

OVERVIEW

Background:

Following a series of internal audits and outside reviews (Cutter, Wilshire, Deloitte), OST and the OIC determined that staffing, process and technology limitations led to unsustainable levels of investment, operating and compliance risks.

These reviews and the resulting proposed future state operating model were the catalyst behind the OST/OIC decision to pursue a multi-year business transformation program beginning with the implementation of the BlackRock Solutions (BRS) *Aladdin* technology platform.

With OIC approval and financial support from the legislature, the Aladdin implementation was successfully executed on time and on budget in CY 2015.

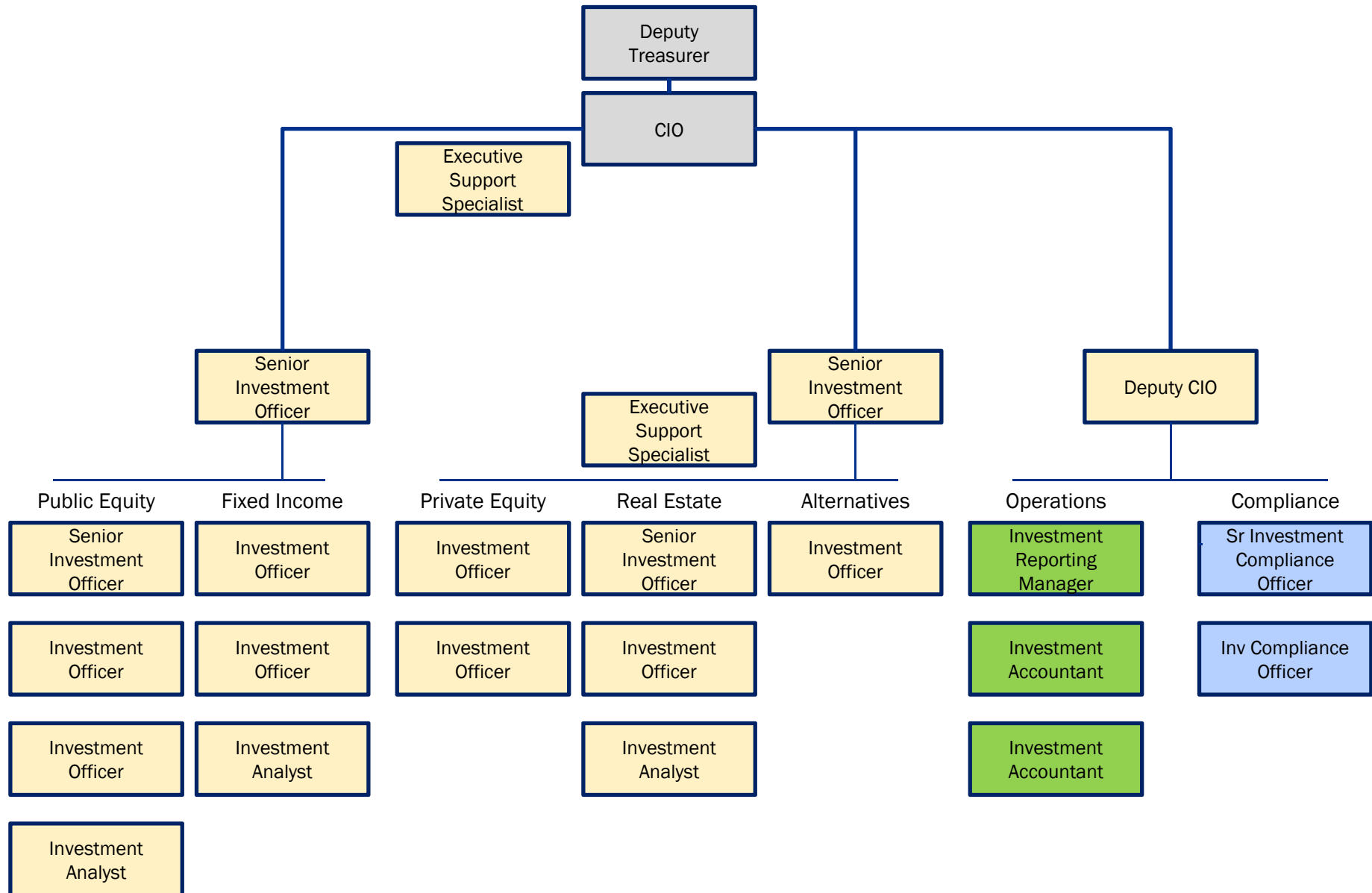
DEFICIENCIES ADDRESSED

Aladdin represents a best-in-class trade processing and risk management suite of electronically integrated tools and services. With this modern infrastructure now implemented and activated, the Investment Division has begun addressing the following key areas previously identified as antiquated and/or deficient:

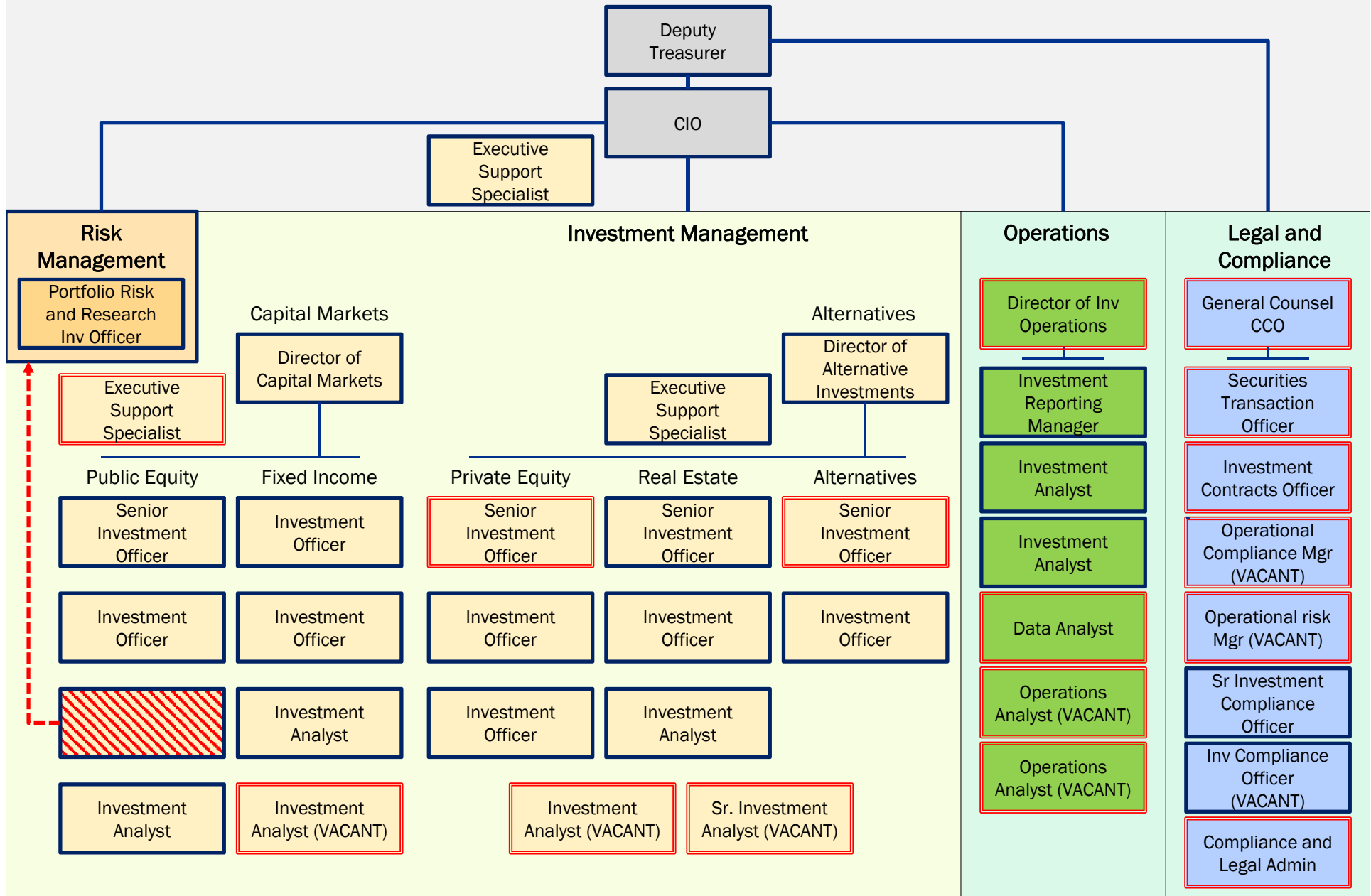
- Portfolio (i.e., Investment) Risk Management
- Trade Order Management
 - Automated Trade Order Placement, Confirmation and Settlement
 - Straight-Through Processing with Third Party Verification
- Compliance Review
 - Systematic Pre- and Post-Trade Compliance Approval
 - Automated Controls/Dashboards
- Operating Improvements
 - Systems Consolidation
 - Automation, Standardization and Process Integration
 - Enhanced Data Integrity

PREVIOUS STATE – ORGANIZATIONAL CHART V3

(AS OF 12/31/2014)



CURRENT STATE – ORGANIZATIONAL CHART V3



ALADDIN: CURRENT STATUS

- **September 2015**
 - Following a six month implementation process comprised of all Investment Division staff, BRS and Cutter, OST went “live” on Aladdin on Monday, September 21.
- **December 2015**
 - Trade Order Management and Compliance Review -- OST now manages the following mandates on the Aladdin platform:
 - \$15.9B of fixed income securities for Oregon Short Term Fund;
 - \$4.6B of public equity securities for Oregon Public Employees Retirement Fund (OPERF); and
 - \$1.4B of fixed income securities for various other State agencies.
 - Portfolio Risk Management:
 - The majority of the \$42.2B of OPERF’s public market (i.e., stocks and bonds) investments are now monitored in Aladdin enabling staff to generate customized risk reports (e.g., duration, geographic and sector exposures, scenario analyses, etc.); and
 - Investment staff now engaged with several partners (e.g., BRS, consultants, State Street, etc.) to model OPERF’s \$25.8B portfolio of illiquid/alternative investments.

PORTFOLIO RISK & RESEARCH INITIATIVES

- **Use Aladdin to Refine OPERF Risk Identification and Measurement**
 - Provide the Oregon Investment Council, Chief Investment Officer and other OST staff a more accurate representation of OPERF risk and return drivers.
 - Modelling of illiquid/alternative investments is still relatively new but BRS and other large institutional investors have committed significant resources to this area. OST collaborating with peers, investment managers and other thought leaders to improve illiquid/alternative modelling efficacy and understanding.
- **Evolve from “Risk Measurement” to “Risk Management”**
 - All models simplify and sacrifice accuracy but some can be useful. Aladdin’s quantitatively-driven factor modelling can provide staff a different perspective in individual investment strategies. Aladdin can also provide a more holistic view, such as the incremental impact on OPERF by investing in a specific strategy or with a specific manager.
 - As staff’s understanding and confidence grows, leverage Aladdin to aid and inform both staff and OIC decision-making.