

Agenda

Technology and Security Committee Meeting

February 14, 2024 | 9:45–10:45 a.m. Central
In-Person

The Houstonian Hotel Houston
111 North Post Oak Lane
Houston, TX 77024
Conference Room: Grand Ballroom (lower level)

Virtual Attendees

Webcast Link: [Join Meeting](#)

Committee Members Board Members

Jane Allen, Chair
Larry Irving
Suzanne Keenan
Robin E. Manning
Jim Piro
Colleen Sidford
Kenneth W. DeFontes Jr., Ex Officio

Introduction and Chair's Remarks

[NERC Antitrust Compliance Guidelines](#)

Agenda Items

1. **Minutes*– Approve**
 - a. August 16, 2023 Open Meeting
2. **ERO Enterprise Business Technology Strategic Plan* – Update**
3. **ERO Enterprise Stakeholder Engagement* – Update**
4. **Threat Landscape* – Update**
5. **E-ISAC and Customer Experience and Stakeholder Engagement* – Update**
6. **GridEx VII Recommendations* – Review**
7. **Other Matters and Adjournment**

*Background materials included.

Draft Minutes Technology and Security Committee Open Meeting

August 16, 2023 | 8:30-9:30 a.m. Eastern
In-Person

Westin Ottawa Hotel
11 Colonel By Dr.
Ottawa, ON K1N 9H4, Canada

Call to Order

Ms. Jane Allen, Committee Chair, called to order a duly noticed open meeting of the Technology and Security Committee (the Committee) of the Board of Trustees (Board) of the North American Electric Reliability Corporation (NERC or the Company) on August 16, 2023, at approximately 8:30 a.m. Eastern, and a quorum was declared present.

Present at the meeting were:

Committee Members

Jane Allen, Chair
Suzanne Keenan
Robin E. Manning
Jim Piro
Colleen Sidford
Kenneth W. DeFontes. Jr., *ex officio*

Board Members

George S. Hawkins
Robert G. Clarke
Susan Kelly
Kristine Schmidt
Larry Irving

NERC Staff

Tina Buzzard, Assistant Corporate Secretary
Manny Cancel, Senior Vice President and CEO of the E-ISAC
Mathew Duncan, Director Intelligence
Howard Gugel, Vice President, Compliance Assurance and Registration
Kelly Hanson, Senior Vice President and Chief Administrative Officer
Stan Hoptroff, Vice President, Business Technology
Soo Jin Kim, Vice President, Engineering and Standards
Mark Lauby, Senior Vice President and Chief Engineer
Kimberly Mielcarek, Vice President, Communications
Sonia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
Janet Sena, Senior Vice President, External Affairs
Andy Sharp, Vice President and Chief Financial Officer
Bluma Sussman, Director, Membership

NERC Antitrust Compliance Guidelines

Ms. Allen directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the advance agenda package and indicated that all questions regarding antitrust compliance or related matters should be directed to Ms. Rocha.

Chair's Remarks

Ms. Allen welcomed participants to the meeting and reviewed the agenda.

Minutes

Upon motion duly made and seconded, the Committee approved the minutes of the May 10, 2023, open meeting as presented at the meeting.

ERO Enterprise Business Technology

Mr. Hoptroff provided an overview of NERC's approach to customer support for its business technology solutions, including NERC's support philosophy, the mechanism for providing support, and its support focus areas in 2023 and longer term to enhance the customer experience. He also provided an update on implementation of Align in Canada, noting that Align is in production in Ontario, Nova Scotia, Manitoba, Saskatchewan, and in development in Alberta and British Columbia. NERC is in discussion with Quebec regarding Align and will be discussing Align with New Brunswick

E-ISAC Operations

Mr. Cancel introduced the discussion topics and thanked the Canadian stakeholders and participants. He thanked the Regulators and the Canadian Center for Cyber Security. Mr. Cancel provided an update on the Member Executive Committee (MEC) charter changes. He noted that Barbara Sugg is the new co-chair and Bill Fehrman is retiring but will remain the MEC Chair.

Mr. Duncan provided an overview of cyber and physical security threats and E-ISAC responses to these threats. He highlighted that the threat environment continues to be dynamic and the continued need for collective defense. Mr. Duncan thanked the Canadian Government and noted NERC's partnership with the Canadian Center for Cyber Security.

Ms. Sussman provided an overall summary of E-ISAC and noted the Canadian participation. She discussed the results of the E-ISAC's 2023 membership survey. Ms. Sussman noted that the survey was intended to gather feedback about the quality of the products the E-ISAC develops, current services offered, and the overall satisfaction they have with the organization. She reported that the E-ISAC received positive feedback with a high net promoter and overall satisfaction scores. Ms. Sussman also discussed feedback that identified opportunities for growth, noting that the E-ISAC will use that feedback to enhance its products and services.

Ms. Sussman also provided an update on the Vendor Affiliate Program, which is focused on facilitating information sharing and best practices between vendors and E-ISAC member and partner organizations.

Ms. Allen thanked the presenters for noting their collaboration with the Canadian organizations. She noted that additional learnings will be provided by the February meeting.

Adjournment

There being no further business and upon motion duly made and seconded, the meeting was adjourned.

Submitted by,



Sônia Rocha
Corporate Secretary

ERO Enterprise Business Technology Strategic Plan

Action

Update

Background

Management will provide an overview of the ERO Enterprise Business Technology Strategic Plan. The overview will include a recap of 2023 and plans for 2024. For 2023, management will discuss the following solutions in support of NERC business units:

- Reliability Coordinator Information System (RFP for Vendor Selection)
- Internal Network Security Monitoring (FERC Mandate 887)
- Cross-Border Risk Analysis Data Request (Section 800)
- NERC Alerts Upgrade and Security Enhancements
- Align (for in-scope Canadian Provinces)
- NERC.com modernization (RFP for Vendor Selection)
- New Human Resources solution (Phase 1 for payroll)
- New Finance system
- Enhanced client support tracking system (EasyVista)

Management will also discuss the following security solutions delivered in 2023:

- NERC Extranet SharePoint upgrade
- Data Loss Prevention (Microsoft 365/Purview/Intune)
- InfoHub adoption - data security and ERO data classification
- Identity access management
- Data and archived email deletion
- ERO cyber security principles and framework standardization

For 2024, management will highlight the following solutions in support of NERC business units:

- New Finance System implementation
- Human Resources solution (Phase 2 for performance management and compensation)
- NERC.com website modernization
- Bulk Electric System Performance Risk Analysis
- Reliability Coordinator Information System Replacement implementation
- Align and Secure Evidence Locker enhancements
- Generating Availability Data System – Wind and Solar
- System Operator Certification Continuing Education database replacement
- Reliability Assessment Data System (Forecasting System)
- Resource Adequacy upgrade
- BAL data collection modernization program (phase 1)

Management will also discuss the following security solutions expected to be delivered in 2024

- Cyber perimeter protection enhancements
- Data loss prevention and data handling enhancements
- Identity access management enhancements
- End-point protection upgrades
- Cloud security enhancements and expansion

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ERO Enterprise Business Technology Strategic Plan

Stan Hoptroff, Vice President, Business Technology
Angus Willis, Director, Core Infrastructure
Technology and Security Committee Open Meeting
February 14, 2024

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- 2023 Business Technology – What We Delivered
- 2024 Business Technology Roadmap – What We Are Planning to Deliver

- Reliability Coordinator Information System (RCIS) - RFP for Vendor Selection
- Internal Network Security Monitoring (FERC Mandate 887)
- Cross-Border Risk Analysis Data Request (Section 800)
- NERC Alerts Upgrade and Security Enhancements
- Align - In-Scope Canadian Provinces
- NERC.com - Modernization RFP for Vendor Selection



2023 WPP
in Action

- New software solution for Human Resources - Phase 1 Payroll
- New Finance System RFP for Vendor Selection
- H Street Audio Visual Introduction - First Hybrid Board Meeting
- Enhanced Client Support Tracking System - EasyVista

- NERC Extranet SharePoint Upgrade
- Data Loss Prevention - Microsoft 365/Purview/Intune
- InfoHub Adoption - Data Security and ERO Data Classification
- Identity Access Management - Vendor selection, requirements/design; implementation underway
- Data and Archived Email Deletion to Support Company Policy
- ERO Cyber Security Principles and Framework Standardization





**2024 WPP
in Action**

- New software solution for Finance - Implementation and Go-Live
- New solution for Human Resources - Phase 2 Performance Management and Compensation
- NERC.com Public Website Modernization
- Bulk Electric System Performance Risk Analysis – Requirements
- RCIS Replacement - Implementation

- Align and Secure Evidence Locker Enhancements
- Generating Availability Data System Wind and Solar - OATI
- System Operator Certification Continuing Education Database Replacement
- Reliability Assessment Data System - Forecasting System
- Resource Adequacy Upgrade
- BAL Data Collection Modernization Program Phase 1

Security Solutions Roadmap - 2024

- Cyber Perimeter Protection Enhancements
- Data Loss Prevention and Data Handling Enhancements
- Identity Access Management Enhancements
- End-Point Protection Upgrades
- Cloud Security Enhancements and Expansion



**2024 WPP
in Action**

Platforms Roadmap - 2024

- Application Platform (Microsoft Dynamics)
- Collaboration Tools (SharePoint, Microsoft Teams)
- Core Infrastructure Servers
- Core Firewalls and Network Infrastructure



Questions and Answers

ERO Enterprise Stakeholder Engagement

Action

Update

Background

Management will provide an overview of the results of the ERO Enterprise Business Technology client survey. The survey was conducted between December 1, 2023 and January 15, 2024. Respondents to the survey included Registered Entities (60%), Regional Entities (17.8%), and NERC staff (22.2%).

General satisfaction with the customer support, the survey indicated the following key areas for improvement (in priority order): (1) resolving issues faster, (2) increased response time to reported issues, (3) improved notifications to customers on status of reported issues; and (4) ensuring response resolves the reported issue.

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ERO Enterprise Stakeholder Engagement

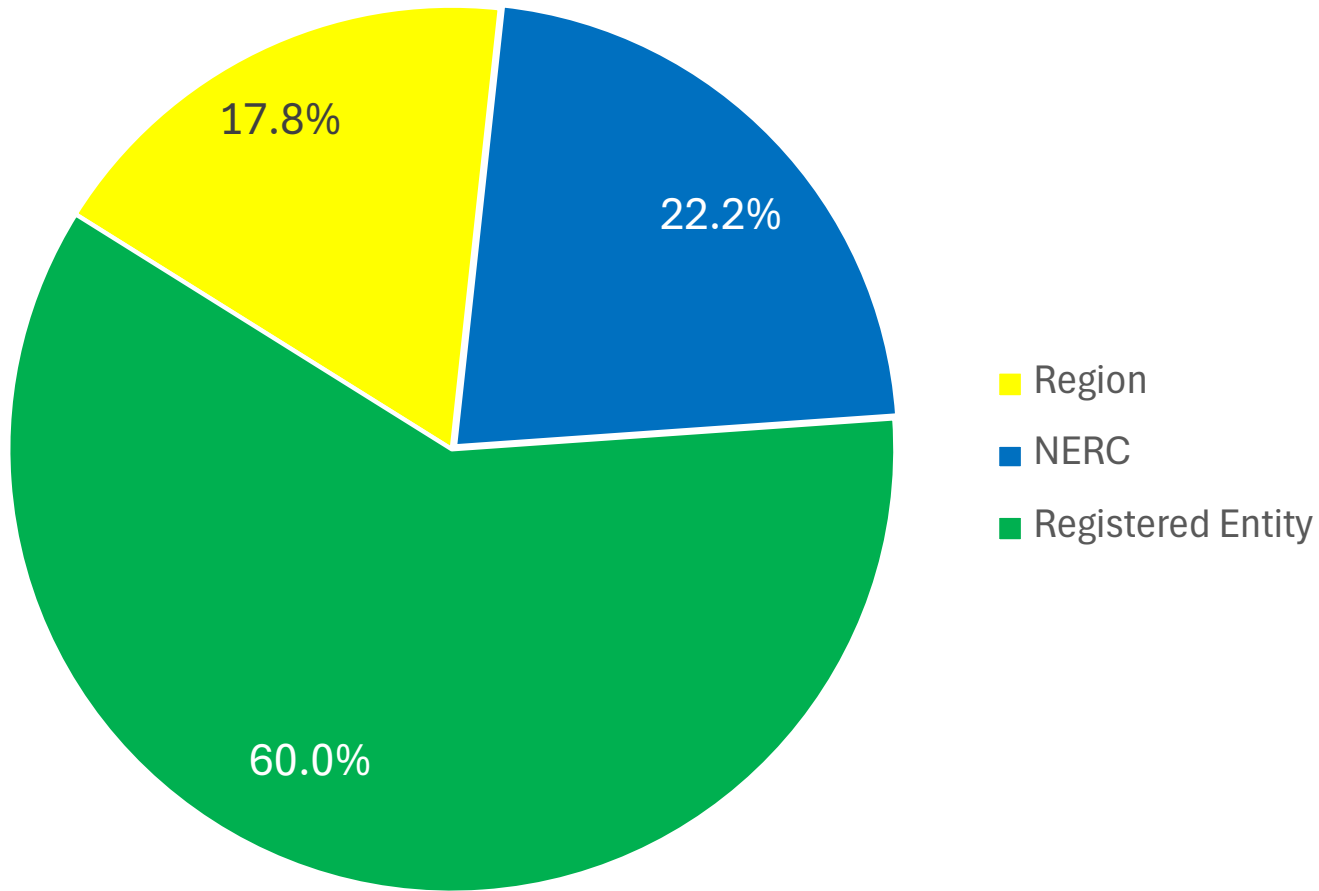
Stan Hoptroff, Vice President, Business Technology
Technology and Security Meeting Open Meeting
February 14, 2024

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- What: Annual Business Technology Survey
- Who: ERO Portal Account Holders, all Regions' staff, and all NERC staff
- When: December 1, 2023 though January 15, 2024
- Why:
 - To give our customers more of a voice
 - To learn what we are doing well and what we need to improve

Survey closed January 15, 2024, with 428 Responses



***NERC staff seems to be generally satisfied.
Registered Entities are somewhat satisfied.
We need to do a better job supporting the Regions.***

		Percentage Favorable or Neutral	
Help and Support	NERC		80%
	Registered Entities		71%
	Regions		53%
Technology Overall	NERC		89%
	Registered Entities		78%
	Regions		55%

Key Areas for Improvement (in priority order)

1. Resolving issues faster
2. Responding more quickly to reported issues
3. Better informing our customers about the status of their issue
4. Making sure our responses resolve the issue

- Resolving issues faster; responding more quickly to reported issues
 - Increase focus on monitoring performance in real-time
 - Work with our Quality Assurance team to analyze trends
- Better informing our customers about the status of their issue
 - More messaging and notifications regarding status
- Making sure our solutions resolve the issue
 - Added emphasis on knowledge base and training
 - Improve team information sharing and collaboration



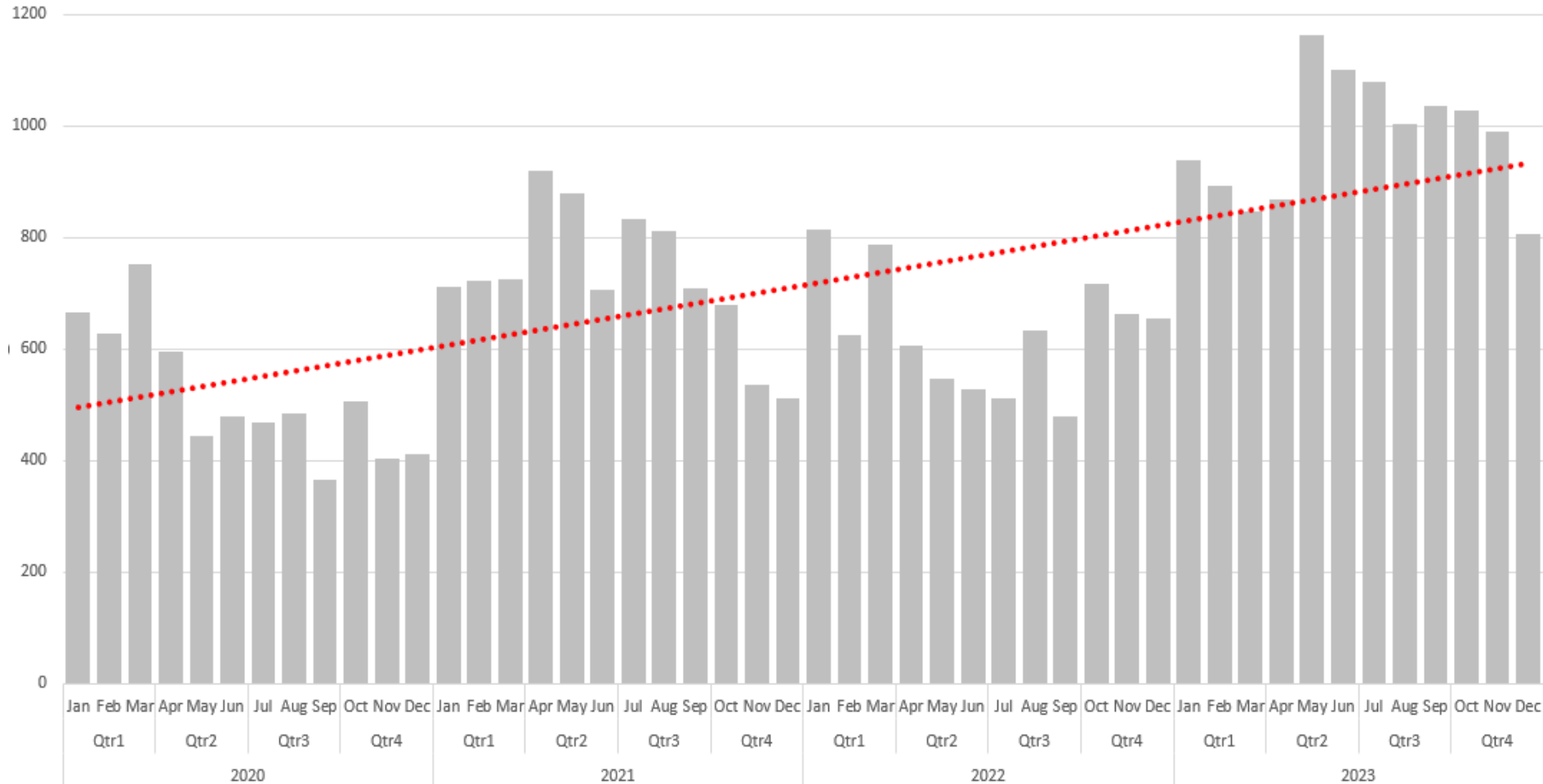
Questions and Answers

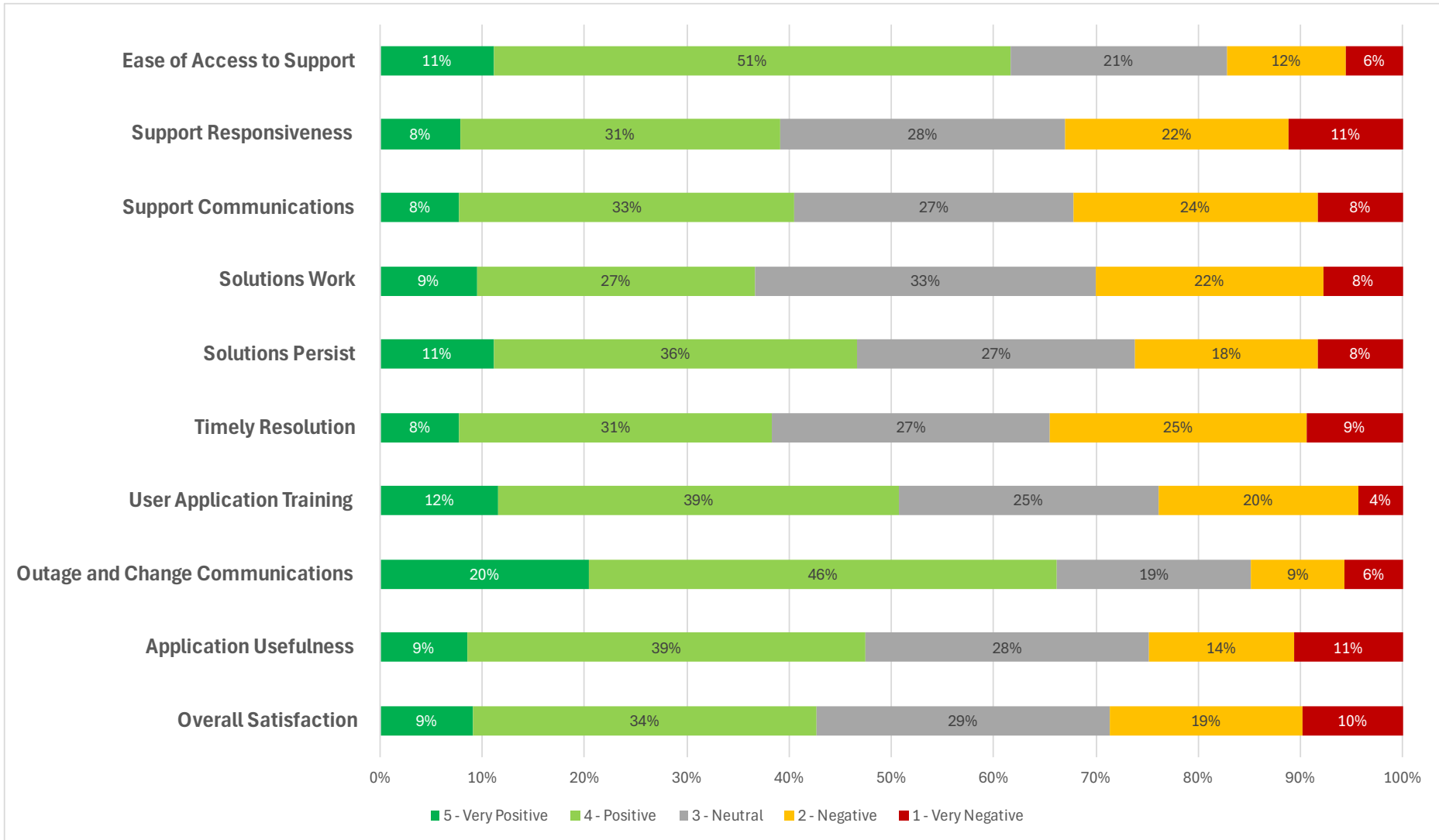


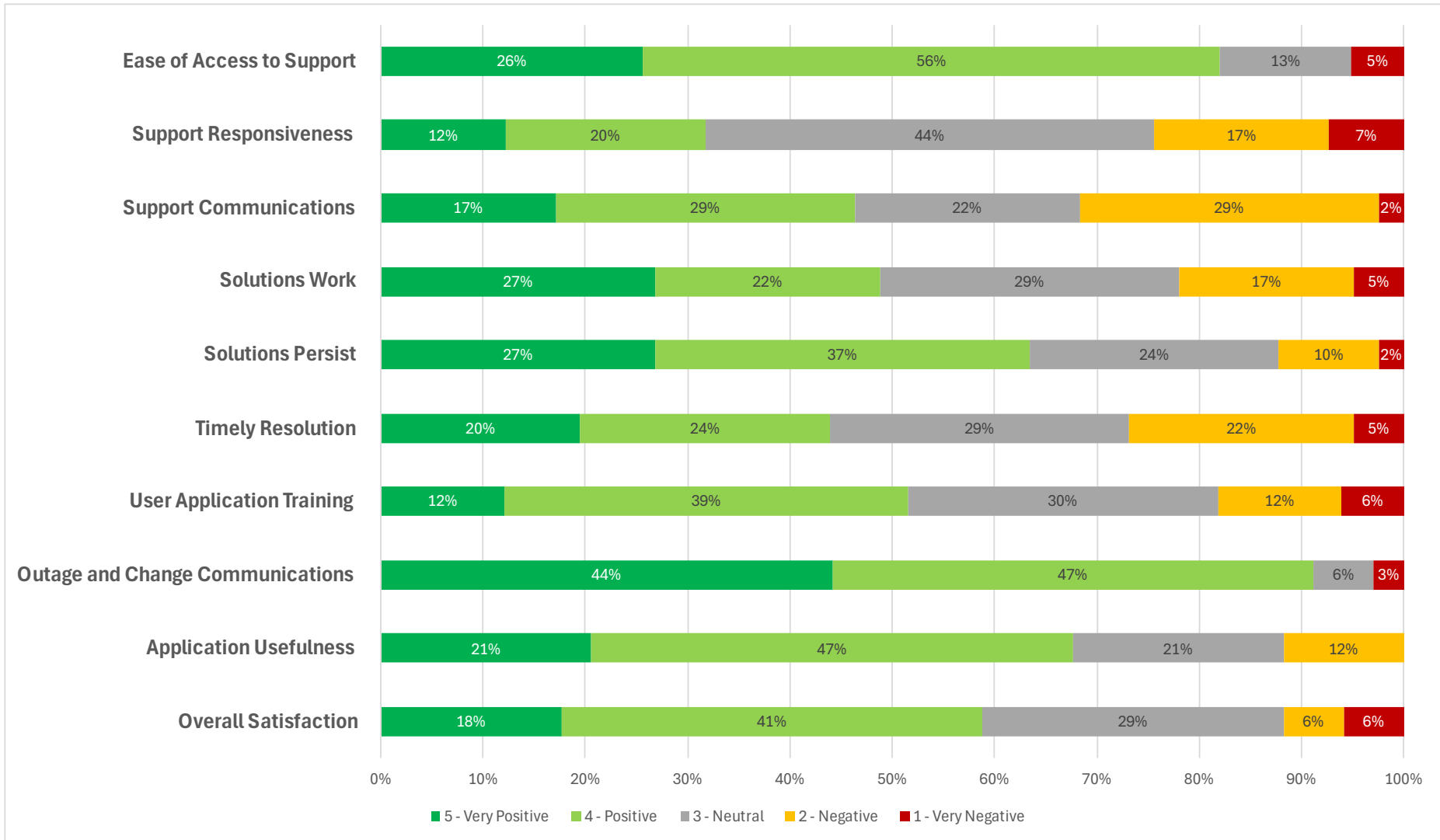
Additional Information

Demand Growth

Monthly Ticket Volumes

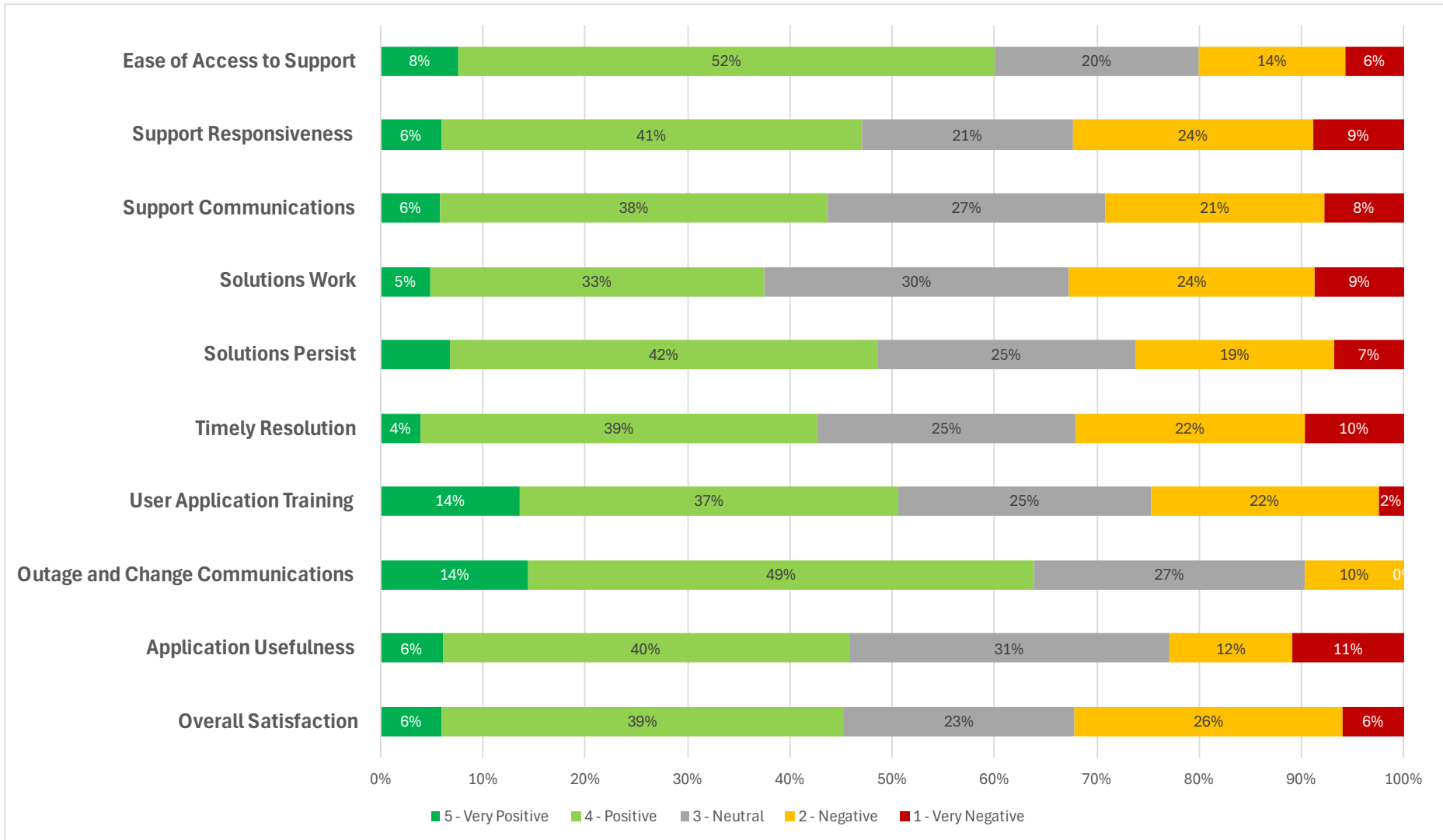


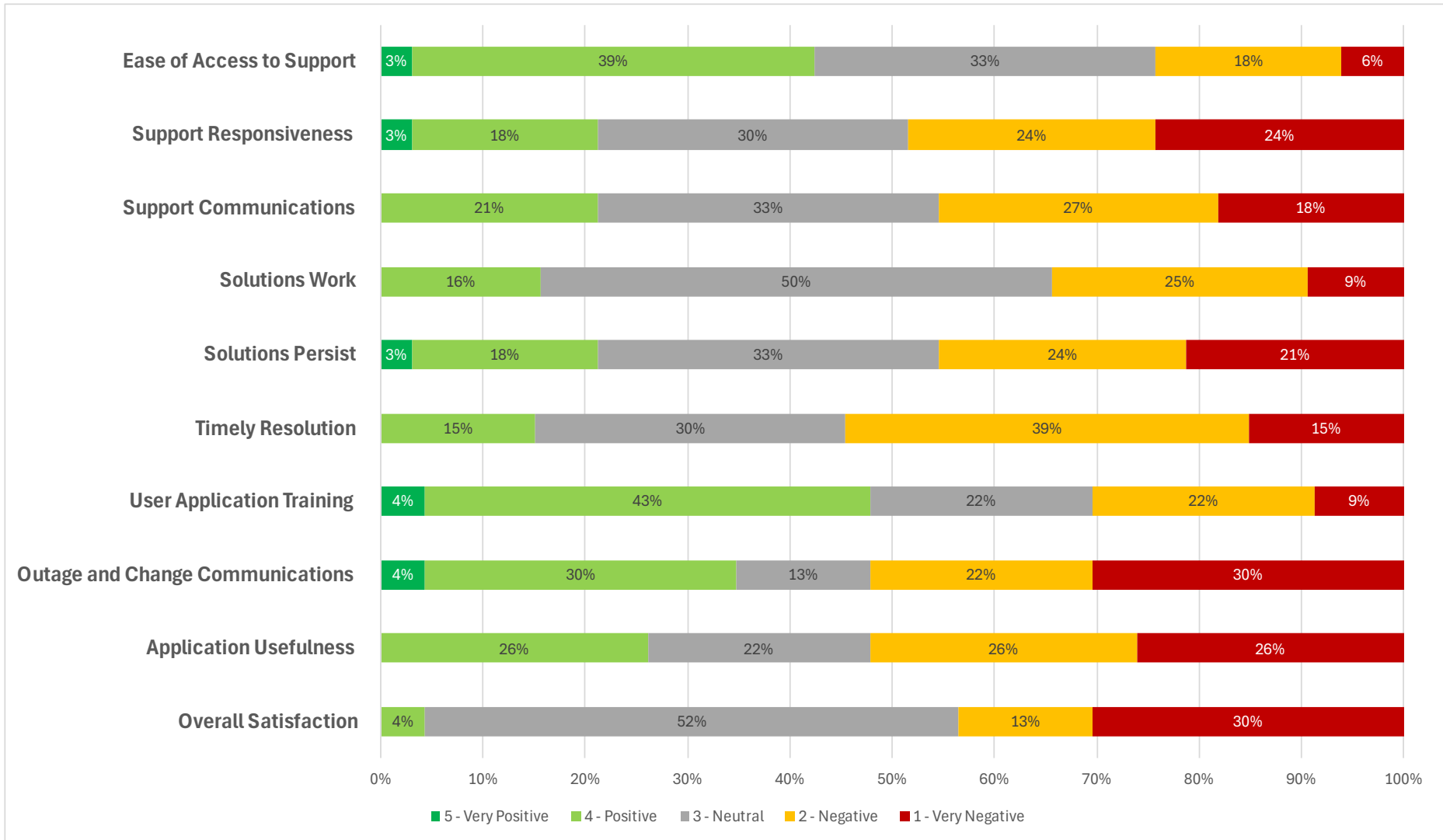




2023 NERC Business Technology Survey

Registered Entity Responses (59.0%)





Threat Landscape

Action

Update

Background

Management will provide an update on the threat landscape, including a summary of cyber vulnerabilities and physical security incidents. The update will include a discussion on artificial intelligence threats and opportunities and the 2024 election cycle.



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Threat Landscape

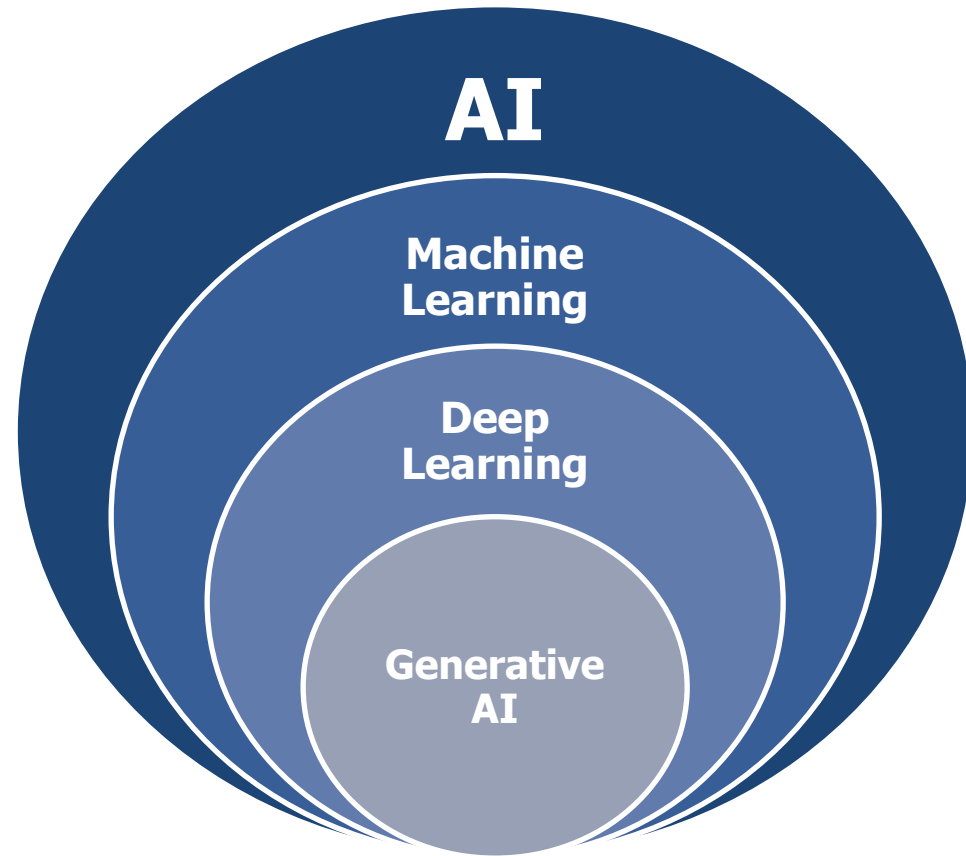
Matt Duncan, Director, Intelligence
NERC Board of Trustees, Technology and Security Committee
February 14, 2024

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Definition: *“An engineered or machine-based system that can, for a given set of objectives, generate outputs such as predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy.” (NIST.AI.1000-1)*



Threats

- “Makes hacking easier”
- Enhanced social engineering/credential harvesting attacks at scale
- Data and Search Engine poisoning
- Workforce Challenges

Opportunities

- Improved cyber threat detection
- Stronger network security and access control
- [“E-ISAC Report: AI and Its Potential Security Impacts”](#)
- Employee training
- NERC AI Policy

Threats

- No specific, credible, and imminent cyber threats to the BPS at this time
- Geopolitical: China, Russia, Middle East
- Ongoing scanning and reconnaissance detected
- Phishing and vulnerability exploitation attempts most reported
- Ransomware remains a major concern

Threats

- Increase in severe physical incidents (theft, ballistic, vandalism, intrusion) based on historical trends

Outlook

- Physical security threats and risks that will continue in 2024:
 - Periods of civil unrest and vandalism against utilities
 - Domestic Violent Extremists and other extremists advocating sabotage
 - Malicious activism against industry
 - Increased theft due to economic turbulence and high materials prices

Threats

- Upcoming election cycle presents opportunity for adversaries
- China, Russia likely to promote mis-information
- DVEs looking for targets of opportunity to promote civil unrest

Actions

- Coordinating with members and partners on election security support
- Monitoring underway and will continue through vote tabulation in January 2025



Questions and Answers

E-ISAC and Customer Experience and Stakeholder Engagement

Action

Update

Background

Management will provide a summary of E-ISAC membership. In addition, they will summarize recent feedback received from stakeholders and efforts underway to address the feedback and provide more value to members. Management will also provide an update on the Vendor Affiliate Program and efforts to enhance the E-ISAC portal and user experience.



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E-ISAC Customer Experience

Bluma Sussman, Director of Membership

Eric Hartung, Director of Performance Management

Technology and Security Committee Meeting

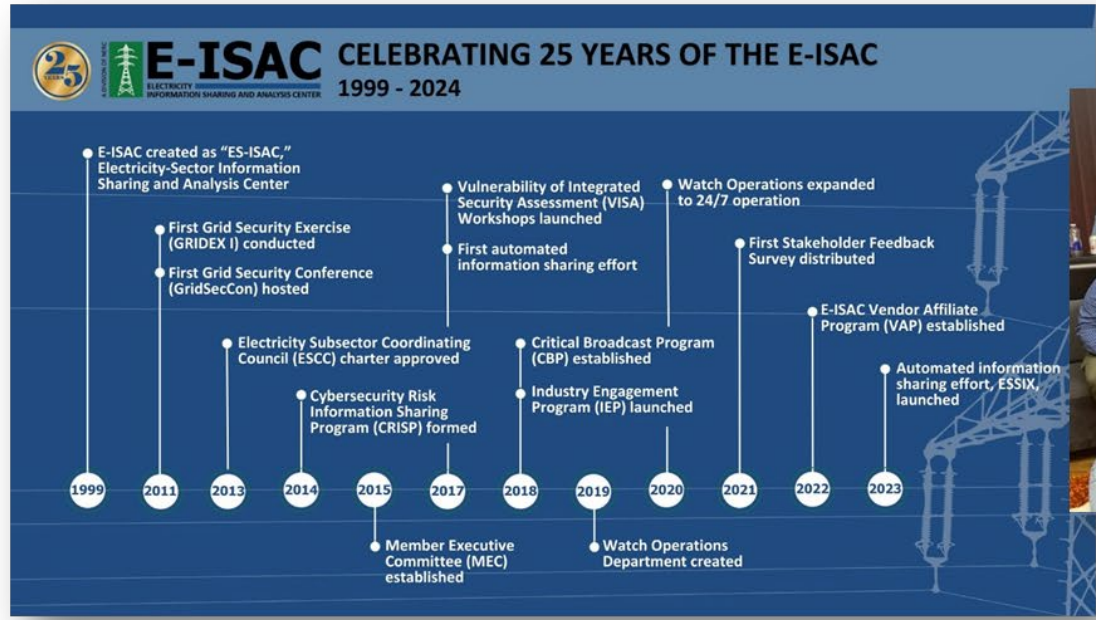
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- Celebrating 25 Years of Industry Leadership and Collaboration
- Milestone events throughout the year
- Recognize the E-ISAC's industry-wide impact



- The E-ISAC community includes
 - ~1,800 member and partner organizations
 - More than 85% of metered customers in North America
 - 100% IOUs, G&Ts, LPPCs, and Canadian Crown Corporations
- 2023 Growth
 - Organizational growth up 9.2%; individual Portal users up 19.3%
 - Increased registered entity membership to 53%
 - Vendor Affiliate Program - 13 companies
- 2024 Focus Areas
 - Joint Action Agencies
 - Registered Entities
 - Vendors
 - IBRs

- Establishing a culture of feedback
- Collecting feedback from diverse sources
- Analyzing and prioritizing
- Turning feedback into action
 - ***Consolidated reports:*** ICS Security Bulletins, Weekly Ransomware and Cybercrime Report
 - ***Portal experience:*** Improved functionality and user experience
 - ***Tangible mitigation strategies:*** VISA, Physical Security Workshops

- Vendor Affiliate Program

- 2024 Goals

- 77% retention rate from 2023, met self-funding goal
 - Achieved \$100,000 goal in new enrollment

- Q3-4 Highlights

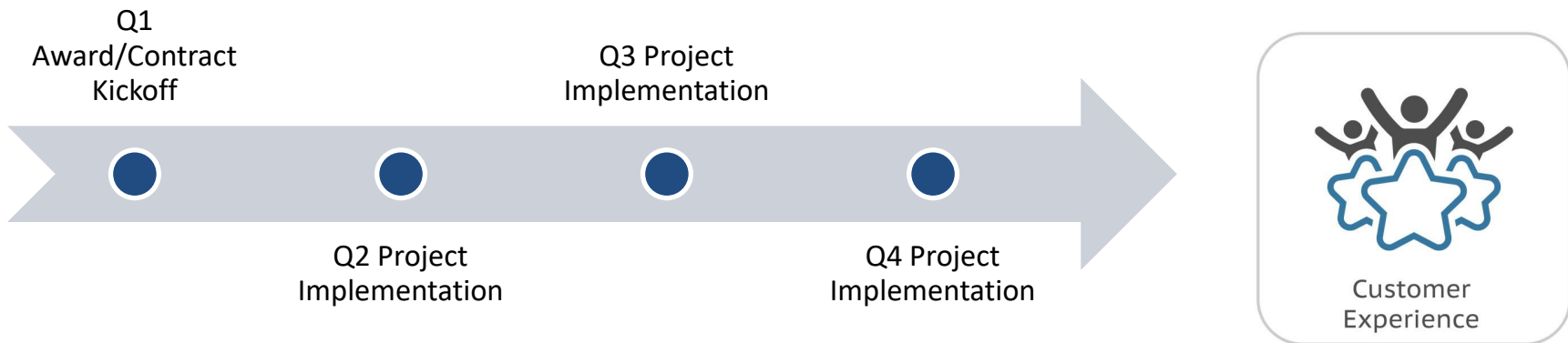
- Vendor Industry Engagement Program
 - Collaboration with the CSAG
 - Participation in GridSecCon and GridEx

- What's New in 2024

- Supply Chain Working Group
 - Discounted products and services for E-ISAC AOO members
 - Addition of Cloud Providers and Physical Security Vendors



- Stakeholder ("customer") Experience (CX)/ User Experience (UX) Work
 - Define stakeholder personas
 - Analyze customer experience
 - Identify gaps in engagement/opportunities for outreach
- Portal User Experience (UX)
 - Analyze Portal User Experience
 - Identify areas for improvement (flow, content, organization, etc.)





Questions and Answers

GridEx VII Recommendations

Action

Review

Background

Management will provide an overview of the draft recommendations from the GridEx VII Executive Tabletop. Preliminary recommendations currently include:

- Evaluate technologies and processes that could be used to increase the resilience of telemetry exchange between control centers and operator voice communications that are essential to operating the grid.
- Review the frameworks used to prioritize restoration during a complex power outage and determine if improvement is needed.
- Evaluate options to mitigate impact of a potential loss of market operations over an extended period.



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GridEx VII

Recommendations

Laura Brown, Director, Strategy, Policy, and Programs
Jesse Sythe, GridEx Program Manager
Technology and Security Open Meeting
February 14, 2024

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Date: November 14-15, 2023

Audience: E-ISAC Members and Partners

- Real-time, decentralized, operational exercise in response to a coordinated cyber and physical attack by a nation-state adversary
- 252 Organizations participated across U.S, Canada, and Mexico
 - All 17 Reliability Coordinators
 - All 6 Regional Entities
- 15,000 individual participants



GridEx VII



Date: November 16, 2023

Audience: Government and industry executives

- Hybrid tabletop exercise held at NERC's DC Office
- 200+ industry executives and senior government officials across 80 organizations
- Complex scenario featured:
 - Inter-control center telemetry outages
 - Long-term energy market disruption
 - ONG/LNG facilities without offsite power due to substation attacks



GridEx VII



- The E-ISAC is working with industry and government partners to finalize recommendations
- Preliminary recommendations focus on:
 - Inter-control center data telemetry
 - Resilient voice communications
 - Deconflicting restoration priorities
 - Prolonged energy market disruption
- Lessons Learned report available March/April 2024





Questions and Answers