC-Safety Observations & SW 20016	Common Intangible Plant	$ 337,323		
Enhance Capabilities	**D.0002082.001**	Video Conf SW MN	Common Intangible Plant	$ 489,520	$ 467,837	$ 926,917
Enhance Capabilities	**D.0002084.017**	Tririga Mobile SW MN-10730	Common Intangible Plant	$ 12,329		
Enhance Capabilities	**D.0002111.008**	ITC-SubTran Portal App SW 200123 MN	Electric Intangible Plant	$ 927,343		
Enhance Capabilities	**D.0002113.006**	ITC-Purchase Power Agrmnt-SW MN	Common Intangible Plant	$ 1,307,687		
Enhance Capabilities	**D.0002180.008**	TAHA Data Tools SW MN-10784	Electric Intangible Plant	$ 727		
Enhance Capabilities	**D.0002180.014**	TAHA Data LIC SW MN-10785	Electric Intangible Plant	$ 2,199,017		
Enhance Capabilities	**D.0002180.018**	ITC-TAHA WS3-SW-MN	Common Intangible Plant	$ 1,340,740		
Enhance Capabilities	**D.0002181.003**	ITC - Strategic Fiber HW MN	Common General Plant		$ 18,920	
Enhance Capabilities	**D.0002181.005**	ITC-Strategic Fiber Deploy -HW MN	Common General Plant	$ 6,833,635	$ 4,568,937	$ 1,374,644
Enhance Capabilities	**D.0002257.003**	ITC-Data Discovery-SW MN	Common Intangible Plant	$ 9,697		
Enhance Capabilities	**D.0002298.001**	ITC-UAS Fleet Mngmt-SW-MN	Electric Intangible Plant	$ 85,558		
			Grand Total	$ 169,786,003	$ 179,258,821	$ 130,049,574
			AGIS Total	$ 64,660,506	$ 59,593,671	$ 44,992,853
			Grand Total (without AGIS)	$ 105,125,497	$ 119,665,150	$ 85,056,721

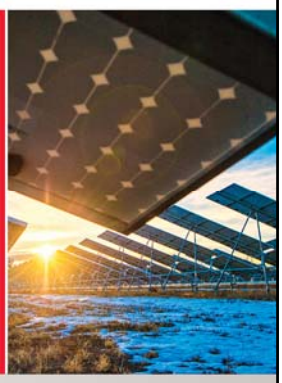
Business Systems 2017-2023 O&M Budget by Category ($'s millions) NSPM Electric							
Cost Category	**2017 Actuals**	**2018 Actuals**	**2019 Actuals**	**2020 Actual/ Forecast**	**2021 Budget**	**2022 Budget**	**2023 Budget**
Network Services	17.9	18.1	16.6	17.2	17.8	18.8	19.4
Software License and Maintenance	22.5	24.5	24.0	29.7	35.8	40.0	41.2
Company Labor	14.5	17.2	17.7	21.9	23.5	24.5	25.7
Distributed Systems Services	3.7	2.9	1.7	0.8	0.9	0.9	1.0
Application Development and Maintenance	8.6	7.8	8.4	9.5	9.6	9.4	9.4
Contract and Consulting	9.4	9.1	7.8	8.8	5.0	5.0	5.0
Shared Assets	-8.6	-1.6	1.8	-0.5	-1.4	-1.3	0.6
Hardware Maintenance and Purchase	1.6	2.8	2.9	2.6	3.0	3.1	3.2
Employee Expenses	1.2	1.3	0.8	0.5	1.0	1.0	1.1
Mainframe	0.8	1.1	1.1	0.8	1.1	1.2	1.2
Equipment Maintenance	0.9	0.5					
Donations, dues, and Fees	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.1	1.9	1.7	1.9	1.7	1.8	1.8
AGIS	0.0	0.0	1.4	8.0	11.7	17.3	26.1
Total	**73.6**	**85.7**	**85.9**	**101.2**	**109.8**	**121.8**	**135.7**
Total Excluding AGIS	**73.6**	**85.6**	**84.6**	**93.2**	**98.1**	**104.5**	**109.5**

Xcel Energy®

Customer Experience Satisfaction

Performance Trends

September 2020



1

CX MEASUREMENT AT XCEL ENERGY

Channels

- Contact Center Phone Agent & IVR
- Website & My Account
- Mobile App
- Notifications
- Email Correspondence
- Customer Connection

Key Moments

- Start/Stop/Transfer service
- Billing & Paying
- Outage Reporting & Notifications
- Finding Solutions
- New Construction

2

Xcel Energy®

2

OVERVIEW OF CUSTOMER EXPERIENCE SURVEYS

Capturing feedback from over 500,000 customer responses since launching our new surveys starting in 2016 or later

Channel	Description	Customer Responses since Launch (thru 09/15/2020)	Launch Date
Website	Online pop up survey offered to 100% of customers visiting XE.com and My Account	101,964	2016
Mobile App	Measures satisfaction and ease of use within the mobile app	6,082	2018
Contact Center Agent (Experience survey)	Phone survey to customers completing a transaction with an Xcel phone agent	45,589	2016
Contact Center Agent (Post Call survey)	Brief automated IVR survey to customers completing a transaction with an Xcel agent	206,247	2016
Contact Center IVR	Brief automated IVR survey to customers completing transaction through the IVR	47,918	2016
Email Correspondence	Online survey to customers corresponding via e-mail with an Xcel contact center agents	12,842	2018
Outage Notifications	Online survey that measures satisfaction, ERT accuracy & timeliness (text/email)	78,546	2017
Customer Connection	Measures satisfaction with all phases of installing and connecting new electric and/or natural gas service process	3,313	2017

Total = 502,501

3

3

Key Takeaways

We continue to see significantly lower satisfaction for customers interacting with our **Digital** channels compared to **non-Digital** channels.

However, **Digital** satisfaction trends have improved in 2020 as efforts have been underway to improve the digital experience.

Customer Connection – we have also seen significant improvements in satisfaction for customers having new meters installed, driven largely by process and digital improvements.

4

4

Overall Digital & Non Digital Trends

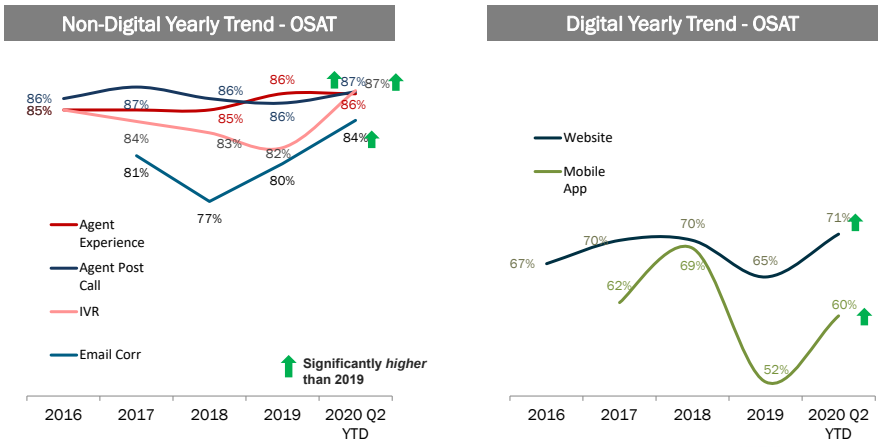
5

Maritz CX Xcel Energy

5

Large Satisfaction Gap Exists Between Digital and Non-Digital

However, we have seen significant improvements in both non-digital and digital satisfaction as of mid-year when compared to 2019.



6

IVR = Top 2 box; Agent PCS Top 2 box; Agent Exp. Top 3 box; Website Exp. Top 3 box
Note: Quarter scores are individual (not year-to-date)
Scores represent Xcel Energy overall (all states)

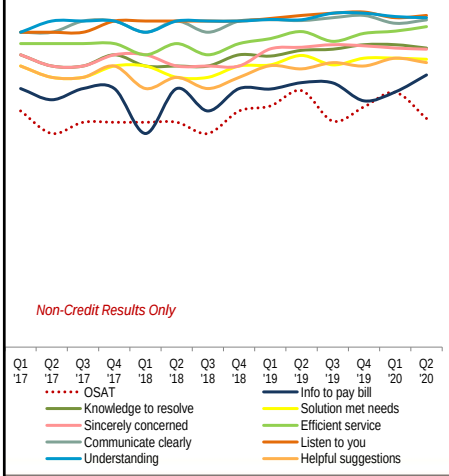
Maritz CX Xcel Energy

6

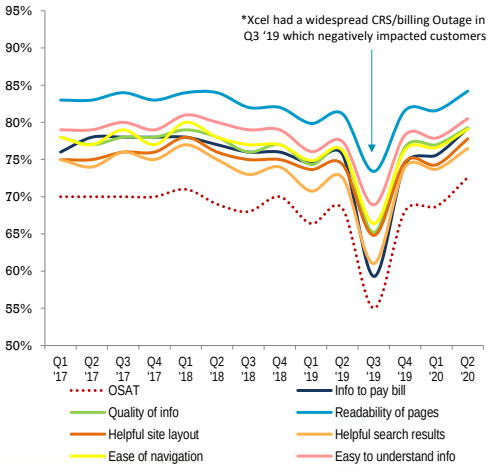
Large Digital Gap Also Exists for Key Attributes

Key attributes from the survey that provide insights to satisfaction performance show that web satisfaction is consistently lower than agent satisfaction on all areas with the exception of readability.

Agent Experience OSAT & Attributes (Top 3 Box)



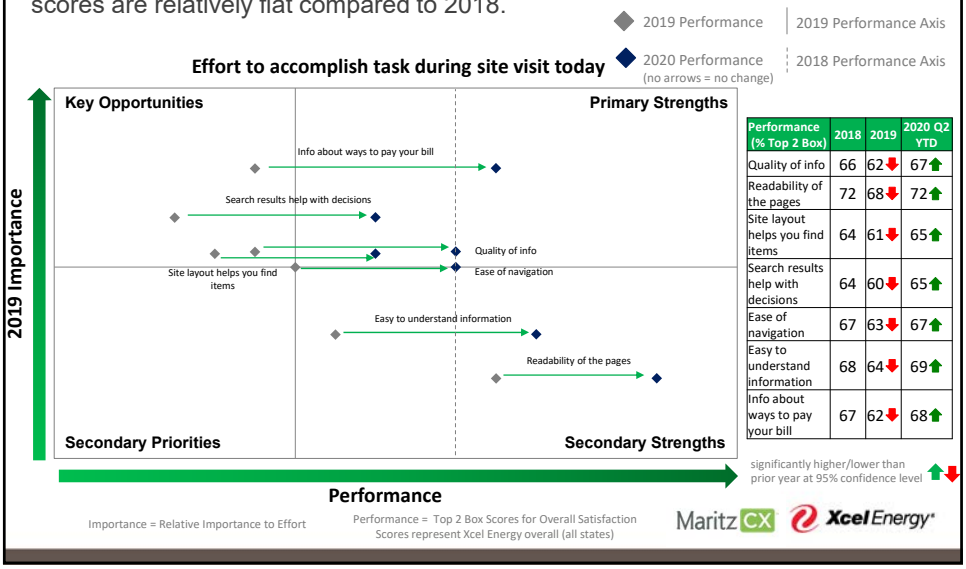
Website OSAT & Attributes (Top 3 Box)



7

Digital True Driver Analysis: *Website – Total*

Takeaway: While significant improvements have been made compared to 2019, scores are relatively flat compared to 2018.



Performance (% Top 2 Box)	2018	2019	2020 Q2 YTD
Quality of info	66	62↓	67↑
Readability of the pages	72	68↓	72↑
Site layout helps you find items	64	61↓	65↑
Search results help with decisions	64	60↓	65↑
Ease of navigation	67	63↓	67↑
Easy to understand information	68	64↓	69↑
Info about ways to pay your bill	67	62↓	68↑

significantly higher/lower than prior year at 95% confidence level ↑↓

Importance = Relative Importance to Effort

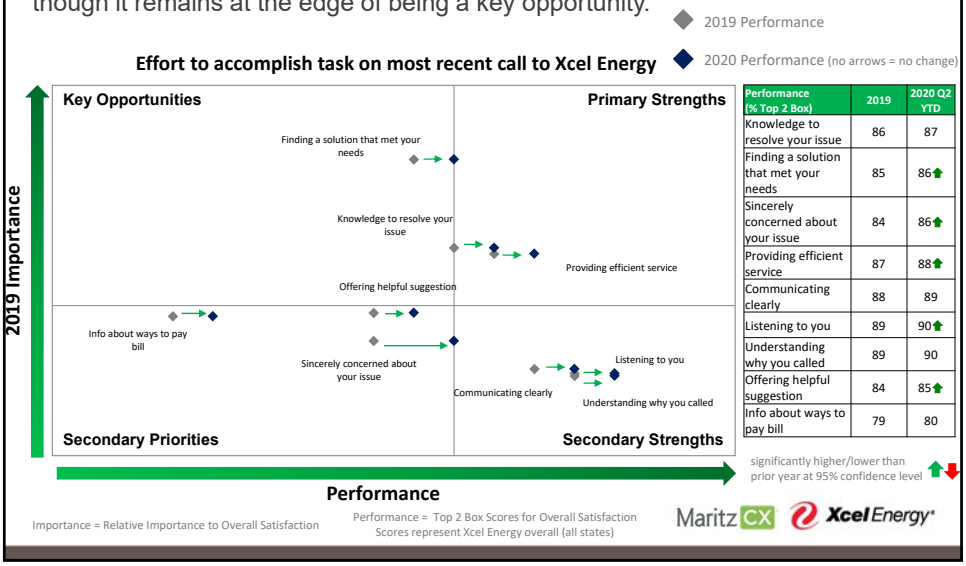
Performance = Top 2 Box Scores for Overall Satisfaction Scores represent Xcel Energy overall (all states)

Maritz CX Xcel Energy

8

Non-Digital True Driver Analysis: *Agent Experience – Total*

Takeaway: We have seen some improvement to *finding solutions* this year, though it remains at the edge of being a key opportunity.



Performance (% Top 2 Box)	2019	2020 Q2 YTD
Knowledge to resolve your issue	86	87
Finding a solution that met your needs	85	86↑
Sincerely concerned about your issue	84	86↑
Providing efficient service	87	88↑
Communicating clearly	88	89
Listening to you	89	90↑
Understanding why you called	89	90
Offering helpful suggestion	84	85↑
Info about ways to pay bill	79	80

significantly higher/lower than prior year at 95% confidence level

Importance = Relative Importance to Overall Satisfaction

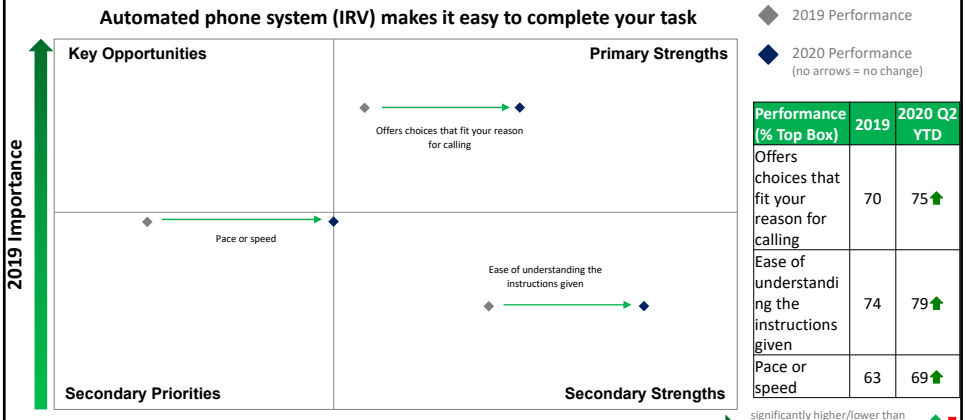
Performance = Top 2 Box Scores for Overall Satisfaction
Scores represent Xcel Energy overall (all states)

Maritz CX Xcel Energy

9

Non-Digital True Driver Analysis: *IVR Experience – Total*

Takeaway: The IVR *offering choices that fit the customer's reason for calling* is a primary strength. All attributes have improved significantly compared to last year.



Performance (% Top Box)	2019	2020 Q2 YTD
Offers choices that fit your reason for calling	70	75↑
Ease of understanding the instructions given	74	79↑
Pace or speed	63	69↑

significantly higher/lower than prior year at 95% confidence level

Importance = Relative Importance to Overall Satisfaction

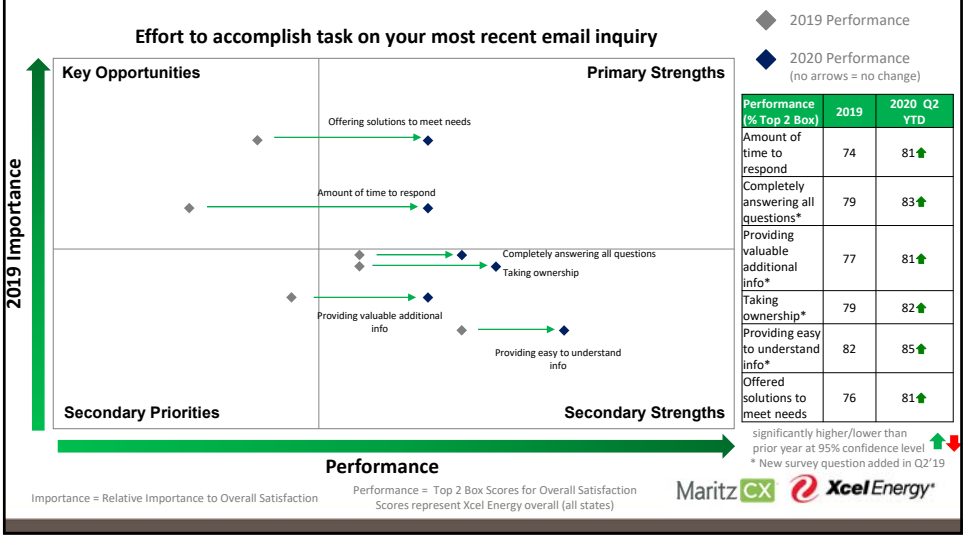
Performance = Top 2 Box Scores for Overall Satisfaction
Scores represent Xcel Energy overall (all states)

Maritz CX Xcel Energy

10

Non-Digital True Driver Analysis: *Email Correspondence – Total*

Takeaway: We have seen significant improvement to all attributes for e-mail compared to last year; *offering solutions* and *timeliness* are primary strengths.



Performance (% Top 2 Box)	2019	2020 Q2 YTD
Amount of time to respond	74	81↑
Completely answering all questions*	79	83↑
Providing valuable additional info*	77	81↑
Taking ownership*	79	82↑
Providing easy to understand info*	82	85↑
Offered solutions to meet needs	76	81↑

significantly higher/lower than prior year at 95% confidence level
* New survey question added in Q2'19

Importance = Relative Importance to Overall Satisfaction

Performance = Top 2 Box Scores for Overall Satisfaction
Scores represent Xcel Energy overall (all states)

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11

Billing & Payment & Outage: CX Satisfaction

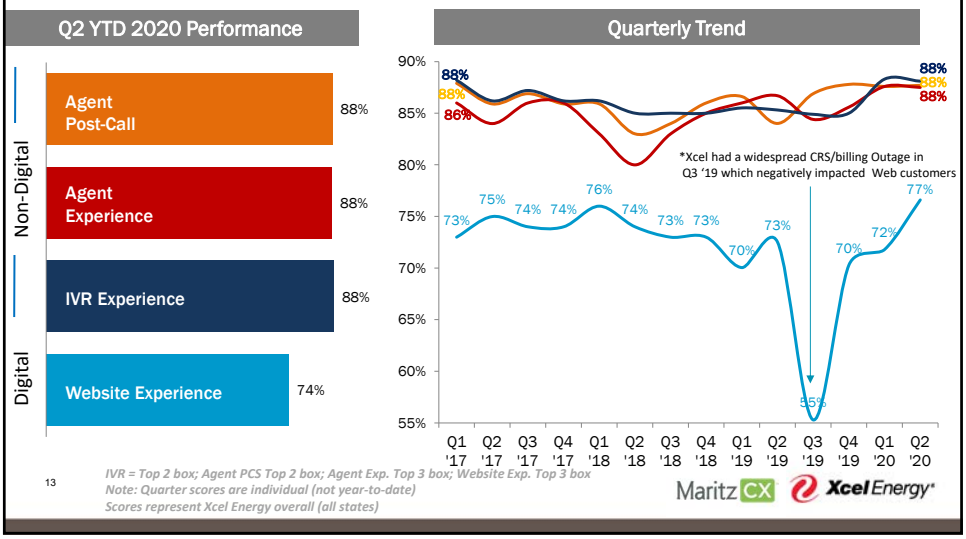
12

Maritz CX Xcel Energy

12

Billing and Payment: Overall Satisfaction

Among billing and payment customers the Website is significantly below Non-Digital channels, though scores have rebounded steadily since Q3 2019.



13

IVR = Top 2 box; Agent PCS Top 2 box; Agent Exp. Top 3 box; Website Exp. Top 3 box
Note: Quarter scores are individual (not year-to-date)
Scores represent Xcel Energy overall (all states)

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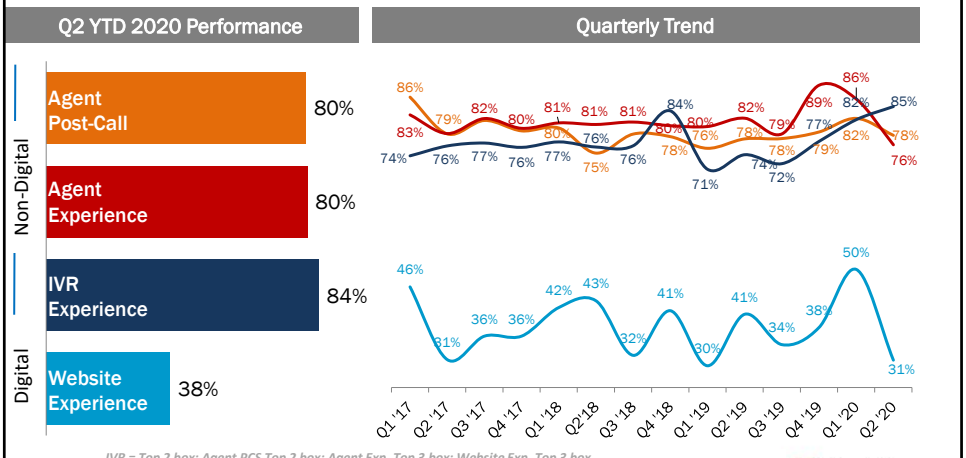
13

Outage: Overall Satisfaction

Customers that visited the website due to an outage are significantly less satisfied than customers that utilized non-digital channels



14

IVR = Top 2 box; Agent PCS Top 2 box; Agent Exp. Top 3 box; Website Exp. Top 3 box
Note: Quarter scores are individual (not year-to-date)
Scores represent Xcel Energy overall (all states)

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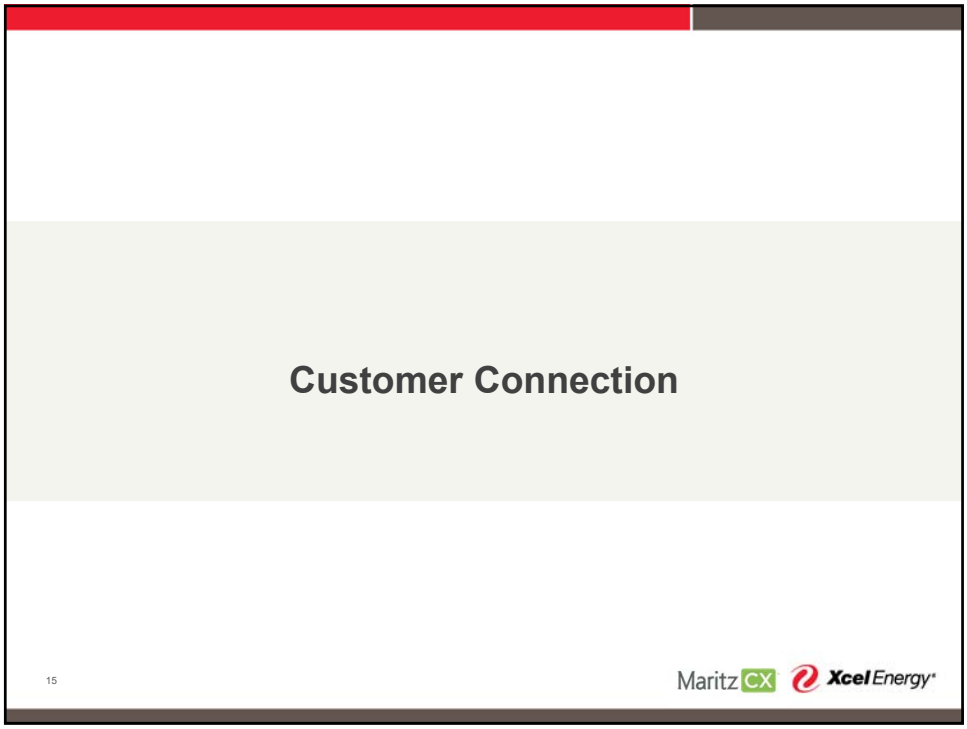
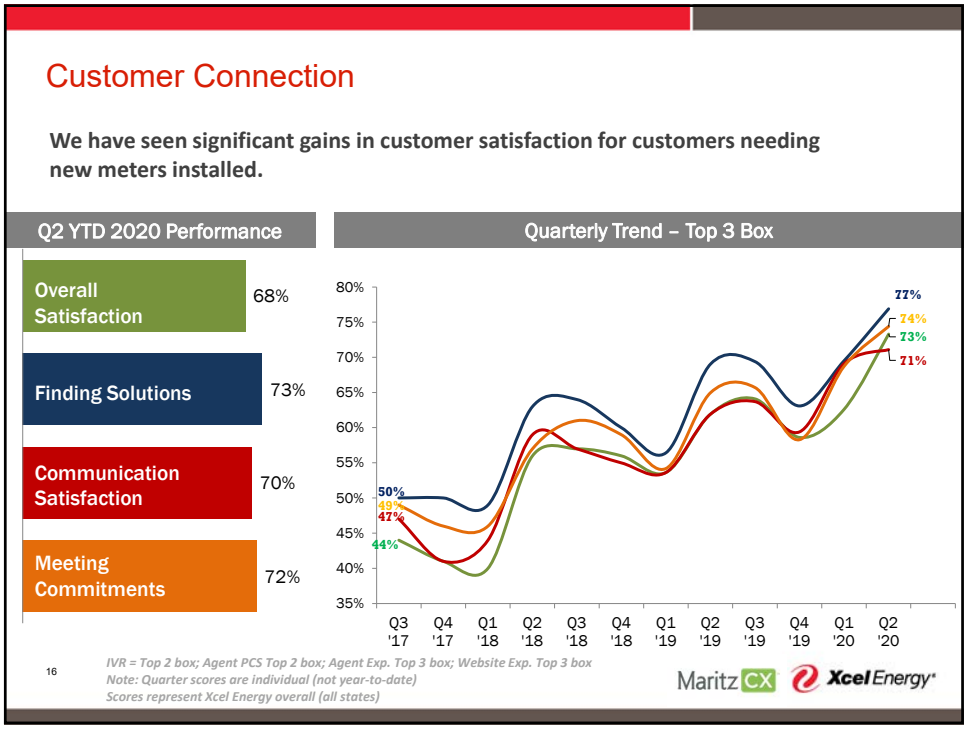

Customer Connection
15
Maritz CX
Xcel Energy

15


Customer Connection
We have seen significant gains in customer satisfaction for customers needing new meters installed.
Q2 YTD 2020 Performance
Overall Satisfaction
68%
Finding Solutions
73%
Communication Satisfaction
70%
Meeting Commitments
72%
Quarterly Trend – Top 3 Box
80%
75%
70%
65%
60%
55%
50%
45%
40%
35%
Q3 '17
Q4 '17
Q1 '18
Q2 '18
Q3 '18
Q4 '18
Q1 '19
Q2 '19
Q3 '19
Q4 '19
Q1 '20
Q2 '20
77%
74%
73%
71%
50%
49%
47%
44%
16
IVR = Top 2 box; Agent PCS Top 2 box; Agent Exp. Top 3 box; Website Exp. Top 3 box
Note: Quarter scores are individual (not year-to-date)
Scores represent Xcel Energy overall (all states)
Maritz CX
Xcel Energy

16

Recap prioritization criteria

We heard what you said - ranked priorities

1

Customer satisfaction

Increase in customer satisfaction scores from Xcel Energy customers

2

Employee satisfaction

Increased satisfaction of Xcel Energy employees in delivering top customer experiences

3

Efficient operations

Use of tools and processes that improve outcomes and experiences at a low cost

4

Earnings per share

Increased earnings across Xcel Energy key products and services

Prioritization scoring definitions

Assess each experience across two dimensions

Value

1 **Strategic alignment**

- Enablement of high-priority capabilities
- Importance for achieving long-term objectives
- New strategy/process set-up

2 **Financial impact**

- Direct and/or indirect value creation (ROI)
- Sustained positive impact on incremental revenue or cost structure
- Ability to recover investment

3 **Customer value**

- Direct improvement to customer experience, satisfaction, and trust
- Ability to strengthen customer relationships over time
- New experience implementation

Complexity

1 **Cost**

- Upfront development cost
- Run costs for ongoing maintenance

2 **Capability requirement**

- People, processes, or platforms to unlock capabilities
- Cultural and organizational shifts to foster outcomes
- User adoption of new experiences
- Brand reputation and strategic fit

3 **Risk & dependency**

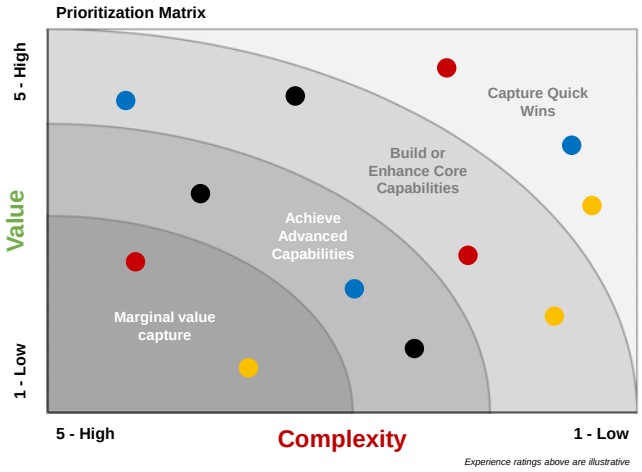
- Level of risk, complexity, and uncertainty
- Longer timeframes
- Dependency on outcomes of other initiatives
- Dependency on 3rd parties
- Regulatory or Labor Union constraints

Experiences driven by outcomes

Customer satisfaction. Employee engagement. Efficient operations. Earnings per share.

We will help you prioritize the right activities by aligning with your objectives

- **Customer satisfaction** - Increase in customer satisfaction scores from Xcel Energy customers
- **Employee engagement** - Increased satisfaction of Xcel Energy employees in delivering top customer experiences
- **Efficient operations** - Use of tools and processes that improve outcomes and experiences at a low cost
- **Earnings per share -** Increased earnings across Xcel Energy key products and services

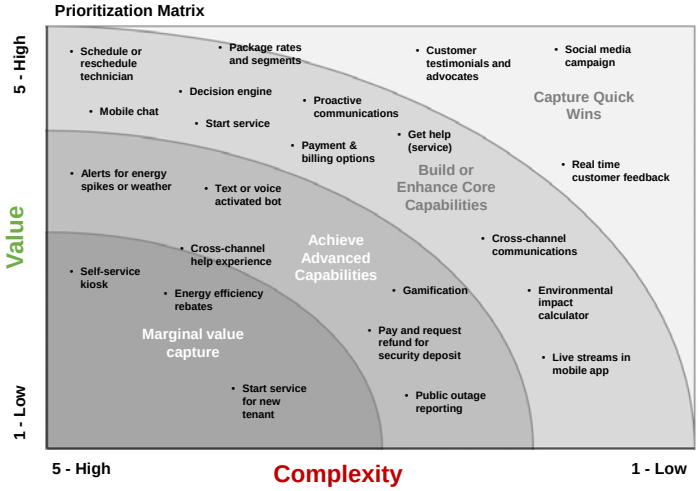


Experience ratings above are illustrative

Outcome - customer satisfaction ●

Increase in customer satisfaction scores from Xcel Energy customers

31+ initial experiences identified

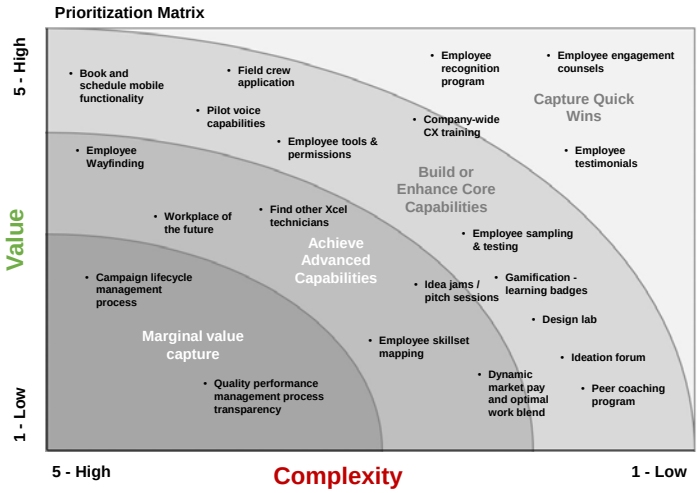


This is an initial experience analysis whose complexity and value ratings may change over time.

Outcome - employee satisfaction

Increased satisfaction of Xcel Energy employees in delivering top customer experiences

21+ initial experiences identified

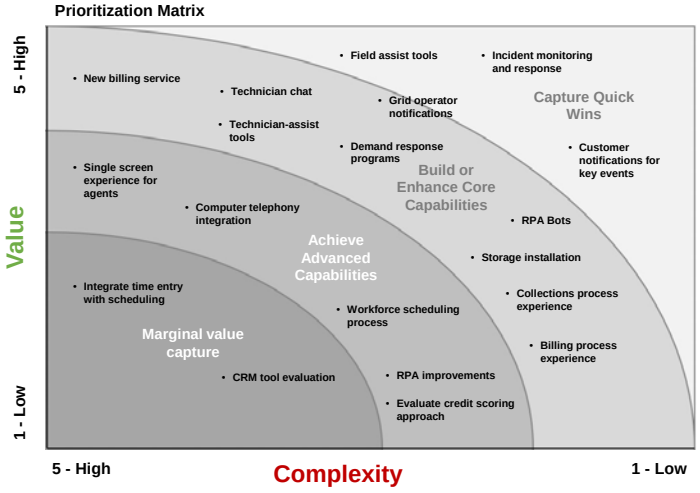


This is an initial experience analysis whose complexity and value ratings may change over time.

Outcome - efficient operations

Use of tools and processes that generate the highest results at the lowest costs

24+ initial experiences identified

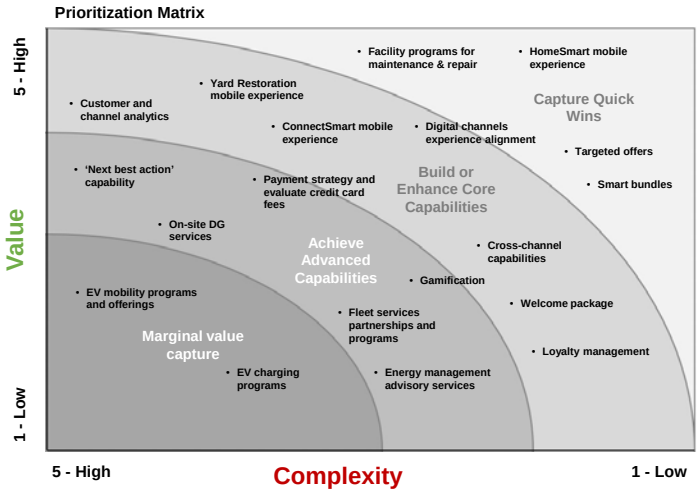


This is an initial experience analysis whose complexity and value ratings may change over time.

Outcome - earnings per share

Increased earnings across Xcel Energy key products and services

20+ initial experiences identified



This is an initial experience analysis whose complexity and value ratings may change over time.

Recap prioritized experiences

Customer satisfaction ● Efficient operations ●
Employee satisfaction ● Earnings per share ●

We heard what you said - priority experiences

Customer experience

- Get help (service) ● ● ●
- Proactive communications ● ● ●
- Start service ● ● ●
- Electric vehicles ● ● ●
- Payment options ● ●
- Billing options ● ●
- Customer testimonials, feedback, and advocates ● ●
- Cross-channel communications ●
- Social media campaign ●

Employee experience

- Employee tools & permissions (to support Get Help) ● ● ●
- Field crew application ● ● ●
- Pilot voice capabilities (Field or CSR Voice of Customer) ● ●
- Employee testimonials ● ●
- Company-wide CX training ● ●
- Employee sampling & testing ●
- Employee recognition ●
- Badges ●

Recap selected experiences

We heard what you said - selected experiences

Inflight experiences

1. HomeSmart

Initial experiences → **Horizon experiences**

2. Electric vehicles
3. Get help
4. Start service

5. Payment options
6. Billing options
7. Proactive communications

Note: experience sequence is subject to change

1

Customer Experience Transformation

Reposition, Rebuild, Reimagine

CXT Strategy
Positioning Xcel Energy to compete in tomorrow's digital economy

1 **Organization** that is:
- Agile
- Self reliant
- Value driven

2 **Technology** that is:
- Scalable
- Flexible
- Resilient

3 **Experience** that is:
- Simple
- Consistent
- Personal
- Proactive

Layers of Transformation

Journeys	**Evaluate I Buy I Account Services I Field Services** HomeSmart, EV, NCC
Interaction	**Digital Channels** XE.com, My Account, Mobile App, Agent 360
Technology	**Personalization** CRM, CIAM
	Data Grid Customer, Meter
Approach	**Tools and Enablers** Agile, Dev Ops, Cloud

Outcomes

- Customer Satisfaction
- Employee Satisfaction
- Efficiency
- Customer Optionality

2

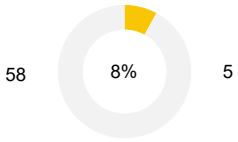
2

CXT Iterative Roadmap

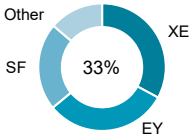
IN DEVELOPMENT | **PLANNED**

‘20 Q2	‘20 Q3	‘20 Q4	‘21 Q1	‘21 Q2	‘21 Q3	‘21 Q4	2022
▪ *Initial buy release* ▪ *Customer Identity & Access Mgmt. foundation* ▪ *XE.com Customer Support pages* ▪ *Initial B&R application release*	▪ *Build long term program roadmap & align team* ▪ *Deliver Customer Data Grid & API foundations* ▪ *Engage in enterprise portfolio demand process* ▪ *Design Customer Journeys*	▪ *Initial CX360 customer release* ▪ *Initial EV buy release* ▪ *Initial field service technician release* ▪ *Initial field service customer scheduling*	▪ *CX360 Mobile app launch w/ EV* ▪ *New .com experience* ▪ *Enable cross/up-sell via customer CX360* ▪ *EV account service and billing release*	▪ *Initial CX360 core agent release :: manage inquiry* ▪ *Start/Stop/Transfer* ▪ *Enhanced CX360 customer release* ▪ *Advanced Metering :: TOU & interval data visualizations*	▪ *Advanced Metering :: Green Button* ▪ *Decommission Legacy* ▪ *Enhanced CX360 agent release :: case & phone experience* ▪ *Real-time notifications*	▪ *Natural Language* ▪ *Enhanced CX360 agent release :: chat*	▪ *Continued experience build out*

DELIVERY RELEASES



RESOURCES



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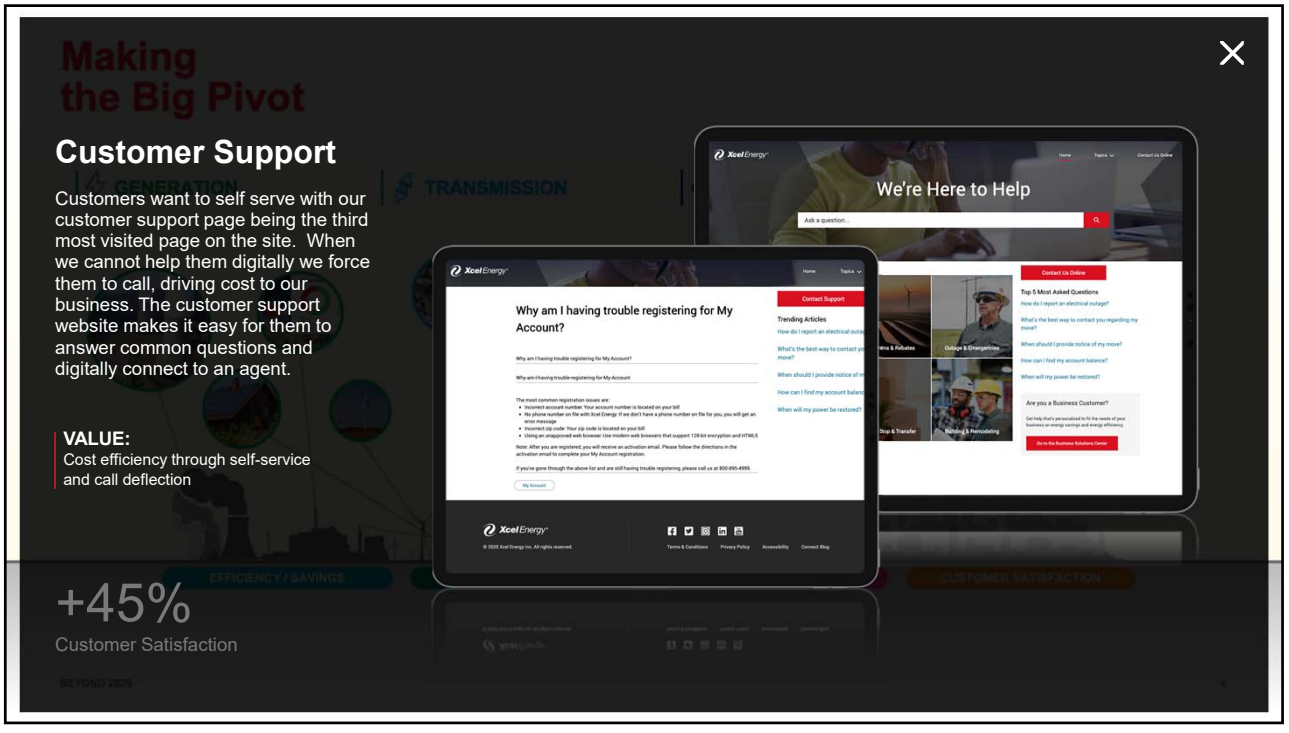


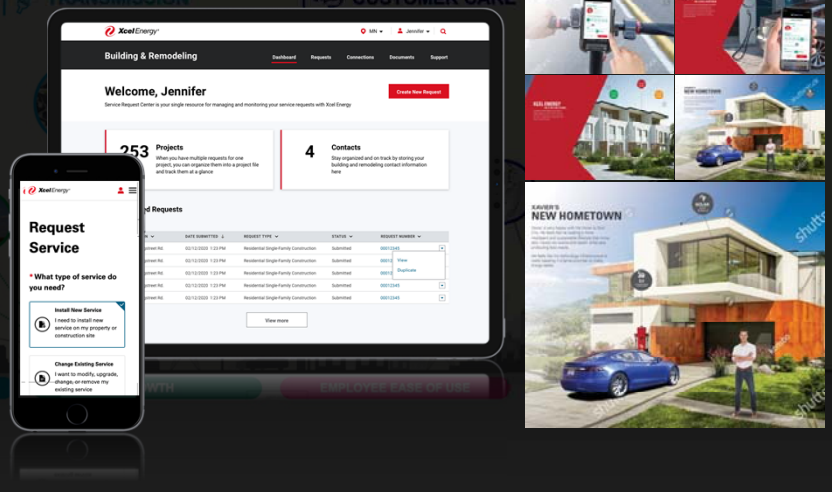
4

Making the Big Pivot

Building and Remodeling

Meeting customer expectations will take a digital boost. The new website and digital application are a big step toward making the new service connection process easier, while connecting our customers to the information they want.

VALUE:
Improve customer experience through efficiency and visibility



75%
Digital applications since launch vs. 50% prior

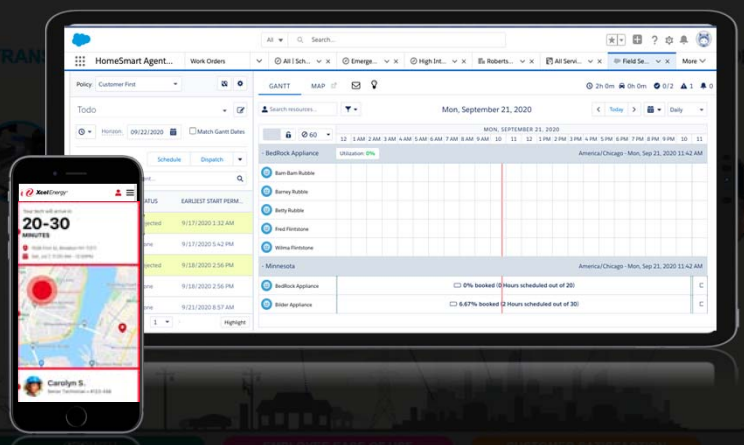
5

Making the Big Pivot

Field Service

Great customer experience is woven into every touchpoint. Providing customers and field technicians with the right information and the ability to stay connected creates a seamless and efficient service experience.

VALUE:
Improve operational efficiency and customer experience through scheduling automation



Product releases coming soon…

85% (target)
CSAT

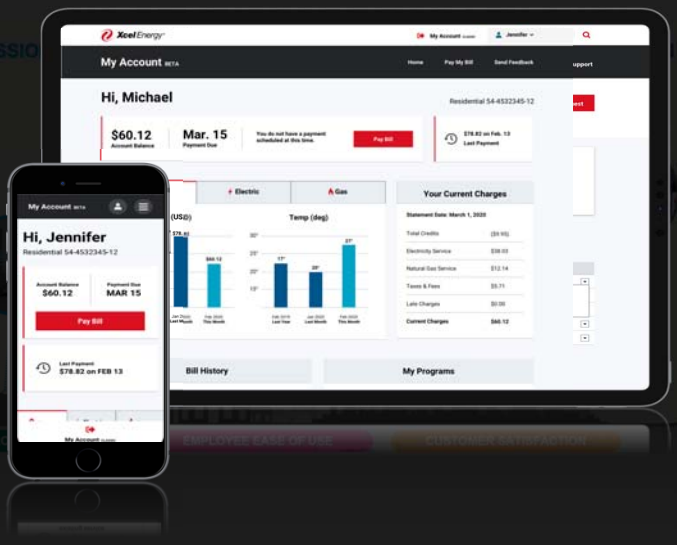
6

Making the Big Pivot

Mobile

Delivering a mobile first experience is an expectation. With over 50% of our customers engaging on a mobile device, bringing easy self-service interactions to their finger tips leads to higher satisfaction and organizational efficiencies.

VALUE:
Improve customer experience through reduced effort.
Cost efficiency through self-service and call deflection.



Product releases coming soon…

+5% Increase CSAT

10% Call reduction

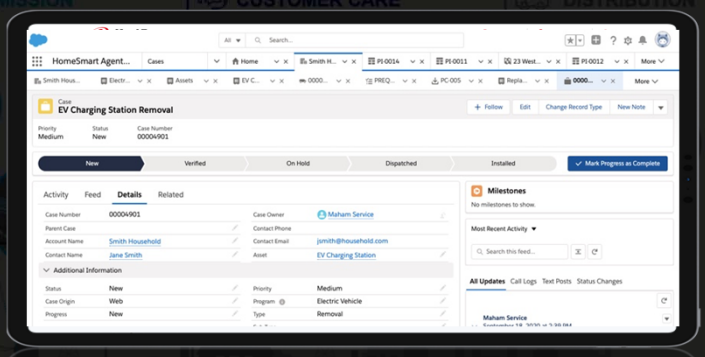
7

Making the Big Pivot

Agent

At the heart of any great experience is an empowered and informed employee. Providing our agents with the right information at the right time creates an opportunity to use their strengths and the power of our digital platform to transform the conversation and create a moment of delight.

VALUE:
Improve customer experience and upsell opportunities through efficiency and visibility

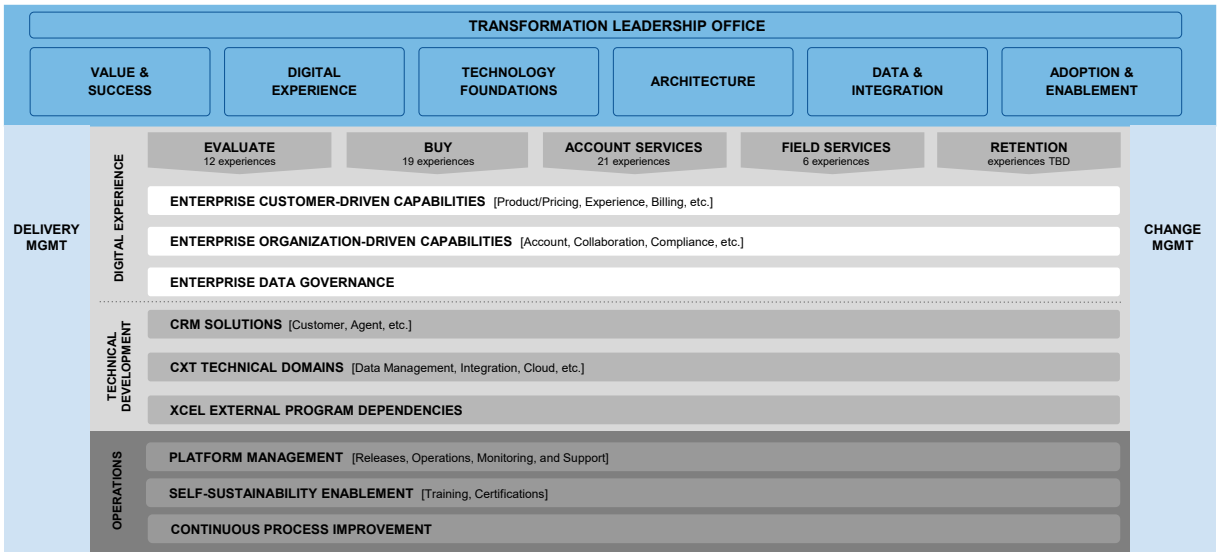


Product releases coming soon…

85% (target) CSAT

8

CXT Operating Model



9

10

PUBLIC DOCUMENT – NOT PUBLIC DATA HAS BEEN EXCISED
Schedule 7 – CRM Platform RFP Results

Trade Secret Justification

Schedule 7 is an internal assessment summary that the Company has designated as Trade Secret information in its entirety as defined by Minn. Stat. § 13.37, subd. 1(b). The analysis and information contained therein has not been publicly released. This summary was prepared by Customer and Sourcing employees and their representatives in 2019, in conjunction with the Company's review of its Customer Relationship Management (CRM) system. This Schedule contains information regarding bidder responses to requests for proposal (RFPs) issued by the Company, including sensitive pricing and other bid data; the Company's proprietary analysis of selected bids; market intelligence; and potential comparative bidder cost and negotiation planning information. Because this overall analysis derives independent economic value from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, Xcel Energy maintains this information as a trade secret pursuant to Minn. Rule 7829.0500, subp 3.

		Xcel Energy Total Expenditures				
Name	**Short Description**	**2020 Capital Expenditure Demand**	**2021 Capital Expenditure Demand**	**2022 Capital Expenditure Demand**	**2023 Capital Expenditure Demand**	**2020-2023 Total**
Enterprise Project Portfolio Management	Enterprise Project Portfolio Management (EPPM)	-	-	$8.1	$7.0	$15.1
Business Systems Enterprise Data Analytics	Modernization of data and analytics capabilities	-	-	$5.9	$8.7	$14.6
Centralized Operations	Centralize control room Data/Control Systems	-	$9.2	$1.6	-	$10.8
Integrated Energy Management Upgrade (IEMU)	Integrated Energy Management Uprade (IEMU)	-	-	$4.5	$4.5	$9.0
HANA Sidecar	Ddeploy a new HANA side car (Native HANA) system at Xcel Energy to enhance reporting availablity and capabilities and to puchase SAP cloud analytics module subscription	-	$5.2	$3.0	-	$8.3
Technology License 2021	New licensing to support infrastructure and operations.	-	$7.7	-	-	$7.7
Transmission Asset Health Analytics (TAHA) PH2	Continuation of TAHA program for enhancing asset health analytics.	-	-	$4.4	$3.0	$7.4
Pocket Sized SAP Work Manager	Pocketsize is needed for quick finger touch info capture and manage work orders.Current size of mobile tablet does not enable real time use of the work execution process on SAP Work Manager.	-	-	$6.7	-	$6.7
DRMS Phase II (Demand Response Management System) Phase II	Replace aging systems to mitigate risk due to potential failure. Positions Xcel Energy to grow demand response programs / functionality in the future to increase customer choice and align with the changing regulatory and grid environments.	-	$5.6	$0.6	-	$6.2
Firewall Rule Management 2021	Implement a new Firewall Rule Management solution	-	$5.2	-	-	$5.2
Meter Data Management System (MDMS)	MDMS Technology Stack Upgrade	$1.1	$4.0	-	-	$5.1
Barcoding System	Enable asset lifecycle tracking through barcoding system	-	-	$2.6	$2.4	$5.0
Prairie Island Security Computer System Refresh	Prairie Island Security Computer system upgrade/refresh. System is regulatory-required for physical security in nuclear	-	-	$1.9	$2.7	$4.6
Verint Security Camera Server Replacement	This project will refresh security camera servers and also includes an update to the Verint VMS software to V7.5.	-	$2.2	$2.2	-	$4.5
Oracle license 2023	Upgrade the Oracle database version across the Xcel enterprise. Several versions deployed within the enterprise are end of life and no longer supported for patching by Oracle. Xcel's business critical systems include Business Objects ESB, XE.com, PC	-	-	-	$4.3	$4.3
TAMS Replacement	Upgrade the current Transmission Asset Management System with a solution that is fully integrated with the core functionality provided by the Fieldsmart replacement and TAHA	-	-	-	$4.2	$4.2
Prairie Island Process Computer System Refresh	Prairie Island Process Computer system (ERCS) upgrade/refresh. Non-control system is required for certain aspects of plant operation including max power generation and emergency response and is relied upon for operations and plant staff.	-	-	$2.1	$2.0	$4.1
2021 Oracle Licenses	Upgrade the Oracle database version across the Xcel enterprise. Several versions deployed within the enterprise are end of life and no longer supported for patching by Oracle. Xcel's business critical systems include Business Objects ESB, XE.com, PC	-	$3.9	-	-	$3.9
2022 Oracle License	Upgrade the Oracle database version across the Xcel enterprise. Several versions deployed within the enterprise are end of life and no longer supported for patching by Oracle. Xcel's business critical systems include Business Objects ESB, XE.com, PC	-	-	$3.9	-	$3.9
SAP Data Governance	The data governance initiative will increase productivity by using tools designed for efficiently processing workflow and monitoring quality while also enabling incremental controls and processes that are scalable and less wasteful	$1.6	$1.7	$0.4	-	$3.8
Cost Traceability between SAP CO and FERC	Improve cost transparency from GAAP to FERC	-	$3.4	-	-	$3.4
Mobile Data collection and design	Implement mobile design capabilities for the mobile GIS solution which supports current and future mobile electric field user roles to support Xcel Energy's design, construction and maintenance activities.	-	$3.4	-	-	$3.4
Distribution Integrated Forecasting	Ability for the Distribution Scheduling team to manage forecasting and real time calendar viewing and collaboration capabilities using the latest robust tool, i.e. Primavera.	-	$2.4	$0.7	-	$3.1
Supply Chain Procure to Pay	SAP Ariba simplifies commerce by consolidating and managing each phase of the procure-to-pay process.	-	$3.0	-	-	$3.0
Sap Purge Archive	SAP ERP has been deployed for 3+ years. Data growth within the system mandates a need to deploy an archive of data to ensure system performance is maintained. This solution will include storage levels to balance data across lower cost data stores.	-	$2.7	$0.3	-	$2.9
Transmission Change Asset Detection	Transmission needs a solution that will allow them to apply Change Detection algorithms for UAS data that will then automatically trigger and update Transmission assets records in source systems SAP, SmallWorld and GIS.	-	-	-	$2.9	$2.9
Mapboard Replacement	Upgrade to the current map boards, as they are end of life. The main tool that provides situational awareness to system operators is the Dynamic Energy Management System (DEMS), followed by various websites and applications displayed on CORP machines	-	-	$2.7	-	$2.7
ERO Replacement	Replace or upgrade existing Electric Reliability Organizations System (Powerbase and Relay Testing applications)	-	$1.7	$0.9	-	$2.5
FERC Improvement Project	FERC Data, Process & Reporting Improvement Project	$0.3	$2.1	-	-	$2.4
2021 Planned MDT Refresh	2021 Planned MDT Refresh will replace end of life and fully depreciated (4yr) mobile devices and their mounts. Replaced with the appropriate field and vehicle rugged laptop standard or mobile device standard.	-	$2.4	-	-	$2.4
Enterprise Metadata Management	Deploy Metadata management software to enable enterprise metadata management. The new metadata management solution will enable the management and publishing of consistent data definitions across the enterprise	-	$2.4	-	-	$2.4
Manchief Onboarding	HW and SW needs to on board Mankato Plant	-	$2.3	-	-	$2.3
Security Camera Upgrade 2021	enterprise.	-	$2.3	-	-	$2.3
Advanced Endpoint Protection & Response Refresh	Renew license to support advanced endpoint detection and response.	-	$2.3	-	-	$2.3
Telematics Integration	This will address the use of resources doing labor internsive manual work when their time could be spent on higher value-added work, i.e. These integration will automate a number of currently manual activities and thus improving productivity.	-	$1.6	$0.5	-	$2.1
Disaster Recovery Orchestration	Implementation of a new disaster recovery program	$2.0	-	-	-	$2.0
Vulnerability Scanning Refresh	Refresh the current vulnerability scanning capabilities inn accordance with XE's Security Standards.	-	$2.0	-	-	$2.0
OT Monitoring 2021	Extend OT Monitoring Capabilities 2021	-	$2.0	-	-	$2.0
OSI PI Environment Refresh	Every three years refresh the OSI PI environment to keep it on the current software version and hardware infrastructure.	-	-	-	$1.9	$1.9
Geospatial Work Assignment System	Enhance the current SAP-Documentum integration	-	$0.9	$1.0	-	$1.9
Field Mobile GIS Upgrade	Field Mobile GIS Platform Replacement	-	$1.8	$0.1	-	$1.9
Pole Attachment Automation	Automate Make Ready and Transfer Notice process	-	$1.1	$0.8	-	$1.9
NAD Server Refresh	In 2022 the NAD Unix servers will be 8 yrs old. NAD has not upgraded Casmo/Simulate (NAD¿s Core Modeling tool) since 1993 and would like to migrate from Casmo-4/Simulate-3 to Casmo-5/Simulate-5.	-	-	$1.7	-	$1.7
Intercom Phone Replacement	Intercom Phone Replacement	-	$1.7	-	-	$1.7

OSI Soft PI Enterprise Agreement	application.	-	-	-	$1.6	$1.6
2020 Handheld Mobile Collector Refresh	Meter reading equipment plus cloud application	$0.3	$1.3	-	-	$1.5
Enterprise Command Center Backup Site	Replace analog phone systems used for intercom security at Xcel Energy sites	-	$1.5	-	-	$1.5
Employee Digital Experience Intranet Platform	Establish a backup site to the existing Enterprise Command Center (ECC) in 414 Nicollet Mall in the case the 414 building is compromized due to natural or non-natural disaster.	$0.5	$0.9	-	-	$1.5
SQLServer 2012 Upgrade	Upgrade SQLServer2012 Databases	-	$1.1	$0.3	-	$1.4
Meter data modeling	Successful implementation of Smart Meter Modeling and Reporting allowing Xcel to meet all Regulatory requirements and expand our solution set to match the needs of our internal clients.	-	$1.3	-	-	$1.3
Business Objects - Refresh	hardware	-	$1.3	-	-	$1.3
PowerPlan Upgrade (Phase 2) - Optimization	functionality provided by vendor.	-	$1.3	-	-	$1.3
Aligne Fuel Upgrade Replacement	Upgrade or Replace Aligne Fuel System used to record coal and commodity oil/wood transactions.	-	-	-	$1.3	$1.3
Certificate & Key Management	This project will replace manual processes for certificate and key management with processes automated by a management solution.	-	$1.2	-	-	$1.2
CyberArk Application Access Management (AAM)	Continue to improve our risk posture by further enabling features/functionality as it pertains to Application Access Management	-	$1.2	-	-	$1.2
SailPoint 2021	Further inclusion of additional applications into the SailPoint solution (NERC/CIP/SOx Onboarding) along with a major version upgrade.	-	$1.2	-	-	$1.2
PingFed MDHA	Enable PingFed as our single sign-on enterprise solution to be multi-data center high availability while conducting a major version upgrade providing additional capability features and functionality to improve the overall platform.	-	$1.2	-	-	$1.2
Wind Performance Software Tools	Implement Asset Performance Management (APM) system for windfarms	$0.2	$1.0	-	-	$1.2
GIS Asset Smallworld Service	Leverage GIS and IBM partners to create an extensible service to identify and pull out asset information from Smallworld. Initial focus will for DER and Customer Connection use cases and integrating with Salesforce	-	$0.5	$0.5	-	$1.0
Vertex ECM-Wizard	Modernize the process for obtaining, managing and updating customer sales tax exemption certificates ("ECs")	-	$0.9	-	-	$0.9
Technology Business Management	Decision making discipline to optimize IT spend	-	-	$0.9	-	$0.9
Financial Accounting and Rate Revenue (FARR) solution replacement	Financial Accounting and Rate Revenue (FARR) solution replacement	-	$0.9	-	-	$0.9
eGRC SOx & Compliance 2021	Improve Reg Compliance & Risk Mgmt capabilities	-	$0.9	-	-	$0.9
Real Property Asset Management Upgrade or Replace	The project will upgrade or replace the Tririga system used by Property Services. Property Services manages all facilities and real estate for Xcel Energy.	-	$0.8	-	-	$0.8
Risk Analysis for Locate Tickets	Calculate risk analysis for locate tickets	$0.5	$0.2	-	-	$0.7
Upgrade Nuclear SAP Document and Record Solution	Upgrade nuclear SharePoint. Upgrade Gimmal Document Management for SAP (a.k.a. ERP-Link). Upgrade nuclear DRMS. Migrate all nuclear SAP documents and nuclear records to new SharePoint.	-	-	$0.7	-	$0.7
Archer 2021	Implement additional risk management functionality for Enterprise Security Services aligning with enterprise standards for incident management, and vendor & technology assessments. This builds on the functionality implemented in previous phases.	-	$0.7	-	-	$0.7
2022 EMS Infrastructure Refresh	Provides for the replacement of end of life and obsolete equipment within the Energy Management System (EMS).	-	-	$0.5	-	$0.5
2021 EMS Infrastructure Refresh	Provides for the replacement of end of life and obsolete equipment within the Energy Management System (EMS).	-	$0.5	-	-	$0.5
2022 Remittance Software Refresh	revenue.	-	-	$0.5	-	$0.5
Environmental Services Refresh	Enviromental Services' systems refresh	-	$0.2	$0.1	$0.2	$0.4
IT Service Request Automation	ITSM is a critical component in Xcel Energy's ability to recover from system issue by tracking incidents and changes. It is important that the ITSM applications be available to support that recovery.	$0.4	-	-	-	$0.4
DocuSign System Project	Implement the DocuSign Signature Appliance system for Transmission engineers.	-	$0.4	-	-	$0.4
Migration of Nuclear Data to Corp Report	Ensures that nuclear business is using one toolset for reporting and analytics	-	-	$0.4	-	$0.4
Cloud Software Assessment	Configure both 'in-the-cloud' and on-premises tools to gather and programmatically analyze application installation and usage data, preparing artifacts and reports from which Xcel Energy can make informed decisions on go-forward implementation strategies for Cloud	-	-	-	$0.4	$0.4
Spam Filitering	Deploy updated spam filtering capabilities to ensure system security	-	$0.4	-	-	$0.4
2023 Handheld Mobile Collector Refresh	Meter reading equipment partial refresh	-	-	-	$0.4	$0.4
2021 Handheld Mobile Collector Refresh	Meter reading equipment partial refresh	-	$0.4	-	-	$0.4
2022 Handheld Mobile Collector Refresh	Meter reading equipment partial refresh	-	-	$0.4	-	$0.4
PI/MT OSI PI Refresh	Refresh the OSI PI hardware and software at both Nuclear Sites to increase reliability, performance, and align with Corporate standards.	-	$0.3	-	-	$0.3
2023 Transmission Control Center Infrastructure Refresh	Replace end of life and broken hardware that is out of warranty for EMS support peripherals (data display), AMAG, SUBNET, PI, RMRG, and Commercial Operations systems.	-	-	-	$0.3	$0.3
Bananatag internal email metrics	Outlook add-on that enables email metrics & design	$0.2	-	-	-	$0.2
Data Power Appliance	Replace Data Power Non-prod appliance that is unsupported as of 12/2020.	$0.2	-	-	-	$0.2
Content Manager Upgrade or Replace	Upgrade or replace the IBM Content Manager to a supported version or replace it with another record management system	-	$0.2	-	-	$0.2
Field Collection System (FCS) Refresh 2023	Refresh the AMR meter reading FCS software with the latest version and latest tech stack.	-	-	-	$0.2	$0.2
2021 UnPlanned MDT Refresh	2021 UnPlanned MDT Refresh. This effort will replace defective or damaged field mobile data terminals (MDTs), as reported in the field and supply new field personnel with MDTs as needed. The cost of repairs, in some cases, far exceeds the remain.	-	$0.1	-	-	$0.1
Narrative Logs Replacement	enterprise applications.	-	$0.1	-	-	$0.1
T&D MPLS - Unplanned	Wide area network reliability and capacity improvements for Distribution and Transmission substations, Energy Supply sites, Service Centers and third parties. Including - Frame Relay, Unplanned circuit improvements, security upgrades.	$0.0	-	-	-	$0.0
	Xcel Energy Totals	**$7.4**	**$108.2**	**$60.9**	**$47.9**	**$224.3**
	NSPMN Portion (assumption: 40% of Xcel Energy amounts)	**$3.0**	**$43.3**	**$24.3**	**$19.2**	**$89.7**