FBISD
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Information Technology Division
Annual Report
2017-2018

MESSAGE FROM CHIEF INFORMATION OFFICER

With the 2018-2019 academic year well underway, it's a good time to reflect upon the activities and accomplishments of the past year that bring the Information Technology Division (IT) to where we are now.   In the 2017-2018 school year, we saw the final effort in the refresh of the district's campus IT infrastructure as supported by the 2014 Bond. This effort resulted in an infrastructure and service platform that facilitates the seamless sharing of information for Fort Bend ISD for the future.   We worked collaboratively with our Academic Affairs Division to pilot the classroom toolset as well as strengthen our abilities in technology-enhanced learning. The IT Division assisted in opening three elementary schools and one middle school. We began an effort to educate staff and students on various information security topics.   Finally, with the passing of the 2018 Bond, we are embarking on refreshing and enhancing current classroom technology that will enable our teachers' ability to deliver instructions with fidelity and provide our students with the tools to enhance their learning.

During the past year, the goal for the Office of the Chief Information Officer was to provide a prompt, effective and trusted information technology organization for teachers, students, and staff. The Information Technology Division can achieve this through transparency, accountability, and end user-led IT governance. Our campuses and classrooms depend on technology and the IT Division's success is measured by how effective it is able to meet district staff and student needs.   We are able to anticipate adequately the technological needs with constant dialog with key divisions within the district as well as ongoing effort to understand and leverage new and upcoming technology to serve the District's mission and vision. We are committed to working together with teachers, students, staff, and administration to provide the best educational experience. Our technology services and resources are a vital part of the Fort Bend ISD's commitment to academic excellence.

Long Pham
Chief Information Officer
Fort Bend ISD

OVERVIEW

The 2017-2018 Division of Information Technology Annual Report provides an overview of the major accomplishments of the division from July 1, 2017, through June 30, 2018, as well as goals for fiscal school year 2018-2019.

FBISD relies on technology in the daily activities of our students and our staff. We are responsible for all facets of technology that enable our end users to perform their daily jobs in delivering the necessary instructional services to our more than 75,000 students. Whether a device plugs directly into a network port in the wall or leverages a wireless connection, the Information Technology Division maintains this infrastructure daily. Most of the time, we work behind the scenes to provide support to business and student applications for all departments such as Human Resources, Business and Finance, Student Information, Child Nutrition, Transportation, and many others. Our focus is to provide creative and innovative solutions to facilitate FBISD business processes.

Mission

The Information Technology Division exists to provide our end users with technology solutions and services that are innovative, dependable, scalable, and sustainable.

Vision

The Information Technology Division will be recognized as innovative K-12 technology leaders by providing effective use of existing and emerging technology to enable the continuous improvement of teaching and learning.

"Fort Bend ISD will graduate students who exhibit the attributes of the District's Profile of a Graduate"

WHAT WE DO

The following is a list of services Information Systems (IS) Department provides to FBISD

Attendance

- Local, State and Federal Reporting
- Texas Education Agency (TEA Records Exchange Services)
- PEIMS Support Services
- Office of Civil Rights Reporting
- Average Daily Attendance (ADA)/Registrar Support

Application Services

(Applications that are not PeopleSoft, Skyward or Web Services)

- Application Implementation and Project Management
- Custom Programming and Reporting
- Datamining (MSSQL, Power BI, and Excel)
- Second and Third Level Application Support

Business Services

- Vendor Management
- Contract Management
- Sourcing Management
- Grant/Bond/ERate Management
- Operation Expenses Management
- Asset Management
- Disaster Recovery Processes

Data Integration

- Data Warehousing
- Business-to-business Integration and Data Exchange

- Unified Data Management (UDM)
- Bulk Data Transfer
- Online Resources and Textbooks - User Account and Roster Provisioning

Enterprise Resources Planning (ERP) Application Services

- PeopleSoft Human Capital Management
- PeopleSoft Financials (FSC)
- PeopleSoft Portal (to be decommissioned in February 2019) PeopleSoft Customer Relationship Management (to be decommissioned in February 2019)PeopleSoft Database Security Support
- PeopleSoft Security
- PeopleSoft FSC Training

Integration Architect

- SQL Database
- Administration
- Database Design
- Database Tuning
- Data Extraction, Encryption, and Transmission
- Data Analysis
- Process Automation
- Business Process Analysis

Student Information Systems

- Skyward Support
- Skyward Training
- Master Schedules
- Grade Reporting
- Online Registration
- Crystal Report Services
- Open Records Requests
- Family Access

Web Services

- Internal Web Services
- External Web Services
- Custom Web Development
- Web Community Manager (formerly known as SchoolWires)
- SharePoint Online

WHAT WE DO

The following is a list of services Information Technology Services (ITS) Department provides to FBISD.

Customer Service Center

- Remote Desktop Support
- Remote Mobile Device Support
- Remote Printer Support
- Enterprise Application Support
- Password Management
- First Level Network/Telephone Support
- First Level Application Support
- Account Management Services
- Remote Support
- Cisco Phones Support
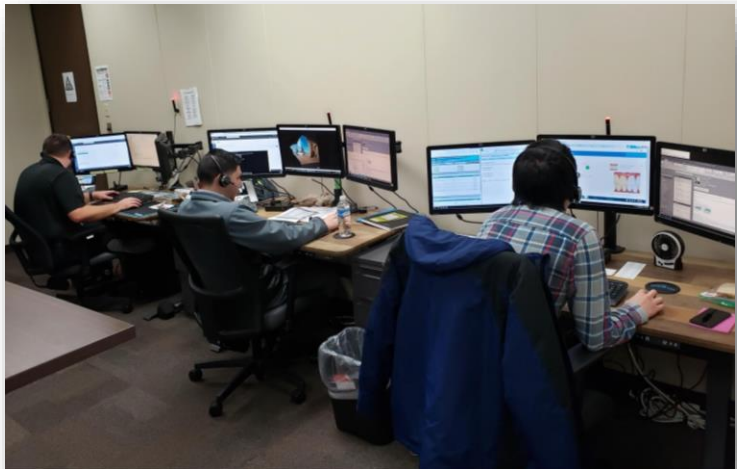
Network Services

- Network Services
- Wireless LAN Services
- VoIP Phone Services
- Network Engineering
- Network LAN/WAN Services
- Network LAN/WAN Support
- Structure Cabling
- Network Security
- Remote Network Access (VPN)

Data Center and Server Management

- Data Center
- Storage/SAN (Storage Area Network)
- Servers
- Cloud Services
- System Backups
- Active Directory
- Email, Server/email Security, User Management

Desktop Support

- Desktop Support
- Mobile Devices
- Printers
- Projectors
- Smartboard/Elmo
- Desktop audio/video
- Lab Management
- Broadcast Studio Audio/Visual
- Enterprise Video, Webcasting, Video CMS
- Elementary Support/High School Support

Desktop Technology

- Desktop Tools
- Asset Management
- Print Services
- Active Directory Policy Management
- Desktop Security
- Desktop Hardware Standards
- Software Life Cycle Management
- Desktop Application Packaging
- Deployment, and Compliance
- Desktop Risk Management
- Patch Management
- Central Region Campus and Administrative Site Support

INFORMATION TECHNOLOGY DIVISION BY THE NUMBERS

- 292,398,000 denied Internet destinations by firewall in 1 day (1/29/19) (top 5 destinations)
- 39,361,326 Fort Bend ISD web page views
- 18,646,218 unique Fort Bend ISD web page views
- 16,440,440 websites blocked by filters in 1 day (1/29/19) (top 5 blocked websites)
- 3,563,748 emails received in a 6-month period (between 8/2/2018-1/28/2019)
- 2,789,542 new visitors to Fort Bend ISD web sites
- 1,027,158 returning visitors to Fort Bend ISD web sites
- 899,769 emails sent in a 6-month period (between 8/2/2018-1/28/2019)
- 841,188 attacks from the Internet blocked at the firewall on 1/29/19 (top 5 attacks)
- 246,120 payroll checks confirmed
- 179,482 SPAM emails filtered in a 6-month period (between 8/2/2018-1/28/2019)
- 80,942 total vouchers processed in PeopleSoft FSC
- 36,038 devices attached to wireless network daily
- 31,391 total purchase orders processed in PeopleSoft FSC
- 7,600 malware detected in emails in a 6-month period (between 8/2/2018-1/28/2019)
- 6,031 malware incidents on devices (6 months)
- 4,780 cameras in use consuming over 2.5 Petabytes of storage space
- 4,688 Change Forms submitted
- 3,200 iPad's were deployed through the Verizon Grant
- 2,734 spyware blocked at the firewall in 1 day (1/29/19)
- 2,402 malwares removed by antimalware software
- 2,182 virus infected computers remediated
- 1,771 Exit Forms submitted
- 1,655 computers infected with severe malwares
- 786 GB size of all PeopleSoft production databases
- 524 brute force hacking attacks blocked by the firewall (1 day reporting)
- 143 Open Records Requests – fulfilled
- 3.9 Gbps peak Internet bandwidth used by wireless users 1 day (1/23/19)
- 2.4 Gbps peak Internet bandwidth used by non-wireless users 1 day (1/23/19)

ACCOMPLISHMENTS BY AREA

Information Systems Department

ERate

Since January 2017, the Information Technology Division (IT) applied and received reimbursements totaling $1,427,492 for eligible equipment and services as part of the ERate program, a federal program that provides discounts to help eligible schools obtain affordable telecommunications and Internet access. IT currently awaits a reimbursement of $1,952,800 for those eligible services for our large fiber buildout project. At any given time, the Information Systems (IS) department manages three ERate fiscal year activities for FBISD, which include filing for reimbursements for our previous year's plan, actively implementing planned services, and planning/applying with Universal Service Administrative Company (USAC) for approval for future services. This is a very time-consuming and rigorous process; however, the benefits include the reimbursements to the District for services that are qualified.

Data Integration

The Data Integration team, established two years ago with the reorganization of Information Systems Department, focuses on data exchange and data controls to or from external vendors. Currently, the Data Integration team securely extracts, transforms, loads and transfers data to and from more than 40 FBISD business partners. The number of vendors will exceed more than 50 by the end of fiscal year 2019. These data services support multiple departments, including but not limited to Transportation, Child Nutrition, Special Education, Teaching and Learning, Career and Technical Education (CTE), Police, and Business and Finance.

The Data Integration team also creates and manages a centralized student pictures repository to support multiple departments in identifying students for the provided services. Examples include Student Information Systems, Police, Child Nutrition, Transportation, Library/Media Services, and Nursing.

PeopleSoft

The PeopleSoft team provides configuration and support to Fort Bend ISD's enterprise resources planning (ERP) system, PeopleSoft (PS). The 2017-2018 school year brought several major enhancements to the PeopleSoft environment for our end users:

- A pilot program for incorporating absence requests on PS My Self-Serve instead of utilizing Aesop – the successful pilot went live in January 2018 for Information Systems Department. In March 2018, the pilot program added the Human Resources Division and the remaining Information Technology Division. With the success of the pilot, IS is currently working with stakeholders for next steps.
- Gifted & Talented credentials are now stored on My Self-Serve – this enhancement automatically loads and tracks teacher information in PS My Self-Serve.
- Absences back-office processes – these processes improved and automated several areas of absences management, including summer hours and rehires.
- Change Form back-end automation
- Texas Retirement System (TRS) – completed updates to system to support the new TRS reporting requirements.
- Furniture, Fixtures and Equipment (FF&E) solution for new school buildouts – created a new printing of door-sheets for tracking and signoff of installation equipment, furniture, and fixtures for each new room.
- Planning and Budgeting Cloud Service (PBCS) – this module implemented to assist in various extracts for District budgeting activities.

- Implemented process for Child Nutrition to begin entering blanket purchase orders (BPOs); encumbered funds are now visible for financial tracking purposes.
- Implemented Requisition Workflow for educational software purchases, allowing the Teaching and Learning Department to review the software request for alignment with curriculum prior to purchase.
- Integrated Athletic web app with PeopleSoft Finance module for voucher loads to improve efficiency, accuracy, and processing of athletic officials payment processing.

- Modifications to Advanced Buyer page to enhance user efficiencies in the Purchasing Department.
- Migration of 24 physical servers to virtual machines (VM), including software Installation/ patching/ configuration on new VMs, saving data center physical space and power requirements while taking advantage of the latest server operating software.

PEIMS

The Public Education Information Management System (PEIMS) team continues with its tasks of loading, validating, and submitting district's PEIMS data to Texas Education Agency (TEA). The following are a few of the team's accomplishments for the 2017-2018 school year:

- The PEIMS team conducted 108 training sessions with 3,383 staff members in attendance that covered deadlines, data requirements, up-to-date information and reminders on day-to-day job functions. Using technology to improve efficiency for all participants, the PEIMS team held 52 Skype training sessions (online interactive remote sessions) and 56 sessions were leader-lead sessions.
- As part of its continued commitment to enhance and improve timelines for PEIMS submissions, the PEIMS team submitted the 2018 fall submission 14 days ahead of the TEA submission deadline! The team focused on data accuracy and communicated expectations to all stakeholders. This effort resulted in a positive impact on PEIMS report timeliness and overall accuracy.
- With focused efforts on improving attendance, 28 campuses reported 97% attendance or higher.
- The PEIMS teams worked 2,776 support cases.
- The PEIMS team facilitated 13 training sessions at various venues such as TASBO and Region IV to train across the state of Texas. The PEIMS Team is also responsible for training over 500 FBISD end users on OnData Suite software.

Integration Architect

The Integration Architect is the key position that provides seamless integration between applications. The Integration Architect takes data from various sources such as the student information system or PeopleSoft, formats the data in correct format, and sends the data to systems and vendors that need them. This position manages 28 Microsoft SQL Server instances that is comprised of 447 databases that consumes 2.4 Terabytes of disk storage for all non-PeopleSoft related applications. For the school year 2017-2018, the Integration Architect's major projects include:

- Migrated processes for Students Provisioning to eliminate local storage and automate Student Account Management for 75,000 students.

- Migrated 10 aging SQL database servers to virtual environment to reduce hardware requirements and simplify future upgrades.

Skyward

The Skyward team provides the day-to-day support and configuration to Fort Bend ISD's student information system, Skyward. The Skyward team was busy last school with the following enhancements to Skyward:

- Loaded Renaissance 360 Parent Score Cards into Student Portfolio
- Loaded Willowridge High School electronic cumulative folders to Student Portfolio - this was a pilot to convert a student's physical records in cumulative folders into electronic format and store in the student's Skyward record
- Uploaded Performance Acknowledgements for high school students into Skyward
- Worked collaboratively with College and Career Readiness Department, implemented Career Plans for high school students
- Conducted Fort Bend ISD's first District-wide Online Student Information Verification process, resulting in an increase of 17% parent participation in 2016-2017 to 50% parent participation in 2017-2018
- Supported the summer activities that included summer school and for the first time SSI, ESL, Inspire and Freshman Rescue in Skyward
- As part of FBISD cost-cutting efforts, working collaboratively with various departments to implement online progress report and online report cards
- Open Records Requests - Fulfilled 143 student information open record requests.
- Curriculum Master - created a Curriculum Master Committee that meets monthly with a focus to clean-up the curriculum master and update with subject and departments which are needed for various data extracts
- Secondary Master Schedule Training – worked collaboratively with Curriculum and Department of School Leadership to redefine the training plan so it broke down into three parts and was spread over a four-month period

Web Services

The Web Services team provides support and services to Fort Bend ISD web needs, including custom web application, SharePoint, and Web Community Manager (formerly known as SchoolWires) web site development. Major milestones for the Web Services include:

- Campus Support Walkthroughs - Implemented solution for reporting using Tableau to display data for department directors and campus principals. Web Services team will work with stakeholder to expand this service in 2018-19 school year.
- Gifted and Talented – 6,246 referrals submitted through the application
- Athletics Official Pay - 1,111 Official Pay requests sent to PeopleSoft for payment as an automated process to increase efficiency and accuracy
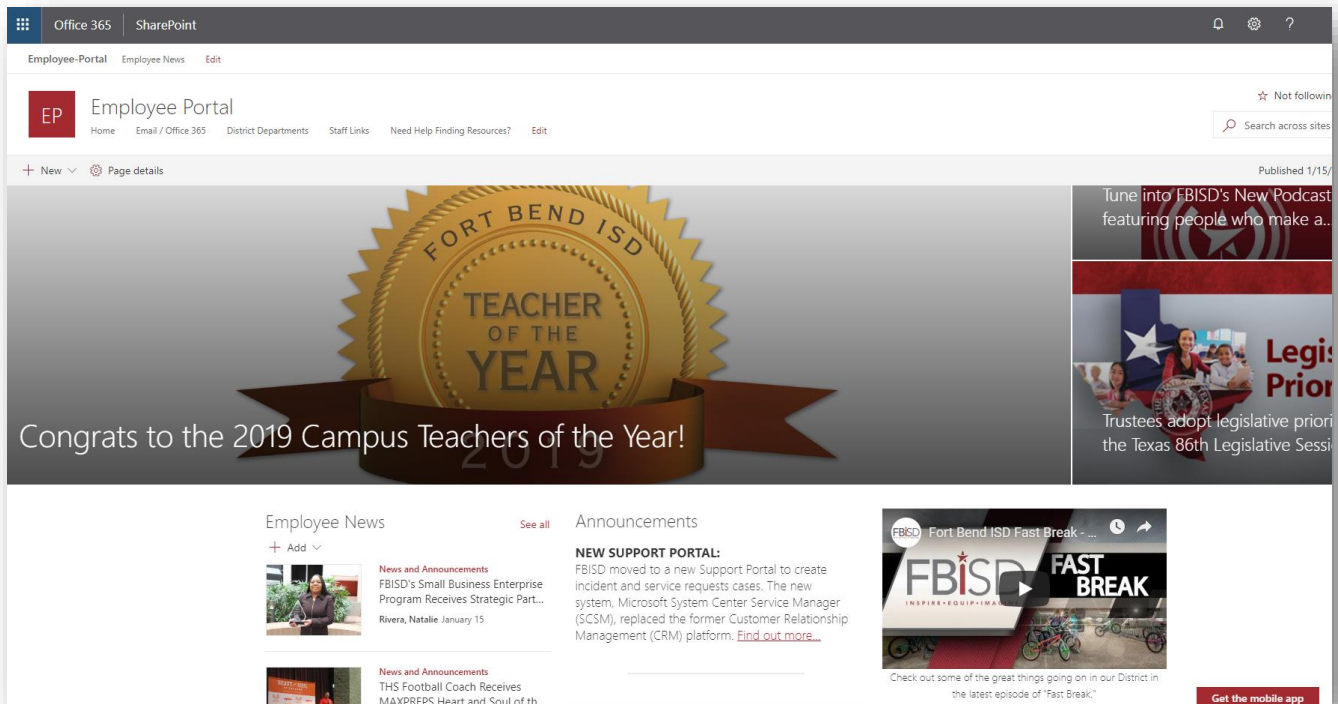
- Employee Portal on SharePoint – the employee portal was fully populated during last school year, providing district employees with a new collaboration tool and repository for shared information and resources.
- Training Sessions
  - 37 SharePoint trainings
  - 9 SchoolWires trainings
- FBISD Website Statistics (July 1, 2017 - June 30, 2018)
  - 39,361,326 page views
  - 18,646,218 unique page views
  - 2,789,542 new visitors

- 1,027,158 returning visitors
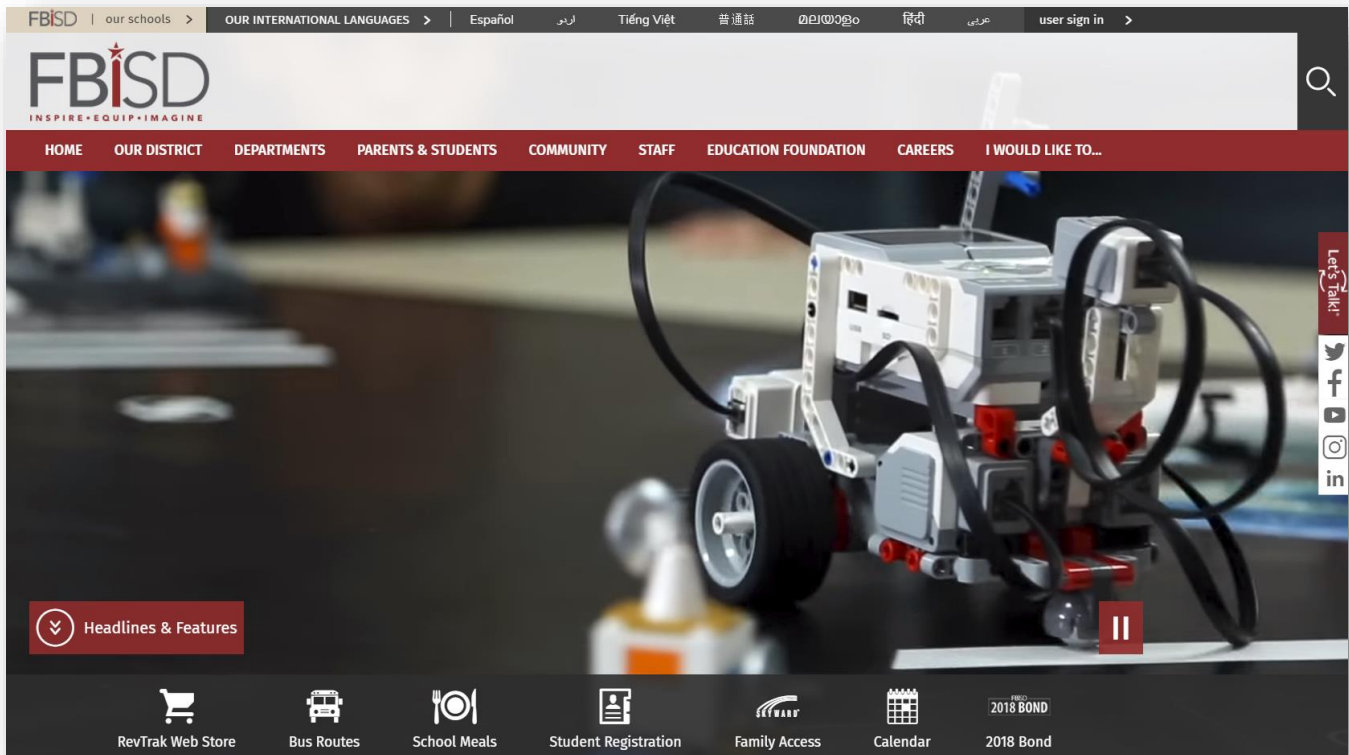
Application Services

The Application Services team provides supports and services to all applications that are not supported by another team in Information Systems. Notable accomplishments by the Application Services team include:

- Video Insight camera solution upgrade that provided significant performance improvements with the increased usages and demands for camera recordings. Currently, the system supports 4,780 cameras, consuming over 2.5 Petabytes of storage space.
- Assisted Child Nutrition with the implementation of Nutri-Status that automates email generation of approval/denial letters for free and reduced lunch applications. This process saved significant amount of time, money and resources printing and mailing 10,000 letters.
- Naviance - Uploaded 4 years of PSAT, and SAT test scores for all high school students
- Implemented a new vendor (MSB) for Medicaid reimbursements for Student Services Department
- Implemented new Library Media Services application by Follett
- Created a Prosperity Bank Import process for Business and Finance to reduce the workload in reconciling Child Nutrition Department bank deposits.
- Implemented Docuware scanning and forms solution for:
  - Digitally converting Special Education student files for storage and retrieval

- o Legal Department workflow for creating new contracts, existing contracts scanned and stored in the solution
- o Design and Construction workflow is in the development phase (Go-live is February 2019)
- o Accounts Payable document storage
- o Police department historical scanning and storage of police reports
- Eduphoria Aware - implemented new custom data import to allow for the uploading of assessment data received from other assessment platforms.
- Eduphoria Strive - implemented new teacher and principal evaluation module (T-TESS and T-PESS)
- Renaissance 360 - implemented universal reading and math screener and instructional support application at all campuses working closely with Teaching and Learning staff and multiple teams within Information Systems including Skyward and Data Integration

Schoology Pilot – Worked collaboratively with Teaching and Learning to implement FBISD new Learning Management System. An interface with TrueNorthLogic, FBISD's eLearning solution, created to allow course creation and management through Schoology.

ACCOMPLISHMENTS BY AREA

Information Technology Services

Customer Service Center

Customer Service Center (CSC) provides the first level of information technology support for teachers, staff, students, and guests. Our support staff strives to quickly, courteously, and effectively solve technology questions and concerns over the phone. CSC staff tries to provide the callers with a first-call resolution.

Below are charts outlining the statistics of the number of calls presented, calls handled, and the cases created/ resolved by the Customer Service Center for school year 2017-2018.

Calls Presented

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
2013-2014	5,774	15,460	10,882	8,246	4,978	4,604	8,637	5,425	5,610	6,035	5,698	5,028
2014-2015	4,345	10,145	8,487	5,858	3,052	2,901	5,285	3,945	3,495	3,967	4,964	4,665
2015-2016	3,759	11,942	7,224	5,434	3,473	2,739	4,881	4,130	4,000	4,231	5,528	4,695
2016-2017	3,395	12,929	8,699	6,195	4,454	2,786	6,026	4,444	4,470	5,504	7,634	4,212
2017-2018	3,163	10,721	9,424	8,698	4,715	3,584	5,016	4,207	3,495	4,585	5,696	3,057

Chart 1: Calls Presented

(Captures the number of calls taken by the Customer Service Center, first by year, then by month)

Calls Handled

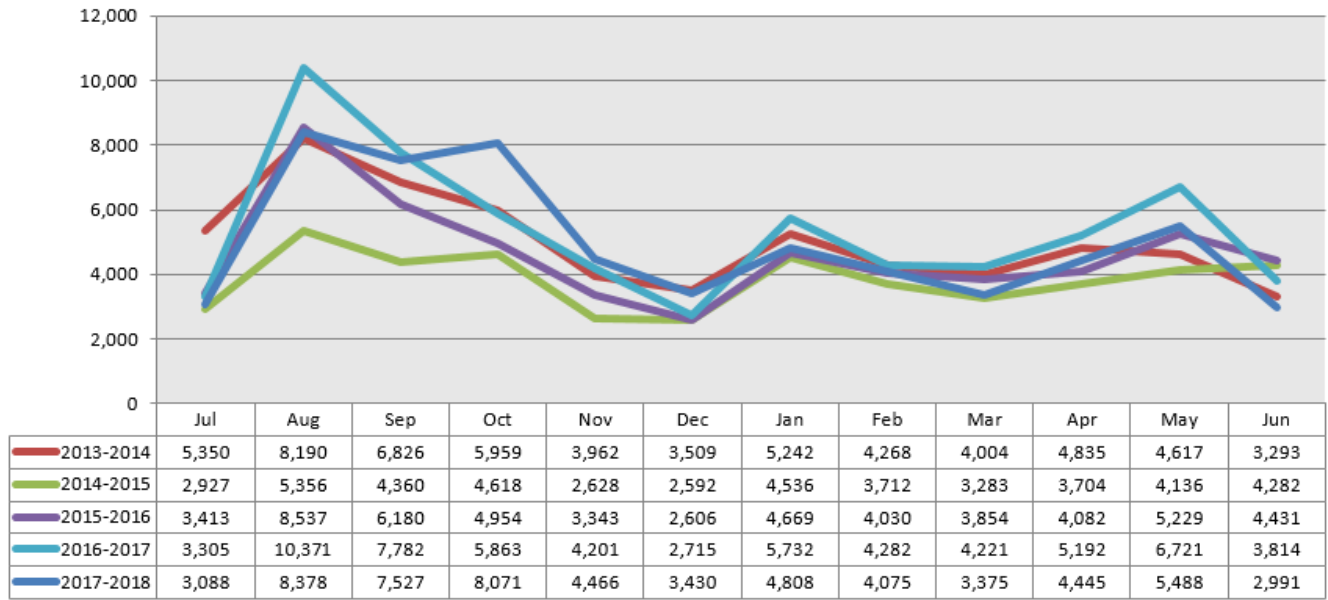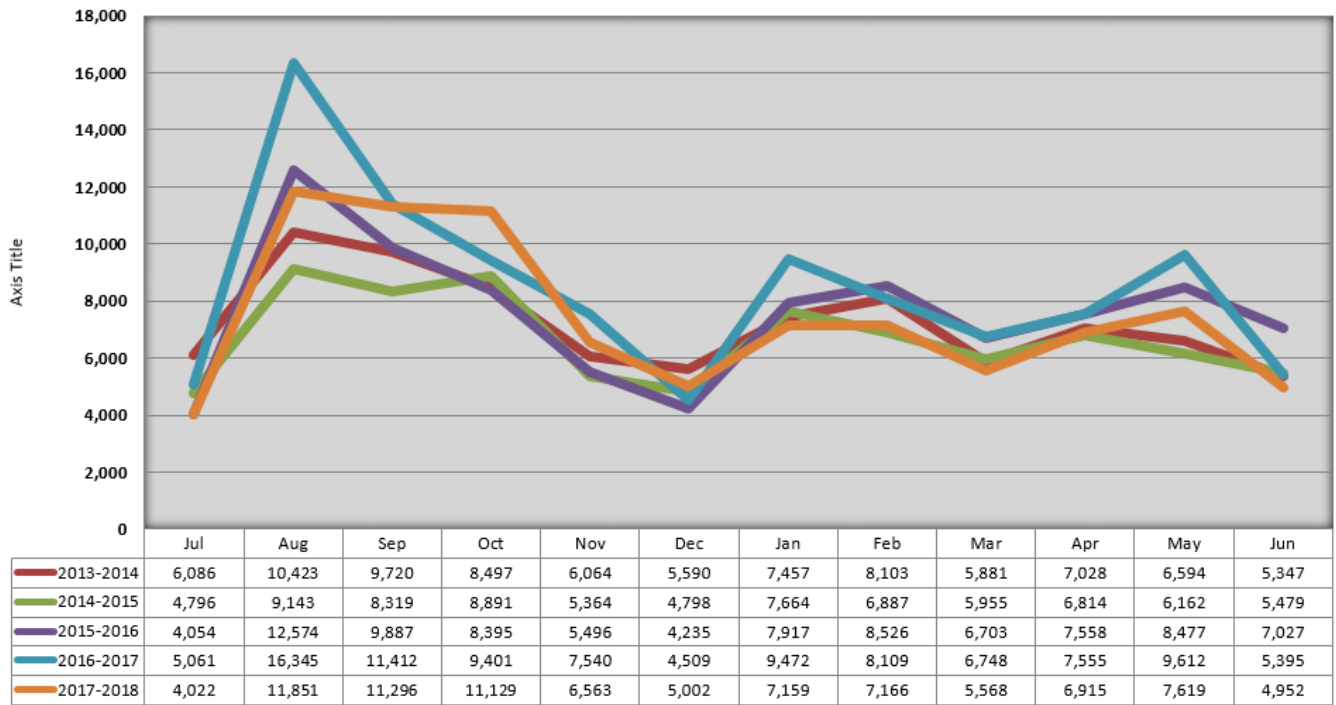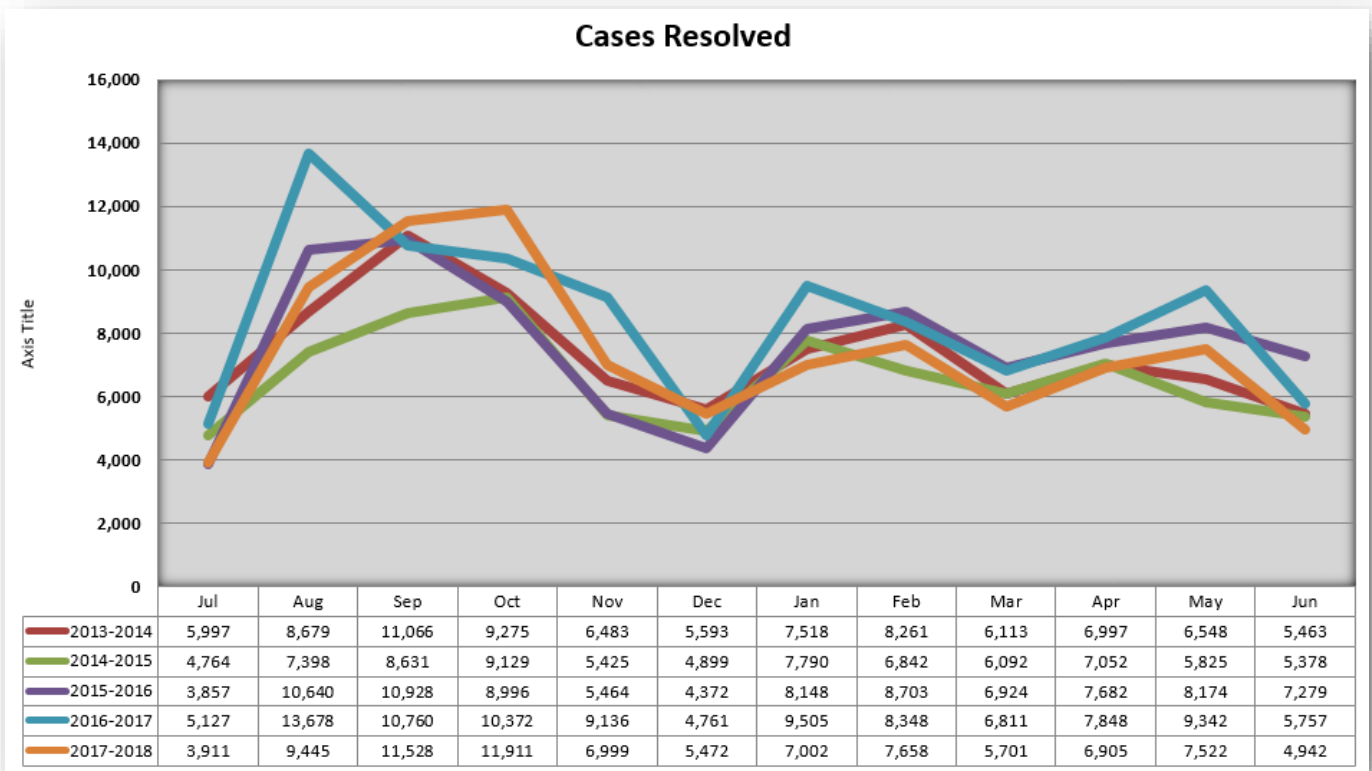|	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
2013-2014	5,350	8,190	6,826	5,959	3,962	3,509	5,242	4,268	4,004	4,835	4,617	3,293
2014-2015	2,927	5,356	4,360	4,618	2,628	2,592	4,536	3,712	3,283	3,704	4,136	4,282
2015-2016	3,413	8,537	6,180	4,954	3,343	2,606	4,669	4,030	3,854	4,082	5,229	4,431
2016-2017	3,305	10,371	7,782	5,863	4,201	2,715	5,732	4,282	4,221	5,192	6,721	3,814
2017-2018	3,088	8,378	7,527	8,071	4,466	3,430	4,808	4,075	3,375	4,445	5,488	2,991

Chart 2: Calls Handled

(Captures the number of calls picked up or handled by the Customer Service Center)

Cases Created

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
2013-2014	6,086	10,423	9,720	8,497	6,064	5,590	7,457	8,103	5,881	7,028	6,594	5,347
2014-2015	4,796	9,143	8,319	8,891	5,364	4,798	7,664	6,887	5,955	6,814	6,162	5,479
2015-2016	4,054	12,574	9,887	8,395	5,496	4,235	7,917	8,526	6,703	7,558	8,477	7,027
2016-2017	5,061	16,345	11,412	9,401	7,540	4,509	9,472	8,109	6,748	7,555	9,612	5,395
2017-2018	4,022	11,851	11,296	11,129	6,563	5,002	7,159	7,166	5,568	6,915	7,619	4,952

Chart 3: Cases Created

(Captures the number of incidents or service requests tickets created by the Customer Service Center)

Cases Resolved

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
2013-2014	5,997	8,679	11,066	9,275	6,483	5,593	7,518	8,261	6,113	6,997	6,548	5,463
2014-2015	4,764	7,398	8,631	9,129	5,425	4,899	7,790	6,842	6,092	7,052	5,825	5,378
2015-2016	3,857	10,640	10,928	8,996	5,464	4,372	8,148	8,703	6,924	7,682	8,174	7,279
2016-2017	5,127	13,678	10,760	10,372	9,136	4,761	9,505	8,348	6,811	7,848	9,342	5,757
2017-2018	3,911	9,445	11,528	11,911	6,999	5,472	7,002	7,658	5,701	6,905	7,522	4,942

Chart 4: Resolved

(Captures the number of incidents or service requests tickets resolved by the Customer Service Center)

Desktop Support

Verizon Digital Promise Grant Campuses 2017-2018

In June 2017, Verizon awarded three schools in Fort Bend ISD the Digital Promise Grant (Christie McAuliffe Middle School, Hodges Bend Middle School, and Missouri City Middle School). This grant provides 1:1 mobile technology in the form of iPads and free Internet access for underserved students to provide hands-on learning experiences. This is

a 2-year grant program and FBISD is in its 2nd year of implementation, FBISD is seeking additional 2-year extension currently. Working together with the Teaching and Learning Department, the three campuses, parents, teachers, and students, ITS distributed over 3,200 iPads to the students and teachers. A dedicated desktop support analyst provides all technology support at each campus.

New School Openings 2017-2018
(James Neill Elementary School, Donald Leonetti Elementary, Patterson   Elementary School, and Ronald Thornton Middle School & 6 campus expansions)

The school year 2017-2018 & 2018-2019 the District saw the opening of three new elementary schools and a middle school. ITS staff worked tirelessly to deploy, configure and test variety of technology at each campus in preparation for the start of school.   Some of the activities are as follows:

- Testing and validation of technologies installed by general contractor, for example, interactive projector, classroom and finer arts audio, etc.
- Configuration and deployment of telephone handsets throughout each campus
- Configuration and deployment of Local Area, Wide Area and Wireless Networks at each campus
- Configuration and deployed of teacher classroom technology toolset to include laptop/docking station, document camera, validation of projector and other audio-video interfaces, grade-level specific applications etc.
- Configuration and deployment of student technology toolsets to include student devices and associated peripherals
- Configuration and deployment of library and campus media/broadcast solution.
- Configuration and deployment of printer-coper technology both for teaching spaces as well as support and administrative areas
- Configuration and management of building access control systems in collaboration with vendors, contractors and Design & Construction
- computer labs, library check-out carts etc.

T-Building Moves for 2017-2018 & 2018-2019

Annually temporary buildings are moved to designated campuses to accommodate growing needs for classroom space for additional students. Through 2017-2019 school years, over 60 classrooms were added in the way of 30 temporary building additions across the district. Working in collaboration with Design & Construction, Business Office and others, each building and classrooms were equipped with the necessary technology to accommodate staff and student needs. Our goals is to provide the toolset and support necessary to start the school year successfully!

Blended Learning for School Year 2017-2018

In the 2017-2018 school year, the district started the implementation of blending learning initiative. To support this initiative, IT worked closely and in collaboration with Teaching and Learning to deploy classroom technology toolset to 16 campuses involved in the blended learning pilot. As part of this effort, 2:1 (two students to one device) ratio of devices were deployed to participating campuses. Classroom toolsets were provided for High and Middle Schools for specific classrooms and teachers that participated in the blending learning pilot. In addition, additional technology was deployed to campuses participating in the initial technology integration implementation.

Blended Learning Expansion 2018-2019 and Equip Academy

In 2018-2019 school year, the district further expanded the blending learning initiative via the equip. academy program. This initiative expanded the blended learning program to approximately 195 classrooms throughout the district. A ratio of 2:1 (two students to one device) devices were provide to the teachers/classrooms that participated.

2018-2019 Expansion of Robotics, STEM and Coding Program

In 2018-2019 school year, IT worked in collaboration with Teaching & Learning to deploy technologies throughout the district in support of programs like Fundamentals of Computer Science at 7 middle schools, STEM Outclass in 12 elementary schools, K-12 coding program expansion in approximately 57 campuses and Swift coding at 5 high schools.

Swift Programming Language

2018-2019 Lending Library Proof of Concept (POC)

In an effort to provide equitable accesses to technology for all students, the IT team in collaboration with T&L, initiated the lending library POC as part of the Education Technology Master Plan and Classroom toolset. The Lending Library program provides for the temporary check-out and use of a mobile laptop and hotspot for students to use at home in the event the student does not have one available to the student at home. The process works similarly to a library book checkout process. The POC was launched at five campuses, Willowridge HS, Marshall HS, Bush HS, Kempner HS and Sugar Land MS. This POC will set the path to determining and establishing quantities and types of lending library devices along with process and procedures that will help to manage the lending library programs in secondary schools.

Data Center

The Data Center and Server Management team is responsible for the day-to-day operation and function of the FBISD data center. The team completed the final upgrade and refresh of the data center equipment as provided by the 2014 Bond that include:

- Data center servers and network refresh: Installed new servers and network hardware in the data center to replace legacy, aging equipment that are no longer supported by the manufacturer or can no longer meet the district's current needs.
  - Data storage migration: transferred all data storage from legacy Hewlett Packard storage to the new EMC storage array, reducing annual support cost of $189,000.
  - Office 365/OneDrive for Business Migration: Working closely with end users, the team migrated user data from the on-premises file server to Office 365 OneDrive for Business enabling users to access files from anywhere without the use of Virtual Private Network (VPN) while reducing the needs for physical storage at the data center.
- Identity Management Solution for district wide use: In collaboration with the Information Security Advisor, Teaching & Learning and end users, IT implemented Identity Automation application to support a manageable identity process for students, teachers, and staff. The Identity Automation application provides services such as automation of end user's account creation, reduced sign-on environment, more secured access, and end user's self-service such as password recovery from anywhere. Portions of the project are still underway; however, the major components will launch in FY19 school year.
- Expansion of Security Camera Storage infrastructure: Additional campuses brought on-line as the security camera projects expanded to Middle and Elementary schools. Additional storage and servicer infrastructure were provisioned to accommodate added and ongoing need.

Desktop Technologies

The Desktop Technologies (DT) team is responsible with the management of all computing devices used within the district. The team creates methods of distributing and installing software to end devices. The team evaluates tests, distributes, upgrades, and patches all software on district's computers and devices. The 2017-2018 school year resulted in several notable accomplishments by the Desktop Technologies team that include:

- SCCM 2016 Migration - An upgrade of the Microsoft System Center Management that delivers both computer applications and operating systems to the individual device. This upgrade will be a significant improvement that will enhance device management and support of future operating systems.

- Windows 10 Upgrade – the project involves the upgrading of approximately 11,000 Windows 10 compatible computers to Windows 10, replacing Windows 7. Windows 10 provides a more secured and stable operating system experience for the end users as well as a better integration with Office365.

- Mobile Device Management for Apple devices: the DT team implemented a new mobile device management solution to manage a growing number of Apple products and services throughout the district. The previous application did not allow for the on-going growth of devices. Apple devices serve as the basis for classroom technology toolset in grades Pre-K to 1st grade per the Education Technology Master Plan. In addition, Apple devices such as iPads are used in various job roles and programs throughout the district.
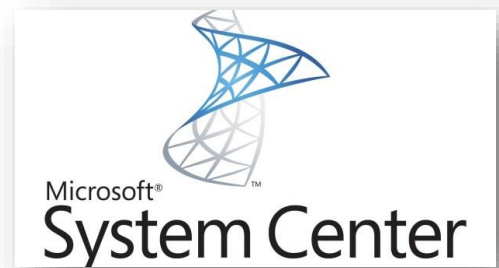
Network Services

The Network Services team provides management and supports for all district network connectivity and associated services (wired and wireless).   The 2017-2018 school year saw the final installation of the needed wireless infrastructure on campuses and the installation of the redesigned wide area network as supported by the 2014 Bond.

- Completed Network Refresh on all the Elementary Schools, thus completing a district-wide refresh of campuses that started 3 years ago
- Upgraded the Datacenter network in conjunction with the Server teams new datacenter infrastructure
- Implemented BYOD wireless network to facilitate Blended Learning
- Decommissioned guest wireless network to improve district security and replaced it with more secure and reliable sponsored guest access
- Implemented the new routed Wide Area Network which includes these enhancements:
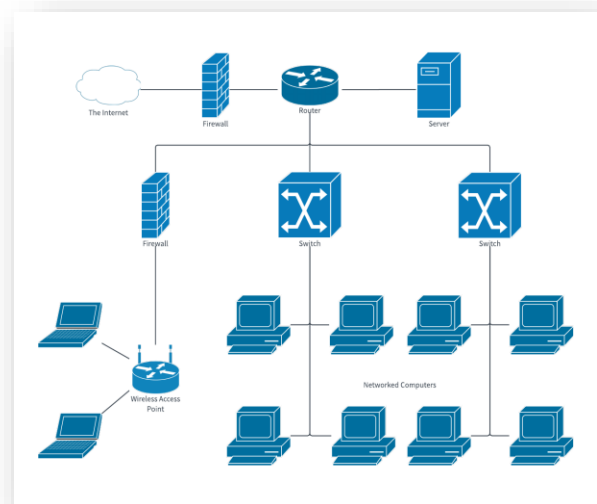
- o Enable a secondary fiber link from each campus to our hubs at AHS and EHS for increased network uptime and resiliency
- o Fiber links between Admin and the hub site for backup routes from campuses to the data center and Internet at Administration Building. This provides for better resiliency and protection from site-wide network outage
- o The way for redundant resources. This provides for better resiliency and protection

- Upgraded the Call Manager VoIP PBX to a new major release (12.01) to improve voice service and system security
  - o Included Unity Connection Voicemail system upgrade
  - o Included CER E911 emergency call notification system upgrade
  - o Included Contact Center (CSC Call Center Software) upgrade
  - o Included Unified Attendant Console (the Receptionists Call routing software) system upgrade
- Upgraded digital fax solution, RightFax, to improve both fax service and system security
- IT HVAC Upgrades: Most IT spaces in Fort Bend ISD were grown organically over the last few decades because of the growing need for technology for both business and classroom use. IT rooms were selected based on arability of space, minimal consideration was given for the environment to support the network infrastructure. The 2018 funded IT HVAC project will address the environmental aspect of IT space by adding HVAC units in each IT space along with other environmental controls like door access, thermostats etc. Phase 1 of this project is under way with 17 schools and anticipated will be completed by end of March 2019.
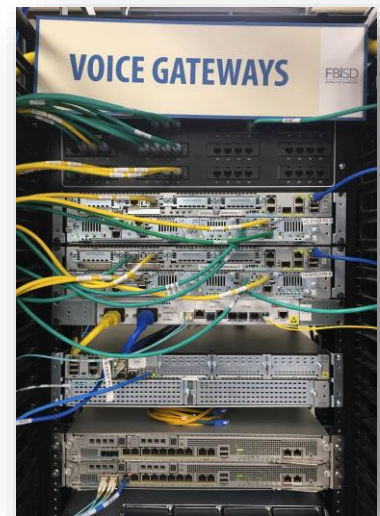
INFORMATION SECURITY NEWS

With the district's increase usage of technology and proliferation of digital threats from inside and outside of the district's network, the district created a security advisor position that directly reports to the Chief Information Officer. The primary responsibility of the security advisor is to ensure all FBISD technology processes, equipment, practices, and environment are secured and follow industry best practices in information security. The 2017-2018 school year saw several major efforts in securing the district digital environment.

Vulnerability Scanning

Information Technology began on-going, proactive vulnerability scanning of all critical systems to ensure the systems are properly patched and configured. This activity compliments on-going efforts to harden and secure workstations and servers following industry best practices and secured operating system builds.

External Email Warnings introduced

FBISD, as any organization, faces constant bombardment of email spam (unwanted email) as well as phishing attacks (bad email designed to trick users into providing sensitive information – including login credentials – as well as click installing malware/viruses). In addition to awareness communications (Information Security Newsletter, emails, etc.), IT added new "warnings" to all external email messages to help staff and students recognize higher risk emails that could pose a danger to the individual or the whole district. These warnings (see below) are added to all received email from outside of FBISD (in this example, a clearly fraudulent email was received from a fake account purporting to be Dr. Dupre). The email appears to have label of "Charles Dupre"; however, the email address is an external email and from a Gmail account and not Dr. Dupre's official FBISD email account.

From: Charles Dupre [mailto:focusaleeza@gmail.com]
Sent: Friday, September 14, 2018 2:03 PM
To: ‾   ‾   <(.. ....@fortbendisd.com>
Subjec [EXTERNAL] .

CAUTION: [EXTERNAL EMAIL] - This email originated from outside of Fort Bend ISD.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello (.,

Are you available? Can you assist with something personal? I have some merchandise i need to pay for but i am currently

FBISD Penetration Test

Information Technology Division contracted an IT network and systems penetration test ("pen test") to test various defenses and protective controls for weaknesses that may allow unauthorized access to critical systems or sensitive data. The "pen test" concluded that the current state of information security for Fort Bend ISD is "B – Good." The vendor detailed the "B" rating as "Moderate risk of security controls being compromised with the possibility of limited financial losses occurring as a result. The security of the observed environment meets industry-accepted practices. The overall security state was found to be strong with a limited number of medium- and low-risk findings. [The vendor] was unsuccessful in obtaining unauthorized access to sensitive data, systems, or networks."

Information Technology Division plans to engage an annual penetration testing to assess the district's readiness to defend against the ever-increasing number of attacks.

WHAT IS IN STORE FOR 2018-2019 SCHOOL YEAR?

The 2018 Bond approved by the voters on November 6, 2018, provides $142.6M for technology improvements throughout the district. Improvements are categorized in six major categories:

- Audio/ visual devices for classrooms and large meeting spaces
- Devices refresh for staff and students (computers, charging carts, tablets, printers)
- Continued infrastructure improvements to provide proper space and cooling for network equipment
- Network devices for district-wide communications and broadcasts as well as tools for troubleshooting, network support
- Software to support end users devices
- Systems improvements for performance, cyber security monitor/prevention, disaster recovery

Starting in January 2019, IT will work closely with the Teaching and Learning Department to develop detailed deployment plan to ensure the correct devices are installed to best support district's curriculum. IT will work closely with the Design and Construction Department to coordinate overlapping schedules.

IT will also undertake many major projects including but not limited to the followings:

- PeopleSoft upgrade
- Winocular replacement
- Aesop replacement
- Facilitron, Staff and Student badges
- Replacement for VBrick
- ERP Planning
- EJ Ward fuel management upgrade
- Security camera storage expansion
- Elementary 51 buildout
- Active Directory redesign
- Computer labs and library device refresh
- Telephones refresh
- Office365 management software
- Middle schools and elementary schools cafetoriums refresh of audio/video
- High schools auditoriums refresh of audio/video
- Bring your own devices (BYOD) full rollout