2019 IT Budget Review

September 19, 2018

Executive Summary

The technology budget is focused on the following areas:

- Grid and Market Reliability on Existing Systems
- Incremental Change to Sustain Reliability
- Preserve and grow the Value Proposition through the catalyst programs.

Total operating budget for 2019 is $75.8M and total capital budget for 2019 is $5.4M. This is a 1% decrease in total OpEx and a 47% decrease in CapEx from 2018.

IT's operating plan and budget focuses on priorities to run and improve while preparing for the future.

Reliably Run the Business

Ensure grid and market reliability by stewarding our existing systems and processes to maintain reliability and compliance

Improve How We Run the Business

Incremental improvements to sustain reliability by enhancing existing systems, processes, and capabilities to improve our maturity gap

Prepare for the Future

Preserve and grow the value proposition by planning and developing existing business needs and critical systems roadmaps

Run & Protect

- Daily Operations and Support
- Security & Compliance
- Platform Refresh

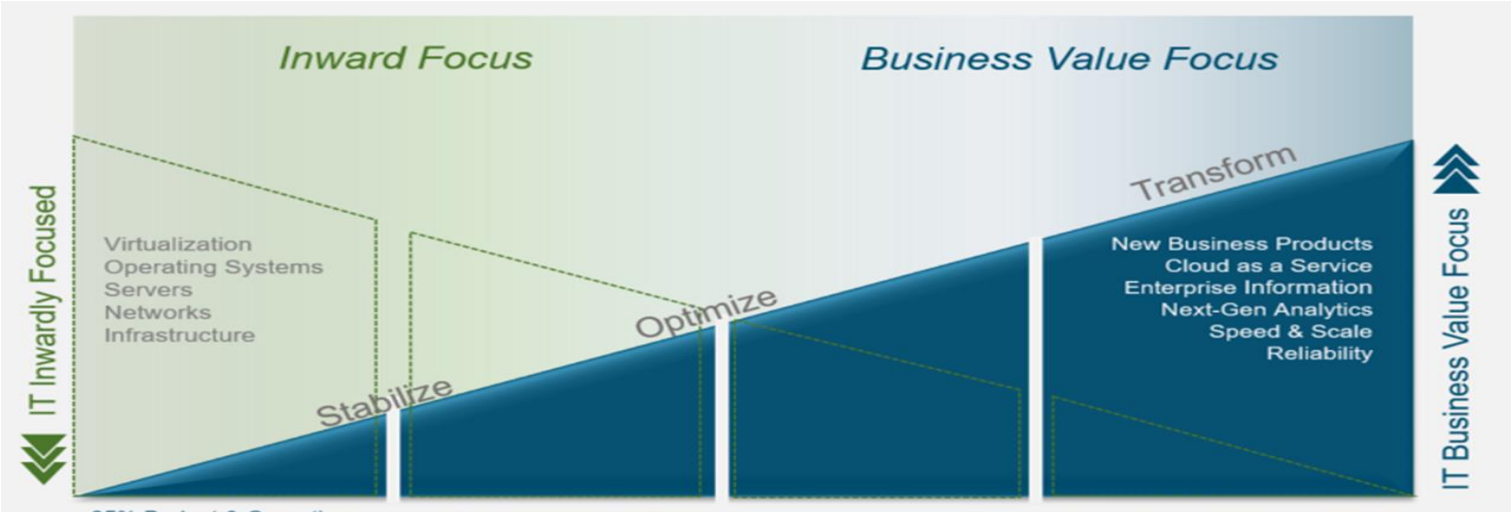
- Security & Compliance
- Mission Critical System Performance

Build

- Existing Systems Roadmap Development
- Catalyst Programs
  - Market Systems Enhancement (MSE)
  - Back Office
  - Customer Experience
  - Manage Services
  - Cloud Services

MISO

Transformational Efforts will Increase Reliability and Efficiency.



Catalyst Efforts

IT Catalyst Program Overview

	Managed Services	Cloud Services
Quick Overview	Moves IT towards an efficient way to manage infrastructure by outsourcing nonbusiness differentiating work. ***GOALS:*** • Controlled and predictable spending • Greater scalability based on demand • Reliable, predictable Service Level Agreements (SLAs) with vendors • Increase in efficiency and maturity of MISO IT Services • Minimization of IT activities related to non-value add areas	MISO's cloud first strategy provides a modern and efficient way to consume non-critical application services (non-CIP). ***GOALS:*** • Operational agility to meet growing or fluctuating bandwidth demands • More predictable and reduced costs both for subscription and administration of network • Create a cloud migrations strategy with cross-functional stakeholders
Targets	Storage, Desktop, and Mobile	Microsoft Office 365, Email, and Skype
2019 Budget	Evaluation Costs: CapEx $0.0M OpEx $0.4M Internal Labor: $0.2M	Evaluation Costs: CapEx $0.0M OpEx $0.5M Internal Labor: $0.2M

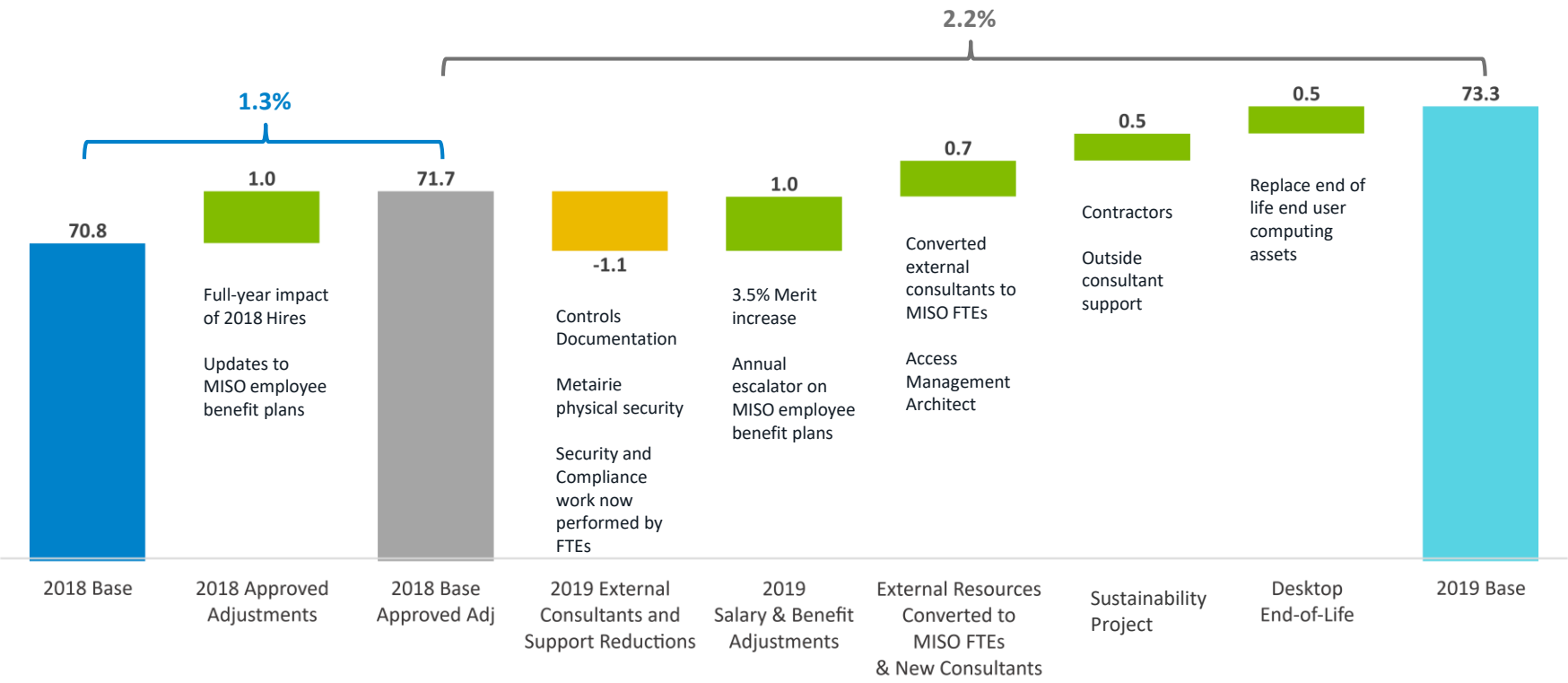
Business Catalyst Programs Overview

IT is partnering with MISO Service Lines to deliver the MSE, Customer Experience, and Back Office Programs to further optimize the IT eco-system.

	MSE	Customer Experience	Back Office
Short Description	Market System Enhancement is a multi-year program to transform our current market platform into a flexible, upgradeable, and secure system.	Effort that includes an assessment, selection and Phase I implementation of a customer relationship management solution.	Programmatic approach to achieve the future state of back office systems for finance, human resources, and legal.
Targets	Re-engineering the MISO infrastructure and operating platform.	Utilizing a cloud first strategy with Software as a Service (SAAS).	Utilizing a cloud first strategy with Software as a Service (SAAS).
2019 Budget	CapEx: $10.7M OpEx: $4.2M Internal labor: $6.9M	CapEx: $1.3M OpEx: $0.6M Internal Labor: $0.6M	CapEx $0.7M OpEx $0.7M Internal Labor: $0.6M

2019 IT Base Business Growth

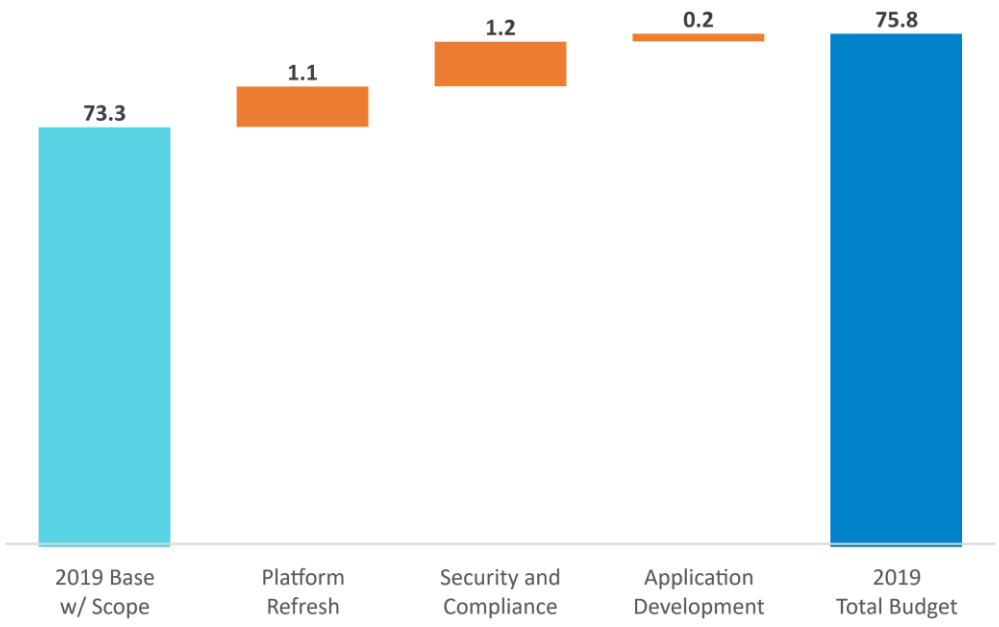
2019 budget increases of $2.5 M are primarily driven by full year impact of 2018 FTE additions, merit increases, increase in employee benefits plans and workstation upgrade costs.



In Millions ($M)
All values rounded

2019 IT Operating Investments

MISO's investment focus is on allocating resources and making decisions to protect and maintain our current value proposition while furthering MISO's strategic objectives.



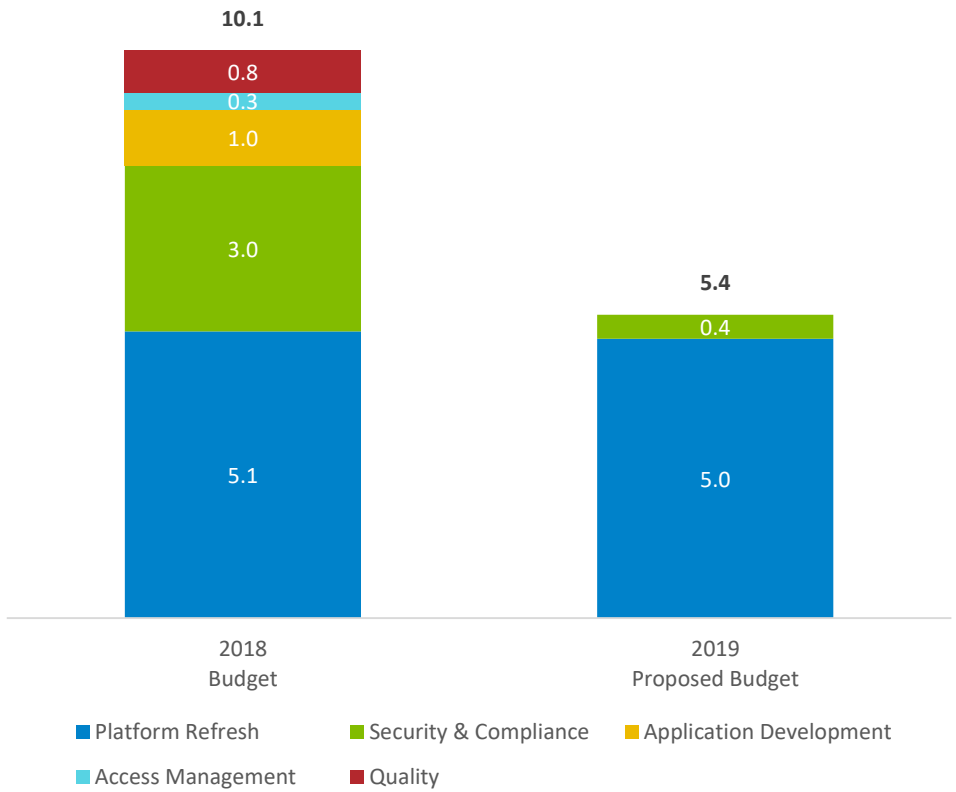
2019 Operating Investments

- Platform Refresh
  - Office 365
  - Next Generation Storage
  - Server Refresh
  - Cherwell Upgrade
- Security and Compliance
  - Digital Security Framework
  - Security Visibility Enhancement
  - Security Profile Monitoring
- Application Development
  - FTP Implementation

In Millions ($M)
All values rounded

2019 IT Capital Expenditure 2018-2019

The capital budget focuses on platform refresh along with security and compliance. Ongoing capital investment is decreasing due to the completion of quality, access management, and settlements programs coupled with plans to embrace managed services and cloud services with primarily operational expense costs.



NOTE: Excludes all capital labor and capital interest.

2019 Capital Expenditure Drivers

- Platform Refresh
  - Next Generation Storage
  - Data Warehouse Analytics Platform Refresh
  - Server Refresh
  - Wallboard Controller Refresh
- Security and Compliance
  - Security Visibility Enhancement
  - Security Market Portal Improvements

In Millions ($M)
All values rounded

Unexpected Potential Demands will be Evaluated Based on Risk and Resource Availability.

Activity	Description	Likelihood	Potential Risk
Audit Remediation	The NERC Audit may identify areas for remediation.		**< $500K**
Infrastructure	Some of the End of Life infrastructure refresh is straddling 2019 into 2020 and may need to be pulled forward if incidents occur.		**< $600K**
Security Matter (e.g., Cyber Insurance)	If a security incident occurs or a threat is present there may need to be an effort to mitigate the threat or incident.		**< $1.5M**
MSE Demand	MSE requires new skills and competencies to operate the future market system. Some of these skills may take an extended time to train or hire.		**Internal Resource Hours & Delaying of Projects**

Appendix

Operating Expenses by Year

Spend Category	2017 Actual	2018 Budget	2019 Forecast	2018-2019 $ Change	2018-2019 % Change
Salaries and Benefits	35.4	37.6	39.9	2.3	6.1%
Outside Services	11.3	13.9	8.9	-5.0	-35.9%
Telecommunications	4.8	4.7	4.8	0.0	0.2%
Computer Maintenance	17.7	18.2	19.5	1.3	7.0%
Other (Insurance, Occupancy, Misc.)	2.6	2.1	2.7	0.6	30.1%
Total	71.8	76.6	75.8	-0.8	**-1.0%**

In Millions ($M)
All values rounded