DTE

| How will you monitor and measure expected value? |
|---|
| Value will be realized when OH and UG field workers have working radios that are reliability and availability with built in redundancy attested to by field employees. Employees will be fully trained on these radios with accompanying standard work instructions. The Organizations Change Management group has been fully involved with this project throughout 2022 and will continue in 2023. The expected completion date is June 2023<br>c |

| What alternatives have been considered? |
|---|
| Alternatives considered include doing nothing and building our own radio system. Doing nothing was no longer an option after considering the age of the existing system and the inability to acquire parts for repair was no longer possible. Building our own radio system was estimated to be much to costly and resource dependent to select this as the final option<br>The alternative are listed below:<br>1. Do nothing. This option was not selected because employee safety was at risk<br>2. Build our own radio system. This option was not selected because it proved to be too costly<br>3. Incorporate State of Michigan radio system was the selected option because of the 24/7 availability and operational abilities in a blackout situation. The overall radio coverage and scalability made this option the best for DTE |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-30 | 2023-06-23 | No | IT |

**IT Costs**

| Type | FY23 | Total |
|---|---|---|
| Capex | $1,841,537 | **$1,841,537** |
| Opex | $86,775 | **$86,775** |
| **Total** | **$1,928,312** | **$1,928,312** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-PFP-22-004 | Business Case Name | DTE Electric Generation Capacity Application Health |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Plant and Field | Business Unit | Generation Optimization |
|---|---|---|---|
| IT Sub-Portfolio | Plant and Field EG | Business Unit Director | Jianli Wang |
| IT Director | Jaison Busby | Business Unit SME | Nick Griffin |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment | Initiative Type | Solutions Delivery - On Prem |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | This business case will enable the implementation of the latest vendor release, and enhancements for the Generation Supply Management System (GSMS) which contain updates for the MISO market regulations, as well as integrate to MISO's upgraded system platform. |
| What system or process is being affected? | Gen Opt's bid to bill IT applications will need continued support as system releases are published or market changes occur. |
| What functionality or capability is being provided? | Capability to offer DTE's generation resources and load into the MISO wholesale power market. |
| What is the customer or employee value? | Complete IT support for all applications that support the buying, selling, and dispatching of power in the wholesale power market and the bulk electric system. Critical system applications are supported by IT personnel who understand the business, Strong Political and Regulatory Context – by ensuring support of applications that directly impact meeting compliance to FERC and NERC, and Superior and Sustainable Financial Performance by ensuring support of applications that directly impact power supply cost recovery (PSCR) savings initiatives. |
| What alternatives have been considered? | No alternatives considered at this time as current solution platform meets the business needs. |

| Key Objectives | |
|---|---|
| 1) | Provide IT support for all applications that support the buying, selling, and dispatching of power in the wholesale power market and the bulk electric system. Critical system applications include GSMS, GOAT, EAGL, RCAT. |
| 2) | Update our Generation Supply Management System (GSMS) to maintain system data compliance with the MISO market regulations. (upgrades) |
| 3) | Integrate GSMS to MISO's upgraded system platform. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | Funding Source | ITS |
|---|---|---|---|---|
| Duration to Complete | 0 Years | 11 Months | | |
| End Month | December | 2022 | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | #VALUE! | $0 | $0 | $0 | $0 | **$560,000** |
| O&M | $51,107 | $0 | $0 | $0 | $0 | **$50,000** |
| Total | #VALUE! | $0 | $0 | $0 | $0 | **$610,000** |

## Business Unit Costs

| BU O&M | $12,000 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-PFP-22-024 |
|---|---|

| Business Case Name | Fermi Enhancements |
|---|---|

## Stakeholders

| IT Portfolio | Plant and Field |
|---|---|
| IT Sub-Portfolio | Plant and Field EG |
| IT Director | Jaison Busby |
| Managed by | IT |

| Business Unit | Nuclear Generation |
|---|---|
| Business Unit Director | Jaison Busby |
| Business Unit SME | Nicole McKinney |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - Cloud |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Title 10 of the Code of Federal Regulations Subpart 50 Appendix B (10CFR50 Appendix B) governs Correct Action Programs at Nuclear Power Plants. The Fermi Electronic Corrective Action Program (eCARD) was developed using a heavily customized version of the Solutions Business Manager (SBM), a process management solution. The SBM implementation of the on-line Corrective Action Program allows the site to initiate, update, and close Condition Assessment Resolution Documents (CARDs) electronically and has been extensively customized since 2004 for 10CFR50 Appendix B compliance. SBM support for the tool require a significant investment in development time and on-premise hardware to move to the current version. |
| What system or process is being affected? | Fermi Corrective Action Program |
| What functionality or capability is being provided? | Fermi Electronic Corrective Action Program as defined by 10CFR50 Appendix B and Fermi procedure MQA-11. This functionality is currently provided using a heavily customized version of SBM that is unique to Fermi. SBM will be replaced with a vendor hosted, nuclear industry supported Corrective Action Program platform. |
| What is the customer or employee value? | The employee value is a streamlined Electronic Corrective Action Program that is specifically designed for industry compliance with 10CFR50 Appendix B compliance and reduced maintenance and aupport activities. This Corrective Action Program platform leverages industry operating experience and implements operational efficiency bulletins from the industry 'Delivering the Nuclear Promise' initiative related to 10CFR50 Appendix B compliance. |
| What alternatives have been considered? | Continued enhancements and upgrades of the current heavily customized version of SBM, a process management solution. SBM support for required custom workflows and compliance issues underlying the Fermi Corrective Action Program is escalating. The next version of SBM does not support the current workflow scripting in use and will result in a total redevelopment of the eCARD system with no economies of scale from industry or vendor support. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Document existing interfaces between SBM and other enterprise platforms |
| 2) | Document regulatory commitments above and beyond 10CFR50 Appendix B regulatory requirements |
| 3) | Document current eCARD workflow and map to new platform workflow with the intent to streamline existing workflows where possible |
| 4) | Develop a data mapping strategy and plan to import all eCARD data into the new platform |
| 5) | Perform initial data load into a Development/Quality Assurance instance for User Acceptance Testing (UAT) |
| 6) | Successfully validate initial data loaded from eCARD into the new platform and test new interfaces between the new platform and other enterprise platforms |
| 7) | Perform UAT and pass with no major issues noted |
| 8) | Perform Change Management in accordance with Fermi procedure MGA34 |
| 9) | Perform final data load into the production instance, move into production and provide heightened post production warranty support for emergent issues for 60 days after production deployment |
| 10) | Retire existing SBM eCARD platform six months after the new system is in production |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases.** **Total** |
|---|---|---|---|---|---|---|
| Capital | $896,565 | $0 | $0 | $0 | $0 | **$900,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $896,565 | $0 | $0 | $0 | $0 | **$900,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $30,000 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-PF-19-119 |
|---|---|

| Business Case Name | Implement Field Service Management (ClickSoft) for EFO YR4 |
|---|---|

## Stakeholders

| IT Portfolio | Plant and Field |
|---|---|
| IT Sub-Portfolio | Plant and Field DO |
| IT Director | Daniel Griffin |
| Managed by | MEP |

| Business Unit | Distribution Operations |
|---|---|
| Business Unit Director | Ryan Stowe |
| Business Unit SME | Tony Spratt |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - Cloud |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Current Service Suite 9.2.1 will be unsupported by end of 2019. The cost to upgrade to 9.7, which was released in May 2018, is $3M. Even with this upgrade, there have been no new purpose built features for Electric Field Operations (EFO). In order to improve in areas such as productivity and performance, crew visibility, time management and application maintenance, we must move away from Service Suite to a more robust fully integrated scheduling tool for DO. The DTE roadmap suggests we strategically move all DO scheduling and dispatching to ClickSoft.<br>NOTE: This project began in May 2019 |
| What system or process is being affected? | Example: Performance monitoring of critical applications |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Example: The value of completing the project is real-time contact center response time reporting vs. hourly reporting, improved user interface - dashboard view vs. emailed report, targeted troubleshooting and faster root cause analysis, low configuration solutions (i.e., less administrative work), and reducing waste. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Improve productivity and performance for both field crews and dispatcher |
| 2) | Increase visibility of crews by dispatchers |
| 3) | Provide real time status at point of activity |
| 4) | Auto capture of timesheet at point of activity against correct work order |
| 5) | Automation to drive productivity and customer engagement |
| 6) | Provide for multiple appointment books supporting business unit needs to keep customer commitments |
| 7) | Reduce the number of applications used in DO from 15 to 1 which reduces overall maintenance cost to business |
| 8) | Provide seamless upgrades with limited downtime and faster implementation with immediate access to new features |
| 9) | 2022 primary goals are to complete testing and implement Clicksoft for EFO |
| 10) | No additional HW or SW are required for 2022 |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 1 Years | Months |
| End Month | January | 2023 |

| | |
|---|---|
| Funding Source | Other Business Unit |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $1,805,504 | $0 | $0 | $0 | $0 | **$1,800,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $1,805,504 | $0 | $0 | $0 | $0 | **$1,800,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $91,000 | Trailing BU O&M Costs | $356,000 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-PFP-22-023 |
|---|---|

| Business Case Name | Integrated Information Resource (I2R) Replacement |
|---|---|

## Stakeholders

| IT Portfolio | Plant and Field |
|---|---|
| IT Sub-Portfolio | Plant and Field EG |
| IT Director | Jaison Busby |
| Managed by | MEP |

| Business Unit | Nuclear Generation |
|---|---|
| Business Unit Director | Jaison Busby |
| Business Unit SME | Grant/Maurer/Matuszak |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | I2R is a critical system used daily to support plant operations. The system supports 28 years of Fermi 2 business rules, practices, documentation and data. Originally constructed in the mid 1980's as a mini- enterprise resource planning (ERP) system it was last upgraded in 1999 in preparation for Y2K. The software/hardware is currently end of life and at risk of permanent failure. To mitigate risk, system functionality began being replaced in 2014. As of today the final two funtions, Engineering Support consisting of CECO, RCTS, ETS and Documents/Records Management Support consisting of WebARMS, ARMS, POMI, VROOM, TROOM, KOFAX and IKS need to be migrated to Enterprise/Industry supported solutions |
| What system or process is being affected? | CECO: Central Components & Component Database, RCTS: Regulatory Commitment Tracking System, ETS: Engineering Tracking System, WebARMS: Document Repository, ARMS: Automated Records Management System, POMI: Procedures, Orders and Manuals Index, VROOM: ARMS Valulting Records automated interface from eCARD (Electronic Condition Assessment Resolution Document), TROOM: ARMS Training Records Vaulting interface, IKS: Preventative Maintenance Classification |
| What functionality or capability is being provided? | Engineering Support functions will be migrated to, enhanced and supported by a Nuclear Generation specific instance of Maximo for Nuclear. Documents and Record Management Support will be migrated to a Nuclear Generation specific instance of Documentum / D2. KOFAX will be replaced to Captiva as part of the Documentum/D2 implementation. |
| What is the customer or employee value? | Engineering Support functions and Documents and Record Management will be managed and supported by Nuclear Industry benchmarked Enterprise solutions that have been successfully implemented at multiple Nuclear Generation sites and organizations. Due to the custom developed nature of CECO, RCTS, ETS, WebARMS, ARMS, POMI, VROOM, TROOM, KOFAX and IKS applications over the years there will be multiple opportunities to streamline and automate functions that are currently manual in nature. The streamlined operations and automation opportunities will reduce Operations and Maintenance costs in addition to providing superior operations visibility for management and better operational decision making support. |
| What alternatives have been considered? | I2R software/hardware is currently end of life and at risk of permanent failure, resulting in lost generation and damage to the reputation and ranking of the Fermi 2 Nuclear Power Station in the INPO and WANO rankings. Migration to supported hardware and software is problematic due to lack of vendor, hardware and development resources to support the current architectrure and infrastructure of the I2R system. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Successfully implement current version of Documentum D2 and Captiva, including NIRMA specific requirements and Maximo integration to replace WebARMS |
| 2) | Successfully implement the current version of Maximo for Nuclear to replace I2R CECO as the system of record for Fermi 2 |
| 3) | Generate and validate functional and technical design based upon requirements |
| 4) | Succesfully provision new hardware and build new systems as specified in functional and technical design |
| 5) | Successfully transfer and verify existing data from WebARMS and I2R CECO to the Documentum and Maximo for Nuclear platforms |
| 6) | Enhance system workflows, search capability, bulk data load and document metadata capabilities |
| 7) | Perform System Testing and Validation |
| 8) | Perform production deployment and manage warranty period |
| 9) | Perform appropriate BU Change Management under the Fermi 2 MGA34 procedure |
| 10) | Post project completion retire I2R ETS, I2R RCTS, I2R ARMS, I2R FDR and I2R POMI, IKS platforms 6 months after successful deployment of this solution |

| | | | |
|---|---|---|---|
| Start Month | September | 2020 | |
| Duration to Complete | 2 | Years | 3 Months |
| End Month | December | 2022 | |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $421,389 | $5,816,346 | $12,000,000 | $0 | $0 | **$18,237,735** |
| O&M | $441,568 | $287,949 | $10,000 | $0 | $0 | **$739,517** |
| Total | $862,957 | $6,104,295 | $12,010,000 | $0 | $0 | **$18,977,252** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $908,000 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $231,250 | $0 | $0 | $231,250 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001445 | Maximo Engineering Process Automation |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Plant and Field | Nuclear Generation |
| **Portfolio** | **Business Unit Director** |
| Plant and Field: ES | Randall E Earley |
| **Portfolio Manager** | **Business Unit SME** |
| Jaison J Busby | Bob Matuszak |
| **Managed By** | **PPS** |
| MEP | 4.5 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

Fermi is currently operating in a split mode Maximo environment with all configuration and engineering information in a Fermi specific Maximo instance and Work Order Management and inventory functions in the shared DTE enterprise Maximo system. This adds some complexity to operations and operators have to operate in a 'swivel chair' approach between the two Maximo instances depending on the function performed. Multiple instances also leads to data interfaces between the two systems that add unnecessary load to both system. All functional enhancements for Fermi on the shared enterprise Maximo platform must compete with DTE prioritization leading to avoidable operational costs that could be reduced with system modifications.

**What functionality or capability is being provided?**

Maximo Work Management and inventory functions that are currently being provided in the shared DTE enterprise Maximo system. Document and design interfaces that are unique to the Corporate Maximo Instance (SAP, Datapower, Maxavera, etc.) Document and design custom functionality unique to the Corporate Maximo Instance that needs to be replicated in the Fermi instance Add and retarget all integrations that currently support Fermi functions in the Corporate Maximo to target Fermi Maximo Upgrade middleware as needed for Fermi Maximo (Primavera, Maxavera, etc) Successfully migrate data from Corporate Maximo Instance to the Dev and QA Fermi Maximo Instance Operational Change Management in accordance with Fermi procedure MGA-34 Successful production cutover of the Fermi specific Maximo instance

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This directly aligns with Fermi’s Safety, Mitigate Enterprise/Operational Risk, Operational Excellence Goals, Measure It will directly improve Internal customer experience with Maximo users at Fermi

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| This project will add value with streamlined Maximo workflows and the end of the 'swivel chair' approach. All Fermi specific workflows and data will be consolidated on a Fermi specific Maximo instance. The separation of the Fermi instance from the shared DTE corporate instance will provide the ability to customize Maximo for Nuclear requirements that do not apply to other DTE operating units. The added flexibility with Maximo development will lead to more focused strategic customizations to reduce operational costs and contribute to the Fermi Financial Excellence Plan.<br>25% improvement in reduction of manual tasks, reporting and elimination of integrations between the Maximo systems<br>30% cost reduction with implementation of electronic work packages made possible by Fermi specific instance of Maximo<br>No outages or performance issues caused by shared instance |

| How will you monitor and measure expected value? |
|---|
| Customer Experience & Employee Engagement will be measured in 25% improvement in reduction of manual tasks, reporting and elimination of integrations between the Maximo systems.Internal customer experience with Maximo users at Fermi, Integrations will improve due only Fermi data and processes being supported by a single Maximo Instance with no dependencies on the Corporate Shared Maximo System<br>Financial Impact will be measured in 30% cost reduction with implementation of electronic work packages made possible by Fermi specific instance of MaximoEfficiency gains due to no service release outages from DTE - Engineering efficiency directly impacts Fix it Now (FIN)<br>Operational Reliability will be measured by 50% reduction in planned and unplanned outages due to shared Corporate Maximo Instance Unplanned outages - Frequency and duration current target for all Fermi applications is 2 unplanned per year with a total duration of <360 - Minutes Goal is to get to 2/180 by 2024<br>Foundational Capability will be realized in 30% efficiency gains in Operational Excellence through capabilities that can be realized including electronic work packages and other mobile device based processes that can be implemented and are applicable to Fossil Generation and Gas Operations |

| What alternatives have been considered? |
|---|
| Continued inefficiencies with the shared DTE Maximo instance and added operational costs due to 'swivel chair' approach inherent with multiple Maximo instances that are functionally divided. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2024-12-01 | No | IT |

DTE

## IT Costs

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $8,250,000 | $3,757,418 | **$12,007,418** |
| Opex | $0 | $873,261 | **$873,261** |
| **Total** | **$8,250,000** | **$4,630,679** | **$12,880,679** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001433 | Maximo HSE Support |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Plant and Field | Energy Supply |
| **Portfolio** | **Business Unit Director** |
| Plant and Field: ES | Justin L Morren |
| **Portfolio Manager** | **Business Unit SME** |
| Jaison J Busby | Alan R Clinton |
| **Managed By** | **PPS** |
| IT | 4.4 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

The Maximo HSE (Health, Safety and Environment Module) solution is currently owned by DTE but is not configured for our work management processes. This lack of core system functionality requires additional activities and systems to access for our employees. Properly configured, the HSE module functionality allows Energy Supply to digitize multiple “permits to work” and operator rounds into our existing work and asset management solution and core application, Maximo.
The current solution requires manual data inputs, maintenance to complex data creation, and limited available support.

**What functionality or capability is being provided?**

Maximo asset maintenance process will be improved. Maximo HSE will be used as the digital logbook for all operational activities at Fossil Generation plants. This includes tracking abnormal operating conditions, safety defects, fire impairments, and interlock defeats. All these items directly impact safety policy and procedures at our power plants. Additionally, the Maximo HSE module will be used to create and authorize various permits to work at our plants (Mitigating Operational Risks.)

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This aligns with strategic goals of work efficiency and safety. This also supports Energy Supply's mobile workforce initiative.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Reduction of employee time to access and enter information including the ability to perform at the point of activity. Improve the quality of asset and operational information and improve the accessibility of information.Expecting 30% increase in employee efficiencies (Time saved). Maximo HSE will reduce the number of systems that power plant operators need to access, be trained in, and allow these operators mobile access to logbook information. Reduction of work time and enable work completion at point of activity.<br>Users of logs will be approx +350 users. Users of permits will be approx +500 users.<br>Expecting 30% increase in employee efficiencies (Time saved). Maximo HSE will reduce the number of systems that power plant operators need to access, be trained in, and allows these operators mobile access to logbook information. Reduction of work time and enable work completion at point of activity. Additionally, Maximo HSE will allow DTE power plants to eliminate all paper from their operational and maintenance activities with fully digital permiting.<br>Target State: Eliminating all printed work orders at all DTE power plants (Time and material savings) All permits associated digitally to WO's for records retention. Logs 100% accessible for input and retrieval on mobility solution.<br>Reducing number of applications used to a single system.<br>Current State: There were 21142 work orders canceled in May due to duplication or rework<br>Target State: Reduce rework by 30%<br>Strengthen our asset management capabilities by 10%. Improving the data quality and data accessibility of generation equipment which enables more accurate maintenance and work planning. Maximo HSE is the logbook for each FosGen plant, meaning, it has an extremely high priority for support. This system is a record of all operational activities that occur in the plant on a daily basis. We are going to reduce the number of duplicate Service Requests and Work Orders by 30% through transparency |

| How will you monitor and measure expected value? |
|---|
| Procedures will be updated and implemented with a Change Management approach to embed the improved process into the organization. Completed work will be analyzed to assess efficiency improvements from these changes. Currently 0% of operational personnel perform digital rounds or logs. Our target to achieve is 100% operational personal performing digital rounds or logs. |

| What alternatives have been considered? |
|---|
| Other platforms were not evaluated because it would create additional complexities and redundant applications to support. Do nothing is also an alternative though this option does not align with Energy Supply's strategic goals of work efficiency and safety.<br>To do nothing does not align with the company's objective of being best operated as it does not implement new capabilities to streamline work management capability metrics. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2023-12-31 | No | IT |

DTE

## IT Costs

| Type | FY23 | Total |
|---|---|---|
| Capex | $387,697 | **$387,697** |
| Opex | $23,724 | **$23,724** |
| **Total** | **$411,421** | **$411,421** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001450 | Primavera Modernization |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Plant and Field | Nuclear Generation |
| **Portfolio** | **Business Unit Director** |
| Plant and Field: ES | Randall E Earley |
| **Portfolio Manager** | **Business Unit SME** |
| Jaison J Busby | Kendra E Hullum-Lawson |
| **Managed By** | **PPS** |
| IT | 5.4 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

Primavera is the critical planning tool used to schedule, synchronize, and plan all operations and work management activities required for the maintenance and safe operation of the plant. Primavera is used for online work activity and refueling outage work activity. P6 EPPM version 7.0 SP3 is a shared on-premises DTE Enterprise system that is over 12 years old with no vendor support from Oracle. It is used by all business units for project scheduling activities. The system is prone to project scheduling and database consistency issues that result in extensive scheduler rework. Corporate policy does not allow direct P6 EPPM database access due to the system fragility and combined enterprise load. The lack of direct database access precludes any reporting or project automation solutions beyond the limited capabilities of the shared DTE P6 Enterprise system. Project visualization reports including GANTT charts must be manually generated using a Comma Separated Value Project data export and import into a third-party graphical reporting package. When Fermi is in online mode there is a Fermi Adds project that consists of work orders that are scheduled as resources become available outside of the normal T-19 schedule. There is a continuing issue that results in the corruption of the Fermi Adds project almost every third week. The only remediation for this issue is to rebuild the Fermi Adds project from Syntempo and Maximo. There is no proper backup or archiving tools in this version which results in the need to make five backup copies of the outage project each day. Resources also cannot be levelized due to calendars and other system level items being shared by all business units.

DTE

| What functionality or capability is being provided? |
|---|
| Benefits realized with additional capabilities including several performance enhancements that include improved efficiency and speed of Primavera and providing automation opportunities not available in current solution, which will reduce manual intervention and administrative tasks by 10% of current labor hours. Ad-hoc reporting using direct database level project access, a capability not supported with the current system will allow auditing capabilities and report generation opportunities that are not possible with the current solution as it exists today. There are new schedule risk and visual reporting capabilities in the new version. Nuclear Generation project visibility will also be greatly enhanced with the use of the Schedule Reader application, a read-only project view and reporting system. Schedule Reader allows users outside of the schedulers to read and manipulate projects in a read only manner – a capability that does not exist today. System speed and stability are the biggest advantages of moving to the new P6 EPPM 21.12 release. P6 EPPM version 7.0 SP3 was java based with no collaboration features. The size of Fermi Outage projects combined with system performance issues resulted in Fermi being forced to use the outdated thick client instead of the browser interface. The new release is HTML 5 based increasing speed and functionality of the web client to be comparable to the desktop client, with all capabilities supported. The java-based version could only have a single project open at a time resulting in schedulers having two sessions open and re-entering schedule items instead of copying predefined work flows and work orders. Multiple projects can be open and there is an option to use the project due date which automatically updates project schedules to allow for true copy and pasting of existing work breakdown schedules between projects. This allows more control over which data date gets used in a multi-project scheduling scenario. |

| Describe alignment of project to Business Unit Goal(s) and Strategy(ies). |
|---|
| Safety, Mitigate Enterprise/Operational Risk, Operational ExcellenceMeasure will be in efficiencies gained by 25% with Nuclear specific customization automation opportunities |

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Affordability & Growth for Planners in 25% cost reduction in scheduler / planner time including avoidance of re-working projects that become corrupted on almost a weekly basis and increased interface speed<br>Affordability and Growth: 10% reduction in O&M project planning / reporting with direct database access providing ad-hoc reporting capability that are not possible or allowed with the shared P6 instance & cloud hosted environment cost reductions and the realization of the opportunity costs that have been imposed by not leveraging added scheduling, integration and reporting capabilities in the latest version of P6<br>Operational reliability: Uptime SLA of 99.99% with hosting vendor and much faster system integrations due to P6 projects limited to Fermi only. |

| How will you monitor and measure expected value? |
|---|
| The success of this initiative will be measured in the decrease of rework, loss of data, decrease in system failures and the added efficiency of having a modern, fully functioning solution. |

| What alternatives have been considered? |
|---|
| Benchmarking evaluation of this solution determined 75% of US nuclear generation sites use Primavera in an on-premises or cloud/vendor hosted implementation for online and outage project scheduling. DTE MEP evaluated the Oracle cloud hosted SaaS offering and decided to implement their workloads utilizing the fixed services offering. MEP has no third-party integrations with their P6 EPPM implementation. Fermi depends on P6 EPPM system integrations with Maximo for Nuclear, Syntempo and Maxavera. Maximo for Nuclear is an Enterprise Asset Management system that is the system of record for all work orders that are executed as part of the Outage and Work Management planning cycle. Syntempo is a unified command-and-control center for managing the status of work order execution during online, refuel, and forced outage cycles. Maxavera is a data integration solution that communicates and provides data synchronization for Maximo, P6 EPPM and Syntempo. Oracle cloud hosted SaaS was ruled out due to the lack of third-party integrations that do not use the fixed, single Oracle data interchange gateway. |

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-08-01 | 2022-09-30 | No | IT |

## IT Costs

| Type | FY22 | Total |
|---|---|---|
| Capex | $430,000 | **$430,000** |
| Opex | $52,473 | **$52,473** |
| **Total** | **$482,473** | **$482,473** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $100,000 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | Annual | $92,109 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0003213 | Storm Data Lakehouse |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Plant and Field | Distribution Operations |
| **Portfolio** | **Business Unit Director** |
| Plant and Field: DO | Daniel J Griffin |
| **Portfolio Manager** | **Business Unit SME** |
| Ajay Gupta | Nolan R Serafin |
| **Managed By** | **PPS** |
| MEP | 4.95 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

Situational awareness is paramount during storms that impact our service territory and result in customer outages. DTE emergency headquarters and storm roles need timely and reliable access to customer, storm, job, and damage assessment information in order to most effectively manage crew resources and provide our customers with accurate restoration information. The Storm Data Lakehouse will build upon our current enterprise data lake infrastructure to provide a performant, unified access layer for storm data and storm analytics needs.
This is provided today by having 4 separate databases in Azure to support the user load requirements. By implementing the Storm Data Lakehouse, we can reduce the number of databases and achieve cost savings of Azure compute charges.

**What functionality or capability is being provided?**

The Storm Data Lakehouse will provide data ingestion, data storage, metadata, data and report visualization, and a data consumption layer that is purpose built meet the needs for storm analytics, storm reporting, and situational awareness of storm restoration efforts.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns to 48 hours storm restoration targets and cost optimization for storm resources

**Define the Benefit/Value to the Organization, Customer, Employee.**

Having timely and reliable data for outages, regions, and customers impacted will enable improved decision making for storm restoration and enable better estimates for our customers

**How will you monitor and measure expected value?**

Expected value will be monitored by assessing Azure compute costs to run the system, any unplanned downtime of the data lakehouse, and the system performance for end users

**What alternatives have been considered?**

Alternative is to continue to use the systems currently in operation today, but these have experienced failures in previous storms and could not support all user queries. An improved system following a proven data architecture pattern is needed.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-13 | 2025-07-31 | No | IT |

## IT Costs

| Type | FY25 | Total |
|---|---|---|
| Capex | $2,000,000 | **$2,000,000** |
| Opex | $205,000 | **$205,000** |
| **Total** | **$2,205,000** | **$2,205,000** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0003237 | Storm Simulation Lab |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Plant and Field | Distribution Operations |
| **Portfolio** | **Business Unit Director** |
| Plant and Field: DO | Ajay Gupta |
| **Portfolio Manager** | **Business Unit SME** |
| Ajay Gupta | Tony Wilhelm |
| **Managed By** | **PPS** |
| IT | 6.3 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE has faced disruptions due to storms, resulting in significant customer events and operational challenges across all utility functions. The organization has recently conducted an analysis to address issues related to system stability arising from these storm events. The identified opportunity involves integrating business and IT resiliency practices into ongoing and future resiliency preparation efforts. This approach aims to enhance overall performance during storms and fortify the organization's capacity to maintain operational stability in adverse weather conditions, contributing to both business and IT resilience.

From 2021 through 2023, DTE experienced 13 sever weather-related events each exceeding 110,000 unique customer outages, averaging 274,000 customers impacted. These particularly impactful periods of outage are known within the Company as “Catastrophic” or CAT Storm. During these CAT Storms, failures in our IT systems such as Outage Management result in both Customer and Operational impact. Customers may not have been able to report outages, wire-down events, hazards, etc. and could also experience delayed or incorrect communications related to their restorations. Field crews would also lack the ability to quickly and efficiently restore power, working from paper with manual processes to plan, schedule, dispatch, and provide statuses of necessary work. Analyzing the data from our IT major incidents shows that during 60% of those events, these kinds of system failures are directly caused by high load that is beyond the design capacity of the related and interconnected systems. While the Company has remediated these issues and corrected the system designs in reaction to these storm events, we have no ability to identify these failure points before they impact our customers and our employees as we lack a sufficient testing environment. The Storm Simulation Lab will identify the maximum throughput that each system’s design can handle and allow us to proactively make the necessary design changes before a storm situation. After implementing the Storm Simulation Lab, the number of IT major incidents incurred due to high load will be drastically reduced with a target of 10% overall reduction in the frequency of IT outages caused by load-related system issued during CAT Storm events.

DTE

| What functionality or capability is being provided? |
|---|
| The Storm Simulation Lab will enhance DTE's capacity to conduct comprehensive end-to-end testing of customer and outage systems. This testing will be conducted both preemptively before each storm season and following any substantial modifications to the corresponding IT systems. Focus will be on the three components mentioned above: (1) building a testing harness, (2) executing the initial end-to-end test, and (3) creating a proactive capability for regular storm resiliency testing.<br><br>Additionally this investment will specifically fund consulting, expert technologists, a delivery team, and intellectual property that will accelerate the effort to meet the summer 2024 timeline. There will also be an internal leadership and delivery team working alongside McKinsey so that once the project is completed, the internal team will have built the skills and capabilities needed for continued operation of the storm simulation lab. Finally, this investment will include the additional hardware and software purchases that will be required to build out an end-to-end optimized test environment that includes all of DTE's critical storm applications in order to fully replicate the production environment(s). |

| Describe alignment of project to Business Unit Goal(s) and Strategy(ies). |
|---|
| The project aligns with DTE's priorities of ensuring the safe and reliable operation of the electrical grid, restoring customers within 48 hours, and continuing to reduce the frequency and duration of electric outages. |

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| The implementation of the Storm Simulation Lab enables DTE to conduct the inaugural end-to-end stress test for the customer and outage systems. This test will pinpoint areas requiring fortification and provide ample time to address the findings. Furthermore, the Storm Simulation Lab establishes an ongoing capability for regular end-to-end stress testing. This ensures the sustained resilience of critical systems, and their availability when most needed by our customers and employees during storm activity. |

| How will you monitor and measure expected value? |
|---|
| Across the system, value will be monitored in response times, uptime/downtime metrics, overall system performance during peak loads, system availability, downtime during stress tests, and response efficiency during simulated storm events. We will also monitor the time to restore customer outages as related to the technology systems targeted. |

| What alternatives have been considered? |
|---|
| The alternative considered was to do nothing and maintain the status quo of performing fragmented testing of our systems, this was not acceptable to meet our corporate or customer expectations. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-10-01 | 2025-03-31 | No | IT |

DTE

## IT Costs

| Type | FY24 | FY25 | Total |
|---|---|---|---|
| Capex | $6,488,324 | $3,500,000 | **$9,988,324** |
| Opex | $40,606 | $39,484 | **$80,090** |
| **Total** | **$6,528,930** | **$3,539,484** | **$10,068,414** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Executive Summary

# Executive Summary

| Business Case ID | BCD-IT-22-009 |
|---|---|

| Business Case Name | IT for IT Application Health |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | IT for IT |
|---|---|
| Business Unit Director | Christine Garber |
| Business Unit SME | Anthony Bolda |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | This business case will maintain the IT Services Platform, including ServiceNow, GitHub, DTHA. This ensures that applications do not go out of support and that security risks are minimized. |
| What system or process is being affected? | The processes being affected includes process areas of Incident Management, Request Management, Change Management, Asset and Configuration Management, Security Incident Response, Discovery, Event Management, Application Portfolio Management, Governance Risk and Compliance, Vendor Risk Management, and Vulnerability Management. |
| What functionality or capability is being provided? | The following functionality will be provided by implementing this project: Implementing version upgrades (2 annually for ServiceNow, other applications as available), security and other patches as made available to minimize security risks, enhancing workflows to improve efficiency, adding new items to the service catalog to take advantage of the tool to improve efficiency, and extending discovery, event management to reduce unplanned outages, and managing vulnerability identification and remediation. Implementing focused automations on frequently requested items improving fulfillment speed and reducing the amount of manual effort to fulfill. |
| What is the customer or employee value? | Through continuous improvement efforts additional enhancements and automations are identified to improve process efficiency and effectiveness. Version upgrades and patch implementations minimize unplanned system outages by maintaining vendor support. |
| What alternatives have been considered? | Continue using the system as is and Continue using the system as is and not realize the efficiency improvements, and other benefits. Also we would fall behind on versions and lose support from the vendor. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Implementation of enhancement requests for capability improvements. |
| 2) | Implement additional automations. |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases.** **Total** |
|---|---|---|---|---|---|---|
| Capital | $2,001,113 | $0 | $0 | $0 | $0 | **$2,000,000** |
| O&M | $150,379 | $0 | $0 | $0 | $0 | **$150,000** |
| Total | $2,151,492 | $0 | $0 | $0 | $0 | **$2,150,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001350 | IT for IT Application Health |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | IT for IT |
| **Portfolio** | **Business Unit Director** |
| IT for IT | Carrin Tunney |
| **Portfolio Manager** | **Business Unit SME** |
| Carrin Tunney | Suman Gubba |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

There are multiple applications that support DTE's ITS Business Unit. This is an annual investment to cover enhancements in support of changes to business processes, implement hardware upgrades, security vulnerability remediation, and adopt software releases to avoid obsolescence and mitigate security vulnerabilities. Enhancements of this type are critical in ensuring that system integrity is maintained allowing for the timely adoption of security patches and emerging versions. Allowing systems to stagnate negatively impacts the Company's ability to monitor the IT systems that support delivery of energy to DTE's customers, these enhancements improve operations and overall system health. Additionally, the scope of this initiative is to enable the implementation of the latest ServiceNow applications and processes to ensure continuous IT services delivery. Integration with security monitoring applications, like CyberArk and Q-Radar, used to monitor and increase security around highly critical applications. Impacting our ability to successfully provide energy to our customers.

**What functionality or capability is being provided?**

The following functionality will be provided by implementing this project: Enhancing IT process and workflows, adding new items to the service catalog to take advantage of the ServiceNow application toolset to improve efficiency, extending software and hardware discovery, and enhance change and event management to reduce unplanned outages. Manage vulnerability identification and remediation via the ServiceNow application suite. Implementing focused automations on frequently requested items improving fulfillment speed and reducing the amount of manual effort to fulfill.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

The goal is to reduce unplanned outages, enhance workflow and improve efficiencies in ServiceNow, improving employee engagement.
Aligns to Operational Excellence and Employee Engagement.
Aligns to Foundational Capability as all Business units across DTE will utilize and take advantage of the new functionality.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Security: Minimize security vulnerabilities on included systems, reducing the opportunities for system disruption. Optimize visibility and monitoring of IT business applications and those services, systems, hardware and cloud infrastructure to reduce security concerns proactively.<br>Employee Value: DTE Energy Information Technology employees will realize process efficiencies and improved effectiveness. DTE Energy employees that use Information Technology systems will experience reduced times for issue resolution and faster delivery of Information Technology requests that enable them to perform their jobs more efficiently and effectively.<br>Since we don't know the enhancement information until shortly before it is released. We cannot quantify the realized benefits until we know the content of the upgrade. |

| How will you monitor and measure expected value? |
|---|
| Expected value will be monitored via the following metrics:<br>Operating Impact: Improve asset health, improve end user experience (e.g., reduce number of application outages, improve processing time, reduce number of system vulnerabilities), and improve IT business management and operational processes.Customer Impact: Improve end user experience (e.g., ability to navigate in the application, time required to complete business unit process activities). |

| What alternatives have been considered? |
|---|
| Doing nothing will have the following negative impacts: - The systems will not be eligible for support by the vendors. If this were to occur and we experience an issue, we may not be able to resolve it. This would severely degrade Information technology's ability to monitor IT systems that are support DTE Energy's delivery of energy to our customers - We will not have access to security patches, introducing vulnerabilities that may be exploited by hackers to access and disrupt DTE Energy's system |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-09 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $1,959,135 | $16,622,640 | $1,694,945 | **$20,276,720** |
| Opex | $360,002 | $364,464 | $360,844 | **$1,085,310** |
| **Total** | **$2,319,137** | **$16,987,103** | **$2,055,789** | **$21,362,030** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-005 | Business Case Name | MYR YR1 IT4IT Tools |
|---|---|---|---|

## Stakeholders

| IT Portfolio | IT BRM | Business Unit | IT for IT |
|---|---|---|---|
| IT Sub-Portfolio | IT for IT | Business Unit Director | Christine Garber |
| IT Director | Christine Garber | Business Unit SME | Kizzmett Collins |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements | Initiative Type | Operational |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The scope of this initiative is to enable the implementation of the latest Microsoft 365 releases maintaining the health of the asset. This will help ensure employees have the latest functionality available. |
| What system or process is being affected? | System being affected is the M365 Online Platform. |
| What functionality or capability is being provided? | M365 Productivity Tools (Word, Excel, PowerPoint, Teams, PowerApps etc). |
| What is the customer or employee value? | Employees will be able to perform their day to day activities using the latest release of MS365 Productivity Tools. |
| What alternatives have been considered? | MS365 is part of DTE's Collaboration Platform . |

| Key Objectives | |
|---|---|
| 1) | Implementation of two annual Microsoft 365 releases to maintain platform integrity. |
| 2) | Ensure minimal impact to the end user, seamless deployment. |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | March | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 9 Months |
| End Month | December | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $400,733 | $400,733 | $0 | $0 | $0 | **$800,000** |
| O&M | $76,321 | $9,433 | $0 | $0 | $0 | **$90,000** |
| Total | $477,054 | $410,166 | $0 | $0 | $0 | **$890,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001704 | Application Portfolio Management - APM |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Technology |
| **Portfolio** | **Business Unit Director** |
| IT for IT | Carrin Tunney |
| **Portfolio Manager** | **Business Unit SME** |
| Carrin Tunney | Suman Gubba |
| **Managed By** | **PPS** |
| IT | 4.5 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

Making better decisions about the investments needed in various application portfolios. This involves identifying applications most in need of investment based on operational failure data, risk and strategy alignment.
DTE has a large portfolio of IT applications that support our operations and our customers, however we do not have a completely accurate inventory that includes up to date quality, reliability, and lifecycle information. Applications and their usage, criticality, and status are stored in ServiceNow but there is no capability to perform multi-dimensional analysis on these applications so that we can optimize the complete application portfolio and ensure that all applications are appropriately architected, secured, managed and operated in the most cost-effective and reliable manner for our customers. Analysis efforts on application suitability, performance and cost are manual and ad hoc, and performed episodically. Since the data and analysis about the IT application portfolio is incomplete, several maintenance and engineering activities are performed reactively, which results in unplanned downtime for employees and customers and increased support costs to due product end of life situations that require premium support contracts.

**What functionality or capability is being provided?**

Full inventory of Business application linkage with business capability, scoring based on custom criteria. For example, “How old are they” and “How often they fail if they are not in alignment with strategy direction”.
Application Attestation process. Ability to generate an assessment survey to send to all IT Application Owners and they must certify information about the application. If it is in production, how many users, data classification, etc.
Creation of APM dashboard that shows an application heat map, and identifies applications scores based on reliability, health, operational performance
Creation of APM dashboard that shows applications targeted for retirement
Linkage of applications to demand in ServiceNow

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with ITS goal for the 5-year plan from asset health perspective Operational efficiency and minimizing operational risk.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Data quality of the application being in the environment Higher quality of being able to make decisions on investments<br>Employee Value: Improving visibility to asset health will enable focused efforts on assets that are not healthy, reducing operational impacts and operational risk. More efficient processes will reduce the level of effort employees expend to create asset health assessments and requestors will receive assessment results faster. |

| How will you monitor and measure expected value? |
|---|
| Customer experience: improve Asset health assessment turn around time by 50%<br>Productivity: reduce the Time spent on Asset health assessments to 50%<br>The targeted improvement is 50% reduction in time to complete asset health assessment from 6 months to 3 months (4000 hours are spent conducting asset health assessments which would reduce to 2000 hours). As a result, the 2020 baseline of 64% assets classified as unhealthy is targeted to improve to 32% by utilizing this new capability.<br>The data from APM will be rolled into the best operated score card. |

| What alternatives have been considered? |
|---|
| Continuing with the existing manual data gathering with no single source of truth.<br>The do nothing alternative was not accepted because the current state does not provide the company with a single source of truth about applications and the relationships between their system components to base strategic planning investments decisions using application criticality, application health and risk. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-04-01 | 2023-10-31 | Yes | IT |

**IT Costs**

| **Type** | FY23 | **Total** |
|---|---|---|
| Capex | $495,683 | **$495,683** |
| Opex | $53,416 | **$53,416** |
| **Total** | **$549,099** | **$549,099** |

**BU Costs**

| **Category** | **Term of Contract** | **BU O&M Cost** |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $63,600 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-011 |
|---|---|

| Business Case Name | Cloud Management (ServiceNow) |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | MEP |

| Business Unit | Server/Storage |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Aditya Tallapally |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Infrastructure - Cloud |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | IT does not have the automation or tooling to manage cloud resources, cloud infrastructure at scale and the manual processes that exist today. As more applications move to the public and private cloud, IT needs to be able to use automated tools to check for compliance, security, resource utilization, cost control and scalability. |
| What system or process is being affected? | The process is manually driven and sometimes reactive. In addition, there is no governance to ensure people are following guidelines and appropriate tagging. This leads to variations in instance configurations and increases difficulty to track and report on cloud resources. |
| What functionality or capability is being provided? | There are two modules within the ServiceNow suite: Cloud Insight and Cloud Management. This will add functionality or capability to optimize. IT will be able to receive accurate data on the usage of resources in the cloud and efficiently respond to audit and control requests. Provisioning applications into the cloud will be streamlined with automated approvals and self-provisioning. The cloud services will bring cloud data and resources together to improve productivity and IT visibility. The two Cloud ServiceNow modules will be an integral purpose platform. |
| What is the customer or employee value? | IT will be able to get correct data on the usage of resources in the cloud and efficiently respond to audit and control requests. Provisioning and management of applications into the cloud will be streamlined with automated approvals and self-provisioning. Reduction in manual work to automate cloud management by using policies to govern deployments and resource operations. These actions will optimize DTE's cloud cost profile. |
| What alternatives have been considered? | To continue managing cloud instances manually. |

| Key Objectives | |
|---|---|
| 1) | Automate to onboard applications into the public and private cloud. |
| 2) | Automate policy checking controls to ensure compliance of cloud resources and configuration to DTE standards. |
| 3) | Integrate ServiceNow Configuration Management Database (CMDB) discovery into public and private cloud environments. |
| 4) | Implement cost reporting dashboards to accurately understand costs per application running in the cloud. |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | |
|---|---|---|---|
| Duration to Complete | Years | 11 | Months |
| End Month | December | 2022 | |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $742,058 | $494,706 | $0 | $0 | $0 | **$1,240,000** |
| O&M | $112,304 | $103,665 | $0 | $0 | $0 | **$220,000** |
| Total | $854,362 | $598,371 | $0 | $0 | $0 | **$1,460,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE Energy

## Executive Summary

| Business Case ID | BCD-IT-22-008 | Business Case Name | IT Service Management Tool |
|---|---|---|---|

### Stakeholders

| IT Portfolio | IT BRM | Business Unit | IT for IT |
|---|---|---|---|
| IT Sub-Portfolio | IT for IT | Business Unit Director | Christine Garber |
| IT Director | Christine Garber | Business Unit SME | Anthony Bolda |
| Managed by | IT | Business Units Impacted | Electric |

### Project Description

| Initiative Category | Strategic | Initiative Type | Operational |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Software Asset Management and Contract Management - It is difficult and in some cases impossible to determine actual usage of software. This leads to two primary business implications:<br>1. We are paying for more software than we are actually using<br>2. If our software providers audit us and we are using more software than we are actually using we incur penalties, sometimes costing hundreds of thousands of dollars<br>3. Software audits consume significant time and resources (~ 1 month each, three software vendors require annual audits, others are on demand, four other vendors required audits in 2020)<br>4. There are currently multiple areas personnel need to go to install software (Window System Center, IT Solution Center portal). This causes confusion and inefficiencies<br><br>Project Portfolio Management - There are a variety of practices and tools for managing projects that are not complex enough to require MEP. These disparate practices lead to inconsistent project delivery quality and status visibility.<br><br>Enhancement/Defect/Test management tool replacement - The existing tool is significantly out of date and suffered for unplanned outages in 2020 |
| What system or process is being affected? | The systems and /or processes being affected includes Software Asset Management, Contract Management, Project Portfolio Management and Finish up HPQC migration |
| What functionality or capability is being provided? | Software Asset Management and Contract Management -<br>1. Monitor license usage and compare to contractual entitlement<br>2. Automatically deprovision software if it has not been used within specified guidelines<br>3. Simplify provisioning of software by providing a single place for personnel to request software, IT Solution Center Portal. Software is automatically installed is possible, or routed through an approval and funding workflow if needed<br><br>Project Portfolio Management -<br>1. Integrated Project Portfolio Management software that includes scheduling, risk management, issue management, financial management, action items, decisions, and status reports.<br>2. Provide a project summary dashboard for leadership to quickly see the status of projects in the portfolio and where attention is needed.<br><br>Enhancement/Defect/Test Management tool replacement - Move to a current, supported toolset for improved reliability |
| What is the customer or employee value? | Software Asset Management and Contract Management - Employees will have a simplified software request and installation process, increasing engagement.<br><br>Project Portfolio Management - ITS and business partner employees involved in project delivery: Improved efficiencies in project delivery including all aspects of project management tied together and workflow/task assignment/status of actions, risks, and issues. Improved visibility and understanding of projects enabling improved project delivery. General DTE employees: Faster realization of project benefits due to improved efficiency of delivery<br><br>Enhancement/Defect/Test Management tool replacement - HPQC users will incur fewer unplanned outages, improving efficiency and reducing rework due to lost work |
| What alternatives have been considered? | To continue manual processes. |

| Key Objectives | |
|---|---|
| 1) | Software Asset Management: Track software utilization and licensing |
| 2) | Project Portfolio Management: Leverage industry standard project management practices |
| 3) | Contract management: Include contract detail with application Information |
| 4) | Test Management: Replace out of support test management tool |
| 5) | Test Management: Replace out of support test management tool |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

### IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $1,200,000 | $0 | $0 | $0 | $0 | **$1,200,000** |
| O&M | $227,583 | $0 | $0 | $0 | $0 | **$230,000** |
| Total | $1,427,583 | $0 | $0 | $0 | $0 | **$1,430,000** |

### Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001849 | Cloud Privilege Access Management |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jonathan Schmidt |
| **Managed By** | **PPS** |
| IT | 150 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Regulatory/Compliance | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

Currently not all privilege identities are not vaulted into the CyberArk tool. Assist DTE to enhance their Privilege Access Management (PAM) capabilities to implement a least privileged access model, mitigate security risk related to ransomware and other cyber threats, and improve compliance against regulatory standards. This is a TSA regulatory and compliance requirements. Monitor privileged identities (DTE Gas).

**What functionality or capability is being provided?**

Secure data encryption of privilege identities for cloud
Functional / Technical Design for SaaS SolutionUpdated security procedures, unified, and aligned with new processesOperations build guidesImplementation of PAM company-wide

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with IPS 3 -5 Year Identity Management Strategy.  Aligns with DTE's Mitigate Enterprise /Operational Risk by preventing Cyber Incidents.  Reduction in Unplanned Outages as a result of a compromised privileged identity which benefits Operational Reliability
Aligns with Foundational Reliability as this capability can be leveraged by other business units.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Strengthening DTE's Privileged Access Management will help isolate and protect privileged accounts and activities in case of a malicious attack.  This will result in lessening the risk of a significant cyber incident impacting DTE financially and reputationally.

**How will you monitor and measure expected value?**

DTE's reduced risk posture

**What alternatives have been considered?**

There are no alternative products to evaluate as CyberArk is DTE's Credential Management platform and this initiative will increase the security defense and depth.

A "do nothing" alternative is not acceptable as compromised credentials could lead to malicious cyber activity and serious cyber incidents with financial and data loss implications. This may also impact audit outcomes and/or lead to regulatory fines.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $534,859 | $37,915 | $525,150 | **$1,097,924** |
| Opex | $204,647 | $0 | $198,707 | **$403,354** |
| **Total** | **$739,506** | **$37,915** | **$723,858** | **$1,501,278** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002645 | Security Information & Event Management (SIEM) End of Life Replacement |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Tom Engle |
| **Managed By** | **PPS** |
| IT | 150 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Regulatory/Compliance | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

The current Security Information & Event Management (SIEM) will be at end of life and unsupported by the vendor at the end of 2025. The SIEM performs real-time monitoring and analysis of security events, generates security alerts for investigation, and logs security data for compliance and auditing purposes such as, North American Electric Reliability Corporation (NERC), Payment Card Industry (PCI), Security Exchange Commission (SEC), Sarbanes-Oxley (SOX), and Transportation Security Administration (TSA). The above regulations mandate the logging of security events. Without an operational SIEM, the logging would not occur, placing in non-compliance. Additionally, the SIEM is used to monitor and detect cyber security threats. Undetected cyber incidents could result in significant financial, reputational, and customer data integrity risks to DTE.

**What functionality or capability is being provided?**

An operating and vendor supported SIEM that meets regulatory compliance and DTE cyber security monitoring requirements. The SIEM performs real-time monitoring and analysis of security events, generates security alerts for investigation, and logs security data for compliance and auditing purposes.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

DTE Priorities:
Identify and mitigate enterprise and operational risks by investigating cyber security alerts generated from the SIEM.In addition, undetected cyber threats could lead to a significant impact to our financial objectives. Average cost of a data breach in 2022 was $4.35M.
ITS Priorities:
Maintain our operational commitment to excellence while achieving cost savings by maintaining a vendor supported SIEM.Maintain a strong security posture as we prepare to respond to evolving threats. The SIEM is the primary security tool for detecting malicious activity.

**Define the Benefit/Value to the Organization, Customer, Employee.**

The benefit will enable DTE to remain compliant for security logging as required by NERC CIP-007R4, PCI, SOX and TSA. In addition, the SIEM is utilized for cyber security monitoring and early detection of cyber incidents, which can result financial, reputational, and exposure of customer data.

DTE

| How will you monitor and measure expected value? |
|---|
| The newly installed and configured SIEM, will extend the life cycle by 5-years with vendor support. |

| What alternatives have been considered? |
|---|
| There are no alternative tools, however, there are alternative vendor products such as Splunk, Microsoft, and IBM. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-02-03 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | FY26 | FY27 | FY28 | FY29 |
|---|---|---|---|---|---|
| Capex | $1,000,000 | $1,000,000 | | | |
| Opex | $231,000 | $252,000 | $252,000 | $252,000 | $252,000 |
| **Total** | **$1,231,000** | **$1,252,000** | **$252,000** | **$252,000** | **$252,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

**Total**

**$2,000,000**
**$1,239,000**
**$3,239,000**

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001869 | Vendor Onboarding for DTE |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jonathan Schmidt |
| **Managed By** | **PPS** |
| IT | 150 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Regulatory/Compliance | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE has no consistent approach for onboarding vendors, creating gaps and delays with granting the right access our system. There is no effective way to monitor the lifecycle accounts established for vendors, thus creating a backlog of accounts that can be disable and/or deactivated. Not all vendors are setup with MFA, which is a security risks when accessing DTE's network.
DTE will enhance our Vendor Identity & Access Management capabilities by implementing at least a privileged access model to be used to mitigate security risk related to ransomware and other cyber threats, while improving compliance with regulatory standards.
The NERC CIP-013-1 cybersecurity supply chain risk management requirement–This means power & utility (P&U) companies are required to prove compliance, increased monitoring and oversight over their global supply chains. Failure to do so can result in fines of up to $1M per day.
Energy organizations should now focus on addressing specific third-party cybersecurity risks, such as the insertion of counterfeit components into cyber assets, vendor remote access vulnerabilities and insecure vendor development practices.

**What functionality or capability is being provided?**

Functional / Technical Design of the system and processes Updated security procedures, unified, and aligned with new processesOperations build guidesImplementation of a unified solution company-wide

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This initiative align's with IPS 3 -5 Year Identity Access Management Strategy.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This will strengthening DTE's vendor identity onboarding governance model which will help with identity management, provision and deprovisioning vendor accounts. It will enhance the overall security posture in DTE by providing the least privilege access to vendors when trying to connecting to DTE's network. This will also effectively streamline vendor setup with MFA and system access.

**How will you monitor and measure expected value?**

Perform vendor access reviews on a timely basis, remove disable or inactive accounts based upon established guidelines, improve overall security by prohibiting ransom malicious attacks.

**What alternatives have been considered?**

There have been no other alternatives considered. Do nothing, which is unacceptable to be able to protect DTE's vendor identities and business data and leave the company not in compliance with NERC CIP-013-1 cybersecurity supply chain risk management requirement.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-03 | 2027-12-31 | Yes | IT |

**IT Costs**

| Type | FY24 | FY25 | FY26 | FY27 | Total |
|---|---|---|---|---|---|
| Capex | $7,700 | $810,400 | $767,529 | $784,787 | **$2,370,416** |
| Opex | | $0 | $46,987 | $43,698 | **$90,685** |
| **Total** | **$7,700** | **$810,400** | **$814,516** | **$828,485** | **$2,461,101** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001723 | Vulnerability Scan Tool |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Tom Engle |
| **Managed By** | **PPS** |
| IT | 150 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Regulatory/Compliance | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

Proactively identify and detect vulnerabilities within ALL DTE network-based assets such as firewalls, routers, web and application servers, etc. Only a subset of Windows and Linux-based assets are scanned on a regular basis today for vulnerabilities today while thousands of devices are missed and posing a significant threat to DTE information systems.

**What functionality or capability is being provided?**

Vulnerability Management is crucial for DTE to manage risk and protect against malicious exploits. This project will evaluate current tools, investigate new tools, and then select and install the appropriate advanced scanning technology. The tools will allow for near real time vulnerability scanning of ALL DTE assets with vulnerability remediation efforts managed within ServiceNow Security Operations.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This project will help in mitigating enterprise and operational risk. By identifying and remediating ALL asset vulnerabilities in a timely manner, the risk associated with a security event or cyber incident is diminished. A single security event could have financial, reputational, customer, and even safety impact to the entire enterprise.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Advanced scanning technology, DTE will be able to proactively identify and detect vulnerabilities within a network-based asset such as a firewall, router, web server, application server, etc. to mitigate any such vulnerability and prevent data loss. Unlike the current static schedule scanning performed today by Qualys, the enhanced scanning technology provides more timely vulnerability information and a quicker identification of risk in DTE networks.

**How will you monitor and measure expected value?**

Asset vulnerabilities are tracked within ServiceNow Security Operations with targets for remediation based upon the severity level of the vulnerability. This project will identify a much greater number of vulnerabilities which will be included in this process.
The primary goal of identifying and remediating vulnerabilities in a timely manner is to reduce the risk of them being exploited and resulting in a significant security event or cyber incident. Both security event and cyber incident are existing Best Operated Scorecard metrics.

DTE

| What alternatives have been considered? |
|---|
| The risk of not expanding the vulnerability scanning program to ALL assets is a greater likelihood of a security event or cyber incident impacting DTE financially, reputationally, and customers. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-03 | 2024-12-22 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $678,737 | $405,240 | **$1,083,977** |
| Opex | $43,965 | $40,689 | **$84,654** |
| **Total** | **$722,702** | **$445,929** | **$1,168,631** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001344 | Cloud Security |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Gregory R Savoie |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

There is a need to transform tools and methodologies used to monitor and control company data in the cloud. Enhance the security posture at DTE by monitoring data in the cloud and measuring the effectiveness of the controls which protect the data. Benefits of aligning to the Cloud Smart goals include ability to respond efficiently and effectively to anomalous behavior in DTE’s cloud platform. Currently there are 1721 unhealthy assets/36 unmonitored assets - raise cloud security score from 46 to 80+, for Azure assets monitoring. This will allow us to be able to implement appropriate access safely to allow storm operations to meet the storm ongoing efforts.

**What functionality or capability is being provided?**

Review DTE's Cloud architecture and standards to determine opportunities to strengthen cybersecurity and technology governance: Define baseline cloud platform architecture and reusable patterns/reference architectures: Develop and document cloud architecture models for cloud delivery typesExpand existing vulnerability management practices to include assessing, mitigating, and/or remediating lower-level vulnerabilities for non-regulated systems. Lower-level vulnerabilities are already tracked for non-NERC/PCI systems, but activities should be expanded to take a risk-based approach at remediation/mitigation efforts for all vulnerabilities.
Enhance the security posture at DTE Energy by monitoring data in the cloud and measuring the effectiveness of controls which protect any new and modified data in the cloud.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with the following Mitigate Enterprise/Operational Risk  Growth Opportunity, Operational Excellence.Foundational capability can be used to protect DTE entities and subsidiaries.

**Define the Benefit/Value to the Organization, Customer, Employee.**

The business case is a return to health by using Microsoft Sentinel for Azure asset monitoring that improve our cloud security disposition.

**How will you monitor and measure expected value?**

Monitoring today is reactive and creates delays to responding to security events and alerts. The ability to respond timely reduces the amount of impact to Azure Cloud architecture and DTE ecosystem; e.g., mean-time-to-respond (MTTR) and time duration of exposure to threat.

DTE

| What alternatives have been considered? |
|---|
| The "do nothing" alternative is not acceptable as external threats are increasingly becoming more sophisticated and the impact devastating. If we did nothing, the cybersecurity risks to Azure Cloud architecture and DTE ecosystem. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-09 | 2025-12-30 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $437,045 | $440,154 | $434,375 | **$1,311,573** |
| Opex | $92,348 | $89,364 | $85,669 | **$267,381** |
| **Total** | **$529,393** | **$529,518** | **$520,043** | **$1,578,954** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

# Executive Summary

| Business Case ID | BCD-IS-22-003 |
|---|---|

| Business Case Name | Cyber Security Defense Center Growth and Life Cycle Management |
|---|---|

## Stakeholders

| IT Portfolio | Information Protection and Security |
|---|---|
| IT Sub-Portfolio | Cyber Security Operations |
| IT Director | Steve Herrin |
| Managed by | IT |

| Business Unit | IT Operations |
|---|---|
| Business Unit Director | Steve Herrin |
| Business Unit SME | Thomas Engle |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE must invest in its cyber security monitoring capabilities and hardware life cycle to maintain detection and defenses against threats to DTE cyber assets. DTE will continue to expand cyber defense & intelligence monitoring to meet the ever-growing threats. This project will utilize existing tools and processes to maintain our ability to more effectively monitor and respond to threats and incidents. |
| What system or process is being affected? | The purchase of additional licenses for the Security Information and Event Monitoring (SIEM, QRadar) to accommodate increasing security log volume. Purchase of additional licensing for existing threat intelligence feeds to accommodate increasing security alerts. Manage the hardware life cycle of Packet Capture (PCAP) hardware, network taps, and sensors that ensure network monitoring remains operational (e.g. Gigamon, Cyber Risk Information Sharing Program) |
| What functionality or capability is being provided? | Maintenance of security monitoring, detection, and alerting capabilities using existing tools to meet the increasing demand of threat actors. |
| What is the customer or employee value? | The value to the organization and its customers is to ensure defenses against cyber threats that would comprimise the DTE network and data explotation. |
| What alternatives have been considered? | Vendor alternatives are based on what we hold in the current production environment. Consideration beyond the vendors that supply the DTE production environment would be an enhancement and, therefore, a separate project. |

| Key Objectives | |
|---|---|
| 1) | Increase decrypted traffic monitoring capabilities at network perimeter. |
| 2) | Maintenance of monitoring capabilties for both cloud and on-prem environments. |
| 3) | Maintain orchestration for incident response processes. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total (Total business case cost for approval on all business cases.) |
|---|---|---|---|---|---|---|
| Capital | $316,330 | $0 | $0 | $0 | $0 | **$320,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $316,330 | $0 | $0 | $0 | $0 | **$320,000** |

## Business Unit Costs

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001303 | Cyber Security Defense Center Growth and Life Cycle Management |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Steve Herrin |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Tom Engle |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

DTE must invest in its cyber security monitoring capabilities and hardware life cycle to maintain detection and defenses against threats to DTE cyber assets. DTE will continue to expand cyber defense & intelligence monitoring to meet the ever-growing threats. This project will utilize existing tools and processes to maintain our ability to more effectively monitor and respond to threats and incidents.

**What functionality or capability is being provided?**

Maintenance of security monitoring, detection, and alerting capabilities using existing tools to meet the increasing demand of threat actors. Maintenance of monitoring capabilities for both cloud and on-prem environments. Maintain orchestration for incident response processes.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

ITS Priorities
Strengthen our strong security posture, focusing on operational technology resiliencyMature our operating performance with digital resiliency capabilitiesTransform DTE's capabilities through execution of NGU and BU initiatives and projects

**Define the Benefit/Value to the Organization, Customer, Employee.**

The value to the organization and its customers is to ensure defenses against cyber threats that would compromise the DTE network, information systems, and operational reliability.

**How will you monitor and measure expected value?**

This is monitored via the ITS Best Operated Scorecard metric, Security Event.
Security Event Target: 1(for the year, maximum)

**What alternatives have been considered?**

A 'do nothing' alternative is not acceptable as a lapse in the management of the CSDC monitoring infrastructure will lead to undetected and unmitigated cyber threats with a significant financial and operational impact.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-05 | 2025-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY22 | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|---|
| Capex | $303,148 | $302,001 | $298,925 | $295,636 | **$1,199,711** |
| Opex | $2,682 | $2,682 | $2,682 | $1,912 | **$9,958** |
| **Total** | **$305,830** | **$304,683** | **$301,607** | **$297,548** | **$1,209,668** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002264 | IPS Operations PAW and DC Replacement |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jonathan Schmidt |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

Cyber Operations maintains and supports several cyber assets that reach end of life each year. The priorities for this demand are the most immediate business problems facing IPS assets or IPS' ability to support critical DTE assets.
Privileged Access Workstations (PAW) are used as part of DTE's layered security defense. They are used by privileged users (including users within IPS) to access sensitive information and perform critical tasks such as domain admin activities, system/server maintenance activities, etc. These users have elevated privileges, which could potentially be abused or targeted to compromise the security of DTE. The PAWs being leveraged by the Cyber Operations team have obsolete hardware and software, making them vulnerable to security threats.
End-of-Life (EOL) PAW's jeopardize the efficiency and effectiveness of the IPS team to support the team's business partners, and in some cases have been unusable. It's imperative to replace EOL PAW's with ones that are up-to-date with the latest hardware and software specifications.
Domain Controllers (DC) at the downtown Datacenter and Alternate Datacenter and Remote Domain Controllers are running on 5 year old hardware. Several of the Remote DC Virtual Machines (VM) and the physical DC VM's are running on aging HyperV hardware. The current DC's pose a risk to DTE's security and reliability. As the central authentication and authorization hub, DC's play a crucial role in managing access to resources and ensuring the security of user accounts and DTE data. The outdated hardware and software of the current DC's make them vulnerable to cyber threats, including malware, hacking, and data theft. EOL DC's are also more prone to downtime, data loss and compliance issues.

**What functionality or capability is being provided?**

Having valid and up-to-date PAW's to perform privileged activities provides a secure and controlled environment for critical activities, reduces the risk of cyber threats, ensures compliance and regulatory requirements are met, and minimizes disruption to critical systems and infrastructure.
Having up-to-date Domain Controllers (DCs) provides several benefits that help maintain DTE's security and reliability. Up-to-date DCs ensure that the DTE's authentication and authorization hub is secure, efficient, and reliable, reducing the risk of cyber threats, data breaches, and compliance issues. They also provide the latest security features and compatibility with the latest software and tools, ensuring that DTE can keep up with evolving security threats and technology. Furthermore, regular maintenance and support for up-to-date DCs minimize downtime and data loss, ensuring that DTE operations are uninterrupted due to cyber vulnerabilities.

DTE

| Describe alignment of project to Business Unit Goal(s) and Strategy(ies). |
|---|
| Cyber Operation activities are in alignment with DTE 5-year IT plan.<br>Maintains and strengthens security posture, focusing on operational technology resiliency and excellence.Mature our operating performance with digital resiliency capabilities. |

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Having functional PAW's within the Cyber Operations organization is critical for DTE. The Directory Services, Identity & Access Governance, and Privileged Access Management teams leverage PAW's to support these key DTE-enabling functions. Having equipment to execute these functions in a secure manner is imperative.<br><br>Domain Controllers (DCs) are a critical component of an DTE's IT infrastructure, and their proper functioning is essential for the DTE's security, reliability, and performance. We rely on DCs for central authentication and authorization of users, resources, and services, and they play a vital role in managing access to sensitive information and critical systems. As such, any disruption or failure of DCs can have significant impacts on the DTE's operations, leading to downtime, data loss, and compliance issues. |

| How will you monitor and measure expected value? |
|---|
| To measure expected value:<br>PAW replacements:<br>Availability/usability of each team member's PAWZero maintenance following deployment<br>Domain Controller replacements:<br>99% DC uptimeZero DC related security incidents (unauthorized access, data breaches, malware attacks) |

| What alternatives have been considered? |
|---|
| PAW:<br>A 'do nothing' alternative is not acceptable as unmitigated cyber risks could lead to serious cyber incidents with financial and data loss implications. The EOL PAW's become increasingly unstable, unusable, and administratively burdensome.<br>DC's:<br>A 'do nothing' alternative means continuing operations on the existing DC's. In doing so, DTE is carrying an ever-increasing risk of cybersecurity incidents. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-03 | 2024-12-30 | Yes | IT |

**IT Costs**

| Type | FY24 | Total |
|---|---|---|
| Capex | $321,125 | **$321,125** |
| **Total** | **$321,125** | **$321,125** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-013 |
|---|---|

| Business Case Name | Endpoint Protection |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Security Infrastructure - Operations |
|---|---|
| Business Unit Director | Steven Herrin |
| Business Unit SME | Greg Savoie |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | IPS is looking to mitigate enterprise and operational risk due to Symantec no longer being supported by the vendor. DTE has a need to protect multiple endpoints from cyber security threats. |
| What system or process is being affected? | DTE uses Symantec Endpoint protection software as the standard tool of choice to secure endpoints. |
| What functionality or capability is being provided? | There is a need to implement an endpoint protection platform that provides all security capabilities of Symantec Endpoint Protection (SEP). The new solution shall have the ability to protect against malware and malicious occurrences for endpoint devises. |
| What is the customer or employee value? | The overall goal is to protect DTE data and infrastructure from cyber security vulnerabilities and malicious attacks by securing DTE endpoints. |
| What alternatives have been considered? | Continue with the current non supported solution exposing DTE to potential malware and malicious attacks. |

| Key Objectives | |
|---|---|
| 1) | Conduct a full analysis of the current enviroment to include all end points servers, databases, etc... |
| 2) | Determine a phased in approach to address the Windows 10.0 user base (~17,000 end points). |
| 3) | Ensure all existing security functions provided by Symantec are covered, in addition provide new functionality and capabilities available with MS Defender ATP |
| 4) | Review current processes and procedures that are in place that may require changes as result of a new product deployment. |
| 5) | Replace current Symantec endpoint protection with MS Defender ATP |
| 6) | Decommission any Symantec software and licenses that are no longer required as part of the deployment. |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | February | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 11 Months |
| End Month | January | 2024 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $402,904 | $219,196 | $0 | $0 | $0 | **$620,000** |
| O&M | $39,963 | $50,228 | $0 | $0 | $0 | **$90,000** |
| Total | $442,867 | $269,424 | $0 | $0 | $0 | **$710,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001359 | Endpoint Protection |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Gregory R Savoie |
| **Managed By** | **PPS** |
| IT | 125 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| IT Enhancements | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE is looking to sunset Symantec (Broadcom) licensing/support due to the significant cost increase and annual renewal time. In addition, DTE has an existing licensing agreement with Microsoft to use Defender which is in alignment with the DTE platform strategy.

**What functionality or capability is being provided?**

Microsoft Defender for Endpoint Protection platform will provide all security capabilities that Symantec Endpoint Protection (SEP) provided. Defender for Endpoint and other Microsoft solutions will replace SEP and provide additional securities that SEP currently does not provide.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This implementation of Microsoft Defender for Endpoint brings the DTE corporate strategy in alignment with current endpoint security solutions. This will help to mitigate enterprise/operational risk and enhance operational excellence.

**Define the Benefit/Value to the Organization, Customer, Employee.**

The overall goal is to protect DTE data and infrastructure from cyber security vulnerabilities and malicious attacks by securing DTE endpoints.

**How will you monitor and measure expected value?**

Monitor and measure following metrics:
Cyber incidents prevented
Cybersecurity infrastructure availability
Reduce the number of malware and malicious occurrences

**What alternatives have been considered?**

Continue with the current non supported solution exposing DTE to potential malware and malicious attacks.
A "do nothing" alternative is not acceptable as undetected malicious cyber activity could lead to serious cyber incidents with financial and data loss implications.
Microsoft Defender for Endpoint aligns with our platform strategy.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-09 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY22 | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|---|
| Capex | $318,597 | $318,438 | $314,431 | $311,525 | **$1,262,990** |
| Opex | $78,404 | $76,277 | $72,028 | $69,726 | **$296,434** |
| **Total** | **$397,001** | **$394,714** | **$386,458** | **$381,251** | **$1,559,424** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-014 |
|---|---|

| Business Case Name | Automated Provisioning |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Security Infrastructure - Operations |
|---|---|
| Business Unit Director | Steven Herrin |
| Business Unit SME | Natosha Tolbert |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | This project will continue efforts to replace our end-of-life Identity and Access Management (IAM) solution. Current capabilities cannot keep pace with increasing demands. |
| What system or process is being affected? | The SailPoint tool was acquired to replace the current IAM solution. This initiative will continue the required configuration and implementation to further utilize the automated provisioning solution and decommission the Oracle Waveset tool. |
| What functionality or capability is being provided? | The project enables DTE to mature the identity, governance and administration program by streamlining processes to provide secure access to DTE systems. Efficiently perform on-boarding, identity management, certification, role management, and data sharing within DTE. It enables the integration with on-premise and cloud technology. |
| What is the customer or employee value? | This initiative provides the ability to replace manual administration processes for business units across the enterprise with automation and providing employee self-service capabilities |
| What alternatives have been considered? | This project it is to implement SailPoint IAM. |

| Key Objectives | |
|---|---|
| 1) | Initiate the implementation of the certification module of SailPoint to replace the Periodic User Access Review (PUAR) process review. |
| 2) | Start the decommissioning the User Identity Management System (UIMS) |
| 3) | Begin decommissioning the Oracle Wave set |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | |
|---|---|---|---|
| Duration to Complete | Years | 11 | Months |
| End Month | December | 2022 | |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $602,808 | $0 | $0 | $0 | $0 | **$600,000** |
| O&M | $63,316 | $0 | $0 | $0 | $0 | **$60,000** |
| Total | $666,124 | $0 | $0 | $0 | $0 | **$660,000** |

## Business Unit Costs

| BU O&M | $76,000 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001460 | Automated Provisioning |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jonathan Schmidt |
| **Managed By** | **PPS** |
| IT | 5 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE's existing IAM (Identity Access Management) platform was and is at the End of Life as of 2012. DTE is replacing the current Oracle Wave Set Platform with SailPoint IIQ which will also add additional capabilities to address our enhanced Cyber Security Strategies. This will address our business concerns and needs to provide the following:
• Manage all identities for DTE. (ie. employees, contractors, consultants, vendors, systems on premise and cloud.)• Ability to grant and remove system access to comply with our least privilege principle and meet our compliance requirements and controls.• Capability to attest and recertified system access across the enterprise to ensure right access is provided and maintained.
Automating provisioning and deprovisioning improves the security around providing the right access to the right users it also ensures separation of duties analysis when performed. It will also provide the opportunity to increase efficiency in meeting SOX controls.
The current Periodic Access Reviews (PUAR) process for all SOX and NERC applications is inefficient and needs to be replaced. It is a manual intensive process prone to human error and SOX deficiencies. It takes at minimum of 90 days to execute the data extraction and the data is at least 2 months stale by the time the review starts.
Develop role-based Cybersecurity training modules to onboard personnel to DTE's most impactful security-related roles in IPS, ITS, and Business Units
Developing a risk-based Continuous Monitoring program provides DTE visibility into system and vendor risk over time to inform remediation and improvements before weaknesses can be exploited
We are already two years into the implementation of SailPoint product. This 2023 is the continuation of the project. This ensures DTE is SOX compliant. If not SOX compliant, substantial fines could be incurred. Currently are relying of old tool WaveSet that is sunsetted in 2012 and not supported. If were to crash, will not be able to recover. The existing Periodic Access Review process is manual and we currently struggle to complete on-time because of the length of time it takes to complete.

DTE

| What functionality or capability is being provided? |
|---|
| The project enables DTE to mature its' identity, governance and administration program by streamlining processes, secure access to DTE systems and deliver the specific functions and capabilities required.<br>• Establish an Identity Access Management Solution that outlines the strategy and roadmaps for desired business out comes.• Enable Access and Lifecyle Management - automatically provisioning and deprovisioning all identities and systems whether on premise, in the cloud or externally. Automating the process from beginning to end with access is no longer needed.<br>Automate account creation, modification, and disablementSoD configurationAccount aggregation<br>• Certification management - Replace our current users access review process for SOX, NERC and privileges identities. Enabling the capability to perform attestation for users access that meets our compliance requirements.<br>Onboarding ~ 10 SOX/ Business critical applications on SailPoint each year 2023 through end of projectConfigure User Access Review campaigns in SailPoint for all SOX applicationsOnboard Birthright applications to support and enable Joiner processConfigure Joiner, Mover, Leaver workflows in SailPoint to automate birthright access and minimize ad-hoc requestsOnboarding remaining applications (non-SOX) on SailPoint<br>Integration with Privilege Access Management, Single-Sign On solutions to improve security and enhance user experience<br>Review current access management policies and proceduresIdentify and define roles within the organizationCreate roadmap for role-based access implementationReview and modify current access rights, and check if users might exceed the actual need-to-knowIntegrate and consolidate current updates regarding physical access into the improved role-based access control updates<br>SailPoint is the new Identity Access Governance (IAG) that aligns to SOX Compliance requirements and provides user access traceability. In 2022, onboarded 18 SOX Applications. Then in 2023, will onboard 10 SOX Application year after year through 2025. 10 per year to minimize impact and disruption to the enterprise and manage the effort in a safe and controlled manner to minimize impact to customers. |

| Describe alignment of project to Business Unit Goal(s) and Strategy(ies). |
|---|
| This project is a strategic alignment with DTE's policy for the Identity Access Management governance program within IPS. |

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| If we do not enhance replace the existing Oracle Waveset IAM platform, DTE’s systems and identities are at risk with cyber threats and thefts, and we cannot maintain our SOX compliance controls and NERC requirements.<br>With enhancing DTE’s Identity Access Management this will minimize potential data breaches from weak or stolen credentials, misused of credentials and systems access by providing an Identity Governance solution.<br>Specifically, the problem we are starting with is replace the current PUAR process to meet SOX compliance.<br>Current capabilities cannot keep pace with increasing demands for efficient on-boarding, identity management, certification, role management, and data sharing with business partners. This project will provide these efficiencies. Having a robust IAM solution ensures the right people have the right access to perform their roles. This program enables good security hygiene is performed with a governance model that protects the integrity of data, minimize the risks of cybercriminals having the ability to gain access to key and critical systems. A well implemented IAM tool, increases the productivity and efficiency of executing a user access review, reducing the manual process of provisioning and deprovisioning access when people move or leaves the company. |

DTE

| How will you monitor and measure expected value? |
|---|
| Metric outcomes would be the percentage improvements productivity and efficiency for the following: • Audit reviews and SOX compliance testing• Project deliverables to meet scope, budget and timeline• Business capabilities are delivered (replacement of IAM, PUAR and automate provisioning and deprovisioning)• Current IAM system is retired, commissioned, and support no longer required.<br>As each capability is deliver, benefits are realized immediately. For example, being able to efficiently run a PUAR that take 90 days can be reduce to 30 days.<br>SailPoint implementation will increase the productivity of end users by providing self-service capabilities to reset forgotten passwords and request new access. Increase productivity by reducing time spent certifying access permissions, increase productivity by minimizing the volume of password reset and access request calls to the helpdesk.<br>Some of the potential metrics include: improving SOX Compliance test scenarios, project deliverables to meet time lines, business capabilities (provisioning and IAG), reduce periodic user access reviews (PUAR) audits from 90 days to 30 days and reduce human error when auditing SOX related applications and ability to respond to audits in 24hrs where previously could not. Metrics will be further defined and measured as the project progresses. |

| What alternatives have been considered? |
|---|
| This is not a new project it is ongoing concern to continue the implementation of SailPoint IAM. An alternative would be to continue with manual processing of provisioning and deprovisioning system access, increased security risk of access granted or remaining with end users who no longer need access.<br>Doing nothing would not allow DTE to meeting SOX compliance, provided the security to protect and manage digital identities and increase vulnerabilities enterprise wide to systems, users, and business. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-09-01 | 2027-12-31 | Yes | IT |

**IT Costs**

| Type | FY22 | FY23 | FY24 | FY25 | FY26 |
|---|---|---|---|---|---|
| Capex | $812,282 | $1,919,233 | $2,846,081 | $1,159,890 | $1,159,434 |
| Opex | $66,183 | $168,415 | $639,918 | $321,948 | $324,654 |
| **Total** | **$878,465** | **$2,087,648** | **$3,486,000** | **$1,481,837** | **$1,484,088** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $103,870 |
| Vendor Support & Licensing | | $0 |

| FY27 | **Total** |
|---|---|
| $1,108,066 | **$9,004,987** |
| $271,837 | **$1,792,955** |
| **$1,379,903** | **$10,797,941** |

# Executive Summary

| Business Case ID | BCD-IT-21-003 |
|---|---|

| Business Case Name | Azure AD Federation |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | IT for IT |
|---|---|
| Business Unit Sponsor | Pankaj Sharma |
| Business Units Impacted | Electric |

## Project Description

| Project Category | Strategic |
|---|---|
| Project Type | Solutions Delivery - On Prem |

| Innovation? | No |
|---|---|
| Strategic Fit | Distinctive Continuous Improvement Capability |

| Business Outcome |
|---|
| Configure Azure AD to support the applications that require Multi Factor Authentication and additional security functionality. Federate all applications requiring MFA using Azure AD MFA. |

| Key Objectives | |
|---|---|
| 1) | Migration of all ADFS federated applications to Azure Active Directory Federation. |
| 2) | Identify the key contacts or system owners with the assistance of the BRMs to quantify those system applications that need to be migrated. |
| 3) | Decommision the relying party trusts in ADFS for migrated system applications. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2021 | |
|---|---|---|---|
| Duration to Complete | Years | 11 | Months |
| End Month | December | 2021 | |

| Funding Source | ITS |
|---|---|

## Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $400,000 | $0 | $0 | $0 | $0 | **$400,000** |
| O&M | $50,000 | $0 | $0 | $0 | $0 | **$50,000** |
| OCM | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total O&M | $50,000 | $0 | $0 | $0 | $0 | **$50,000** |
| Total | $450,000 | $0 | $0 | $0 | $0 | **$450,000** |

| Hardware/Software/ Cloud | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $0 | $0 | $0 | $0 | $0 | **$0** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |

| BU O&M | $0 |
|---|---|

| Incremental Costs | $0 |
|---|---|

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001342 | Azure Active Directory Federation |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jonathan Schmidt |
| **Managed By** | **PPS** |
| IT | 125 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

With increasing cyber-attacks and the need to enable work from anywhere, increasing authentication security layering is critical for on-premise and cloud platforms. DTE currently provides MFA(Multi-Factor Authentication) for on-premise applications utilizing on-premise Microsoft MFA servers through an Active Directory Federation System (ADFS). The move of functionality to the cloud enables DTE to leverage MFA and additional security and functionally available in Azure through our Microsoft Enterprise Agreement. The existing on-prem MFA limits our ability to update user authentication without manual intervention. Cloud MFA provides the automation that allows users to update their authentication credentials from home office or field thereby improving our ability to prevent unauthorize access. Users no longer required to drive into the office every 30days to renew their certificates. Many Gas and Electric applications require Cloud MFA. Those projects are dependent upon this solution being in place.

**What functionality or capability is being provided?**

This effort federates all applications requiring MFA to use Azure AD(Active Directory) MFA. This allows identity authentication and authorization in the cloud rather than on-premise. Moving to the cloud provides a second layer of authentication in the cloud, ensuring the people attempting to accessing computer systems have the appropriate credentials. Continue the migration of all ADFS federated applications to Azure Active Directory. Validate the key contacts or system owners with the assistance of the BRMs to quantify those system applications that need to be migrated. Decommission the relying party trusts in ADFS for migrated system applications. Migrate to Azure MFA Move password hashes to Azure Enable self-service password reset

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Operational Reliability: Cyber Incidents Prevented. Cybersecurity Infrastructure Availability
Foundational Capability: Cyber Incidents Prevented. Cybersecurity Infrastructure Availability

**Define the Benefit/Value to the Organization, Customer, Employee.**

Protects the front door to applications, protecting DTE critical business data (both employee and Customer Service), systems and networks.
The move of MFA to the cloud is in support of DTE’s Cloud strategy.

DTE

| How will you monitor and measure expected value? |
|---|
| Number of cyber incidents identified.<br>Number of cyber incidents remediated.<br>Remediation duration reduction.<br>This demand is more about providing Authentication and Authorization to Cloud applications than Cyber Attacks. Cloud MFA eliminates users from driving into the office to renew their device security certificate every 30days. |

| What alternatives have been considered? |
|---|
| Risk the ability to protect critical business data, systems and networks. Existing On-Prem MFA is approaching End-Of-Life.<br>Microsoft is the Strategic Corporate Direction with adoption of Azure Cloud, MS Office365 and InTune. The products all integrate. And get economies of scale (Capital and O&M savings) by aligning to strategic platform that offers many services vs managing many independent niche services. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-09 | 2025-12-30 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $441,295 | $442,454 | $438,873 | **$1,322,622** |
| Opex | $83,226 | $79,161 | $76,709 | **$239,096** |
| **Total** | **$524,521** | **$521,615** | **$515,581** | **$1,561,718** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IS-22-004 |
|---|---|

| Business Case Name | Cyber Excellence Program |
|---|---|

## Stakeholders

| IT Portfolio | Info Protection & Security |
|---|---|
| IT Sub-Portfolio | Cyber Security Operations |
| IT Director | Tabice Ward |
| Managed by | IT |

| Business Unit | Security Infrastructure - Compliance |
|---|---|
| Business Unit Director | Steven Herrin |
| Business Unit SME | Srinivas Gowda |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The on-going effort to protect DTE against emerging threats and mitigate cyber risks by providing oversight, guidance and processes<br>The Company established the CEP program to build a cross-business-unit collaborative team to identify and address cybersecurity issues that expose the Company's operational technology infrastructure at its facilities. While the Company has over 1,000 facilities hosting sets of OT technology, we use "Design Based Threat" as a holistic approach to analyze, understand, and identify technical controls and determine risk mitigation. Each year, the Company performs this work for a set of facilities. |
| What system or process is being affected? | The Cyber Excellence Program will implement processes (Security Walkdown, Risk Assessments, etc.) and tools (Vulnerability Scanning, Access Control, End Point Protection, etc.) to enable better identification and mitigation of vulnerabilities, enhancing access controls, endpoint security, as well as providing visibility for the Cyber Security Defense Center on security events. |
| What functionality or capability is being provided? | Enhanced endpoint security protection and increased visibility into security events by implementing vulnerability scanning, endpoint protection and monitoring tools. |
| What is the customer or employee value? | It will reduce the potential risk for any malicious cyber security incidents therefore ensuring the stability of DTE Operational Technology environments. |
| What alternatives have been considered? | An alternate technology solution would be to reassess our security products and technology prior to implementing these established controls at various facilities. In almost every circumstance when dealing with an established platform or technology, responsible stewardship of capital investment eliminates the option of completely replacing current state. Alternative technology solutions replacing existing systems would require a longer-term investment and implementation cycle. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Provide clearly defined vulnerability management processes for Key and Critical systems. |
| 2) | Identify and establish target business units for the implementation strategy. |
| 3) | Establish process for patching and remediation of critical vulnerabilities. |
| 4) | Establish integration strategy with SIEM (Security Information Event Management) tool to provide visibility to the security incidents/events for Key and Critical apps. |
| 5) | Within the SIEM tool implement monitoring of defined criticial security events. |
| 6) | Understand the current DTE tools landscape for endpoint and network protection. Enable the tool to fill the identified gaps. |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | | |
|---|---|---|---|
| Start Month | January | 2022 | |
| Duration to Complete | 0 Years | 11 | Months |
| End Month | December | 2022 | |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $301,019 | $0 | $0 | $0 | $0 | **$300,000** |
| O&M | $21,400 | $0 | $0 | $0 | $0 | **$20,000** |
| Total | $322,419 | $0 | $0 | $0 | $0 | **$320,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001468 | Cyber Excellence Program |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Steve Herrin |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Tom Engle |
| **Managed By** | **PPS** |
| IT | 3.3 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

## What business problem or opportunity are we trying to solve?

This initiative is to enhance the DTE  security culture.  DTE in conjunction with the Edison Electric Institute (EEI) recognizes that need to engage with industry peers to strengthen the industry's collective security culture. In March 2022, DTE hosted an EEI Culture of Security Peer Review with the intent to receive and share best practice recommendations regarding the DTE cyber and physical security landscape.
The EEI Culture of Security (COS) Peer Review is led by industry peers. The peer reviews are centered around the key focus areas that help build and maintain a strong security culture:
Security Governance, Risk, and Workforce ManagementCyber Security ProtectionsPhysical Security ProtectionsResponse, Recovery, and ExercisesExternal Partnerships and Information SharingOperational Resiliency - added as a sixth focus area
There is an opportunity to enhance the visibility of the following:
Cyber security metrics collection process and presentationDTE cyber security monitoring capability for Operational Technology, such as that employed in DTE Electric Distribution Operations, DTE Gas, and renewable generation

## What functionality or capability is being provided?

MAaM will provide interfaces between Power BI and external data sources, such as ServiceNow, Microsoft Office365 (O365), and vendor provided data. The metrics will span cyber risk, monitoring, endpoint protection, and compliance data.

The DTE cyber security OT monitoring enhancement effort will provide expanded visibility of additional OT sites.

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Metrics Automation and Management aligns with goal to be metrics driven and benchmarkable with other best in class companies.
The DTE cyber security OT monitoring capability effort aligns with Safety,

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| The DTE organization will have a clear real-time picture of the cyber security posture resulting in high confidentiality, integrity, and availability for customers and employees.<br>Efficiency Measurement- Vulnerabilities monitored are limited for OT assets, this will realize the visibility of these vulnerabilities Target 50% improvement.<br>Operational Reliability- Being able to obtain alerts and alarms immediately decreases the resolution cycle time which increases operational reliability.<br>Foundational Capability- All Assets are maintained in a manner that protects IT and OT across the company from vulnerabilities and cyber threats. |

| How will you monitor and measure expected value? |
|---|
| Cyber security metrics will be visible and used to employ remediation in a timely manner, as it occurs. The benefits of this program in total will be realized upon completion in 2025. Incremental benefits will be realized as new assets are monitored for vulnerabilities and cyber threats. By the end of the program we would expect to be monitoring 50% more OT assets and realizing 100% alerting and alarms enabled of assets being monitored. |

| What alternatives have been considered? |
|---|
| Consideration of the procurement of a new tool for MAaM was ruled out since (1) Power BI is used enterprise wide for dashboard presentations and has the capability to meet the MAaM presentation requirements; and, (2) the metric data exists and can be made available through interfaces with Power BI.<br>A "do nothing" alternative is not acceptable as undetected malicious cyber activity could lead to serious cyber incidents with financial and data loss implications. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $301,981 | $299,975 | $298,387 | **$900,343** |
| Opex | $21,484 | $19,708 | $18,088 | **$59,280** |
| **Total** | **$323,464** | **$319,683** | **$316,475** | **$959,622** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001346 | Enterprise Mobility Management |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Steve Herrin |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Gregory R Savoie |
| **Managed By** | **PPS** |
| IT | 125 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

## What business problem or opportunity are we trying to solve?

Information security risks have increased in recent years as a result of the proliferation of new technologies and the increased sophistication and frequency of cyberattacks, and data security breaches.

DTE Energy has been deploying a robust Enterprise Mobility Management (EMM) platform for managing devices that will process, store, or transmit DTE data on company owned devices and “Bring Your Own Devices” (BYOD). This includes securing them and bringing advanced capabilities to increase end user experience. DTE will be migrating to one platform Microsoft solution and removing the third party saving on the renewal of airwatch. Airwatch doesn't automatically feed into our security practices, doesn't do dlp and does not feed into microsoft centinal. Microsoft MFA does not interact with it. There is no existing problem it is just deploying the corporate strategy to use Microsoft's platform.

## What functionality or capability is being provided?

Functionality or capability being provided: -Endpoint hardware and software inventory -Software distribution -Endpoint Security Configuration Management -Mobile Application Security Management -Single Management Console -Enhanced Conditional Access -Endpoint DLP (Data Loss Prevention)

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Has a significant impact to Strategic Alignment aligning to Mitigate Enterprise/Operational Risk, Growth Opportunity, Employee Engagement, Operational Excellence.
Has a large impact for Operational Reliability as it allows for all DTE owned mobile devices and BYOD devices to access DTE data in a secure manner.
Has a large impact for Foundational Capability as this functionality can be leveraged across multiple business units.

## Define the Benefit/Value to the Organization, Customer, Employee.

Minimizing the actions which the end user has to take to ensure DTE data is secure and protected on their endpoint devices. Moving towards elimination of duplicate endpoint consoles will result in the simplification of endpoint management. Moving to the newer console will allow more granular controls, which will allow for more applications to be securely accessed from these devices.

DTE

| How will you monitor and measure expected value? |
|---|
| Track deployed agents to Mobile devices.<br>Track deployed applications and application usage.<br>Preventive measures for threats or damage to any DTE assets or data loss. |

| What alternatives have been considered? |
|---|
| Project is already inflight, if the project is not completed, DTE will lose the opportunity to increase productivity and any savings realized as a result of eliminating duplicate endpoint consoles. Continue to see increased cyber security risks associated with personal devices which are used for business use. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-09 | 2025-12-29 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $336,989 | $28,355 | $333,454 | **$698,799** |
| Opex | $103,909 | $102,211 | $99,009 | **$305,129** |
| **Total** | **$440,898** | **$130,567** | **$432,463** | **$1,003,927** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $110,550 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-023 | Business Case Name | Network Access Control |
|---|---|---|---|

## Stakeholders

| IT Portfolio | IT BRM | Business Unit | Security Infrastructure - Compliance |
|---|---|---|---|
| IT Sub-Portfolio | IT for IT | Business Unit Director | Steve Herrin |
| IT Director | Christine Garber | Business Unit SME | Jason Pittman |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic | Initiative Type | Solutions Delivery - On Prem |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Currently unauthorized and / or untrusted devices can connect to the DTE Network, any device which connects is treated as a trusted device. This exposes critical IT and OT (Operational Technology) assets to undue cyber security risks.<br><br>This investment will provide increased network security when outside forces attempt to illegally access our network and data assets. This approach to security will unify endpoint security technology, user and system authentication and network security enforcement. |
| What system or process is being affected? | Wired Network level access will be affected. |
| What functionality or capability is being provided? | This solution will prevent unauthorized and / or untrusted devices connecting to the DTE network and exposing critical IT and OT (Operational Technology) assets to potential cybersecurity risks. |
| What is the customer or employee value? | This investment will provide increased network security when malicious actors attempt physical access our network and data assets. This will ensure bad actors cannot connect to the DTE network, protection of customer data, ensuring critical business processes and assets are protected and the overall protection of the grid. |
| What alternatives have been considered? | 1) Manually lock down IP addresses<br>2) Increased Network Segmentation. |

| Key Objectives | |
|---|---|
| 1) | Execution of the implementation plan established in 2021, start with a phased approach of capabilities and location. Example - "Authentication", Location: DTE HQ – SB Floor "X". |
| 2) | Allow conditional wired network access based upon user / devices “Risk Profile”. |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | | Funding Source | ITS |
|---|---|---|---|---|---|
| Duration to Complete | Years | 11 | Months | | |
| End Month | December | 2022 | | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $348,668 | $0 | $0 | $0 | $0 | **$350,000** |
| O&M | $44,598 | $0 | $0 | $0 | $0 | **$40,000** |
| Total | $393,266 | $0 | $0 | $0 | $0 | **$390,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001647 | Network Access Control |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Jason J Pittman |
| **Managed By** | **PPS** |
| IT | 1.3 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

Currently unauthorized and / or untrusted devices can connect to the DTE Network, any device which connects is treated as a trusted device. This exposes critical IT and OT (Operational Technology) assets to undue cyber security risks.
This investment will provide increased network security when outside forces attempt to illegally access our network and data assets. This approach to security will unify endpoint security technology, user and system authentication and network security enforcement.

**What functionality or capability is being provided?**

This solution will prevent unauthorized and / or untrusted devices connecting to the DTE network and exposing critical IT and OT (Operational Technology) assets to potential cybersecurity risks.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Has a large impact to Mitigate Enterprise/Operational Risk

**Define the Benefit/Value to the Organization, Customer, Employee.**

This investment will provide increased network security when malicious actors attempt physical access our network and data assets. This will ensure bad actors cannot connect to the DTE network, protection of customer data, ensuring critical business processes and assets are protected and the overall protection of the grid.

**How will you monitor and measure expected value?**

Number of ports protected with NAC enforcement divided by total number of targeted ports per Implementation Strategy. Target quarter total ports per year.

**What alternatives have been considered?**

Following are alternative solutions to Network Access Control:
1) Manually lock down IP addresses
2) Increased Network Segmentation

A "do nothing" alternative would result in the continued risk of an unauthorized device physically connecting to the company's network exposing critical assets and information.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-02 | 2027-12-31 | Yes | IT |

**IT Costs**

| Type | FY24 | FY25 | FY26 | FY27 | Total |
|---|---|---|---|---|---|
| Capex | $501,417 | $1,271,682 | $1,273,440 | $1,273,700 | **$4,320,239** |
| Opex | $106,026 | $44,159 | $48,159 | $49,241 | **$247,584** |
| **Total** | **$607,443** | **$1,315,841** | **$1,321,599** | **$1,322,940** | **$4,567,822** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-020 |
|---|---|

| Business Case Name | Ransomware Protection |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Security Infrastructure - Operations |
|---|---|
| Business Unit Director | Steven Herrin |
| Business Unit SME | Thomas Engle |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Ransomware attacks are becoming more sophisticated and prevalant, DTE must mitigate these risks in order to protect the company data. |
| What system or process is being affected? | For the identified critical systems storage of back up data will be stored offline and the recovery of the data. |
| What functionality or capability is being provided? | Identify critical DTE application data and store those application data offline and protect from ransomware. Provide offline backups to applications that cannot tolerate any loss of data. |
| What is the customer or employee value? | The risk reduction on the attack surfaces decreases the success rate of attackers attempting to encrypt customer and employee data. |
| What alternatives have been considered? | As part of the 2021 business case, proof of concept will be conducted, which will determine the alternative solutions. |

| Key Objectives | |
|---|---|
| 1) | Continue upon implementation strategy based upon 2021 POC results and recommendations. Implementation strategy of the protection of critical data. |
| 2) | Move identified critical application data to offline backup. |
| 3) | Backups will be stored in a vault and isolated from the corporate and backup networks. |
| 4) | Engage vendor for consulting services to understand best practices, design recommendations and strategy for implementation, installation and configuration. |
| 5) | Recovery procedures are documented within a Ransomware playbook. |
| 6) | Ensure successful testing of the backup recovery process for all critical applications. |
| 7) | Provide training to essential personnel (including IPS and IDSS) to support cyber recovery solution. |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 11 Months |
| End Month | December | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $351,349 | $403,467 | $0 | $0 | $0 | **$750,000** |
| O&M | $65,498 | $9,787 | $0 | $0 | $0 | **$80,000** |
| Total | $416,847 | $413,254 | $0 | $0 | $0 | **$830,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $53,600 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001360 | Ransomware Recovery |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Comp | Steve Herrin |
| **Portfolio Manager** | **Business Unit SME** |
| Steve Herrin | Jason J Pittman |
| **Managed By** | **PPS** |
| IT | 125 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

Ransomware attacks are becoming more sophisticated and DTE Cybersecurity must mitigate these risks in order to protect DTE Energy data. Furthermore, the TSA has mandated CyberSecurity controls requiring offline storage for recovery solutions.

**What functionality or capability is being provided?**

Identify critical DTE application data and store those application data offline from ransomware. Provide offline backups to applications that cannot tolerate any loss of data.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Cyber Incidents PreventedRecovery cost reduction after detection (50%)Reducing exposure of confidential data through security incident (50%)
Recovery cost reduction after detection (50%)Reducing exposure of confidential data through security incident (50%)
Cyber Incidents PreventedReduction in unplanned outages

**Define the Benefit/Value to the Organization, Customer, Employee.**

Recovery cost reduction after detection and reducing exposure of confidential data through security incident

**How will you monitor and measure expected value?**

Recovery cost reduction after detection (50%) Reducing exposure of confidential data through security incident (50%)

**What alternatives have been considered?**

A "do nothing" alternative is not acceptable as undetected malicious cyber activity could lead to serious cyber incidents with financial and data loss implications.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-09 | 2025-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY22 | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|---|
| Capex | $282,036 | $494,983 | $502,425 | $499,929 | **$1,779,372** |
| Opex | $54,381 | $50,840 | $110,882 | $110,351 | **$326,454** |
| **Total** | **$336,417** | **$545,823** | **$613,306** | **$610,280** | **$2,105,826** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002692 | Recovery Manager for AD - Disaster Recovery Edition |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Ron G Darling |
| **Managed By** | **PPS** |
| IT | 4.6 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Infrastructure - On Prem |

## What business problem or opportunity are we trying to solve?

At present, DTE lacks a viable solution for Active Directory recovery, and attempting to do so without DRE could take several weeks to months, if it's even possible. However, the implementation of DRE can reduce recovery time to within 24-48 hours. This is crucial because over 95% of DTE's applications depend on Active Directory for authentication, as do all Windows servers and systems.

DRE provides a comprehensive backup and recovery capability for Active Directory (AD) environments. It guards against disasters like accidental deletion, corruption, or ransomware attacks, enabling a swift and reliable recovery of AD services in the event of a disaster. Additionally, it can identify and mitigate potential security threats through features such as change tracking and object comparison.

With DRE, DTE can ensure business continuity by minimizing downtime and data loss in AD environments. As a result, DRE implementation is a vital step in securing DTE's information systems and maintaining operational continuity.

## What functionality or capability is being provided?

The Quest DRE tool will provide:
Granular and flexible recovery options for individual objects and entire AD domainsContinuous replication and recovery for critical components such as Group Policy Objects and DNS zonesCentralized console for managing and monitoring disaster recovery operationsExtensive reporting and auditing capabilities for maintaining compliance with regulatory requirementsDedicated Active Directory recovery console for efficient recovery operationsIntegration with Microsoft Azure for offsite disaster recovery optionsAbility to recover AD objects from system state backups and snapshotsSupport for recovering deleted objects and attributes
The tool offers different recovery methods:
Bare Metal - recover all volumes of our Domain Controller (DC) onto new or different hardwareReinstall AD - force demote and re-promote DC's where the operating system is still in-tactRestore AD from Backup - restore AD onto an otherwise healthy serverInstall AD - promote new servers to take the place of DC's you did not restore from backupClean OS - leave malware behind by restoring AD onto a new Windows Server

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Operational Reliability: Increase cyber incidents response and recovery capabilities. Increase cybersecurity infrastructure availability.
Operational Resilience: Recover AD in the event of a security incident within 24-48 hours.

## Define the Benefit/Value to the Organization, Customer, Employee.

Active Directory (AD) serves as the primary authentication and access provider for DTE's enterprise. A significant portion of DTE's infrastructure, including file stores, endpoints, databases, and applications, is dependent on AD. The importance of AD to DTE's operations cannot be overstated. Active Directory (AD) disasters, such as accidental deletion, corruption, or ransomware attacks, pose an increased risk of data loss for companies. Recovery of AD data can be a time-consuming manual process, resulting in extended downtime and significant productivity and financial losses.
Ransomware attacks are a growing threat, with the global average downtime due to such attacks was 21 days in 2020. At that time, it also took an average of 287 days for businesses to fully recover from these attacks. Given the crucial role that AD plays in DTE's operations, an attack on AD could have severe implications for the company.
DTE relies on on-prem AD for authentication and authorization of users and devices to access network resources. Furthermore, the Directory Services team at IPS uses AD for the management of user accounts, permissions, and group policies. Any disruptions to AD's health and availability can cause significant disruptions to DTE's operations, impacting business continuity.
It is therefore essential to ensure the availability and health of AD to prevent any potential disruptions to DTE's operations. Implementing comprehensive backup and recovery solutions like DRE for AD environments can help ensure the continuity of DTE's business operations, protect against ransomware attacks, and minimize downtime in case of a disaster.
Additional benefits for DRE:
Flexibility - handle any AD recovery scenario from attribute changes to full Forest disastersAutomation - automate Microsoft best practices to ensure our AD is up and healthy in record timeClean OS - leave malware behind, ensuring DTE won't restore the infection back into our environmentIntegrity - use malware scanning to ensure backup integrity - that they are free from infectionSecurity - secure DTE's backups so they'll still be around after a Ransomware Attack

## How will you monitor and measure expected value?

After implementing Quest DRE:
DRE's near-continuous replication and recovery options will enable the ability to set and help achieve low Recovery Time Objective (RTO) and Recovery Point Objective (RPO) targets for Active Directory.DRE's extensive auditing and reporting capabilities will allow DTE to monitor and report on disaster recovery operations. This will help identify areas for improvement and ensure compliance with regulatory requirements.DTE will have the ability to perform test recoveries without impacting the production environment.

## What alternatives have been considered?

Avamar/Data Domain was not selected. Avamar/Data Domain is the data center backup solution, however it does not provide the ability to reliably recover without the potential of creating long term domain issues.
The Do-Nothing scenario means:
Increased risk of data loss due to AD disasters, such as accidental deletion, corruption, or ransomware attacksExtended downtime and significant productivity loss due to the time required to manually recover AD data
An Active Directory-down situation means that 95%+ of DTE applications would also be down
Security risks due to the inability to quickly mitigate potential threats in AD environmentsSignificant financial losses due to business interruption, lost revenue, and damage to the DTE's reputation

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-08 | 2024-08-30 | Yes | IT |

DTE

## IT Costs

| Type | FY24 | Total |
|---|---|---|
| Capex | $652,970 | **$652,970** |
| Opex | $119,563 | **$119,563** |
| **Total** | **$772,533** | **$772,533** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | Annual | $70,000 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

# Executive Summary

| Business Case ID | BCD-IT-22-001 | Business Case Name | MYR YR1 Threat Intel Module |
|---|---|---|---|

## Stakeholders

| IT Portfolio | IT BRM | Business Unit | Security Infrastructure - Operations |
|---|---|---|---|
| IT Sub-Portfolio | IT for IT | Business Unit Director | Steven Herrin |
| IT Director | Christine Garber | Business Unit SME | Tom Engle |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic | Initiative Type | Solutions Delivery - On Prem |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE does not currently have a consolidated threat intelligence platform. This effort will provision additional threat intelligence sources and detections. Automate the intake and handling of the threat intelligence data to mitigate previously undetected cyber threats against our computing environment. Automation of this data means that we are not only aware of potential threats, but we are able to more efficiently ingest and handle threat data to make decisions that will ensure cyber resilience against emerging threats. |
| What system or process is being affected? | Currently intake and handling of threat intelligence data is a manual process and not as efficient as an automated solution |
| What functionality or capability is being provided? | Increase the ability to detect threats with deep packet inspection, honeypots, sensors, and network taps. Additionally evaluate various threat intelligence platforms before selecting one based upon DTE requirements. There is a need to automate intelligence data and will help inform decision making and correlation of data more efficiently. |
| What is the customer or employee value? | A threat intelligence platform integrated with our cyber event ticketing system will aid in reducing cyber risk by quickly associating shared threat intel with internal cyber alerts generated by our security monitoring systems. Protecting valuable customer and employee da |
| What alternatives have been considered? | No alternatives have been considered at this time. |

| Key Objectives | |
|---|---|
| 1) | Enhanced threat detection capabilities with deep packet inspection, honeypots, and additional network sensors |
| 2) | Quicker response to mitigate security alerts and minimize the window of opportunity for malicious activity to occur. |
| 3) | Integration into ServiceNow Security Operations for ticketing and tracking. |
| 4) | Include additional threat feed subscriptions for intel and indicators of compromise that are not available from by any other means. |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 3 Months |
| End Month | April | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $599,996 | $259,645 | $0 | $0 | $0 | **$860,000** |
| O&M | $56,529 | $55,590 | $0 | $0 | $0 | **$110,000** |
| Total | $656,525 | $315,235 | $0 | $0 | $0 | **$970,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001361 | Threat Intel Module |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Information Protection and Security Oper | Jesse K Reisman |
| **Portfolio Manager** | **Business Unit SME** |
| Jesse K Reisman | Tom Engle |
| **Managed By** | **PPS** |
| IT | 125 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

With increasing attacks on utilities companies it has become extremely important to not only be able to identity and prevent attack and IOC scenarios relatively quickly but also to proactively detect and respond to them. At DTE we have made significant investment in SIEM over the years to collect and log security data , SOAR in 2022/2023 to centralize the threat intelligent platform to integrate various intelligence sources and the next step is analysis of such data and proactively preventing such attacks using AI/ML technologies (XDR)Solutions for detection and response . This is a Gap across IT and OT systems today . With regulations like TSA ,NERC and QMS this is become more of a important requirement enterprise -wide

Consolidate Threat Intel Platform is to consolidate threat intel information that we receive from CISA ,DOE DHS etc . Today this information is received in a mailbox. This centralized tool will allow DTE to mine the data.

This tool can be integrated with perimeter gateway solutions such as firewall, proxies and DNS to automatically evaluate if we are exposed to such threat and take proactive preventative actions and reduce our exposure to such threats.

TSA compliance also requires some of these capabilities to be in place so intelligence data is historically maintained and acted upon.

Automate the intake and handling of the threat intelligence data to mitigate previously undetected cyber threats against our computing environment. Automation of this data means that we are not only aware of potential threats, but we are able to more efficiently ingest and handle threat data to make decisions that will ensure cyber resilience against emerging threats.

**What functionality or capability is being provided?**

A threat intelligence platform includes a centralized repository to retain threat intel received from a multitude of sources. DTE currently receives threat intel from vendors, government (DHS, DOE, FBI, etc.), Information Sharing and Analysis Centers (E-ISAC, DNG-ISAC), peer companies, and from DTE’s internal sources.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with DTE’s Mitigate Enterprise and Operational Risk by preventing Cyber Incidents. Reduction in Unplanned Outages which benefits Operational Reliability. Foster employee engagement by improved system efficiency.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Having the entire collection of intel shared within a single platform, integration can be made with security tools to better detect malicious activity. This will result in lessening the risk of a significant cyber incident impacting DTE financially and reputationally. |

| How will you monitor and measure expected value? |
|---|
| Number of Cyber incidents prevented and reduction in unplanned outages. Value is that we have a central repository and monitoring will be measurable so that incidents can be collected. |

| What alternatives have been considered? |
|---|
| A "do nothing" alternative is not acceptable as undetected malicious cyber activity could lead to serious cyber incidents with financial and data loss implications. This may also impact audit outcomes and/or lead to regulatory fines. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-09 | 2023-12-31 | Yes | IT |

**IT Costs**

| Type | FY22 | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|---|
| Capex | $621,918 | $42,500 | $0 | $0 | **$664,418** |
| Opex | $60,000 | $5,000 | $0 | $0 | **$65,000** |
| **Total** | **$681,918** | **$47,500** | **$0** | **$0** | **$729,418** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

# Executive Summary

| Business Case ID | BCD-IT-21-014 |
|---|---|

| Business Case Name | Automating Database Event Log Monitoring |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Shared Infrastructure |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Aditya Tallapally |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Regulatory/Compliance |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | One of DTE's Sarbanes Oxley (SOX) controls requires logging of database events and review of them for compliance. Today, the process is manual and time intensive, consolidating access event data into spreadsheets and routing them for review via email. The reviewers are given about five business days to perform and initiate any necessary remediations. The cycle time allows for reviews to occur only on a monthly cycle. Best practice indicates cycle times can be shorter via automation. This has been commented on by our external auditors. |
| What system or process is being affected? | DTE's financial databases that are impacted by SOX. (The DTE Energy SOX compliance team has supplied a list of the databases that will be included in event monitoring automation.) |
| What functionality or capability is being provided? | Automating database event log monitoring for SOX application, aggregating the selected events into a central repository for Security Operations team to monitor, and for auditing and reporting purposes. Also, allow the triggering of reviews by approvers to ensure user access is managed and compliance requirements met. |
| What is the customer or employee value? | The automation will reduce the inherent errors associated with the current manual process. It will also facilitate a more timely management of risk by identifying and mitigating threats sooner against the financial systems. |
| What alternatives have been considered? | Continue emailing reports and manually reviewing log events which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | Centralize event monitoring with Cyber Security Operations (i.e. CSDC and SIEM) |
| 2) | Automatically discover and classify sensitive data, monitor access and protect data. |
| 3) | Record events in real time or near real time and mitigate them. |
| 4) | Integrate Imperva with Qradar application for real-time intelligence, visibility and policy actions. |
| 5) | Use predefined reports for database administrators, security and auditors. |
| 6) | Modify existing log event monitoring processes to align with automation and best practices. |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | | | | |
|---|---|---|---|---|---|
| Start Month | September | 2022 | Funding Source | ITS | |
| Duration to Complete | 1 Years | 3 Months | | | |
| End Month | December | 2022 | | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $686,993 | $278,904 | $0 | $0 | $0 | **$970,000** |
| O&M | $29,587 | $24,207 | $0 | $0 | $0 | **$50,000** |
| Total | $716,580 | $303,111 | $0 | $0 | $0 | **$1,020,000** |

## Business Unit Costs

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $83,808 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-017 |
|---|---|

| Business Case Name | Tower and Lighting Inspections and Repairs |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Plant & Field Core Operations |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Saikrishna Gangeddula |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Regulatory/Compliance |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | FCC Regulations requires DTE Energy to inspect and repair all owned/leased communication towers in a 3 -5 year intervals  As result of the inspections, DTE is to provide the necessary repairs/maintenance to ensure safety of the community and employees, sustain the stability of equipment, and to adhere to FCC STD Codes. |
| What system or process is being affected? | The Physical Tower structure regulation compliance to FCC standards. |
| What functionality or capability is being provided? | The security and safety of the physical towers. |
| What is the customer or employee value? | This ensures the towers that to which Network equipment is attached meet FCC Safety and Security standards which in turn ensures the Network capability used by the Enterprise. |
| What alternatives have been considered? | None. No alternatives are possible without impacting the Capital Budget. |

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| Key Objectives | |
|---|---|
| 1) | This is a FCC Regulation that requires evaluation and maintenance of the towers and lighting that support the GRID every 3 to 5 Years. |
| 2) | The features identified in scope align to the corporate, business unit, and department strategic goal(s)/objective(s) below: |
| 3) | The below features ensure that we are meeting regulatory standards mandated by the FCC in order to ensure the health and capability of the electric and gas grids. Additionally it meets the ITS Technology Roadmap Asset Sustainment plans |
| 4) | Prioritization of towers based on visual and physical inspection |
| 5) | Determination and development of repair cadence based on prioritization |
| 6) | Execution of the plan by DTE or Vendors |
| 7) | This business case will support the Shared Infrastructure, Distribution Operations, and Plant and Field departments by improving and meeting the Regulatory requirements necessary for maintenance and sustainment of outstate network locations |
| 8) | The beneficiaries of this business case being implemented are: Shared Infrastructure, Plant and Field , Distribution Operations, Gas |
| 9) | The expected payback period is a rolling 3 to 5 years |
| 10) | |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $280,000 | $0 | $0 | $0 | $0 | **$280,000** |
| O&M | $10,000 | $0 | $0 | $0 | $0 | **$10,000** |
| Total | $290,000 | $0 | $0 | $0 | $0 | **$290,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001338 | Tower and Lighting Inspections and Repairs |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Mikael Gandy |
| **Managed By** | **PPS** |
| IT | 150 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Regulatory/Compliance | Operational |

**What business problem or opportunity are we trying to solve?**

FCC Regulations requires DTE Energy to inspect and repair all owned/leased communication towers in a 3 -5 year intervals. As a result of these inspections, DTE is to provide the necessary repairs/upgrades to ensure safety of the community and employees, sustain the stability of equipment, and to adhere to FCC STD Codes.

**What functionality or capability is being provided?**

The security and safety of the physical towers. This is a FCC Regulation that requires evaluation and maintenance of the towers and lighting that support the GRID every 3 to 5 Years. The features identified in scope align to the corporate, business unit, and department strategic goal(s)/objective(s) below: The below features ensure that we are meeting regulatory standards mandated by the FCC in order to ensure the health and capability of the electric and gas grids. Additionally it meets the ITS Technology Roadmap Asset Sustainment plans Prioritization of towers based on visual and physical inspection Determination and development of repair cadence based on prioritizationExecution of the plan by DTE or Vendors

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This is a sustain business case for the enterprise. As such it is aligned with the following ITS (CIO) priorities. * Mature our operating performance with digital resiliency capabilities * Strengthen our strong security posture, focusing on operational technology resiliency * Transform DTE’s capabilities through execution of NGU and BU initiatives and projects

**Define the Benefit/Value to the Organization, Customer, Employee.**

This ensures the towers that to which Network equipment is attached meet FCC Safety and Security standards which in turn ensures the Network capability used by the Enterprise. This business case will support achieving improved performance in existing operational process gaps, metrics, etc. by: a. Providing reliable, efficient, and redundant network physical towers and tower locations b. Providing enhanced safety c. Reducing unplanned outages

**How will you monitor and measure expected value?**

The currently defined metrics/measures defined in Best Operating Scorecard, including Asset Health and Operational metrics for Network Engineering, would be used for monitoring and measuring value expected.

DTE

| What alternatives have been considered? |
|---|
| An alternative would be to execute the project with DTE personnel. This effort would increase the cost significantly due to the need to increase direct hire staffing levels.<br><br>'Do Nothing' would place DTE in direct conflict with the regulations of the FCC and cause fines and more importantly increase the probability that the Towers or Real Estate would no longer be secure, safe, or capable of meeting the requirements of the business or customers. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-12 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $280,000 | $150,000 | $280,000 | **$710,000** |
| Opex | $10,127 | $9,942 | $9,942 | **$30,011** |
| **Total** | **$290,127** | **$159,942** | **$289,942** | **$740,010** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Executive Summary

# Executive Summary

| Business Case ID | BCD-SI-21-002 |
|---|---|

| Business Case Name | MYR YR1 Ashley Mews Relocation ITS Network Reconnections |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | John Steven Bennett |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The Ashley Mews Building (AMB) located in downtown Ann Arbor is being sold as part of a long term corporate real estate and facilities strategy. ITS Network Engineering has established this location as a Private Fiber Hub for the Enterprise and as such needs to reroute the Hub, Remove the Microwave Hardware, and res-establish the connection to the Uof M Power plant. |
| What system or process is being affected? | Private Fiber Hub for the Enterprise |
| What functionality or capability is being provided? | To meet DTE's responsibility as a certified Balancing Authority private fiber hub must provide the same function, processes, and technological capabilities of the existing Hub that resides in the Ashley Mews Building. This includes the reclaimation of the redundant Microwave hardware, private fiber reconnection to power plants, and reconnection to UofM Power Plant |
| What is the customer or employee value? | The private fiber hub provides enterprise wide connectivity for DTE. This hub is critical to the communication of DTE secured data and ensures connectivity to our power plants technological hardware and the personnel and systems assigned to monitor the network |
| What alternatives have been considered? | None. Any alternate solution other than replacing the existing Private fiber hub will have significant impact on Capital budget. |

| Key Objectives | |
|---|---|
| 1) | Reroute of Private Fiber connections to DTE power plants and UofM Power Plant. Including: Design, Physical Fiber Ring Pull, Integration with existing Fiber Ring work underway in a separately DO Funded project |
| 2) | New Hardware Purchases to support the Private Fiber Ring |
| 3) | Reclaimation of all hardware deemed necessary and for planned reuse |
| 4) | Reclaim Microwave Secondary hardware for reuse |
| 5) | Provide Redundant Private Fiber Connection to replace Microwave |
| 6) | Reconnect the UofM Powerplant including all necessary hardware and engineering |
| 7) | Provide necessary building infrastructure and technological capabilities to support the Merchants Operations Center. Secure vendor(s) for the design and remodeling of the existing DTE Western Wayne facility to host MOC control center operators and support staff and incorporate necessary amenities for continue 24/7/365 operations. |
| 8) | |
| 9) | |
| 10) | |

Michigan Public Service Commission
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| Start Month | August | 2021 | Funding Source | ITS |
|---|---|---|---|---|
| Duration to Complete | 0 Years | 8 Months | | |
| End Month | April | 2022 | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $1,300,000 | $400,000 | $0 | $0 | $0 | **$1,700,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $1,300,000 | $400,000 | $0 | $0 | $0 | **$1,700,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-007 | Business Case Name | BackUp Environment Growth |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations | Business Unit | Enterprise |
|---|---|---|---|
| IT Sub-Portfolio | Infrastructure and Operations | Business Unit Director | Pankaj Sharma |
| IT Director | Pankaj Sharma | Business Unit SME | |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment | Initiative Type | Infrastructure - On Prem |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Each year DTE applications require additional space to handle their data storage requirements in order for the applications to remain aligned to DTE retention practices. This places increased demand on our storage and backup environments. This project will cover expected increase in demand for storage capacity for application backups for 2020. Increased storage estimated as based on previous years operational growth. |
| What system or process is being affected? | All existing applications data that which will experience growth during the business case year that mandates a Back up |
| What functionality or capability is being provided? | Business applications data is duplicated in order to reduce the potential for loss in the case of an outage. |
| What is the customer or employee value? | Ensures business critical data is available after loss of service or an outage. |
| What alternatives have been considered? | None. No alternatives are possible without impacting the Capital budget since this is a sustain effort. |

| Key Objectives | |
|---|---|
| 1) | Replace aged backup infrastructure with current technology that can be expanded as necessary to support DTE's backup and storage requirements for the next 2 years. |
| 2) | Maintain the ability to recover from viable backups within SLA timeframes as required. |
| 3) | Reduce maintenance cost and effort to support and maintain the backup environments. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 0 Months |
| End Month | January | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $500,000 | $0 | $0 | $0 | $0 | **$500,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $500,000 | $0 | $0 | $0 | $0 | **$500,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001317 | Back Up Environment Growth |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

For years 2023 - 2025, we will see an increase of stored data within the designated infrastructure assets. This increase must be accounted for annually in order to maintain access requirements defined by the business as well as maintaining the business data retention policy. This places increased demand on our storage and backup environments capacity. This effort will ensure we meet the expected increase in demand for storage capacity for application backups for 2023 through 2025.

**What functionality or capability is being provided?**

This effort will provide the necessary backup and storage needs for the business data in 2023, 2024 and 2025.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the goals for the operational excellence and continuous improvement strategic direction.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures business critical data is available after loss of service or an outage. Provide sufficient storage to continue to provide timely backups and recovery for applications to ensure application continuity for 2023, 2024 and 2025. IDSS will maintain 95% success rate in daily, weekly and monthly backups and 100% success rate in recovery capability for all key and critical applications.

**How will you monitor and measure expected value?**

Service Now dashboard S3 metrics captures/monitors the performance as follows:
1) % Incident assignments responded in time
2) % Incidents resolved in Time
3) IDSS Incident response Metrics
4) IDSS Incident Resolution Metrics
5) IDSS Successful Change - By Quarter
6) IDSS Unsuccessful change - By Quarter
7) IDSS New Incidents - Sum By Week
8) IDSS New Requested Items - Sum by Week

**What alternatives have been considered?**

None. No alternatives are possible without impacting the Capital budget since this is a sustain effort.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $624,000 | $624,000 | $500,000 | **$1,748,000** |
| **Total** | **$624,000** | **$624,000** | **$500,000** | **$1,748,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-CA-21-019 |
|---|---|

| Business Case Name | Collaboration Sustainment |
|---|---|

## Stakeholders

| IT Portfolio | Corporate Apps |
|---|---|
| IT Sub-Portfolio | Corporate Apps |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Sponsor | Kiley Priebe |
| Business Units Impacted | Electric |

## Project Description

| Project Category | Sustainment |
|---|---|
| Project Type | Operational |

| Innovation? | No |
|---|---|
| Strategic Fit | Top-Decile Customer Satisfaction |

| Business Outcome |
|---|
| The enterprise collaboration team is enabled to maintain and operate current systems at optimum levels, reducing downtime and outages. |

| Key Objectives | |
|---|---|
| 1) | The key opportunity would be to enable new capabilities and operate secure platforms and make investments to sustain incremental improvements to the service level. |
| 2) | Success would be improvement on both planned and unplanned outages. |
| 3) | Project deployments from other teams are generating needed functionality from an enterprise technology support perspective to maintain compatibility and supportability. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2020 | |
|---|---|---|---|
| Duration to Complete | 1 | Years | Months |
| End Month | January | 2021 | |

| Funding Source | ITS |
|---|---|

## Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $1,150,000 | $0 | $0 | $0 | $0 | **$1,150,000** |
| O&M | $430,000 | $0 | $0 | $0 | $0 | **$430,000** |
| OCM | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total O&M | ~~$430,000~~ | $0 | $0 | $0 | $0 | **$430,000** |
| Total | $1,580,000 | $0 | $0 | $0 | $0 | **$1,580,000** |

**O&M $440,000**

| Hardware/Software/ Cloud | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $0 | $0 | $0 | $0 | $0 | **$0** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |

| BU O&M | $0 |
|---|---|

| Incremental Costs | $0 |
|---|---|

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001211 | Collaboration Application Health |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Kiley R Priebe |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

This is a continued year over year annual investment to cover improvements in support of changes to business processes, implement hardware and environment upgrades, security vulnerability remediation, and adopt both major and minor software releases to avoid or account for software version obsolescence. Improvements of this type are often critical in ensuring that system integrity is maintained allowing for the timely adoption of security patches and emerging versions. These improvements further support the capabilities of the Collaboration platform and improve overall system performance. This is the first year of support, the previous years have been deploying products to the business.

**What functionality or capability is being provided?**

The functionality and capability to be provided pertains to continued sustain support work associated with DTE's Collaboration platform.
Maintain application availability by allowing Microsoft products on multiple devices.
Improve asset health.
Provide critical functionality and features required by the enterprise to work remotely and to execute their processes. We have done this by rolling out Teams Calling to the business to allow communication from anywhere from any device.
Provide updates and improvements to critical functionality and features required by business unites to continue to support the Enterprise. Microsoft will continue to push upgrades to their products.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

The Key opportunity would be to enable new capabilities and operate secure platforms and make investments to sustain incremental improvements to the service level.

**Define the Benefit/Value to the Organization, Customer, Employee.**

The value of this investment enables employees to remain safe and still deliver service and support business functions – which would have been impossible before the investment in this platform. In addition, this platform enables the company strategy post-COVID, which is moving to a hybrid work environment where employees will choose to either work on-site or at a remote location which best suits the work they are required to do. Employees will have options on work location to best support and improve their productivity.

DTE

| How will you monitor and measure expected value? |
|---|
| Customer feedback and surveys will be used to monitor and measure the expected value |

| What alternatives have been considered? |
|---|
| We do not have an option to do nothing with the Microsoft cloud platform. If we do not keep the products within two releases besides impact to security, application performance and usability, Microsoft will stop the service |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-30 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $20,776,813 | $1,531,113 | $1,523,981 | **$23,831,907** |
| Opex | $288,569 | $287,336 | $285,237 | **$861,143** |
| **Total** | **$21,065,382** | **$1,818,449** | **$1,809,218** | **$24,693,050** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0003143 | DELL Storage Hardware Refresh |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Dean R Herr |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

The existing lease for storage infrastructure is expiring end of 2023 and in order to maintain enterprise storage services, a new agreement had to be executed. This impacts DTE's storage capabilities that supports all servers and applications hosted on these servers. This is a sustainment effort to maintain DTE's on-going storage requirement and needs, to support continued operational activities.

**What functionality or capability is being provided?**

This effort is intended to improve the system capability which in turn will minimize system overloads due to the increase in Storage demands. Additionally, the procurement of next gen hardware will support system reliability and performance improvement.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This project aims to improve and aligns with Operational Excellence by reducing storage and backup unavailability. This initiative will increase the operational reliability of DTE's IT infrastructure.

**Define the Benefit/Value to the Organization, Customer, Employee.**

1. Few outages to DTE's systems (due to system overload and degradation of application performance) will lead to more customer satisfaction.2. Higher availability of DTE systems will reduce revenue loss.

**How will you monitor and measure expected value?**

ServiceNow reports would be utilized to monitor and maintain performance metrics of hardware and software devices and unplanned outages.

**What alternatives have been considered?**

Do nothing: DTE's ability to store customer data would be significantly impacted if a do-nothing alternative is selected.

DELL being DTE's preferred service provider, replacement of their services could result in revenue loss as it would lead to an evaluation of new service provider and resulting in unnecessary downtime and outages that can significantly impact DTE's customers.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-02 | 2028-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY24 | FY25 | FY26 | FY27 | FY28 |
|---|---|---|---|---|---|
| Capex | $255,000 | | | | |
| **Total** | **$255,000** | | | | |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

**Total**

**$255,000**

**$255,000**

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-015 |
|---|---|

| Business Case Name | Endpoint End Of Life Electric Support Services |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Endpoint Technology Experience |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE does not have the internal staffing levels or capacity to perform Endpoint Desktop support sevices in the downtown complex or Application Packaging. Meeting the work requirements with a contractor workforce aligned within a two-year commitment schedule is not optimal for continuity of operations within the Endpoint Technology Expierience team (ETX) |
| What system or process is being affected? | Example: Performance monitoring of critical applications |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Example: The value of completing the project is real-time contact center response time reporting vs. hourly reporting, improved user interface - dashboard view vs. emailed report, targeted troubleshooting and faster root cause analysis, low configuration solutions (i.e., less administrative work), and reducing waste. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | Provide Incident and Request services to over 10,000 enpdoint devices from cradle to grave. |
| 2) | Provide End of Life services to approximatley 10% of the endpoint fleet annually |
| 3) | Walk-up support for mobile electronic devices |
| 4) | Develop, test and deploy corporate application packages |
| 5) | Provide Incident, Request and Maintenance services and support of those application packages |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $800,000 | $0 | $0 | $0 | $0 | $800,000 |
| O&M | $0 | $0 | $0 | $0 | $0 | $0 |
| Total | $800,000 | $0 | $0 | $0 | $0 | $800,000 |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001321 | Endpoint End of Life Electric Support Services |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Steve Bennett |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

DTE does not have the internal staffing levels or capacity to perform Endpoint Desktop support services in the downtown complex or Application Packaging. Meeting the work requirements with a contractor workforce aligned within a two-year commitment schedule is not optimal for continuity of operations within the Endpoint Technology Experience team (ETX).
NOTE: The following words are the original verbiage and have been left for record keeping.
This case will involve the DTE Digital Workplace Experience Support Managed Service and will provide the complete end to end service for all End Point Technology issues and incidents within DTE.

**What functionality or capability is being provided?**

This effort provides necessary endpoint operational support for end user issues that are impacting daily work requirements.

This service will also include a 'Tech Hub' that will provide 5x8 hours per day support of walk-up customers at the Tech Hub location - administrating setup and deployment of software and hardware to end users including training end users on deployed equipment. The Tech Hub team will troubleshoot, maintain, and resolve any software or hardware issues while pursuing continuous improvement in customer experience.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

In collaboration with DTE, the Managed Service Agreement vendor will recommend and/or propose continuous improvements and automation/AI opportunities for re-engineering efforts necessary to resolve and reduce service levels during the 2023, 2024 and 2025 years.

**Define the Benefit/Value to the Organization, Customer, Employee.**

By providing a Managed Service in support of end user operational hardware and operating system issues, DTE will be able to maintain the capabilities of the business workforce's endpoint devices.
NOTE: The following words are the original verbiage and have been left for record keeping.
This service will also include a 'Tech Hub' that will provide 5x8 hours per day support of walk-up customers at the Tech Hub location - administrating setup and deployment of software and hardware to end users including training end users on deployed equipment.

DTE

| How will you monitor and measure expected value? |
|---|
| The Managed Service Agreement has established service level metrics that will be used to monitor and measure expected value.<br>NOTE: The following words are the original verbiage and have been left for record keeping.<br>The Tech Hub team will troubleshoot, maintain, and resolve any software or hardware issues while pursuing continuous improvement in customer experience. |

| What alternatives have been considered? |
|---|
| 1) Hire direct employees 2) Outsource to a non standard vendor.<br>A "do nothing" alternative is not in scope because of an increased burden on other support groups who develop applications or service the devices and the applications used on them. If support and maintenance is not available the device end users will have decreased satisfaction due to higher failure rates and reduced performance. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | No | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $853,000 | $853,000 | $853,000 | **$2,559,000** |
| **Total** | **$853,000** | **$853,000** | **$853,000** | **$2,559,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002778 | Enterprise Monitoring Licensing Renewal |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Robert Hamilton |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Solutions Delivery - On Prem |

**What business problem or opportunity are we trying to solve?**

The License Agreement expires in 2025 and in order to provide ongoing monitoring capability we must extend and expand this agreement. Provide visibility into the IT ecosystem and to provide the broadest contextual and situational awareness of the health of all IT assets and services.

**What functionality or capability is being provided?**

Enhance or extend preventative monitoring across the entire IT landscape

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This aligns with the corporate priority to deliver operational excellence across the enterprise and the ITS priority to mature our operating performance with digital resiliency capabilities

**Define the Benefit/Value to the Organization, Customer, Employee.**

Strategic Alignment- his will impact the following priorities: Fundamentally improve our relationship with customers, Deliver Operational Excellence across the enterprise, Execute the Distribution Excellence If this initiative is not approved, it will drastically decrease our visibility into the IT ecosystem which will increase the detection time for system anomalies and root cause when issues occur. This will increase the number of customers impacted by 20%, the number of unplanned outages by >10%, and the duration of those outages by 20%. Prevent service downtime and reduce impact of downtime when an incident occurs to ensure system availability.

DTE

| How will you monitor and measure expected value? |
|---|
| Customer Experience: Enterprise monitoring tools are used for the entire IT landscape and allow IT technical resources to see and be notified of issues quickly so they can take corrective actions that reduce the duration of and in some cases eliminates a negative experience for our customers and internal business partners. All of our customers can potentially be impacted when our IT systems experience downtime or performance degradation. Not approving this initiative will increase the number of customers impacted by 20%, the number of unplanned outages by >10%, and the duration of those outages by 20%.Employee Engagement Enterprise monitoring tools are used by all technical teams in IT that support application and infrastructure operations. It provides greater visibility into their systems and alerts them when certain thresholds are met. Losing these tools will drastically increase the time it takes to triage an incident by over 20% which increases stress for employees that are trying to solve a production issue for a key and/or critical system.Affordability and Growth- This initiative will provide visibility into the IT ecosystem. It will also provide the broadest contextual and situational awareness of the health of that asset, along with other IT services. Losing this visibility will increase technical call time by over 100 hours (average of 20 FTEs on each technical call) which is equivalent to more than $100k in productivityOperational Reliability- Enterprise monitoring has a direct impact on the frequency, duration, customers impacted and employees impacted for unplanned outages. Reducing or eliminating enterprise monitoring will have a negative impact on all unplanned outage metrics. Not approving this initiative will increase the number of customers impacted by 20%, the number of unplanned outages by >10%, and the duration of those outages by 20% |

| What alternatives have been considered? |
|---|
| There are no alternatives that have been considered, as this continues to build on the foundational Enterprise Monitoring capabilities established in previous demands.<br>A do nothing approach which would remove our ability to effectively monitor our IT assets and applications causing a drastic increase in unplanned outage frequency and duration. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-04-13 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | Total |
|---|---|---|
| Capex | $5,000,000 | **$5,000,000** |
| Opex | $200,000 | **$200,000** |
| **Total** | **$5,200,000** | **$5,200,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

## Executive Summary

| Business Case ID | BCD-IO-22-003 |
|---|---|

| Business Case Name | Enterprise Monitoring Strategy Operational Growth |
|---|---|

### Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

### Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Because of the foundation built by the Enterprise Monitoring Strategy, there is an opportunity to provide personnel with a common dashboard. This will enhance analysis and reduction of Mean Time to Repair. |
| What system or process is being affected? | The scope of this business case is to consolidate, maintain and grow the monitoring and event management functions in the centralized IT Ops Command Center, with an Enterprise wide capability that includes IT infrastructure, applications, business transactions and business processes. This sustains the Enterprise Monitoring capabilities operationalized in 2019, and the robust integration with the ITOM capabilities of the ITSM solution. |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Customer value is situational awareness that instantiates either preventing negative impact to service or reducing downtime once service has been impacted. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | SI-20-NNN-Ent. Monitoring-F001- Expand/enhance monitoring to all portfolio applications<br>Expand/enhance individually tiered monitors across all portfolios - Identify applications and business transactions for enhanced/expanded key/critical application monitoring across portfolios.<br>Acquire and deploy necessary technology to enhance/expand application monitoring (Dynatrace, HPOM replacement/upgrade, expanded deployment of NetScout and such) |
| 2) | SI-20-NNN-Ent.Monitoring -F002- Orchestration for Event Analytics – to transform data through analytics into actionable intelligence (expanding/operationalizing post-ITOM implementation)<br>Provide ability to extract from structured and unstructured data log<br>Implement Event Analytics Dashboard.<br>Provide ability to search events to accelerate Problem isolation, identification and resolution for greater operational agility<br>Provide ability to analyze historical event archive and identify groups of events that always occur together for operational efficiency<br>Provide ability to use Event Analytics for event seasonality, isolation and correlation - to reduce MTTR and to trigger automatic actions |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 0 Months |
| End Month | January | 2023 |

| Funding Source | ITS |
|---|---|

### IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $500,000 | $0 | $0 | $0 | $0 | **$500,000** |
| O&M | $88,000 | $0 | $0 | $0 | $0 | **$90,000** |
| Total | $588,000 | $0 | $0 | $0 | $0 | **$590,000** |

### Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001322 | Enterprise Monitoring Strategy Operational Growth |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Robert Hamilton |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

Investment in Enterprise Monitoring Operational Growth expands the monitoring of the overall health of critical applications, infrastructure, security, services, and user experiences that was established in 2019 through the Enterprise Monitoring Strategy Implementation and NOC automation to ensure that business transactions have the necessary capability to provide rapid responses to end users which results in the reduction of Mean Time to Repair. This is an ongoing effort and will continue from 2023 through 2025.
We would lose sight of the operational status of our critical systems increasing downtime and impacting customers, if the monitoring is not maintained.
In addition, there is a need to close visibility gaps to prevent the potential of unplanned downtime and network failures in four significant areas: i) Environmental conditions in Critical and Key Telecom rooms/closets ii) Network Transport (including lease/private circuits) iii) Field Communication Network iv) Network Security infrastructure.
In 2022 the network environment was reviewed which identified conditions to be addressed.
Gigamon appliances that collect network data are reaching the end of life. It is critical as it eliminates security blind spots and reduces tool costs, enabling better security and management of DTE's hybrid cloud infrastructure.
The HC2 data collectors are no longer available and support for them will end in 2025 and newer versions (HC3) are required to continue the functionality within DTE. Completing this work in 2024 would make the transition into the new environment more controlled and align with current contract durations.

**What functionality or capability is being provided?**

This effort will provide an iterative monitoring and event management capability to ensure the health of both the infrastructure assets and their inherent configurations to meet the demand of the business requirements.

Extend preventative monitoring environmental controls (e.g. humidity, temperature) in the Network Transport and Field Communication Network infrastructure to aid in proactively avoiding unplanned downtime and network failure.
This is a key capability that DTE currently has, with assets that are reaching the end of their useful life and are nearing the end of support. Therefore, DTE has decided to refresh the environment and needs to continue with this capability.

DTE

| Describe alignment of project to Business Unit Goal(s) and Strategy(ies). |
|---|
| Aligns with operational excellence across the enterprise. Per IT Priorities, maturing operational performance leading to Digital Resiliency capabilities. |

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Customer value is situational awareness that instantiates either preventing negative impact to service or reducing downtime once service has been impacted. |

| How will you monitor and measure expected value? |
|---|
| The monitoring system will improve the empirical data quality leading to reduce the number of incidents and the duration of the incidents. |

| What alternatives have been considered? |
|---|
| A "do nothing" alternative would halt the current operationalization of monitoring and negatively impact the Company's ability and customer expectations around providing rapid responses to customer, business, and end-user concerns. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $600,000 | $600,000 | $1,000,000 | **$2,200,000** |
| Opex | $99,459 | $150,030 | $149,788 | **$399,277** |
| **Total** | **$699,459** | **$750,030** | **$1,149,788** | **$2,599,277** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-009 |
|---|---|

| Business Case Name | Field Communications Network FCN Growth and Upgrade |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The Business requires redundant communication and control functionality which allows constant communication for the alternate SCADA Operations Center (SOC) location to all substations. The activities executed for business in 2021 will continue to build the infrastructure at substations and the supporting network in 2022. |
| What system or process is being affected? | This continued implementation of the network infrastructure will provide redundant Internet Protocol Address (IP) for digital communication and control functionality to the alternate SCADA Operations Center (SOC) location for all substations. |
| What functionality or capability is being provided? | Redundant critical communication between the SCADA Operations Center and substations. |
| What is the customer or employee value? | Ensures redundant communication mandated as a load balancing authority in the case of the loss of a primary network in order to provide uninterrupted business processes. |
| What alternatives have been considered? | None. Since this is a sustain case, no alternatives are possible without an impact to the Capital budget. |

| Key Objectives | |
|---|---|
| 1) | Analysis and Identification of substations that require communication and control functionality to the alternate SCADA Operations Center (SOC) |
| 2) | Identification of existing substation network hardware and configurations and determination of hardware that must be purchased, added or upgraded |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $400,000 | $0 | $0 | $0 | $0 | **$400,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $400,000 | $0 | $0 | $0 | $0 | **$400,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001324 | Field Communications Network FCN Growth and Upgrade |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Mikael Gandy |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

The Business requires redundant communication and control functionality which allows constant communication for the Company's field devices (Routers, Switches and Hubs) that monitors and control the operation of the bulk-electrical system network. This creates a need to replace devices that are reaching the end of useful life as well as to add new devices to accommodate load or geographical growth that adds functionality, automation, and redundant critical communication between the alternate SCADA Operations Center (SOC) location and all substations. This project takes into account both the hardware and labor investment from 2022 through 2025.

**What functionality or capability is being provided?**

This project will focus on providing redundant critical communication between the SCADA Operations Center and substations for 2022, 2023, 2024 and 2025.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligned with DTE Electric to support the multi-year capital investment into grid operations utilizing the FCN Network.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures redundant communication mandated as a load balancing authority in the case of the loss of a primary network in order to provide uninterrupted business processes.

**How will you monitor and measure expected value?**

Total assets utilizing the network will be measured as growth continues throughout this multi-year program between 2022 to 2025.

**What alternatives have been considered?**

Alternate technology solutions include complete replacement of core routers, switches, gateways, and firewalls, which were rejected because supplanting a 10-year platform and investment would cause an interruption of service for key and critical systems, which depend on this network.

Doing nothing would directly impact the requirements of the FCC that would in turn have a direct impact on the electrical grid management and load balancing authority requirements.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $400,000 | $300,000 | $400,000 | **$1,100,000** |
| **Total** | **$400,000** | **$300,000** | **$400,000** | **$1,100,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-016 |
|---|---|

| Business Case Name | Network Hardening and Operations |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE does not have the internal staffing levels to fulfill the growing demands (both project and operational) of Network Engineering services/functions across the enterprise. Along with this constraint, meeting those commitments with a contractor workforce aligned within a two year commitment schedule is not optimal/sustainable. |
| What system or process is being affected? | Enterprise Network Engineering project and operational support |
| What functionality or capability is being provided? | |
| What is the customer or employee value? | Ensures the timely execution of work mandated by business driven initiatives in order to improve or maintain the health of our networks. |
| What alternatives have been considered? | None. Since this is a sustain case, no alternatives are possibled without impacting the Capital budget. |

| Key Objectives | |
|---|---|
| 1) | Provide Incident, Request and maintenance services and support of Network Engineering function and assets |
| 2) | Design, Develop, test and deploy Network Engineering solutions across the enterprise |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $400,000 | $0 | $0 | $0 | $0 | **$400,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $400,000 | $0 | $0 | $0 | $0 | **$400,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001334 | Network Hardening and Operations |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Saikrishna R Gangeddula |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

DTE does not have the internal staffing levels to fulfill the growing demands (both project and operational) of Network Engineering services/functions across the enterprise. Along with this constraint, meeting those commitments with a contractor workforce aligned within a two year commitment schedule is not optimal/sustainable.

**What functionality or capability is being provided?**

Support for business driven initiatives that improves or maintains the overall health of network engineering managed solutions.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This is a sustain business case for the enterprise. As such it is aligned with the following ITS (CIO) priorities. * Mature our operating performance with digital resiliency capabilities * Strengthen our strong security posture, focusing on operational technology resiliency * Transform DTE’s capabilities through execution of NGU and BU initiatives and projects.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures the timely execution of work mandated by business driven initiatives in order to improve or maintain the health of our networks. This business case will address the fulfilling of the Network Engineering commitments through workforce augmentation managed under Professional Services Agreement (PSA), operating at agreed upon Service Level Agreements (SLAs). Thus, Network Engineering with this workforce ensures sustained availability and reliability of DTE networks.

**How will you monitor and measure expected value?**

The currently defined metrics/measures defined in Best Operating Scorecard, including Asset Health and Operational metrics for Network Engineering, would be used for monitoring and measuring value expected.

**What alternatives have been considered?**

A “do nothing” alternative would result in delays or a complete inability to execute network deployments or project tasks in a timely manner due to lack of internal staffing to perform. This presents a considerable risk to supporting of DTE's aspiration of being the best operated energy company in North America

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $800,000 | $400,000 | $400,000 | **$1,600,000** |
| **Total** | **$800,000** | **$400,000** | **$400,000** | **$1,600,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002757 | Palo Alto Capital License Purchase |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Chris Thornton |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

External and internal security threats continue to increase and evolve throughout DTE's IT and OT/Control networks. DTE leverages Palo Alto based security infrastructure for securing our network and providing the needed threat protection. There is a need to keep DTE's security infrastructure up to date and supported. In 2022 Palo Alto licensing was renewed to ensure functionality and supportability of network security assets needed for DTE's IT and OT/Control networks. This licensing and support will expire in 2025 needing a renewal.

**What functionality or capability is being provided?**

Provide network threat protection and layered security to DTE’s assets, including IT and OT systems.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Strategic Alignment- 1.(Mitigate Enterprise/Operational Risk) Zero security events due to external network threats 2.(Mitigate Enterprise/Operational Risk) Increase in the threats blocked at the firewall by 10% 3.(Operational Excellence) Reduce the number of unplanned outages by 10% 4.(Growth Opportunity) Increased capacity to support additional network traffic by at least 5% (Need Current state and target state)

**Define the Benefit/Value to the Organization, Customer, Employee.**

Customer Experience- Protect all our customers (>1 million) information, thereby reducing/preventing MPSC complaints. Due to increase in cyber threats, there is a need to implement this initiative, without which customer complaints could increase by 10%Employee Engagement- Significant improvement of experience for all DTE employees (~10,000) Due to increase in cyber threats, there is a need to implement this initiative, without which end user endpoints compromised could increase by 20%. Affordability and Growth- The average cost of a single data breach per IBM/Ponemon Institute is $ 4.24 million. Prevention of even a single incident of data breach provide significant cost avoidance for DTE (https://www.upguard.com/blog/cost-of-data-breach)Cost Benefit- Cost Avoidance can not be used as Cost Benefit only for affordability and growthOperational Reliability- Significant impact attributed to unplanned system/application outages, due to an increase in cyber threats vulnerability exploitation. There is a need to implement this initiative, without which the systems and applications could experience an increase in unplanned outages by >10%.

DTE

| How will you monitor and measure expected value? |
|---|
| Foundational Capability- •All DTE business unit networks, infrastructure and applications can utilize the advanced protection features as well as capacity available in the firewalls to effectively improve protection from cyber threats.•Implementation of this initiative will provide for all business units to increase the user capacity by 25% over the next 5 years.•This will also allow for increase in business applications and support customer expansion by 10%. |

| What alternatives have been considered? |
|---|
| 1) Do Nothing: This will have a significant impact on DTE's network security posture.<br>No other alternatives have been considered as DTE has a strategic investment and partnership with Palo Alto as the firewall provider. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | Total |
|---|---|---|
| Capex | $5,500,000 | **$5,500,000** |
| **Total** | **$5,500,000** | **$5,500,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-005 |
|---|---|

| Business Case Name | Server Engineering Support Services |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | This business case provides Work Products and Services with defined service level agreements for Server and Database Engineering & Operations teams through a Managed Service Agreement (MSA). Services provided are incident management, service request processing, project support, troubleshooting, vulnerability management and upgrades for servers and databases. |
| What system or process is being affected? | Maintain and improve application availability to support business processes across the DTE Enterprise. |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Example: The value of completing the project is real-time contact center response time reporting vs. hourly reporting, improved user interface - dashboard view vs. emailed report, targeted troubleshooting and faster root cause analysis, low configuration solutions (i.e., less administrative work), and reducing waste. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | Maintain application availability. |
| 2) | Achieve vulnerability management requirements . |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 0 Months |
| End Month | January | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $2,700,000 | $0 | $0 | $0 | $0 | **$2,700,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $2,700,000 | $0 | $0 | $0 | $0 | **$2,700,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001336 | Server Engineering Support Services |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Operational |

**What business problem or opportunity are we trying to solve?**

This business case provides Work Products and Services with defined service level agreements for Server and Database Engineering & Operations teams through a Managed Service Agreement (MSA).

**What functionality or capability is being provided?**

This effort provides operational engineering support to the IT Compute department (IDSS) to meet project and operational demand from 2023 - 2025

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort allows for the processing of repeatable iterative work in the compute space by an approved third party vendor in order to allow for DTE Employee focus to be placed on operational and strategic excellence, personnel performance growth and infrastructure integration with counterpart IT and Business Units.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This effort provides the necessary compute engineering knowledge currently unavailable within the IT Compute department ensuring that scheduled efforts from either project or operational demand meets the business need.

**How will you monitor and measure expected value?**

Service Now dashboard S3 metrics captures/monitors the performance as follows:
1) % Incident assignments responded in time
2) % Incidents resolved in Time
3) IDSS Incident response Metrics
4) IDSS Incident Resolution Metrics
5) IDSS Successful Change - By Quarter
6) IDSS Unsuccessful change - By Quarter
7) IDSS New Incidents - Sum By Week
8) IDSS New Requested Items - Sum by Week

**What alternatives have been considered?**

1) Hire more internal personnel.
2) RFP to a different vendor.
3) Outsource completely.
A "do nothing" alternative would result in delays or a complete inability to execute network deployments or project tasks in a timely manner and is not viable for the company.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $2,650,000 | $3,100,000 | $3,100,000 | **$8,850,000** |
| **Total** | **$2,650,000** | **$3,100,000** | **$3,100,000** | **$8,850,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002871 | VMWare License Purchase |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

VMware is a virtualization and cloud computing software for IT infrastructure like VRealize operations, VRealize automation, VMWare Hypervisor and vCenter Server and vSphere Client. DTE uses these to run critical applications and the software licensing is reaching expiration in 2025. Without the necessary renewal, DTE cannot sustain operations of its critical infrastructure and applications. To ensure this does not happen, DTE renews the licenses once every 3 years. Without this renewal critical applications such as AMI, AVAYA, ESRI, MAXIMO, SAP would become non-operational.

**What functionality or capability is being provided?**

Virtualization software creates an abstraction layer over computer hardware that allows the hardware elements of a single computer— processors, memory, storage, and more— to be divided into multiple virtual computers, commonly called virtual machines (VMs). Each virtual machine runs its own operating system (OS) and behaves like an independent computer, even though it is running on a portion of the actual underlying computer hardware.
VMware vSphere vMotion is a zero downtime live migration of workloads from one server to another which in turn provides high availability and increases productivity.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This is a sustain effort to ensure DTE's critical infrastructure is operational. Hence, operational excellence is the key objective for the implementation of this effort.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Renewing the licenses will ensure DTE's critical infrastructure and applications stays operational.
This is a low significant to customer and employees effort as it focuses on renewing the licenses.

**How will you monitor and measure expected value?**

By renewing the licenses, DTE will continue monitoring and performing operational activities that are part of VMWare infrastructure maintenance like patching, decommissioning, upgrading and provisioning.

**What alternatives have been considered?**

Do nothing: A do nothing will significantly impact DTE's critical infrastructure and applications as the existing VMWare software licenses would expire making our systems non-operational.
Instead of renewing every 3 years, renewing every year was considered but it has more overhead costs and would not support affordability goals.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | Total |
|---|---|---|
| Capex | $5,600,000 | **$5,600,000** |
| **Total** | **$5,600,000** | **$5,600,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001646 | Compute and Storage Cache Refresh |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

The current powermax infrastructure at DDC is running at an average 80% capacity and compute to accommodate existing and new applications demands. This will reduce system overloads and improve the efficiency of application performance.

**What functionality or capability is being provided?**

This effort is intended to improve the system capability which in turn will minimize system overloads due to the increase in Compute and Storage demands.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This project aims to improve and aligns with Operational Excellence by reducing compute and storage unavailability. This initiative will increase the operational reliability of our IT infrastructure.

**Define the Benefit/Value to the Organization, Customer, Employee.**

1. Few outages to our systems (due to system overload and degradation of application performance) will lead to more customer satisfaction2. Higher availability of our systems will reduce revenue loss3. A better understanding of how our systems work and how to keep it up and running. With less unexpected downtimes, employees will have more time to perform value-added and engaging work

**How will you monitor and measure expected value?**

Current planned and unplanned outages and performance of applications and MTTR (Mean time to Resolution for failures) would serve as the baselines. These same metrics could be measured after successful implementation of this capacity refresh to monitor and measure value.

**What alternatives have been considered?**

Continue to follow a reactive approach to lessen applications workloads by moving the compute and storage demand to various performance tiers within the Powermax infrastructure. There is a lot of operational and administrative overhead with these reactive approaches.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2024-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $527,471 | $524,780 | **$1,052,251** |
| Opex | $21,606 | $20,035 | **$41,641** |
| **Total** | **$549,077** | **$544,814** | **$1,093,891** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-006 |
|---|---|

| Business Case Name | Conference Room Audio Video Support |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Endpoint Technology Experience |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE does not have the internal capacity, capability nor technical ability to support the current Audio Visual equipment in the 500 plus conference rooms at 50 plus corporate facilities in the state and leverages this agreement to provide the expected customer service levels. This project will provide the funding for the continuation of a Managed Service Agreement with NBS to provide onsite support for all conference rooms. |
| What system or process is being affected? | Onsite collaboration capabilities that supports the business of DTE. |
| What functionality or capability is being provided? | Technical expertise and hardware necessary for conference room collaboration capabilities. |
| What is the customer or employee value? | Provides the technology and support necessary for onsite conference room communication connection to maintain employee productivity. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | Provide full technical support of the Audio Visual equipment in over 500 conference rooms at 50 DTE facilities around the state. |
| 2) | Inventory and prevantative maintenance of AV equipment in the conference rooms |
| 3) | Enhanced support of Executive floors |
| 4) | Break fix of of AV hardware and software systems |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | February | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 10 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $250,000 | $0 | $0 | $0 | $0 | $250,000 |
| O&M | $66,000 | $0 | $0 | $0 | $0 | $70,000 |
| Total | $316,000 | $0 | $0 | $0 | $0 | $320,000 |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001318 | Conference Room Audio Video Support |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Steve Bennett |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE does not have the internal capacity, capability nor technical ability to support the current Audio Visual equipment in the 500 plus conference rooms at 50 plus corporate facilities in the state and leverages this agreement to provide the expected customer service levels. This project will provide the funding for the continuation of a Managed Service Agreement with NBS that provides onsite physical replacement and/or upgrade to existing conference room Audio Visual hardware support for all conference rooms.

**What functionality or capability is being provided?**

This effort will provide the necessary technical expertise and hardware to maintain the hardware located in DTE conference rooms to ensure effective collaboration capabilities for the business users who have registered the room.
DTE is constantly evaluating next generation collaboration hardware (which is not a part of this effort) in order to ensure the best possible experience for the user. To specifically identify OEM (Original Equipment Manufacturer) equipment would keep DTE from being able to provide improved conference room solutions.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the operational excellence, strategies and maintains the goal of zero impact to employee productivity.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Provides the technology and support necessary for onsite conference room communication connection to maintain employee productivity. The outcome of the business case is to provide exceptional customers service in relation to the support of conference rooms, and the inventory and maintenance of AV equipment in them.

**How will you monitor and measure expected value?**

We will monitor this effort through Incident Management captured data as well as utilize average mean time to repair metrics.

**What alternatives have been considered?**

1) Do Nothing: Without the necessary maintenance, enhancement, and testing, conference room hardware for collaboration purposes would experience degraded service or complete failure causing an impact to the daily work effort of business users in team meetings or other collaborative events.
2) Outsource to a new vendor: Endpoint department works directly with purchasing and procurement to identify the most cost effective vendor and hardware that meets requirements of DTE. Currently, we have an agreement with a local company - NBS

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $229,000 | $500,000 | $750,000 | **$1,479,000** |
| **Total** | **$229,000** | **$500,000** | **$750,000** | **$1,479,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-002 | Business Case Name | UPS Data Center Modernization and Optimization |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations | Business Unit | Enterprise |
|---|---|---|---|
| IT Sub-Portfolio | Infrastructure and Operations | Business Unit Director | Pankaj Sharma |
| IT Director | Pankaj Sharma | Business Unit SME | |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health | Initiative Type | Operational |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | This opportunity is comprised of the replacement of a single Enterprise Uninterruptible Power Supply (UPS).<br>The DTE Enterprise Data Centers store the full complement of the physical assets that host DTEs Business Applications, Data and Network. As DTE implements new solutions for the business the core infrastructure of the Data Centers must be able to respond to the new and increasing demand to power and the existing UPS that supports this effort is failing and we will not be able to recover within the business mandated SLAs which will cause an extended outage as we attempt to recover manually. |
| What system or process is being affected? | The replacement of the UPS in the data centers are enterprise wide solutions. All departments within the enterprise will benefit from security provided by a supported UPS and data centers that are optimized and modernized to the fullest potential |
| What functionality or capability is being provided? | Unplanned Outage Frequency (Incidents) should decrease and Power Draw Resiliency will be benefitted |
| What is the customer or employee value? | This effort provides DTE with the foundation to be the best run energy company in North America. In that DTE depends on a stable Data Center environment to host its complete portfolio of applications and data. Failure of any key Data Center asset can result in unplanned outages which will decrease customer satisfaction, lower employee engagement and mandate costly, corrective maintenance. This effort will ensure that the applications, data and processing of said are capable of supporting the power requirements of the assets that host these applications and inherent data. |
| What alternatives have been considered? | None. Due to the fact that the Hardware assets that hosts the businesses asspplications require a power structure resiliency in order to maintain the required uptime for daily operations, no alternatives are possible without impacting the existing capital budget and the resiliency of the applications. |

| Key Objectives | |
|---|---|
| 1) | Purchase, Replace, Configure and Deploy a new UPS. Decouple and remove the current failing UPS. |
| 2) | Design and implement asset/application outage/cutover plan to ensure re-connection of the new UPS. |
| 3) | Validate asset power draw upon implementation. |
| 4) | Establish monitoring and report thresholds that indicate increased utlization or response planning. |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | | Funding Source | ITS |
|---|---|---|---|---|---|
| Duration to Complete | 1 | Years | 0 Months | | |
| End Month | January | 2023 | | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $1,210,000 | $0 | $0 | $0 | $0 | **$1,210,000** |
| O&M | $320,000 | $0 | $0 | $0 | $0 | **$320,000** |
| Total | $1,530,000 | $0 | $0 | $0 | $0 | **$1,530,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001339 | Data Center Modernization and Optimization |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Donald J Poterek |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

The current secondary and primary data centers where the hardware that hosts the business applications are no longer meeting the industry standards required by DTE which include having a floor that can support the newer, heavier equipment, consolidating equipment into racks to increase utilization, aligning those racks into hot aisles and cold aisles to increase cooling efficiency, and updating battery banks to better technologies that last longer and require less maintenance.
These problems will be rectified after a thorough evaluation of the core components that make up the data centers. This evaluation will provide us with the actions necessary to re-establish capabilities required for the health and security of our existing business hardware and respond to the new and increasing demand from forthcoming business driven projects. Analysis will determine the viability of the supporting floor (tiles, stanchions, load bearing limits), rack utilization and physical deployment (hot & cold aisles, usage), Universal Power Supply (UPS) health (battery health, cabling), UPS utilization (necessary power draw and redundancy), UPS End-Of-Life, Overhead Cabling vs underfloor, HVAC (Cooling demands), Power Distribution Unit (PDU) replacement with "smart" PDUs that can be monitored and controlled remotely, and Floor physical architecture.
The analysis will be completed and reviewed in the first half of 2022 with work commencing mid-year after as detailed in the recommended solution below.

**What functionality or capability is being provided?**

The solution will provide a floor system at the ADC that will be able to withstand greater loads which is needed for the newer equipment that will be installed in the future as it is heavier and more dense. In addition, the equipment racks will be set up in more efficient, cold aisles that will maximize the utilization of the available space as well as improve cooling efficiency resulting in direct O&M savings. New batteries using new technologies such as Lithium Ion will greatly reduce the annual maintenance costs by up to 50% as well as reduce future capital expenditures since they last up to twice as long. Retiring the SB60 data center will result in additional O&M facility savings and UPS/battery maintenance costs. Smart PDUs will allow for discreet power monitoring and control of IT equipment which will enable more efficient operations.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the goals for the operational excellence and continuous improvement strategic direction.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| This effort provides DTE with the foundation to be the best run energy company in North America. In that DTE depends on a stable Data Center environment to host its complete portfolio of applications and data. Failure of any key Data Center asset can result in unplanned outages which will decrease customer satisfaction, lower employee engagement and mandate costly, corrective maintenance. This effort will ensure that the applications, data and processing of said are capable of supporting the power requirements of the assets that host these applications and inherent data. |

| How will you monitor and measure expected value? |
|---|
| Upon completion of this effort, we will be able to use baseline outages to monitor Data Center failure responses – Time to Repair, Hardware and Physical building issues, and correlate with external impacting events for root cause analysis. Empirically, value will be described by the actual failures and the cost of the repair in correlation to lost work hours; comparison of repair cost to overall implementation cost; revenue and personnel business impacts. |

| What alternatives have been considered? |
|---|
| The data centers are established physical buildings that cannot be moved without substantial budgetary increases, as well as increased probability of impacts to the business.<br>Do Nothing: Not replacing end of life components such as the UPS and battery banks puts the data center at a grave risk if there is an interruption in power supplying the data centers. Maintenance and repair costs will be higher as well. Leaving the floor as is limits the ability to utilize newer, denser, more efficient equipment. Leaving the equipment racks oriented as they are today ensures that we are inefficiently cooling the data centers and spending extra money on power. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2024-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $750,000 | $2,100,000 | **$2,850,000** |
| **Total** | **$750,000** | **$2,100,000** | **$2,850,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002499 | Data Center Modernization and Optimization |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Donald J Poterek |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

The current secondary and primary data centers where the hardware that hosts the business applications are no longer meeting the industry standards required by DTE which include having a floor that can support the newer, heavier equipment, consolidating equipment into racks to increase utilization, aligning those racks into hot aisles and cold aisles to increase cooling efficiency, and updating battery banks to better technologies that last longer and require less maintenance.
In 2022, A thorough evaluation of the core Data center components was completed on the Uninterruptable Power Supply (UPS) health (battery health, cabling), UPS utilization (necessary power draw and redundancy), UPS End-Of-Life, Power Distribution Unit (PDU) replacement with "smart" PDUs that can be monitored and controlled remotely, and Floor physical architecture. This evaluation provided DTE with the actions necessary to re-establish capabilities required for the health and security of our existing business hardware and respond to the new and increasing demand from forthcoming business driven projects.

**What functionality or capability is being provided?**

New UPS's are replacing existing end-of-life UPS's and will be lighter and more compact and efficient. New batteries using new technologies such as Lithium Ion will greatly reduce the annual maintenance costs by up to 50% as well as reduce future capital expenditures since they last up to twice as long. Smart PDUs will allow for discreet power monitoring and control of IT equipment which will enable more efficient operations.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the goals for the operational excellence and continuous improvement strategic direction.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This effort provides DTE with the foundation to be the best run energy company in North America. In that DTE depends on a stable Data Center environment to host its complete portfolio of applications and data. Failure of any key Data Center asset can result in unplanned outages which will decrease customer satisfaction, lower employee engagement and mandate costly, corrective maintenance. This effort will ensure that the applications, data and processing of said are capable of supporting the power requirements of the assets that host these applications and inherent data.

DTE

| How will you monitor and measure expected value? |
|---|
| Upon completion of this effort, we will be able to use baseline outages to monitor Data Center failure responses – Time to Repair, Hardware and Physical building issues, and correlate with external impacting events for root cause analysis. Empirically, value will be described by the actual failures and the cost of the repair in correlation to lost work hours; comparison of repair cost to overall implementation cost; revenue and personnel business impacts. Additionally, budget would be monitored for lower maintenance costs and few future capital expenditures. |

| What alternatives have been considered? |
|---|
| The data centers are established physical buildings that cannot be moved without substantial budgetary increases, as well as increased probability of impacts to the business.<br>Do Nothing: Not replacing end of life components such as the UPS and battery banks puts the data center at a grave risk if there is an interruption in power supplying the data centers. Maintenance and repair costs will be higher as well. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-01 | 2027-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | FY26 | FY27 | Total |
|---|---|---|---|---|
| Capex | $800,000 | $500,000 | $400,000 | **$1,700,000** |
| **Total** | **$800,000** | **$500,000** | **$400,000** | **$1,700,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-013 | Business Case Name | Endpoint End Of Life Electric |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations | Business Unit | Enterprise |
|---|---|---|---|
| IT Sub-Portfolio | Infrastructure and Operations | Business Unit Director | Pankaj Sharma |
| IT Director | Pankaj Sharma | Business Unit SME | |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health | Initiative Type | Operational |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | In order to return to Asset Standard Compliance by the end of 2020 and accommodate appoximately 2,669 Endpoint and MDT devices, older devices must be replaced. Also taken into consideration is a 7% growth in new hires. |
| What system or process is being affected? | Example: Performance monitoring of critical applications |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Example: The value of completing the project is real-time contact center response time reporting vs. hourly reporting, improved user interface - dashboard view vs. emailed report, targeted troubleshooting and faster root cause analysis, low configuration solutions (i.e., less administrative work), and reducing waste. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | 2020 Endpoint End of Life (EOL) Device Replacements: Replace approximately 2669 endpoint devices (2553 endpoints and 116 MDT's) greater than 5 years old |
| 2) | Endpoint New Growth Devices: Business unit new hire growth approximately 7% annual (HR estimate of 700 new hires across the corporation) |
| 3) | Mobility Growth Related Devices: Replace a limited number of Non-EOL desktop devices with mobile devices each year |
| 4) | Endpoint Break/Fix: Repair or replace Non-EOL devices which are not covered under warranty |
| 5) | Business unit requests for 5 or more devices will be considered project work and outside the scope of this business case due to the hardware and labor costs involved |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | | Funding Source | ITS |
|---|---|---|---|---|---|
| Duration to Complete | 0 | Years | 11 Months | | |
| End Month | December | 2022 | | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $2,000,000 | $0 | $0 | $0 | $0 | **$2,000,000** |
| O&M | $650,001 | $0 | $0 | $0 | $0 | **$650,000** |
| Total | $2,650,001 | $0 | $0 | $0 | $0 | **$2,650,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001320 | Digital Worker Experience Electric End Of Life |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Steve Bennett |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

The primary interface devices used by the employees of DTE to access business systems, communications and data are on Laptops, desktops, tablets, smart devices, and ruggedized field computers. These devices become degraded after 5 years of service and due to the age and versions of the internal components such as (mother boards, storage and wireless radios). In order to maintain the necessary interfacing connectivity to DTE business systems, communications and data, we must replace these devices to maintain the requirements of the business users.

Old verbiage: In order to return to Asset Standard Compliance by the end of 2023 and accommodate approximately 2553 Endpoint devices, older devices must be replaced. Also taken into consideration is a 7% growth in new hires.

**What functionality or capability is being provided?**

This effort replaces endpoint devices that have matured to an end of life status in order to maintain and sustain the endpoint device connectivity, access, and security necessary for end user capabilities as required by their work demands.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the operational excellence, strategies and maintains the goal of zero impact to employee productivity.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures employees are able to complete daily work effort. The outcome of this business case is to refresh older endpoint devices in alignment with the Asset Standard Compliance plan by the end of 2023. Newer devices will improve the employee experience by reducing downtime and improving performance and productivity.

**How will you monitor and measure expected value?**

We will monitor this effort through Incident Management captured data as well as utilize average mean time to repair metrics.

**What alternatives have been considered?**

The introduction of other original equipment manufacturers assets into the endpoint mix would have required a redesign of the secure operating system packages, a distinctive set of patching protocols and the need to increased personal to maintain and sustain the different assets introduced to the workforce. This option was rejected as the investment cost would have increased for every new "non-standard" asset introduced.
The alternative considered would be to not refresh these core components, increasing the likelihood of system and personnel downtime, causing interruption to normal business operations, and determined unacceptable to daily operations.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | No | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $2,336,000 | $2,650,000 | $2,650,000 | **$7,636,000** |
| **Total** | **$2,336,000** | **$2,650,000** | **$2,650,000** | **$7,636,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-010 |
|---|---|

| Business Case Name | End Of Life Asset Replacements |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE currently has old and unsupported versions of hardware and software running in its Data Centers. The hardware is expensive to support and in some cases, spare parts are hard to find. The old versions of software are no longer supported by the vendors, which leaves DTE exposed to hacking as the software no longer is patched to address vulnerabilities. This business case will fund the installation and configuration of new hardware and software environments in the data center to improve our overall risk exposure. |
| What system or process is being affected? | Example: Performance monitoring of critical applications |
| What functionality or capability is being provided? | Example: The following functionality will be provided by implementing this project: Application Performance Monitoring, Infrastructure and Network Performance Monitoring. |
| What is the customer or employee value? | Example: The value of completing the project is real-time contact center response time reporting vs. hourly reporting, improved user interface - dashboard view vs. emailed report, targeted troubleshooting and faster root cause analysis, low configuration solutions (i.e., less administrative work), and reducing waste. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

| Key Objectives | |
|---|---|
| 1) | An additional 25% of IDSS end-of-life hardware or software will be replaced thereby reducing DTE's overall risk exposure. |
| 2) | |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $500,000 | $0 | $0 | $0 | $0 | **$500,000** |
| O&M | $35,000 | $0 | $0 | $0 | $0 | **$30,000** |
| Total | $535,000 | $0 | $0 | $0 | $0 | **$530,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001319 | End Of Life Asset Replacements |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

DTE currently has old and unsupported versions of hardware and software like servers, storage, databases, and operating licenses running in its Data Centers. The hardware is expensive to support and in some cases, spare parts are hard to find. The old versions of software are no longer supported by the vendors, which leaves DTE exposed to hacking as the software no longer is patched to address vulnerabilities. This business case will fund the installation and configuration of new hardware and software environments in the data center to improve our overall risk exposure. This is a continuous effort that will carry on from 2023 through 2025.

**What functionality or capability is being provided?**

Sustainability of the assets that hosts the business applications to meet the demands of the business users.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with the goals for the operational excellence and continuous improvement strategic direction.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Provides a normalized environment for the business applications and ensures business demands are met without extraordinary effort.  This business case will fund the installation and configuration of new hardware and software environments in the data center to improve our overall risk exposure. To be replaced include IT Assets (Servers, Storage, DB, and MW components) that are beyond asset life-cycle threshold and in danger of not being supported by corresponding OEM vendors.

DTE

| How will you monitor and measure expected value? |
|---|
| Service Now dashboard S3 metrics captures/monitors the performance as follows:<br>1) % Incident assignments responded in time<br>2) % Incidents resolved in Time<br>3) IDSS Incident response Metrics<br>4) IDSS Incident Resolution Metrics<br>5) IDSS Successful Change - By Quarter<br>6) IDSS Unsuccessful change - By Quarter<br>7) IDSS New Incidents - Sum By Week<br>8) IDSS New Requested Items - Sum by Week |

| What alternatives have been considered? |
|---|
| The do nothing alternative was rejected as assets would have the potential for increased outages and interruptions of service would increase by 33% based on evaluation of standards from the National Institute of Standards and Technology. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $500,000 | $500,000 | $500,000 | **$1,500,000** |
| **Total** | **$500,000** | **$500,000** | **$500,000** | **$1,500,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002889 | Field Worker Electric  End Of Life |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Distribution Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Daniel G Rose |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

The lifecycle of the current Mobile Data Terminal (MDT) fleet has been stretched to the point that field crew are experiencing multiple device and connectivity failures.  This impacts the crew's ability to gain insight into customer issues and outages, provide updates to leadership and customer service, communicate resolution and closure of customer concerns in a safe and efficient way.

**What functionality or capability is being provided?**

Mobile Data Terminal is a computerized device used on mobile devices (Devices in transit or devices that are mounted on systems that are always on the move) to communicate with a centralized control system. Mobile data terminals are equipped with technology to provided maps and information systems regarding geographic locations and other information relevant to the tasks and actions performed by the devices they are mounted on. These capabilities allow field workers to resolve customer issues and provides input to customer service representatives so they may effectively respond to customer queries.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort directly impacts safety and operational excellence.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This effort provides DTE field crews with technology that provides the ability to reliably address customer issues, react to line downs during storms, prevent safety incidents and communicate effectively with systems and leadership.

**How will you monitor and measure expected value?**

Service Now incident management tickets related to MDT failures would be utilized to monitor the health of the devices.

**What alternatives have been considered?**

Do nothing: This will continue to impact operational excellence and the ability to respond to customer issues during field operations including storms.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-02 | 2026-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY24 | FY25 | FY26 | Total |
|---|---|---|---|---|
| Capex | $900,000 | $900,000 | $900,000 | **$2,700,000** |
| **Total** | **$900,000** | **$900,000** | **$900,000** | **$2,700,000** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002421 | Load Balancer Asset Health and Re-Engineering |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Shared Infrastructure |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Raghava Manda |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

F5's are reaching end of life in 2025 and unsupported versions of F5's would be vulnerable for hackers and approximately 4000 URL's would be at risk. Some of these URL's are external facing to our customers and without the replacement of the F5's, DTE's operational business activities would be impacted.
This problem provides an opportunity to procure Virtual load balancers for a modern architecture and engineering approach. Virtual load balancers are virtualized application delivery controller software that helps to distribute network traffic load amongst backend servers. Virtual Load Balancers are software-based load balancing solutions that help manage load effectively while still offering exceptional performance and scalability.

**What functionality or capability is being provided?**

Here are some of the capabilities of virtual load balancers:
A virtual load balancer can handle traffic loads and spikes and increase a website’s overall capacity.It gains an edge over hardware machines as it’s scalable and flexible.It improves the performance of a website, simplifies the network, and reduces costs.It speeds up the delivery time of a website by effectively distributing traffic over multi-server hosts.It relieves stress from an application server by switching between various servers automatically.It helps the server not exceed its capacity while still managing low-traffic requests efficiently.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with DTE's operational excellence strategy and with the implementation of software-based load balancers, operational risk would be minimized.

**Define the Benefit/Value to the Organization, Customer, Employee.**

1) Replacement of F5's with the software-based solution will ensure elimination of all the vulnerabilities, providing significant value to both organization and customers.
2) IT & BU productivity: Upto 4 hours a week would be freed up in support and maintenance as the need for hardware is eliminated.

DTE

| How will you monitor and measure expected value? |
|---|
| 1) Operational workload of resources would be monitored post-implementation of this effort.<br>2) The system uptime would be monitored.<br>3) Security level compliance would be measured and monitored according to IPS outlined protocols. |

| What alternatives have been considered? |
|---|
| 1) Do Nothing: The load balancers are reaching End of Life and a Do Nothing approach would significantly impact the enterprise.<br>2) Continue using hardware-based load balancers by replacing them one-to-one impacting the O&M costs and supporting the outdated technology rendering the use of modern architecture. (Based on the vendor quotes, hardware replacement requires as much as twice the capital compared to software-based load balancers) |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-01 | 2026-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | FY26 | Total |
|---|---|---|---|
| Capex | $466,000 | $466,000 | **$932,000** |
| **Total** | **$466,000** | **$466,000** | **$932,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-008 | Business Case Name | Microwave End Of Life |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations | Business Unit | Enterprise |
|---|---|---|---|
| IT Sub-Portfolio | Infrastructure and Operations | Business Unit Director | Pankaj Sharma |
| IT Director | Pankaj Sharma | Business Unit SME | |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health | Initiative Type | Operational |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | In order to continue support Corporate Wide Area Network (WAN); Field Communication Network (FCN), which includes Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI); and voice-expanding Networks; equipment at End of Life (EOL) must be replaced. |
| What system or process is being affected? | Corporate Wide Area Network (WAN); Field Communication Network (FCN), which includes Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI). |
| What functionality or capability is being provided? | Ensures the health and capability of devices and networks that support: Corporate Wide Area Network (WAN); Field Communication Network (FCN), which includes Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI) |
| What is the customer or employee value? | Provides fully capable devices and networks for internal requirements that support our customer base. |
| What alternatives have been considered? | Annually, alternatives are considered based upon improvements to hardware assets and customer driven demand and vetted against impact to financial considerations and corporate directives for adoption or rejection. |

| Key Objectives | |
|---|---|
| 1) | Continued Identification of the applications that pass through the existing microwave hardware and provide leadership and end users with a communication plan for implementation |
| 2) | Implementation and configuration of Microwave End-of-Life hardware and configurations<br>a. Identification of the impacted application and development of communication plan<br>b. Identify and prioritize EOL Microwave locations<br>c. Upgrade & replace old EOL microwave link to over 189 Mbs data rate<br>d. Where possible incorporate failover paths into the DTE Fiber ring<br>e. Install backup generators at critical microwave hub sites<br>f. Install new microwave along with higher bandwidths to several sites that will eliminate leased lines and O&M costs<br>g.Rold Cambium microwave to new Aviat equipment (better vendor support, better scalability and reliability) and 50 to 189 Mbs data rates on paths determined by item b<br>h. Replace all Channel Banks by converting remaining analog circuits to Ethernet Configuration of the switches and routers based upon network requirements and industry standards |
| 3) | Please double click Items 1. and 2. to view more information within their cells. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $40,001 | $0 | $0 | $0 | $0 | **$40,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $40,001 | $0 | $0 | $0 | $0 | **$40,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001329 | Microwave End Of Life |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Mikael Gandy |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

In order to continue support Corporate Wide Area Network (WAN); Field Communication Network (FCN), which includes Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI); and voice-expanding Networks; equipment at End of Life (EOL) must be replaced.

**What functionality or capability is being provided?**

Ensures the health and capability of devices and networks that support: Corporate Wide Area Network (WAN); Field Communication Network (FCN), which includes Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI)
This investment includes replacement of microwave paths, 20 improvements to stabilize the microwave ring, and support changes mandated by 21 the FCC in deregulation of the 6 gigahertz (Ghz) frequency

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with the Business Unit multi-year Capital investment program for grid operations and remote site network usage.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Provides fully capable devices and networks for internal requirements that support our customer base. This continued implementation of the DTE Microwave Infrastructure provides the hardware; configuration and sustainment of higher network speeds and more efficient transmission of data, voice; and video for DTE offices in Service Centers, Power Plants, and key operational facilities.

**How will you monitor and measure expected value?**

Total assets remediated will be measured throughout this multi-year program.

**What alternatives have been considered?**

Annually, alternatives are considered based upon improvements to hardware assets and customer driven demand and vetted against impact to financial considerations and corporate directives for adoption or rejection. If nothing occurs, the end of life systems will fail and disrupt network service to service centers, substations, power plants and other critical locations.
Do Nothing: The company rejected a “do nothing” alternative as it would increase the potential for outages in microwave communications, failure to meet changes mandated by the FCC, and delay our ability to release telecom services.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $402,000 | $402,000 | $402,000 | **$1,206,000** |
| **Total** | **$402,000** | **$402,000** | **$402,000** | **$1,206,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002534 | Modernize Disaster Recovery tools |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Shared Infrastructure |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE must maintain operational resiliency for its business operations. Applications and data that support critical business processes must be able to recover from a data center disaster (weather, water damage, facility damage) or event. DTE has a custom built solution for disaster tolerance and recovery that supports SAP, Maximo and AMI systems. This solution is built on now obsolete technology and infrastructure.
This technology (DTHA Commander) has become increasing difficult and expensive to maintain and security risk increases as it is no longer supported by the operating system vendor. This system must be modernized in order to maintain the capability to withstand and recover from events that impact DTE's computing infrastructure.

**What functionality or capability is being provided?**

The capability being provided is business continuity and disaster recovery for DTE's computing infrastructure, specifically to support critical business applications such as SAP, Maximo and AMI systems. Modernizing the disaster recovery applications (DTHA Commander) restores the reliability of the aged, existing system and enhances automation capabilities. These systems support DTE's work management, asset management, and field operations and must be operationally resilient to recover from failures.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This project is aligned to business goals for operational resiliency as well as IT goals for application availability, asset health, and strategic use of modern and cloud technologies.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| The benefit and value provided to the organization is to ensure business continuity and uninterrupted business operations that affect our employees and customers. • DTE's external customers have exceeding high expectations for reliable energy to meet their needs and business requirement. This project supports their expectations by returning the DTHA application to a supportable state that will continue to support the SAP, Maximo and AMI systems that support field operations • DTE's ITS organization will benefit from having a fail-over system and application which will be supported by a vendor, easier to maintain, and built using modern technologies. Additional automation will reduce the amount of time internal IT resources required to perform a system recovery action • DTE's organization and employees need access to these critical applications to do their job to support both their internal and external customers - providing them with uninterrupted access to critical business applications |

| How will you monitor and measure expected value? |
|---|
| Metrics used to measure the expected value include: 1. Reduction of security risks and vulnerabilities due to unsupported vendor operating system and software<br>2. Improved Mean time to restore system/application before project and after project.2. Improved Mean labor costs incurred from point of failure to point of restoration. |

| What alternatives have been considered? |
|---|
| The alternatives that have been considered include:1. Do nothing. Continue using the existing system which results in greater security concerns, cost, time and effort to maintain. This includes internal resources that must be trained/knowledgeable in the outdated technologies and risk of technology failure2. Modernize the tools. Identify a commercial solution which can be acquired and implemented to provide the required disaster recovery capabilities for the SAP, Maximo, and AMI applications and databases. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-01 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | FY26 | Total |
|---|---|---|---|
| Capex | $500,000 | $500,000 | **$1,000,000** |
| Opex | $20,000 | | **$20,000** |
| **Total** | **$520,000** | **$500,000** | **$1,020,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-011 |
|---|---|

| Business Case Name | Network Advanced Metering Infrastructure Support |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Mikael Gandy |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Current Advanced Metering Infrastructure (AMI) network architecture and infrastructure need enhancement to provide more flexibility and reliability, due to coverage issues related to both environmental and signal strength. This will maximize the usage of the assets with more precision, which assists in improving the read rate and throughput. Additionally this effort improves operational return to health for the TropOS mesh. |
| What system or process is being affected? | With improvements in coverage and signal strength as well as reliability, we will be able to provide a robust network and return the assets to health. |
| What functionality or capability is being provided? | Potential use of the GenX network Radios on this system will allow for Pole Top Devices and Overhead Capacitor systems to utilize the DTE private Network approximately 6000 devices of the next 5 years. |
| What is the customer or employee value? | Enhancing the AMI Mesh backhaul will provide bandwidth to operate at an on-demand basis. Potential to reduce MPSC complaints and customer complaints. Enhanced Communications Infrastructure will improve the work flow for several operating groups in both DO and IT. |
| What alternatives have been considered? | Example: Continue emailing reports and dashboard manually which is labor intensive and does not provide the monitoring reports in a timely manner. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Projection of new AMI equipment load to the existing Mesh |
| 2) | Analysis to determine the impact of the AMI data and processing requirements on the existing environment and propose new or enhanced network equipment to resolve the increase of capacity requirements |
| 3) | Implementation and testing of the identified hardware/software necessary to enhance the AMI Mesh |
| 4) | Incorporation and testing with the AMI Team to ensure network connectivity meets requirements |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | | |
|---|---|---|---|
| Start Month | January | 2022 | |
| Duration to Complete | 0 | Years | 11 Months |
| End Month | December | 2022 | |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $2,200,000 | $0 | $0 | $0 | $0 | **$2,200,000** |
| O&M | $200,000 | $0 | $0 | $0 | $0 | **$200,000** |
| Total | $2,400,000 | $0 | $0 | $0 | $0 | **$2,400,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $60,000 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001330 | Network Advanced Metering Infrastructure Support |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | DTE Corporate Services |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Mikael Gandy |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

Current Advanced Metering Infrastructure (AMI) network architecture and infrastructure need improvements to provide more flexibility and reliability, due to coverage issues related to both environmental and signal strength.

**What functionality or capability is being provided?**

Projection of new AMI equipment load to the existing Mesh Analysis to determine the impact of the AMI data and processing requirements on the existing environment and propose new or improved network equipment to resolve the increase of capacity requirements Implementation and testing of the identified hardware/software necessary to improve the AMI Mesh Incorporation and testing with the AMI Team to ensure network connectivity meets requirements

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns with the Business Unit multi-year Capital investment program for Operational Technology supporting Advanced Metering Infrastructure.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This prudent investment ensures that AMI meters have the required backend infrastructure to provide send real time energy utilization data for bill analysis and billing. This investment is in direct support of the Company’s Distribution Grid Plan regarding telecommunications no regrets investment.

**How will you monitor and measure expected value?**

Total assets optimized, upgraded, installed will be measured throughout this multi-year program.

**What alternatives have been considered?**

While there are alternative technological solutions available, this would require a change of the existing AMI meter strategy resulting in tens of millions of dollars in expense.
Do Nothing: The Company opposes a do-nothing alternative. If we were to halt or reduce the efforts described in this investment, we would experience loss of customer data directly impacting bill generation. Additionally, instead of remotely viewing the status of the AMI meters, the Company would be required to send a field service team to evaluate and follow up with manual resolution further increasing costs, lowering customer satisfaction, and reducing response capabilities in the case of an outage.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

## IT Costs

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $2,200,000 | $2,200,000 | $2,200,000 | **$6,600,000** |
| Opex | $100,371 | $200,747 | $199,947 | **$501,064** |
| **Total** | **$2,300,371** | **$2,400,747** | **$2,399,947** | **$7,101,064** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-019 |
|---|---|

| Business Case Name | Network Data Center End Of Life Project |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Saikrishna Gangeddula |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Network assets supporting Electric Business have a definite end of life, without replacement these assets will become vulnerable to potential IT Security concerns and may provide a logical ingress point for bad actors (hackers). |
| What system or process is being affected? | Enterprise wide networks |
| What functionality or capability is being provided? | Ensures on-going capability of the devices to meet business requirements. |
| What is the customer or employee value? | Ensures that the work demand of the business meets their requirements for the processing of user enterprise data transference. |
| What alternatives have been considered? | None. No alternatives are possible without impacting the capital budget. |

Michigan Public Service Commission
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| Key Objectives | |
|---|---|
| 1) | Identification of the applications that pass through the aged Entrasys switches and development of a communication plan<br>Implementation and configuration of DC, and other MDF EOL Routers, Switches, and protocols |
| 2) | The scope of this business case will support achieving improved performance (in existing operational process gaps, metrics, etc.) by:<br>a. Providing reliable, efficient, and redundant network connectivity between the Data Centers<br>b. Ensures increased capability of application failover between data centers<br>c. Increased reliability of the switches and routers<br>d. Provides enhanced security<br>e. Asset life cycle compliance<br>f. Unplanned outages |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases.**<br>**Total** |
|---|---|---|---|---|---|---|
| Capital | $405,246 | $0 | $0 | $0 | $0 | **$410,000** |
| O&M | $35,692 | $0 | $0 | $0 | $0 | **$40,000** |
| Total | $440,938 | $0 | $0 | $0 | $0 | **$450,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001331 | Network Data Center End Of Life Project |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | DTE Corporate Services |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Saikrishna R Gangeddula |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

Network assets supporting Electric Business have a definite end of life, without replacement these assets will become vulnerable to potential IT Security concerns and may provide a logical ingress point for bad actors (hackers).

**What functionality or capability is being provided?**

Business applications with a requirement of failover and backup capabilities rely on the operability of data-center core switches and routers to ensure continuity in the event of an unplanned outage.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This is a sustain business case for the enterprise. As such it is aligned with the following ITS (CIO) priorities. * Mature our operating performance with digital resiliency capabilities * Strengthen our strong security posture, focusing on operational technology resiliency * Transform DTE’s capabilities through execution of NGU and BU initiatives and projects

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures that the work demand of the business meets their requirements for the processing of user enterprise data transference. This effort will improve asset health by replacing end of life devices in order to ensure security and capability. Thus ensuring more realizable, robust and secure networks.

**How will you monitor and measure expected value?**

The currently defined metrics/measures defined in Best Operating Scorecard, including Asset Health and Operational metrics for Network Engineering, would be used for monitoring and measuring value expected.

**What alternatives have been considered?**

Replacing the existing core switches and routers with alternative products would cost the Company $5-$10 8 million.

Do nothing: The do-nothing alternative was rejected as this would increase the likelihood of system and personnel downtime, causing interruption to normal business operations.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $933,082 | $450,000 | $450,000 | **$1,833,082** |
| Opex | $40,014 | $40,000 | $40,000 | **$120,014** |
| **Total** | **$973,096** | **$490,000** | **$490,000** | **$1,953,096** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-018 |
|---|---|

| Business Case Name | Network End Of Life Electric |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Saikrishna Gangeddula |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Operational |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Network assets supporting Electric Business have a definite end of life, without replacement these assets will become vulnerable to potential IT Security concerns and may provide a logical ingress point for bad actors (hackers). |
| What system or process is being affected? | Enterprise wide networks |
| What functionality or capability is being provided? | Ensures on-going capability of the devices to meet business requirements. |
| What is the customer or employee value? | Ensures that the work demand of the business meets their requirements for the processing of user enterprise data transference. |
| What alternatives have been considered? | None. No alternatives are possible without impacting the capital budget. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Identification of End-of-Life (EOL) Network Infrastructure<br>Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2024. |
| 2) | Implementation of EOL Network Hardware<br>Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2024. |
| 3) | Replace EOL network cabling.<br>Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2024. |
| 4) | Wireless LAN EOL<br>Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2024. |
| 5) | Network WAN Connectivity Improvements<br>Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2024. |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases.**<br>**Total** |
|---|---|---|---|---|---|---|
| Capital | $700,000 | $0 | $0 | $0 | $0 | **$700,000** |
| O&M | $320,000 | $0 | $0 | $0 | $0 | **$320,000** |
| Total | $1,020,000 | $0 | $0 | $0 | $0 | **$1,020,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001332 | Network End Of Life Electric |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Saikrishna R Gangeddula |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Operational |

**What business problem or opportunity are we trying to solve?**

Network assets supporting Electric Business have a definite end of life, without replacement, these assets will become vulnerable to potential IT Security concerns and may provide a logical ingress point for bad actors (hackers).

**What functionality or capability is being provided?**

This investment will maintain the core foundation for upcoming investments needed for new customer rates like Time of Use billing, and accounts for planned data loads as new electric-grid-control systems come online. It will further increase the size and capacity of existing equipment as key electrical-control points for required security upgrades. Examples of these improvements are support for perimeter intrusion detection and streaming real-time video surveillance at locations that are deemed critical or high. This updated infrastructure will provide improved stability and supportability across the network.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

As such it is aligned with the following ITS (CIO) priorities. * Mature our operating performance with digital resiliency capabilities * Strengthen our strong security posture, focusing on operational technology resiliency * Transform DTE’s capabilities through execution of NGU and BU initiatives and projects

**Define the Benefit/Value to the Organization, Customer, Employee.**

Ensures that the work demand of the business meets their requirements for the processing of user enterprise data transference.

**How will you monitor and measure expected value?**

The currently defined metrics/measures defined in Best Operating Scorecard, including Asset Health and Operational metrics for Network Engineering, would be used for monitoring and measuring value expected.

**What alternatives have been considered?**

The do-nothing alternative would have us not complete the refresh for core components as they reach the serviceable end of life. This was rejected as it would increase system and workforce demand and cause interruption to normal business operations and increase unplanned outages due to network device failures.

DTE

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | No | IT |

## IT Costs

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $880,000 | $700,000 | $700,000 | **$2,280,000** |
| Opex | $99,770 | $100,000 | $100,000 | **$299,770** |
| **Total** | **$979,770** | **$800,000** | **$800,000** | **$2,579,770** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

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DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

# Executive Summary

| Business Case ID | BCD-IS-22-002 | Business Case Name | Security Infrastructure Growth and End of Life |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Information Protection and Security | Business Unit | Security Infrastructure - Operations |
|---|---|---|---|
| IT Sub-Portfolio | Cyber Security Operations | Business Unit Director | Steve Herrin |
| IT Director | Steve Herrin | Business Unit SME | Anthony Amalraj |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health | Initiative Type | Infrastructure - On Prem |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE security infrastructure has components that reach end of life every year. Keeping this infrastructure at a level where it is operationally stable as well as supported by the vendor ensures that they are perpared for security vulnerabilities and the risk to DTE's network and data is reduced. This supports DTE IT's best operated strategy and ensures our critical infrastructure is secure. |
| What system or process is being affected? | DTE's key and critical security infrastructure systems |
| What functionality or capability is being provided? | Ability to support the growth in usage, operational stability and remediated vulnerabilities for security infrastructure |
| What is the customer or employee value? | Improved employee and customer experience - Security firmware being kept up to date reduces outages related to vulnerabilities and operational stability issues<br>Protection of customer, employee and corporate data: Avoid exploitation of vulnerabilities but patching the security infrastructure |
| What alternatives have been considered? | Alternative is to not perform hardware and firmware upgrades on security infrastructure. This would be unacceptable as it increases our vulnerabilities and reduces the barrier for exploitation of DTE's information systems. |

| Key Objectives | |
|---|---|
| 1) | Replace firewalls, VPNs, SFT, RADIUS, DNS, Qualys, Proxy that are at EOL |
| 2) | Upgrade the firmware on all security infrastructure components |
| 3) | Upgrade IAM and Sailpoint |
| 4) | Purchases additional licenses - AD Domain, Change Auditor, Quest Recovery Manager, Tripwire, CyberArk etc. |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 | | Funding Source | ITS |
|---|---|---|---|---|---|
| Duration to Complete | Years | 11 | Months | | |
| End Month | December | 2022 | | | |

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total (This is the business case cost for approval on all business cases.) |
|---|---|---|---|---|---|---|
| Capital | $1,397,052 | $0 | $0 | $0 | $0 | **$1,400,000** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total | $1,397,052 | $0 | $0 | $0 | $0 | **$1,400,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $40,000 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001315 | Security Infrastructure Growth and End of Life |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Anand K Shah |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE security infrastructure has components that reach end of life every year. Keeping this infrastructure at a level where it is operationally reliable as well as supported by the vendor ensures that they are free of security vulnerabilities and the risk to DTE's network and data is minimized. This supports the Company's best operated strategy and ensures our key and critical infrastructure is secure.
This project will replace end-of-life hardware/firmware appliances such as network firewalls, web proxy appliances, external Domain Name System (DNS), remote access appliances, internal certificate management system, and log collection servers. Additionally, asset firmware health management will update all firewalls, web proxy appliances, external DNS servers, remote access appliances, secure file transfer appliances, and Virtual Private Network (VPN) software.

**What functionality or capability is being provided?**

Ability to support the growth in usage, operational reliability and remediate vulnerabilities for security infrastructure.
Replace firewalls, VPNs, SFT, RADIUS, DNS, Qualys, Proxy, jump servers, domain controllers, endpoint protection that are at EOL. The list is illustrative.
Upgrade the firmware on all security infrastructure components.
Upgrade identity Access Management (IAM) and Sailpoint
Purchase additional licenses to meet demand - Change Auditor, Quest Recovery Manager, Tripwire, CyberArk etc.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

ITS Priorities
Strengthen our strong security posture, focusing on operational technology resiliencyMature our operating performance with digital resiliency capabilitiesTransform DTE's capabilities through execution of NGU and BU initiatives and projects

**Define the Benefit/Value to the Organization, Customer, Employee.**

Improved employee and customer experience - Security firmware being kept up to date reduces outages related to vulnerabilities and operational issues.
Protection of customer, employee and corporate data: Avoid exploitation of vulnerabilities by patching the security infrastructure.

DTE

| How will you monitor and measure expected value? |
|---|
| This is monitored via the ITS Best Operated Scorecard metric, Asset Health.<br>Our percentage of healthy key and critical assets will be greater than 90%. |

| What alternatives have been considered? |
|---|
| A 'do nothing' alternative is not acceptable as unmitigated cyber risks could lead to serious cyber incidents with financial and data loss implications. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $1,400,000 | $1,400,000 | $1,400,000 | **$4,200,000** |
| **Total** | **$1,400,000** | **$1,400,000** | **$1,400,000** | **$4,200,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $40,000 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001732 | Wide Area Network and Wireless Local Area Network Expansion |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Saikrishna R Gangeddula |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

## What business problem or opportunity are we trying to solve?

WAN: Assets used for telecommunication purposes are at end of life and do not meet the demand of the business. The incorporation of collaboration tools to regulate the load of the telephony infrastructure is not compatible nor sustainable.
WLAN: The current state of the wireless infrastructure requires expansion to cover new locations and additional points of activity. Thus ensuring network connectivity for field and knowledge workers at DTE locations. This is In alignment with the DTE strategy to reduce the need for wired network communications. The devices that support the daily business operations have reached the end of their serviceable life and are unable to be kept viable in order to meet the requirements of the business. Corporate WLAN expansion is needed to support the increased number of devices and network coverage. The current wireless components comprising the network at many DTE locations are not optimal as wireless requirements have changed since their original installation.

## What functionality or capability is being provided?

WAN: This investment provides the necessary backbone hardware to meet the telecommunications demand of the enterprise, and prepare for the increasing demands of a remote workforce. This project will replace the telephony platform with a more efficient one, align with the MicroSoft Teams application, and allow for e911 deployment. Implement WAN (Wide Area Network) redundancy for sites which are currently single WAN connected only Change technologies to meet the current and growing connectivity demand e.g.higher bandwidth demands Providing and enhancing WAN based business capabilities e.g. SIP(Session Initiation Protocol) Provide a robust, scalable, secure and manageable network telecommunications at the point and time of activity for our business partners/Customer Services Continue improving the Wide Area Network with hardware, software and services.
WLAN: Provides appropriate network communication needed for daily business operations, ensuring security and sustainability. Providing Network connectivity at every point of activity, e.g: 1) Network field crew in DTE trucks/vehicles with MDTs requiring external wireless connectivity outside DTE premises. 2) A plant operator needing to perform a safe worker observation at the point of activity.3) Improve wireless coverage for more densely populated areas with in DTE premises.

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

WAN/WLAN:
This is a return to health business case for the enterprise. As such it is aligned with the following ITS (CIO) priorities.

* Mature our operating performance with digital resiliency capabilities
* Strengthen our strong security posture, focusing on operational technology resiliency
* Transform DTE's capabilities through execution of NGU and BU initiatives and projects

## Define the Benefit/Value to the Organization, Customer, Employee.

WLAN: Provides fast, reliable, safe and dependable network connection at the point of activity enabling efficiency and speed of operations.
WAN: Upgrading the telecommunications platform across the enterprise (excluding Customer Service service which resides on a different system) will allow for a more efficient use of the network and accessibility.
Wide Area Network technologies enables the supporting of Call Center locations and Service Center locations who have direct communication with the customer. The solution will aid CR, Dispatch and Service Center support employees to better support Customers.
Improved Wide Area Network capabilities including, network connectivity speed, backhaul, bandwidth, redundancy, latency and reliability that will improve employee experience. Provide connectivity to all employees to any DTE locations with their choice of devices (Future of Where We Work)
Savings from the reduction in WAN incident tickets. Reduction of leases for external solutions footprint
WAN:
"Project Aligns to Safety (High Impact), Growth Opportunity (Medium impact), Employee Engagement (High Impact) . Operational Excellence (High Impact).
Savings from the reduction in WAN incident tickets and lease costs.
Wide Area Network related disconnects and performance issues will significantly reduce, in addition providing reliable connection in any point of activity within the DTE locations.Reduction of Unplanned Outages (Target: 20% reduction)
Deploying Next Generation infrastructure to support wide area connectivity for enabling high speed backhaul to support new and updated business applications and mobile technologies at DTE. Examples - Support for Teams/SIP based voice infrastructure.
Increased WAN Redundancy

## How will you monitor and measure expected value?

WAN:
Strategic Alignment: Significantly aligns with Employee Engagement and Operational Excellence
Customer Experience: Current State Metric Target: 20% reduction Increased WAN Redundancy (Target: TBD)
Employee Engagement: Improve Wide Area Network capabilities Metric Target: Approx. 20 additional sites No of Employees Impacted min 2000 up to entire DTE Enterprise
Affordability: Metric Target: Operational lease reductions approx $300K-500K per year
Cost/Benefit: Current State: Metric Target: This investment provides the necessary backbone hardware to meet the telecommunications demand of the enterprise, and prepare for the increasing demands of a remote workforce. Hence High IRR
Operational Reliability: Reduced Wide Area Network related incident tickets Metric Target: 20-30% reduction in WAN Incident tickets Network Utilization (Target <=80%)
Foundational Capability: Increase number of DTE locations with improved WAN capabilities Metric Target: Approx. 20 additional sites Network Utilization (Target <=80%) WLAN: The currently defined metrics/measures defined in Best Operating Scorecard, including Asset Health and Operational metrics for Network Engineering, would be used for monitoring and measuring value expected.

## What alternatives have been considered?

WLAN: Wireless solution is the alternative to hard wired networks, this is to cater to the new mobile applications which DTE is looking to implement.
WAN: Business capabilities based on network and telecommunications will be adversely impacted. e.g. if DTE doesn't adopt a SIP solution it could impact the Contact Center, if proper WAN redundancy is not developed the SOC business unit may not be able to communicate with the appropriate remote terminal units used in the field.

The do nothing alternative would not allow us to meet the requirements of the business, reduce connectivity availability, and delay the collaboration capabilities in service to the business of DTE and was rejected.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $599,999 | $600,000 | $1,000,000 | **$2,199,999** |
| Opex | $21,600 | $19,200 | $19,200 | **$60,000** |
| **Total** | **$621,599** | **$619,200** | **$1,019,200** | **$2,259,999** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-022 |
|---|---|

| Business Case Name | Virtual Desktop Infrastructure Asset Health |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Endpoint Technology Experience |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Brendan Arble |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Sustainment |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Current Virtual Desktop Infrastructure (VDI) cannot maintain performance and functionality to support uptick in VDI requests to support the workplace transformation. |
| What system or process is being affected? | Virtual Desktop Infrastructure (VDI) |
| What functionality or capability is being provided? | Providing an IT-managed Windows Virtual Desktop. |
| What is the customer or employee value? | Assists in workplace transformation<br>Required to provide a secure Windows desktop for non-DTE users (vendors, contractors, etc.)<br>Backbone of growing automation platform |
| What alternatives have been considered? | None. No alternatives are possible without impacting the Capital budget. |

| Key Objectives |
|---|
| 1) Maintain proper Virtual Desktop Infrastructure (VDI) capacity and performance to support growing VDI requests |
| 2) |

Michigan Public Service Commission
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3)
4)
5)
6)
7)
8)
9)
10)

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases.** Total |
|---|---|---|---|---|---|---|
| Capital | $260,001 | $0 | $0 | $0 | $0 | **$260,000** |
| O&M | $10,012 | $0 | $0 | $0 | $0 | **$10,000** |
| Total | $270,013 | $0 | $0 | $0 | $0 | **$270,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002397 | Virtual Desktop Infrastructure Asset Health |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Brendan J Arble |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

The current virtual desktop hardware including virtual desktops and virtual application cluster that hosts around 770 devices is reaching end of life by the end of 2023. This hardware provides secure virtual network connectivity to approximately 7000 users across the enterprise and without the necessary replacement there would be loss connectivity for all end users on utilizing the Virtual desktop infrastructure which would impact their ability to perform daily operations.

**What functionality or capability is being provided?**

Virtual Desktops and applications are a critical IT service used by over 7,000 DTE employees, contractors and vendors - 24x7x365 - accessed from across the globe.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This effort aligns with operational excellence and reducing operational risk by replacing the end-of-life hardware. Additionally, it helps improve employee engagement as around 100 VDI requests are received per quarter.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Customer Experience: VDI infrastructure is utilized by both internal (helpdesk team, applications) and external customers for secure virtual network connectivity. Implementation of this effort provides significant impact in terms of performance and efficiency of DTE's virtual assets.
Operational reliability: Replacement of end-of-life hardware ensures operational management and productivity maintenance.
Employee Engagement: This effort provides the necessary virtual connectivity to DTE's existing as well as new employees increasing productivity.

**How will you monitor and measure expected value?**

Service Now dashboard reporting would be utilized to monitor the asset health of the virtual assets. Additionally, asset health metrics would be defined to monitor the asset replacement schedule.

**What alternatives have been considered?**

1) Do Nothing: This option is not possible as it will result virtual connectivity loss for around 7000 users across the enterprise.
2) Azure was considered as an alternative solution however it was determined that the performance and efficiency of virtual desktops would not be optimal and the costs of procurement was significantly higher.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY24 | FY25 | Total |
|---|---|---|---|
| Capex | $980,000 | $565,000 | **$1,545,000** |
| **Total** | **$980,000** | **$565,000** | **$1,545,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-012 |
|---|---|

| Business Case Name | Afaria Upgrade/Replacement |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | IT Operations |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Dan Rose |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Return-to-Health |
|---|---|

| Initiative Type | Solutions Delivery - Cloud |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The current Afaria software product used at DTE is obsolete and is no longer supported. Upgrading the existing product is no longer an option because it would require several version enhancements and there would be significant cost associated with bringing the unsupported software to its most current version. The direction of Afaria has changed to a cloud strategy |
| What system or process is being affected? | The secure content distribution platform process which is currently using an antiquated version of Afaria is obsolete and is no longer supported. Upgrading to the most current version of the existing Afaria software might be considered. However, Afaria does provide a cloud-based solution. |
| What functionality or capability is being provided? | Afaria is a byte level content management tool for use by MDT devices used by DTE. It functions by allowing disparate networks to work as one. This patch and this enterprise mobility management tool enables the push of important safety information and ensures the delivery of the content files to the field device which is available at all times. |
| What is the customer or employee value? | The information required for our field workforce to perform their jobs safely and efficiently by using the most current underground and overhead maps available. The dependability of the information also needs to be timely to avoid any risk. The customer benefits with reduced downtime and is provided with a much more efficient system. |
| What alternatives have been considered? | The Alfaria's cloud-based application and Microsoft System Center Configuration Manager (SCCM). |

| Key Objectives | |
|---|---|
| 1) | Byte level content distribution of maps and information to MDTs |
| 2) | The safe, secure and consistent delivery of critical field informatio to the MDT devices. |
| 3) | Decommission current version of software. |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | February | 2022 | |
|---|---|---|---|
| Duration to Complete | Years | 6 | Months |
| End Month | August | 2022 | |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $300,488 | $0 | $0 | $0 | $0 | **$300,000** |
| O&M | $58,811 | $0 | $0 | $0 | $0 | **$60,000** |
| Total | $359,299 | $0 | $0 | $0 | $0 | **$360,000** |

## Business Unit Costs

| BU O&M | $25,000 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001362 | Network Segmentation (phase 2+) emergent extension |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Anand K Shah |
| **Managed By** | **PPS** |
| IT | 5.1 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| IT Enhancements | Operational |

**What business problem or opportunity are we trying to solve?**

Cyber threats continue to rise, and it has become increasingly important to add additional cybersecurity countermeasures to DTE networks. The intention of this business case is to achieve improved security posture and operational processes by controlling access to critical data center applications and thereby increasing our threat-defense capabilities. Resulting in more discrete control of system and network access.
Supply chain delays prevented the delivery of the eight Cisco N9K-FX3 network switches in YR2022. These network switches are needed to replace currently installed legacy network switches that are incompatible with other recently installed versions of the N9K-FX3 network switches. This incompatibility prevents the configuration of the Cisco Application Centric Infrastructure (ACI) technology that restricts traversing the DTE network. This also prevented the installation and use of firewalls to isolate applications running on obsolete operating systems.
The inability to deliver the network switch installations, application isolation requiring firewalls, and ACI configurations in YR2022 also requires funding be provided for this work in YR2024 extending into YR2025. This funding supports the labor and firewall hardware to support this work.

**What functionality or capability is being provided?**

Key Objectives:Payment and installation of Network Leaf Switches. (2024)
Isolate applications running on obsolete operating systems using firewalls and newly acquired network switches. (2024)
Migrate the Management Switches before starting Network Segmentation with Cisco ACI related to the VM racks. (2024)
Network Monitoring. Monitoring and management of identified key/critical application traffic to provide fine grain control. (2024)
Establish procedures and criteria for newly deployed key/critical systems to take advantage of the segmentation capabilities. (2024-2025)
Segment a prioritized list of applications from general network traffic will better protect from internal and external threats. Prevent lateral movement of malicious traffic and actors across the segments. (2025)

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Aligns to improving our overall security posture by providing network separation between critical systems. This prevents threats from traversing across the network and impacting other systems. More discrete control of system and network access.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Achieve improved security posture and operational processes by controlling access to critical data center applications and thereby increasing our threat-defense capabilities and protecting customer and employee data.
Cybersecurity Infrastructure Availability - 99.95%

**How will you monitor and measure expected value?**

Expected value would re-enforce the prevention of intruders accessing the DTE Network and compromising DTE applications.

**What alternatives have been considered?**

"Do Nothing" alternative means DTE should continue with the traditional network configuration with firewall prevention and security authorization. Any potential impact to a vulnerable system/ application could potentially have larger impact on other systems and applications due to lack of segmentation. These network switches are needed to replace currently installed legacy network switches that are incompatible with other recently installed N9K-FX3 network switches. This incompatibility prevents the configuration of the Cisco Application Centric Infrastructure (ACI) technology that restricts traversing the DTE network. Not having the N9K-FX3 network switches also prevents the installation and use of firewalls to isolate applications running on obsolete operating systems.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-31 | Yes | IT |

**IT Costs**

| Type | FY22 | FY23 | FY24 | FY25 | FY26 |
|---|---|---|---|---|---|
| Capex | $1,842 | $500,303 | $504,903 | $403,873 | $500,000 |
| Opex | | | $10,600 | $275,605 | |
| **Total** | **$1,842** | **$500,303** | **$515,503** | **$679,478** | **$500,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

**Total**

**$1,910,921**
**$286,205**
**$2,197,126**

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001682 | Self-healing Endpoint Automation |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Vikram C Bhatt |
| **Managed By** | **PPS** |
| IT | 2.8 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| IT Enhancements | Solutions Delivery - On Prem |

## What business problem or opportunity are we trying to solve?

This effort is in response to the need for a refined tool and methodology by which we ensure our employees utilized Endpoint equipment that maintains the functional and security requirements mandated by the Enterprise.
Currently, endpoint management is not optimal in terms of remote re-imaging and is designed more for digital workers on-premises as most of DTE IT employees work from home since the pandemic. This causes time delay in resolving employee's endpoint related issues like rebooting, domain drop-off etc. Currently, this is resolved via endpoint device having to be dropped off on DTE premises IT Tech Hub. This results in DTE resources without connectivity to DTE's internal networks and loss of productivity.
The overall goal of Self-healing Endpoint Automation will improve the employee experience.

## What functionality or capability is being provided?

InTune
1) With the enhancement of Intune, endpoint devices like laptops, desktops etc can be built remotely.
2) Functionalities like, imaging, patching, application delivery and support available on any device from any location would be provided.
3) Remote wiping and patching enhance DTE's endpoint security.
AutoPilot (InTune)
In addition to the above-mentioned functionalities, this solution would allow us to ship equipment directly to the DTE employees and provision DTE configuration and security profile.
Powershell scripting
It will allow for automated solutions to enable self-healing issues like hard drive space issues, CPU memory performance issues.

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Aligns with I&O 3 -5 Year Strategy for End Points: Automation Visibility and Cloud enablement, Enhance Field device support.
Aligns with Future of Where We Work (FWWW) strategy, allows for the future growth of a touchless support model.
This effort aligns with the goals for operational excellence and continuous improvement in strategic direction.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Provides immediate resolution to the end user for common endpoint maintenance needs, ensuring there is minimal impact to their day-to-day activities, reducing the need to travel for on-site support.<br>Implementation of the solution will eliminate non-value-added activities for the team, and allow the team to focus on higher priority work.<br>By enabling remote support for First Call Resolution, this will allow the end user to resolve endpoint device issues faster and reduce potential downtime.<br>With around 15,000 active devices, there is significant Employee Engagement impact with more than 10% improvement with quantitative current state metric and target state metric. |

| How will you monitor and measure expected value? |
|---|
| Reports built in Service Now like % First Call Resolution, Average Resolution Time, Survey Results etc. are currently been used to monitor and measure expected values. These reports would be leveraged after the solution implementation as well. |

| What alternatives have been considered? |
|---|
| This is a transformational approach to manage endpoint devices, doing nothing would maintain the extended complexity of the current multiple solutions which will make alignment to FW3 strategy more challenging.<br>No other alternatives were explored as our preferred platform is Microsoft and they meet all the requirements. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2025-01-03 | 2026-12-31 | Yes | IT |

**IT Costs**

| Type | FY25 | FY26 | Total |
|---|---|---|---|
| Capex | $250,000 | $600,000 | **$850,000** |
| Opex | $50,000 | $100,000 | **$150,000** |
| **Total** | **$300,000** | **$700,000** | **$1,000,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-004 |
|---|---|

| Business Case Name | Wide Area Network Redesign Session Initiation Protocol Backhal |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure and Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure and Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Network Engineering |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Anand Shah |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Assets used for telecommunication purposes are at end of life and do not meet the demand of the business. The incorporation of collaboration tools to regulate the load of the telephony infrastructure is not compatible nor sustainable. |
| What system or process is being affected? | This impacts Enterprise Wide communication requirements from all of DTE's remote locations including Power Plants, Wind Parks, Business Offices, Services Centers, Peakers, Subsidiary locations etc. Also impacts field communication required for SCADA, AMI and related communication needs. Communication needs catered by this business case includes both voice and data. |
| What functionality or capability is being provided? | This investment provides the necessary backbone hardware to meet the telecommunications demand of the enterprise, and prepare for the increasing demands of a remote workforce. This project will replace the telephony platform with a more efficient one, align with the Microsoft Teams application, and allow for e911 deployment. |
| What is the customer or employee value? | Upgrading the telecommunications platform across the enterprise (excluding customer service which resides on a different system) will allow for a more efficient use of the network and accessability. |
| What alternatives have been considered? | Design, deployment alternatives are being considered to meet ever changing and growing business requirements. By leveraging the technological advancements in telecommunications, DTE is building a sustainable platform to meet these ever changing and growing business requirements |

| Key Objectives | |
|---|---|
| 1) | Implement WAN (Wide Area Network) redundancy for sites which are currently single WAN connected only |
| 2) | Change technologies to meet the current and growing connectivity demand e.g.higher bandwidth demands |
| 3) | Providing and enhancing WAN based business capabilities e.g. SIP(Session Inititation Protocol) |
| 4) | Provide a robust, scalable, secure and manageable network telecommunications at the point and time of activity for our business partners/customers |
| 5) | Continue improving the Wide Area Network with hardware, software and services. |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 11 Months |
| End Month | December | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $1,004,652 | $0 | $0 | $0 | $0 | $1,000,000 |
| O&M | $0 | $0 | $0 | $0 | $0 | $0 |
| Total | $1,004,652 | $0 | $0 | $0 | $0 | $1,000,000 |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IO-22-012 |
|---|---|

| Business Case Name | Wireless Local Area Network Expansion |
|---|---|

## Stakeholders

| IT Portfolio | Infrastructure Operations |
|---|---|
| IT Sub-Portfolio | Infrastructure Operations |
| IT Director | Pankaj Sharma |
| Managed by | IT |

| Business Unit | Network Engineering |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Saikrishna Gangeddula |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | The current state of the wireless infrastructure requires expansion to cover new locations and additional points of activity. Thus ensuring network connectivity for field and knowledge workers at DTE locations. This is In alignment with the DTE strategy to reduce the need for wired network communications. The devices that support the daily business operations have reached the end of their serviceable life and are unable to be kept viable in order to meet the requirements of the business. Corporate WLAN expansion is needed to support the increased number of devices and network coverage. The current wireless components comprising the network at many DTE locations are not optimal as wireless requirements have changed since their original installation. |
| What system or process is being affected? | Enterprise wide impact providing wireless communication to any identified point of activity. |
| What functionality or capability is being provided? | Provides appropriate network communication needed for daily business operations, ensuring security and sustainability. Providing Network connectivity at every point of activity, e.g:<br>1) Network field crew in DTE trucks/vehicles with MDTs requiring external wireless connectivity outside DTE premises.<br>2) A plant operator needing to perform a safe worker observation at the point of activity.<br>3) Enhanced wireless coverage for more densely populated areas with in DTE premises. |
| What is the customer or employee value? | Provides fast, reliable, safe and dependable network connection at the point of activity enabling efficiency and speed of operations. |
| What alternatives have been considered? | Wireless solution is the alternative to hard wired networks, this is to cater to the new mobile applications which DTE is looking to implement. |

Michigan Public Service Commission
Executive Summary
DTE Electric Company
IT Business Case Executive Summaries

| Key Objectives | |
|---|---|
| 1) | Replace end of life wireless infrastructure to support connectivity enhancement and performance needs. |
| 2) | Increase wireless coverage to support additional points of activities. |
| 3) | Conduct site surveys to ensure coverage for needed density. Site surveys to confirm WIFI setup expansion and enhancement, deploy access points, and replace EOL units. |
| 4) | Reduce the dependency on wired network connections. |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | |
|---|---|---|
| Start Month | January | 2022 |
| Duration to Complete | Years | 11 Months |
| End Month | December | 2022 |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $800,000 | $0 | $0 | $0 | $0 | **$800,000** |
| O&M | $10,000 | $0 | $0 | $0 | $0 | **$10,000** |
| Total | $810,000 | $0 | $0 | $0 | $0 | **$810,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-CA-22-018 | Business Case Name | Connect Us Teams |
|---|---|---|---|

## Stakeholders

| IT Portfolio | Corporate Apps | Business Unit | Enterprise |
|---|---|---|---|
| IT Sub-Portfolio | Corporate Apps | Business Unit Director | Christine Garber |
| IT Director | Christine Garber | Business Unit SME | DeShaun Martin |
| Managed by | IT | Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic | Initiative Type | Solutions Delivery - Cloud |
|---|---|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | DTE will continue investment to complete the Skype for Business Conversion (previously known as ConnecUs Phases 3-4). This ongoing invesment consists of infrastructure and software updates needed to enhance security, support and to drive collaboration. The investment includes moving from a traditional on premise phone system to a cloud based voice, video, and conferencing implementation of the Microsoft Teams Platform, and the associated change management activities needed to facilitate employee adoption of new technology. The system will enable multiple collaboration capabilities to drive efficiency and digitize manual work. The core capabilities are chat, conferencing, voice calling, user centered tool creation, and desktop sharing. The rollout for year 5 introduces MS Teams for audio, video, and web conferencing for remote locations (non HQ) at DTE. Project efforts will include the implementation of room systems to enable these capabilities, audio and video devices for users, the launch of Yammer (an enterprise, private social networking service) for connecting and engaging employees throughout the enterprise and a unified communications calling infrastructure |
| What system or process is being affected? | Traditional deskphones, telephony systems and in-person meeting collaboration. |
| What functionality or capability is being provided? | Internal and External calling and conferencing from anywhere. Provides the ability for External and Internal entities to communicate and collaborate effectively with calling, messaging and sharepoint integration for documentation. |
| What is the customer or employee value? | Enhanced collaboration with the use of Microsoft Teams. Minimizes need to travel for conferencing providing additional cost saving benefits. |
| What alternatives have been considered? | Other solutions not on our platform (Zoom, GoTo meetings, Webex, etc.) are costly, not as secure, and are not integrated with the hardware we are providing for our employees and rooms. |

| Key Objectives | |
|---|---|
| 1) | Support ease of collaboration remotely and locally |
| 2) | Adoptions of MS Teams audio/video conferencing |
| 3) | Provide DTE internal and external employees the ability to collaborate with business and service providers |
| 4) | Eliminate the cost and time associated with traveling to meetings |
| 5) | Encourage employee collaboration by utilizing tools such as video conferencing, desktop sharing and voice calling from any device |
| 6) | Provide digital conferencing capabilities to Service Centers, Power Generation and subsidiary sites |
| 7) | Enable calling through MS Teams for certain 'knowledge workers', eliminating desk phones |
| 8) | Build a supported infrastructure for calling through MS Teams; including calling externally |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 0 Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $998,678 | $0 | $0 | $0 | $0 | **$1,000,000** |
| O&M | $202,805 | $0 | $0 | $0 | $0 | **$200,000** |
| Total | $1,201,483 | $0 | $0 | $0 | $0 | **$1,200,000** |

## Business Unit Costs

| BU O&M | $0 | Trailing BU O&M Costs | $0 |
|---|---|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002223 | DataPower Replacement |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Information Protection and Security |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Chris Thornton |
| **Managed By** | **PPS** |
| IT | 100 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Return-to-Health | Infrastructure - Cloud |

**What business problem or opportunity are we trying to solve?**

The Company uses Data Power to provide security services for applications that are externally exposed as well as for the applications that are externally hosted. These applications hosted on Data Power are not on DTE's preferred cloud platform and the specialty skillsets required are not on DTE's strategic roadmap.

**What functionality or capability is being provided?**

The project will replace Data Power identity management capabilities, for the targeted applications as listed below with an optimal solution for providing the reverse proxy as well as identity provider capabilities.
List of applications:
Customer contacts outagemapoutagemap customer-notification doapps fsm :443fsm:6223doapps /mfpdoapps /mobileappsdoapps /DOAppsrd doapps /teavendortelemetry :1025doapps /vtsworkorder maximomobile dtecrsalesforce /salesforceentfedapps /pacentfedapps /wdeskcepactions concur agencycustomermanagement ebsmobile eoptws loadcontrollerEventsArrived fleetvehicleapi mfamobileauthfactor mydte dpsvms-mindshare visitor :8333tss mydata visitor loadcontroller loadcontrollerws newlook mobile kiosk eomobile missdig myfiles

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This solution aligns with DTE's strategic goal of partnering with Microsoft for their cloud solution. Better Operational excellence for the applications that would be hosted on the cloud platform are the key strategies for this effort.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This technology adoption will provide the Company with the ability to securely enable business critical applications and better enable future cloud offerings. The solution would protect the confidentiality, integrity and availability of the applications listed above.

**How will you monitor and measure expected value?**

Operating Impact - Reduce maintenance requirements for vulnerability Management capabilities for the targeted applications. Expected change is 5%.

**What alternatives have been considered?**

A "do nothing" alternative would result in an elevated risk level for the Company's externally facing websites and applications due to insufficient capabilities within the current DataPower toolset. This would not be an acceptable position for the Company to be in.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2023-12-22 | Yes | IT |

**IT Costs**

| Type | FY23 | Total |
|---|---|---|
| Capex | $600,000 | **$600,000** |
| Opex | $30,042 | **$30,042** |
| **Total** | **$630,042** | **$630,042** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001645 | DataPower Replacement Phase 2 |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Anand K Shah |
| **Managed By** | **PPS** |
| IT | 5.4 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

DTE uses DMZ DataPower Gateway to provide security services for applications that are externally exposed. The services include authentication/authorization for the users to access applications based on need, as well as provide layered protection to prevent unauthorized access. It is also used as an identity provider for some of our cloud hosted applications. Today this capability resides on physical servers in our data centers, this project will move current functionality to cloud. This technology adoption will provide the Company with the ability to securely enable business critical applications and better enable future cloud offerings. The solution would protect the confidentiality, integrity and availability of the applications in scope.

**What functionality or capability is being provided?**

The project will replace Data Power identity management capabilities, for the targeted applications, with an optimal solution for providing the reverse proxy as well as identity provider capabilities.
This technology adoption will provide the Company with the ability to securely enable business critical applications and better enable future cloud offerings. The solution would protect the confidentiality, integrity and availability of the applications listed above.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Completion of this project will enable multiple DTE business units to continue to securely exchange data with their external business partners in a reliable manner.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Strategic Alignment: Mitigate operational risk: Current state is zero security events due to exploited vulnerabilities. This solution will avoid the possibility of occurrence of security event due to increased security threats.2.Growth Opportunity: Current state: 30 applications utilizing the DMZ Datapower platform. Future state will enable more than 50 applications across multiple business units to adopt the new platform3.Operational Excellence: Improved operational stability due to timely firmware upgrades. Current state – 12 Planned outages, Future state – 8 Planned outages4.Employee Engagement: Reduction in helpdesk tickets due to application issues by 10%5.Safety: Improved availability and reliability of Safety related applications hosted through the DMZ gateway.
This technology implementation will provide the ability to ensure the applications that are mediated through DataPower to internet are secure and protected from unauthorized actors.

DTE

| How will you monitor and measure expected value? |
|---|
| Customer Experience - Due to the growth in customer usage of the applications, there is a need to implement cloud solution. Failure to do so could increase customer complaints by 10% due to performance issues in key applications. The usage base of customers is > 1MEmployee Engagement - Employee Engagement: Reduction in application issues experienced by DTE employees (~10,000) by 15% (measured through helpdesk tickets)Foundational Capability - •All DTE business unit applications will utilize the new cloud based application gateway platform to provide secure access to employees and customers.•Implementation of this initiative will provide for all business units to increase the user capacity by 25%.•This will also allow for increase in business applications and user expansion by 30%."The value will be realized upon completion of the replacement of the technology in terms of the maintenance of the Infrastructure.<br>Project team will monitor the number of applications which will move from DataPower to the selected technology. |

| What alternatives have been considered? |
|---|
| A "do nothing" alternative would result in an elevated risk level for the Company's applications due to the complexity of the DMZ DataPower appliances and the level of expertise required to maintain them. This would not be an acceptable position for the Company to be in |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-03 | 2024-12-22 | Yes | IT |

**IT Costs**

| Type | FY24 | Total |
|---|---|---|
| Capex | $650,654 | **$650,654** |
| Opex | $40,494 | **$40,494** |
| **Total** | **$691,148** | **$691,148** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0002356 | Digital Infrastructure and Services |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | DTE Electric |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Christine C Garber |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Justin M Gross |
| **Managed By** | **PPS** |
| IT | 4.3 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

The Company invested $8.31 million in 2022 and will invest an additional $.25 million in 2023 in the Digital Infrastructure and Services project. The investment covers infrastructure, software tools, endpoint devices and consulting services for Agile delivery.

**What functionality or capability is being provided?**

The assets in which we invested will be reused across the portfolio to enable Agile product development structured around three foundational pillars: cloud, product, and DevOps. The tools purchased increase our ability to deliver applications and services at high velocity and evolve and improve products at a faster pace vs traditional software development and infrastructure management.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

This investment provides the benefit of reduced time to provision development environments, reusable infrastructure services across the portfolio providing a platform for developing software applications quickly and easily and tools to help edit, debug, and run source code more efficiently.

**Define the Benefit/Value to the Organization, Customer, Employee.**

This investment provides the benefit of reduced time to provision development environments, reusable infrastructure services across the portfolio providing a platform for developing software applications quickly and easily and tools to help edit, debug, and run source code more efficiently. Benefits of this investment will be realized in DO Vegetation Management, and Gas Lighthouse projects and will continue to be realized as projects are prioritized for Digital Infrastructure and Services Delivery.

**How will you monitor and measure expected value?**

Monitoring expected time to delivery development environments and delivery time to value

**What alternatives have been considered?**

The Do nothing alternative, which was not accepted as prudent for time to delivery optimization.

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-03 | 2023-12-31 | Yes | IT |

DTE

## IT Costs

| Type | FY22 | FY23 | Total |
|---|---|---|---|
| Capex | $8,726,711 | $249,000 | **$8,975,711** |
| **Total** | **$8,726,711** | **$249,000** | **$8,975,711** |

## BU Costs

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-021 |
|---|---|

| Business Case Name | DTE Private Cloud |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Shared Infrastructure |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Aditya Tallapally |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Infrastructure - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | There is a significant amount of manual processing that occurs to provision, update and manage assets. This implementation of various tools will significantly reduce the manual processing and errors. |
| What system or process is being affected? | Infrastructure delivery and automation of infrastructure resources (servers, databases) |
| What functionality or capability is being provided? | Implementing cloud capable tools and automating processes will reduce configuration and deployment errors, reduce provisioning and deployment life-cycle time, empower the Application Teams to estimate infrastructure costs directly, reduce operational costs due to virtualization, and allow tight integration with ServiceNow. |
| What is the customer or employee value? | The provisioning and management of server and storage assets is very labor intensive, consuming a significant portion of our capital labor hours annually. Utilizing automated tools will allow for tighter controls and release individuals to perform other meaningful activities that will further enhance DTE's operational excellence such as certificate renewals, patching, etc. |
| What alternatives have been considered? | None were considered |

| Key Objectives | |
|---|---|
| 1) | Design and implement a scalable on-demand Azure stack on-premise environment. |
| 2) | Configure current tools to operate within the Azure on-premise environments. |
| 3) | Enhance self-service disaster recovery and fail-over capabilities. |
| 4) | Expand mitigation for end of life environments. |
| 5) | Automate hardware firmware patching, configuration, reporting and monitoring. |
| 6) | Implement tools to monitor and report on server optimization. |
| 7) | Continue to develop automation of manually intensive deployment and support processes. |
| 8) | Provide technical training to support solution. |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | 1 Years | 11 Months |
| End Month | December | 2023 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $883,661 | $418,524 | $0 | $0 | $0 | **$1,300,000** |
| O&M | $60,498 | $148,943 | $0 | $0 | $0 | **$210,000** |
| Total | $944,159 | $567,467 | $0 | $0 | $0 | **$1,510,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $52,000 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001356 | DTE Private Cloud Infrastructure as a Service |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Shared Infrastructure |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Hayder Allebban |
| **Managed By** | **PPS** |
| IT | 6.4 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Infrastructure - On Prem |

## What business problem or opportunity are we trying to solve?

The current DTE Private Cloud provides very limited IaaS services which involves provisioning of Windows VMs only. This limits the use of the DTE private cloud & also the applications that can leverage these services. The limited services hinder the modernization of applications in a way that self-provisioning and high availability/disaster recovery cannot be accomplished. Self-provisioning will reduce the time to market for business solutions. Whereas high availability/disaster recovery would reduce the vulnerability and downtime of applications."

A portion of DTE current server infrastructure is dated and requires manual effort to configure and support. Manual effort induces risk of major outage as a result of human error. This solution will reduce the risk of outage through automated patching and work load provisioning while ensuring the system continues to be compatible with industry standards and supported by major vendors. Dated systems are no longer compatible and often not supported which is a risky proposition. DTE only has one Cloud IaaS that is on-prem. 2022 was to install infrastructure. 2023 migrate work loads to the infrastructure. As of 10/14/2022, DTE has ~44 Windows2003, ~97 Windows2008 servers and ~703 Windows2012 servers that are out of support and need to be migrated to this On-prem Azure IaaS Cloud.

## What functionality or capability is being provided?

The following functionality/capability would be provided:
High availability / disaster recovery for critical production applicationsModernize application development and delivery using DevOps practicesAutomated services and self-service, where applicableAdditional cloud aligned services like PaaS

## Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Project aligns with Mitigate Enterprise Risk/Operational Risk (high impact) , Employee Engagement (medium impact) and Operation Excellence (high impact)
The provisioning and management of server and storage assets is very labor intensive, consuming a significant portion of our capital labor hours annually. Utilizing automated tools will allow for tighter controls and release individuals to perform other meaningful activities that will further enhance DTE's operational excellence such as certificate renewals, patching, etc.
Private Cloud infrastructure on prem is the core foundation for Agile and DevOps methodology within DTE. Deploying next generation private cloud infrastructure to support Agile and DevOps methodology for building new cloud applications for business units, swiftly and consistently.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| ~3 FTEs of effort freed up from manual Cloud Infrastructure activities to focus on higher value added activities.<br>Having high availability will increases systems reliability and resilience. Automated self healing.<br>Automated fail over Defects for 100 servers being provisioned (13% to 0%) |

| How will you monitor and measure expected value? |
|---|
| Strategic Alignment "Significantly Aligns with Mitigate Enterprise Risk/Operational Risk" Employee Engagement, Operation Excellence Customer Experience CS: Planned Outages: 53 Target: 50% reduction Employee CS: Server Provision Wait Time ~40 hours Target: ~4hours Employee CS: ~40 hours / server provision. Target: ~12 hours / server Employee Engagement CS: Unplanned Outages: 18 Target: 75% reduction CS: Planned Outages: 53 Target: 50% reduction Affordability CS:Provisioning Labor Costs ~4K Target: 50% Reduction Current State: ~40 hours / server provision. Target: ~12 hours / server Operational Reliability CS: Unplanned Outages: 18 Target: 75% reduction CS: Planned Outages: 53 Target: 50% reduction Current State: 13% defect rate Metric Target: 0 Foundational Capability % of new of Applications deployed on Private Cloud Infrastructure (Target: 10%) |

| What alternatives have been considered? |
|---|
| Azure HCL was considered as an alternative but the scope was limited and it did not have functionalities as Azure stack. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2022-01-01 | 2023-12-01 | Yes | IT |

**IT Costs**

| Type | FY21 | FY22 | FY23 | Total |
|---|---|---|---|---|
| Capex | $3,537 | $826,631 | $795,172 | **$1,625,340** |
| Opex | | $52,149 | $108,851 | **$161,000** |
| **Total** | **$3,537** | **$878,780** | **$904,022** | **$1,786,340** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001855 | Endpoint Operating System and Hardware Upgrade |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Vikram C Bhatt |
| **Managed By** | **PPS** |
| IT | 5.1 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Operational |

**What business problem or opportunity are we trying to solve?**

DTE endpoint devices that have antiquated technology and operating systems will no longer be supported through Microsoft's standard support process. thus rendering the user unable to perform their job responsibilities. This demand will improved productivity by incorporating functional enhancements between two operating systems Windows 10 and Windows 11 and increased security by being on a supported version. In addition, incorporating endpoint hardware technology upgrades to support Microsoft's standard support process.

**What functionality or capability is being provided?**

FBetter security which eliminates vulnerabilities. Alignment with platform standards and support other corporate applications. (example Advanced Distribution Management System)

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Stategic Alignment Safety : CyberSafety - With FWWW , people working remote, this becomes very important, system will become vulnerable in the absence of this upgradeEmployee Engagement , Operational Excellence: This project will help keep endpoint infrastructure up-to-date with latest operating system and patches. This will help us maintain a secured infrastructure for managing vulnerabilities effectively and ensure reliable hardware asset health. Current state - 0 machines on Windows11. Target State - Around 10,000 machines on Widows11

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Customer Experience: Qualitative only This is a significant improvement to (internal) customer experience ranging from usability, uI/ux, security improvements. Employee Engagement: This will impact around 10,000 machines.As per Microsoft , newer versions of Windows provide a better user experience for FWWW - increase work from anywhere score , employee engagement and productivity increase (https://docs.microsoft.com/en-us/mem/analytics/work-from-anywhere)Microsoft has also reported an impressive 99.8% crash-free experience in the Windows 11 previewAffordability and Growth- New enhanced features increase productivity of end users Instantly productive with Windows 11 · "Now work can happen wherever & whenever" · Hero start screen redesigns productivity · Optimize screen space and workflow. This aligns with FWWW strategy. Link for additional details https://www.microsoft.com/en-us/windows/business/windows-11-productivity-featuresOperational Reliability- Keeping Storm Support endpoints up-to-date is paramount is ensuring that necessary timely support can be provided during system downtimes. Win 10 retirement is 2025 so will need to start in 2024 to convert storm support desktops in 2024 as phase 1 to complete project by Microsoft sunset date in 2025. Storm personnel also support remotely (FWWW) and reliability of equipment is of high importance. Current state - 0 machines on Windows11. Target State - Around 10,000 machines on Widows11Foundational Capability- Maintain current versions of OS and Hardware upgrades allows for the capability for future enhancements |

| How will you monitor and measure expected value? |
|---|
| A scorecard will monitor and track application system readiness, operating system deployment and hardware replacement |

| What alternatives have been considered? |
|---|
| None. DTE has adopted the Microsoft platform which directs our operating system selection and support. Therefore it is incumbent that DTE use the most up to date operating systems and hardware requirements to be compliant with the platform. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-03 | 2026-12-22 | Yes | IT |

**IT Costs**

| Type | FY24 | FY25 | FY26 | Total |
|---|---|---|---|---|
| Capex | $2,800,469 | $4,096,567 | $7,062,808 | **$13,959,843** |
| Opex | $399,546 | $296,017 | $293,600 | **$989,163** |
| **Total** | **$3,200,015** | **$4,392,584** | **$7,356,408** | **$14,949,007** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-007 |
|---|---|

| Business Case Name | Enterprise Monitoring Strategy Implementation |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | IT Operations |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Kameshwari Ganti |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Provide visibility into the IT ecosystem and to provide the broadest contextual and situational awareness of the health of all IT assets and services. |
| What system or process is being affected? | Following systems are being affected: ServiceNow, Dynatrace, Netscout, HPOM. Processes affected are: Process Monitoring and Event Management Process. |
| What functionality or capability is being provided? | New services and capability will be provided by Dynatrace and NetScout, new and enhanced ServiceNow integrations for building preventative and predictive analytics. |
| What is the customer or employee value? | Prevent service downtime and reduce impact of downtime when an incident occurs. |
| What alternatives have been considered? | This continues to build on the foundational Enterprise Monitoring capabilities established in 2017. |

| Key Objectives | |
|---|---|
| 1) | Based upon 2021 project deliverables implement the replacement of HPOM. |
| 2) | Implement new services and capabilities provided by Dynatrace and NetScout. Evaluate current Netscout deployment and disposition if Netscout Module expansion is required. |
| 3) | New ServiceNow integrations and enhancing the integrations for building preventative and predictive analytics. |
| 4) | Event management system have to be enhanced for building the foundation for preventative and predictive analytics. |
| 5) | Multiple monitoring tools are currently in-house, need to evaluate and consolidate tools where possible. |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $501,266 | $0 | $0 | $0 | $0 | **$500,000** |
| O&M | $54,717 | $0 | $0 | $0 | $0 | **$50,000** |
| Total | $555,983 | $0 | $0 | $0 | $0 | **$550,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $60,000 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001641 | External Secure File Transfer Replacement |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Anand K Shah |
| **Managed By** | **PPS** |
| IT | 4.6 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

Secure File Transfer technology supports exchange of data with external business partners utilizing secure protocols to protect the integrity and confidentiality of DTE data. The platform is currently hosted at DTE data centers. This technology will soon go out of support and will need to be replaced to ensure continued support for the business functions. There is an opportunity to move SFT functionality to a cloud based service, to provide better scalability and improve the level of service. An analysis will be performed to adopt a cloud platform, and the current SFT technology will be sunseted.

**What functionality or capability is being provided?**

The following functionality will be provided by implementing this project:  Scheduled, manual and ad-hoc transfer of files with external business partners and entities
The ability to have scheduled, manual or ad-hoc file transfers between DTE's business partner and other outside entities with additional scalability.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Statetgic Alignment; 1.Safety: File transfer platform enables a Safe and secure exchange of ~100,000 files that contain proprietary company information.2.Mitigate operational risk: Current state is zero security events due to exploited vulnerabilities. This solution will avoid the possibility of occurrence of security event due to increased external security threats.3.Growth Opportunity: Current state: 100,000 files that are exchanged on a monthly basis. Future state will enable a growth of 50% for files exchanged. Enable for unlimited growth due to cloud platform adoption.4.Operational Excellence: Improved operational stability due to timely firmware upgrades. Current state – 6 Planned outages, Future state – 4 Planned outages (33% reduction)5.Platform Strategy – Implementation of this initiative aligns with DTE’s cloud first strategy

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| Affordability & Growth- The average cost of a single data breach per IBM/Ponemon Institute is $ 4.24 million. Prevention of even a single incident of data breach provide significant cost avoidance for DTE (https://www.upguard.com/blog/cost-of-data-breach)Cost Benefit- Can not use Cost avoidance as cost benefitOperational Reliability- Implementation of the external secure file transfer platform in the cloud improves the operational reliability by >10% Foundational Capability- •All DTE business units will be able to utilize the new cloud based file transfer platform to securely exchange proprietary company data with external partners.•Implementation of this initiative will provide for all business units to increase the usage capacity by 25%. •Implementation of cloud platform solution enables for future increase in demand with only incremental cost |

| How will you monitor and measure expected value? |
|---|
| The anticipated value would be realized by aligning with DTE's strategic direction for Cloud Adoption. The deployed solution will be able to scale according to demand. |

| What alternatives have been considered? |
|---|
| Doing nothing by not replacing the existing SFT technology, will result in negatively impact the current business process that rely on the platform for data exchange. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-03 | 2025-12-31 | Yes | IT |

**IT Costs**

| **Type** | FY24 | FY25 | **Total** |
|---|---|---|---|
| Capex | $354,754 | $66,659 | **$421,412** |
| Opex | $30,398 | | **$30,398** |
| **Total** | **$385,151** | **$66,659** | **$451,810** |

**BU Costs**

| **Category** | **Term of Contract** | **BU O&M Cost** |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001746 | Firewall Threat Protection |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Anand K Shah |
| **Managed By** | **PPS** |
| IT | 6.6 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Infrastructure - On Prem |

**What business problem or opportunity are we trying to solve?**

DTE's external and internal threats continue to increase and evolve for both IT and OT/Control networks. This requires the company to build additional protection, detection and response capabilities to protect DTE's assets. To achieve this, there is a strategic need to deploy firewalls that can provide added capacity as well as advanced capabilities for real time threat protection. Some of the business areas where this is anticipated include Customer Payments, Energy Supply control networks, AMI, Gas and Electric SCADA, substation networks.

**What functionality or capability is being provided?**

Provide network threat protection and layered security to DTE’s assets, including IT and OT systems.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

It strengthens our security posture and focuses on operational technology resiliency. It will also mature our operating performance with digital resiliency capabilities.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Strategic Alignment- 1.(Mitigate Enterprise/Operational Risk) Zero security events due to external network threats 2.(Mitigate Enterprise/Operational Risk) Increase in the threats blocked at the firewall by 10% 3.(Operational Excellence) Reduce the number of unplanned outages by 10% 4.(Growth Opportunity) Increased capacity to support additional network traffic by at least 5% (Need Current state and target state)

DTE

| How will you monitor and measure expected value? |
|---|
| Customer Experience- Protect all our customers (>1 million) information, thereby reducing/preventing MPSC complaints. Due to increase in cyber threats, there is a need to implement this initiative, without which customer complaints could increase by 10%Employee Engagement- Significant improvement of experience for all DTE employees (~10,000) Due to increase in cyber threats, there is a need to implement this initiative, without which end user endpoints compromised could increase by 20%. Affordability and Growth- The average cost of a single data breach per IBM/Ponemon Institute is $ 4.24 million. Prevention of even a single incident of data breach provide significant cost avoidance for DTE (https://www.upguard.com/blog/cost-of-data-breach)Cost Benefit- Cost Avoidance can not be used as Cost Benefit only for affordability and growthOperational Reliability- Significant impact attributed to unplanned system/application outages, due to an increase in cyber threats vulnerability exploitation. There is a need to implement this initiative, without which the systems and applications could experience an increase in unplanned outages by >10%.Foundational Capability- •All DTE business unit networks, infrastructure and applications can utilize the advanced protection features as well as capacity available in the firewalls to effectively improve protection from cyber threats.•Implementation of this initiative will provide for all business units to increase the user capacity by 25% over the next 5 years.•This will also allow for increase in business applications and support customer expansion by 10%. |

| What alternatives have been considered? |
|---|
| No other alternatives have been considered as DTE has a strategic investment and partnership with Palo Alto as the firewall provider |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-03 | 2024-12-22 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $1,556,000 | $600,000 | **$2,156,000** |
| Opex | $155,642 | $44,440 | **$200,082** |
| **Total** | **$1,711,642** | **$644,440** | **$2,356,082** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001720 | Mobile Device Management |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Vikram C Bhatt |
| **Managed By** | **PPS** |
| IT | 4.6 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

The management of the IoT devices such as iPads, Android Tablets, Android and Apple Smart Phones, and other mobile devices connected to the DTE network has resulted in a level of complexity due to operating system versions, hardware versions, and hardware configurations. During the pandemic this complexity increased further. The result is longer queue times for response and repair, difficulties in repairing personally configured devices that directly impact employee communication capabilities at home, in the office or in the field.

**What functionality or capability is being provided?**

This effort will provide an automated solution that will ensure that end users interface devices will be updated to the latest DTE accepted configurations.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Mitigate enterprise and operational risk

**Define the Benefit/Value to the Organization, Customer, Employee.**

Strategic Alignment- Operational excellence: Increases data security on mobile device by 50% (will add corporate devices) Mitigates zero day vulnerabilities Growth opportunity: Supports the growth of additional mobile devices accessing corporate date. 100% increase. The benefit/value resulting in this effort is to ensure that end user IoT devices meet the standards of DTE and the Vendor

**How will you monitor and measure expected value?**

Employee Engagement : Ease of setup. Brings down overtime by 100-150 hoursCustomer Experience- High Impact on customer experience. Currently 100% of internal customers are required to manually update their OS on corporate devices. This initiative reduces the effort required to 0. System automatically takes care of tjhe updatesEmployee Engagement: Significant improvement. High number of users: It will allow for patches to be updated 100% in field environment. This brings down the travel to 0 for the end users to bring their mobile devices on-site for support.Affordability and Growth- Some impact to financials : IT & BU productivity: 100 -150 hours freed upThis solution benefits all business units using smart devices. It will enable a better way of managing smart devices for all BUs. Reduces manual effort(all users carrying corporate devices) for managing devices to 0. ability to scale

**What alternatives have been considered?**

DTE

Alternatives will be evaluated as part this effort

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2024-12-31 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | Total |
|---|---|---|---|
| Capex | $611,707 | $340,000 | **$951,707** |
| Opex | $169,561 | $0 | **$169,561** |
| **Total** | **$781,269** | **$340,000** | **$1,121,269** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

Michigan Public Service Commission
DTE Electric Company
IT Business Case Executive Summaries

Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-IT-22-022 |
|---|---|

| Business Case Name | Network Operations Center (NOC) Automation Project |
|---|---|

## Stakeholders

| IT Portfolio | IT BRM |
|---|---|
| IT Sub-Portfolio | IT for IT |
| IT Director | Christine Garber |
| Managed by | IT |

| Business Unit | Network Operations |
|---|---|
| Business Unit Director | Pankaj Sharma |
| Business Unit SME | Kameshwari Ganti |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | Strategic |
|---|---|

| Initiative Type | Solutions Delivery - On Prem |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | There is a need to close visibility gaps to prevent the potential of unplanned downtime and network failures in two significant areas: i) Environmental conditions in Critical and Key Telecom room/closets ii) Network Transport (including lease/private circuits) and Field Communication Network |
| What system or process is being affected? | Building maintenance and environmental monitoring systems for physical Data Center, Data Center infrastructure components (eg cabinets, cooling systems etc), Network and Telecom closets. Monitoring of Network Transport and Field Communication Network assets. |
| What functionality or capability is being provided? | Enhance or extend preventative monitoring of the environmentals (e.g. humidity, temperature) and Network Transport and Field Communication Network infrastructure to aid in proactively avoiding unplanned downtime and network failure. |
| What is the customer or employee value? | Minimizing disruption of an individual's work day, business operations (eg Systems Operation Center) and to the external customer facing applications. Prevent and / or minimize unplanned downtime and failures with the IT infrastructure (Data Centers, Data Center components, Network / Telecom Closets). |
| What alternatives have been considered? | Investigated different options which could integrate with existing site monitoring and provide a centralized solution. |

| Key Objectives | |
|---|---|
| 1) | Implement key objectives of Environmental Monitoring POC in identified Key and Critical Telecom rooms. Continue deployment of identified operational tool including additional Network & Telecom (N&T) sites, UPS (Uninterrupted Power Supply) related upgrades, integration with monitoring software. |
| 2) | (#1 cont): Produce dashboards, scorecards to respond to alerts and incidents. Enhance integration capability with Service Now. |
| 3) | Continue refinement of existing Monitoring/Engineering tools (Field Communication Network and Routing),including analysis,POC,implementation, configuration or upgrade |
| 4) | Conduct POC for Transport Circuit/FCN Monitoring. POC Key Objectives: •Identification of Key and Critical telecom rooms. •Understand integration capability with ServiceNow. •Selection of Transport Circuit Monitoring vendor.• Produce dashboards, scorecards to respond to alerts and incidents. |
| 5) | POC Scope (cont):•Investigate "Service Dependency"/"Service Mapping" feature (move towards automation of troubleshooting and provide more robust monitoring. |
| 6) | Add and extend monitoring capabilities eg NNM and Netscout, integration between existing network monitoring tools and ServiceNow, and ability to use Service Now. |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| Start Month | January | 2022 |
|---|---|---|
| Duration to Complete | Years | 11 Months |
| End Month | December | 2022 |

| Funding Source | ITS |
|---|---|

## IT Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total amount is sent for approval on all business cases. Total |
|---|---|---|---|---|---|---|
| Capital | $755,122 | $0 | $0 | $0 | $0 | **$750,000** |
| O&M | $58,254 | $0 | $0 | $0 | $0 | **$60,000** |
| Total | $813,376 | $0 | $0 | $0 | $0 | **$810,000** |

## Business Unit Costs

| BU O&M | $0 |
|---|---|

| Trailing BU O&M Costs | $0 |
|---|---|

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0003227 | Storm Cloud (Scalable/Uptime) |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Infrastructure Operations |
| **Portfolio** | **Business Unit Director** |
| Infrastructure Operations- Electric | Pankaj Sharma |
| **Portfolio Manager** | **Business Unit SME** |
| Pankaj Sharma | Rajashree K Gangur |
| **Managed By** | **PPS** |
| IT | 6.9 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Strategic | Infrastructure - Cloud |

**What business problem or opportunity are we trying to solve?**

DTE has suffered several technology related challenges during storms which drive cost to restore and impact customer satisfaction. System resiliency for our cloud-based applications has become an issue impacting our customers. Systems are being pushed to deliver more while still maintaining legacy applications and architecture that cannot scale/deliver business functionality needed today. Over the last few years DTE has faced multiple storms where application resiliency issues hindered the restoration effort and impacted customer satisfaction. While DTE IT has responded quickly to root causes from prior storm issues, this effort plans to significantly improve storm performance into the future.
DTE prioritized storm resiliency and initiated multiple steps e.g., setup executive governance committee with a storm focus, initiated end to end resiliency testing, prioritized IT initiatives to resolve issues identified during storms, and set up a director level team to identify storm pain points and sequence resolution. This initiative is a result of that comprehensive assessment focused on improving application resiliency, scalability, and governance, resulting in reduced outage recovery times for our customers.

**What functionality or capability is being provided?**

The solution will improve the availability, scalability, and security of existing storm applications in the Cloud by implementing best-in-class principles for Cloud architectural design. Additionally, DTE team member capabilities will be improved to support and align storm critical applications to best in class policies.

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

DTE prioritized storm resiliency and initiated multiple steps e.g., setup executive governance committee with a storm focus, initiated end to end resiliency testing, prioritized IT initiatives to resolve issues identified during storms, and set up a director level team to identify storm pain points and sequence resolution.

**Define the Benefit/Value to the Organization, Customer, Employee.**

Improve the availability and performance of customer-facing and internal critical storm apps in the Cloud to support peak load during storm season.Improve our IT operational processes, stronger engineering talent and monitoring of IT systems to be able to address IT issues more quickly.Improve the robustness of system testing processes to identify scalability issues earlier.Strengthen governance and more consistent standards around system design to ensure systems are designed to scale.

DTE

| How will you monitor and measure expected value? |
|---|
| The overall impact can be measured in terms of overall system availability (and hence reduced downtime for crews when system outages happen) as well as improved CSAT from ability to serve customers better (increased uptime and performance for customer facing applications).<br>Reduced customer storm related application issues by monitoring incoming incidents related to storm.<br>Additionally, from a technical perspective, critical in scope apps will be assessed for resiliency, scalability, and performance during normal and peak times such as storm related outages. |

| What alternatives have been considered? |
|---|
| Do nothing: This alternative would result in continued system outages in terms of duration and severity and future changes or load to customer facing apps will increase the risk of outages into the future. These will extend the restoration time for our customers.<br>No other alternatives are possible based on the solution evaluation that led DTE to this recommended solution without incurring significant risks to our infrastructure and customers. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2024-01-02 | 2025-06-30 | No | IT |

**IT Costs**

| Type | FY24 | FY25 | Total |
|---|---|---|---|
| Capex | $10,000,000 | $6,000,000 | **$16,000,000** |
| **Total** | **$10,000,000** | **$6,000,000** | **$16,000,000** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

DTE

# Executive Summary

| Business Case Number | Business Case Name |
|---|---|
| DMND0001299 | Enterprise Data Reporting Assets Application Health |

# Stakeholders

| Portfolio Category | Business Unit |
|---|---|
| Shared IT | Enterprise Data and Analytics |
| **Portfolio** | **Business Unit Director** |
| Enterprise Data Analytics | Catherine Stafford |
| **Portfolio Manager** | **Business Unit SME** |
| Rich Shunia | Uma M Poduturu |
| **Managed By** | **PPS** |
| IT | 200 |

# Project Description

| Investment Type | Initiative Type |
|---|---|
| Sustainment | Solutions Delivery - Cloud |

**What business problem or opportunity are we trying to solve?**

- In DTE's current state, we do not have a complete near real-time transactional and reporting capability for SAP Customer and Billing data where business users can perform business operations, data analysis, reporting and analytical tasks. To address this gap, Qlik is chosen for moving data from prioritized set of business application tables in near real time from SAP Customer and Billing systems to Azure Cloud while minimizing production performance. DTE purchased a 3-year subscription for Qlik Software in 2021. This request is to support the on-going licensing costs for Qlik. 2023 is year 3 of a 3-year license, amounting to $300k in capital per year- Microsoft offers a significant discount when we lease/rent infrastructure (like physical servers) from Microsoft for a 3-year period. This can be achieved using 'Azure Reservations'. Azure Reservations are pre-purchase commitments that reduce cloud consumption costs by reserving Azure resources in advance. DTE purchased a set of VMs in July 2020 for 3 years. Using Azure Reservations, this costed $264k resulting in $417k savings over three years. This request is to repurchase a similar set in 2023
Doing these two changes will help us add required functionality to the EDA (Enterprise Data Analytics) cloud data platform which serves the DTE enterprise with data in a financially responsible way

**What functionality or capability is being provided?**

- Write APIs (Application Programming Interface) and micro services to access data in Data Lake and SQL Server.- Build storage environment for unstructured data sets such as audio, image and video files. - Foundational work to support cognitive services and AI (Artificial Intelligence) and ML (Machine Learning) capabilities.- Build monitoring capabilities for EDA (Enterprise Data Analytics) services aligned to IT Ops standards in the cloud.- Continue to make a subset of ISU and CRM (ISU and CRM are SAP Modules) tables available to the business in near real-time using Qlik- Dependably deliver timely, secure, high-quality data to the business partners throughout the enterprise

**Describe alignment of project to Business Unit Goal(s) and Strategy(ies).**

Creating a data foundation is a key requirement for operational excellence.

DTE

| Define the Benefit/Value to the Organization, Customer, Employee. |
|---|
| - Process Efficiency: We anticipate significant benefits to be gained by enabling new datasets in near real-time or batch from a centralized platform via APIs and microservices. This pattern will eliminate data siloes and improve data consistency, accuracy, timeliness, and data availability for our business partners. The benefit/value comes when the business uses the data to analyze and answer business questions; and provide metrics to solve business problems- Add new environment and foundational capabilities to support incoming requests from the business regarding unstructured data, AI (Artificial Intelligence) and ML (Machine Learning) |

| How will you monitor and measure expected value? |
|---|
| We plan to measure the following using Azure Scripts and Azure toolso Capture the amount of new data added to the Data Platform in 2023 and compare the size with 2022 to make sure there is an increaseo Compare the number of new datasets to the platform in 2023 with 2022o Compare new use cases deployed thru the platform in 2023 with 2022 numberso Number of new users added to the data platform in 2023 |

| What alternatives have been considered? |
|---|
| SLT (SAP Landscape Transformation) technology and Azure SAP CDC (Change Data Capture) preview solutions were considered before moving with Qlik replication technology.<br>Do nothing: The Enterprise Data Platform will not be able to support the digital needs of the enterprise with respect to data availability. |

| Start Date | End Date | Shared Asset | Funding Source |
|---|---|---|---|
| 2023-01-02 | 2025-12-29 | Yes | IT |

**IT Costs**

| Type | FY23 | FY24 | FY25 | Total |
|---|---|---|---|---|
| Capex | $1,562,542 | $1,561,789 | $1,558,526 | **$4,682,857** |
| Opex | $305,903 | $306,708 | $301,227 | **$913,838** |
| **Total** | **$1,868,445** | **$1,868,497** | **$1,859,753** | **$5,596,695** |

**BU Costs**

| Category | Term of Contract | BU O&M Cost |
|---|---|---|
| Business Unit | | $0 |
| Cloud Usage Cost | | $0 |
| Digital EXP Design Cost Est | | $0 |
| Maintenance/Renewals | | $0 |
| Organizational Change Management | | $0 |
| Vendor Support & Licensing | | $0 |

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Case No : U-21534
Exhibit : A-24
Schedule: N1
Witness: P. Sharma

DTE Energy

# Executive Summary

| Business Case ID | BCD-EDA-22-001 |
|---|---|

| Business Case Name | Advance and Enhance the Enterprise Data Platform |
|---|---|

## Stakeholders

| IT Portfolio | Enterprise Data Analytics |
|---|---|
| IT Sub-Portfolio | Enterprise Data Analytics |
| IT Director | Catherine Stafford |
| Managed by | IT |

| Business Unit | Enterprise |
|---|---|
| Business Unit Director | Catherine Stafford |
| Business Unit SME | Uma Poduturu |
| Business Units Impacted | Electric |

## Project Description

| Initiative Category | IT Enhancements |
|---|---|

| Initiative Type | Solutions Delivery - Cloud |
|---|---|

| Business Opportunity | |
|---|---|
| What business problem are we trying to solve? | Maintain and add required functionality to the EDA cloud data platform which supports the DTE enterprise.<br>- Qlik: Business units need data from CRM and ISU that is near real-time and complete. Qlik is the chosen solution for moving data near real-time from ISU and CRM to SQL Server on the Azure platform while minimizing the burden on the source system. This request is for the on-going licensing costs for Qlik. 2022 is year 2 of a 3 year license. $300k in capital per year<br>- Azure VM reservations: Minimize our MS Azure expense. Microsoft offers a significant discount when we reserve Virtual Machines for a three year period. |
| What system or process is being affected? | This would impact the use of the platform data in new or more efficient ways.<br>- Qlik: CDC allows us to continue and grow the data that is avaiable to the business near real-time. |
| What functionality or capability is being provided? | Write APIs (Application Programming Interface) and micro servces to access data in ADLS<br>Build storage environment for unstructured data sets such as audio, image and video files.<br>Foundational work to support cogniticve services and AI (Artificial Intellegence) and ML (Machine Learning) capabilities.<br>Build monitoring capabilites for EDA services aligned to IT Ops standards in the cloud.<br>- Qlik: The result will be to contunue to make a subset of ISU and CRM tables available to the business in near real-time. |
| What is the customer or employee value? | APIs and microservices give users a standard interface for common data requests. Improving the consistency and accuracy of the analysis and reporting by the business.<br>Ensure that we have the environment and foundationlal capabilitlies to support incoming requests from the business regarding unstructured data, AI and ML. |
| What alternatives have been considered? | This is in alignment with the TPP (Technology Platform Plan) and specific solutiuons have not yet been identified.<br>- We considered other options for Qlik, including SAP's solution. We found it to be too expensive and less flexible to the various analytics tools and strategies. |

Michigan Public Service Commission
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| Key Objectives | |
|---|---|
| 1) | Dependably deliver timely, secure, high-quality data to the business partners throughout the enterprise |
| 2) | |
| 3) | |
| 4) | |
| 5) | |
| 6) | |
| 7) | |
| 8) | |
| 9) | |
| 10) | |

| | | | |
|---|---|---|---|
| Start Month | January | 2022 | |
| Duration to Complete | 1 | Years | 11 Months |
| End Month | December | 2023 | |

| | |
|---|---|
| Funding Source | ITS |

**IT Financial Impact**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total amount is sent for approval on all business cases. Total** |
|---|---|---|---|---|---|---|
| Capital | $251,148 | $251,148 | $0 | $0 | $0 | **$500,000** |
| O&M | $25,520 | $25,525 | $0 | $0 | $0 | **$50,000** |
| Total | $276,668 | $276,673 | $0 | $0 | $0 | **$550,000** |

**Business Unit Costs**

| | | | |
|---|---|---|---|
| BU O&M | $0 | Trailing BU O&M Costs | $0 |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| OCM O&M | $0 | $0 | $0 | $0 | $0 | $0 |

# Executive Summary

| Business Case ID | BCD-EA-20-002 |
|---|---|

| Business Case Name | YR2 Applied Innovation |
|---|---|

## Stakeholders

| IT Portfolio | Technology and Architecture |
|---|---|
| IT Sub-Portfolio | Technology & Architecture |
| IT Director | Phillip Smith |
| Managed by | IT |

| Business Unit | Enterprise Architecture |
|---|---|
| Business Unit Sponsor | Phillip Smith |
| Business Units Impacted | Electric |

## Project Description

| Project Category | Strategic |
|---|---|
| Project Type | Operational |

| Innovation? | Yes - Savings, Capital Efficiency, Customer Affordability, Safety, Electric Reliability, and other emergent value as discovered, prioritized, and delevered. |
|---|---|
| Strategic Fit | Superior & Sustainable Financial Performance |

### Business Outcome

Work in 2021 and 2022 will continue focusing on the DO strategy, projects and metrics to expand business capabilities, and potentially expand to other business units as prioritized by company leadership. DO strategy and projects are focused on Business and Company metrics for: Hard Savings, Capital Efficiency, Customer Affordability, Safety, and Electirc Reliability, driven by 8 Strategy Pillars. 2020 work focused on rapid response projects helping the company to operate amid the Covid19 Pandemic, and continually demonstrating the 4 service keys in our daily work.

### Key Objectives

1) Do Differnent. Increase Speed to Value into core DTE operations where the Status Quo Doesn't Cut It
2) Advance DO Innovation Portfolio project discovery, prioritization, and delivery, as guided by the Technology and Innovation Strategy first formalized in 2020.
3) Deliver Value through, Savings, Capital Efficiency, Customer Affordability, Safety, Electric Reliability through innovation projects and innovation mindsets.
4) Use Speed to Value Mindset, with our project and program tools and methods to: Rapidly unlock breakthrough value; Challenge conventions with brave unbiased curiosity.
5)
6)
7)
8)
9)
10)

| | | | |
|---|---|---|---|
| Start Month | January | 2020 | |
| Duration to Complete | 3 | Years | 0 Months |
| End Month | January | 2023 | |

| | |
|---|---|
| Funding Source | ITS |

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Summary

## Financial Impact

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $3,500,000 | $2,000,000 | $2,000,000 | $0 | $0 | **$7,500,000** |
| O&M | $420,000 | $0 | $0 | $0 | $0 | **$420,000** |
| OCM | $0 | $0 | $0 | $0 | $0 | **$0** |
| Total O&M | $420,000 | $0 | $0 | $0 | $0 | **$420,000** |
| Total | $3,920,000 | $2,000,000 | $2,000,000 | $0 | $0 | **$7,920,000** |

| Hardware/Software/ Cloud | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Total** |
|---|---|---|---|---|---|---|
| Capital | $0 | $0 | $0 | $0 | $0 | **$0** |
| O&M | $0 | $0 | $0 | $0 | $0 | **$0** |

| | | | |
|---|---|---|---|
| BU O&M | $0 | Incremental Costs | $0 |