Information Technology Challenges and Opportunities

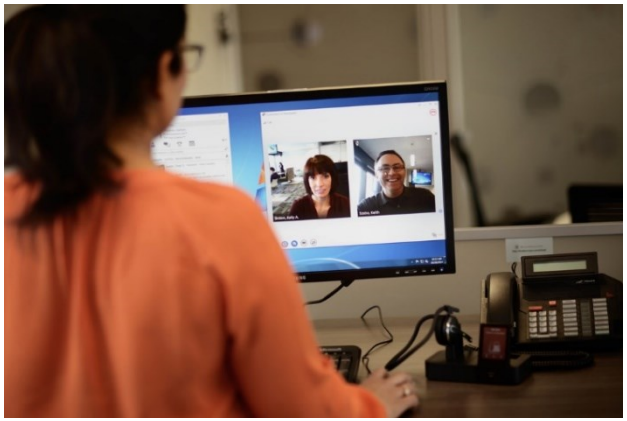
2018 October 24

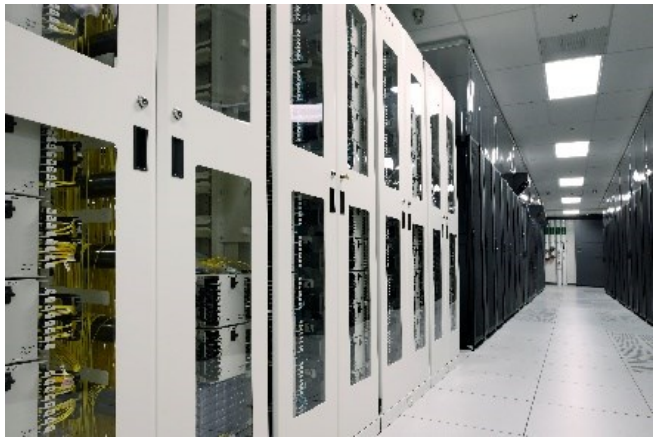
AC2018-1210 Attachment 1

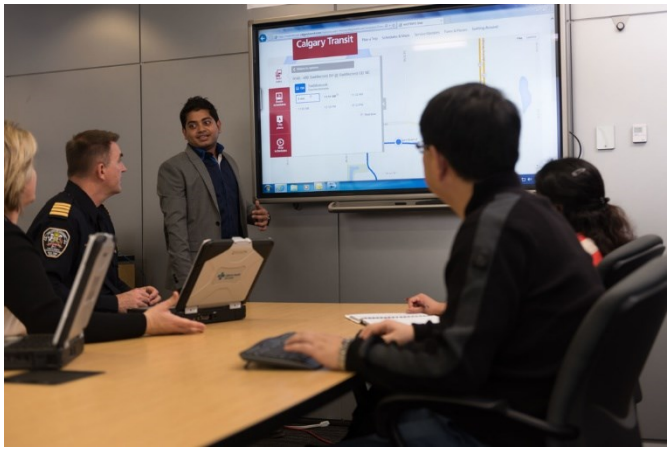
The Role of Technology in Municipalities is Evolving

"Tech is no longer an industry, it is a strategic piece of *every* industry. We are all technology companies now."
-Alan Murray, Editor of Fortune Magazine (2017)

IT is here…





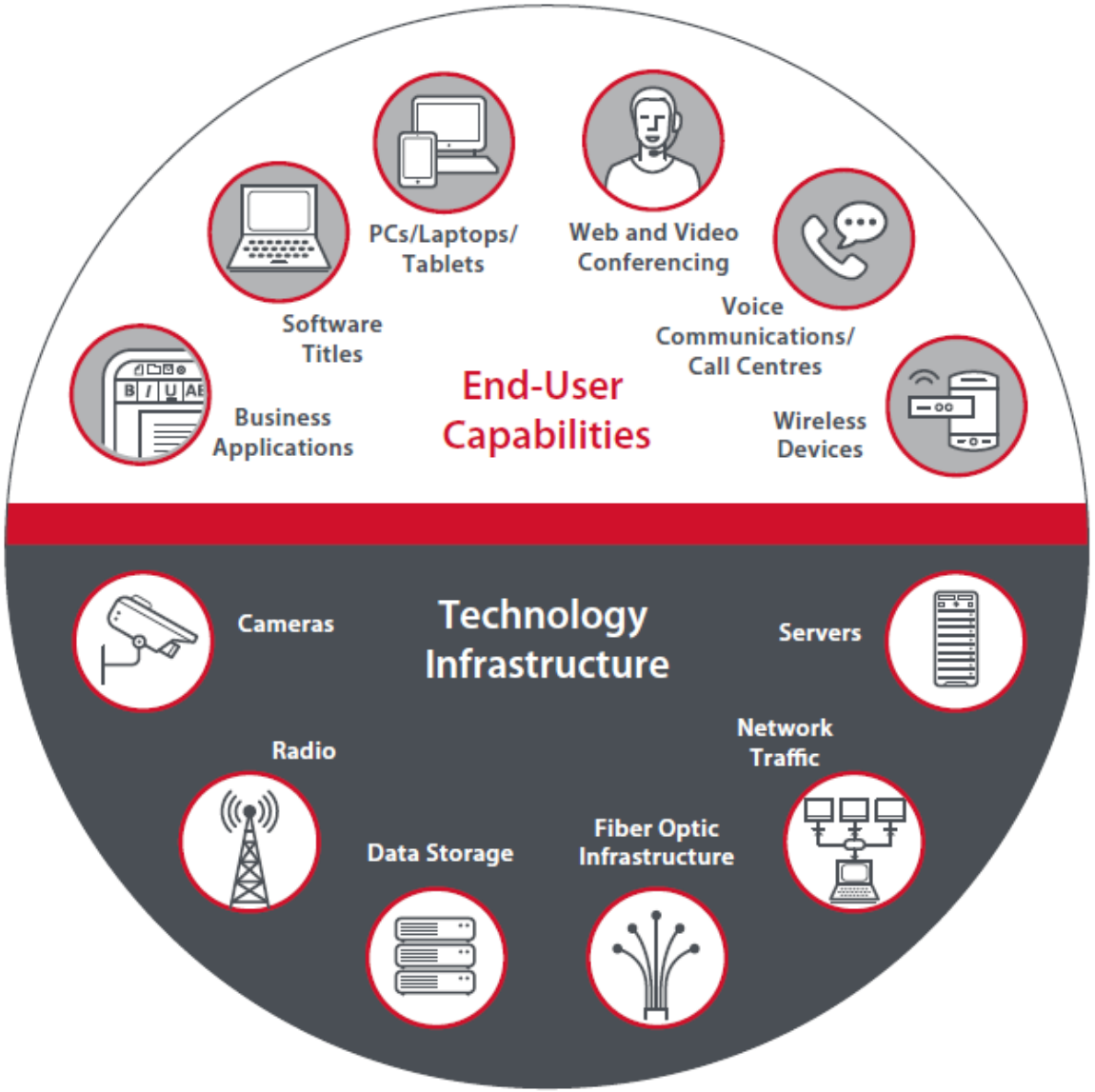


…and IT is here, too

"Technology will be embedded in everything in the digital business of the future."
-David Cearley, Vice-President, Gartner (2017)

IT is a Strategic Partner

City Technology Landscape



City Business Units Rely on Technology

- 18,000+ employees across 35 business units in over 260 City facilities
- 460+ line-of-business and enterprise apps; 2,000+ additional software titles
- 14,000+ telephone lines and VoIP lines, 5,800 smartphones, 911, 311 and 20 other contact centers
- 100+ cloud implementations
  City-owned private/hybrid cloud environment
- 450 km of City-owned fibre providing high-speed connectivity to 525 City facilities and assets
- 30,000+ endpoints and almost 16 petabytes of network traffic; 3,000+ network-connected vehicles
- 2 data centers, 450 physical servers, 2,800 virtual servers with 3,200 TB of storage

Citizens Demand Technology Services

- 375,000 myID citizen accounts and 7,000 myID business accounts
- 281 citizen-facing transactions can be completed online or with a mobile device
- Public Wi-Fi: 22+ million connections per year. Offered at 80 City locations
- 54% of Calgarians prefer to conduct business with The City by internet
- 61% of website visits to Calgary.ca are through a mobile device
- 21 million visits to Calgary.ca. Citizens seeking self-serve transactions make up nearly 50% of these visits

IT Zero-Based Review Opportunities

- **Managing Line of Business System Operations**
  - Diagnosis, Resolution, and Prevention of System Outages
  - Levels of Service
  - Funding & Sustainment of Business Systems
- **Managing Software Assets**
  - Rationalize Existing Applications
  - Application Portfolio Management
  - Customer Understanding (Journey Map)
- **Workforce Productivity**
  - Right Device
- **Corporate ZBR: Shared Challenges of Internal Services**

Software: Perpetual (Buy) vs. Subscription (Lease)

Software Costs: Why are they Increasing?

I. Shift to Subscription-Based Software

- We are in transition from the “buy” model to the “lease” model and will have both models for some time yet
- Over the longer term, subscriptions have a higher Total Cost of Ownership

II. Increased Demand

- Impacts to back-end infrastructure
  - Database licenses, management tools, extended support agreements
- Compliance and Resiliency Requirements
  - Secure access, remote/mobile access, business continuity
- New services and new maintenance charges
  - Integration, analytics, maintenance charges for software

III. Price Increases

- Inflation
- US Dollar Exchange Rate

Software Costs: Mitigation Strategies

I. Use Better Tools to Manage Software

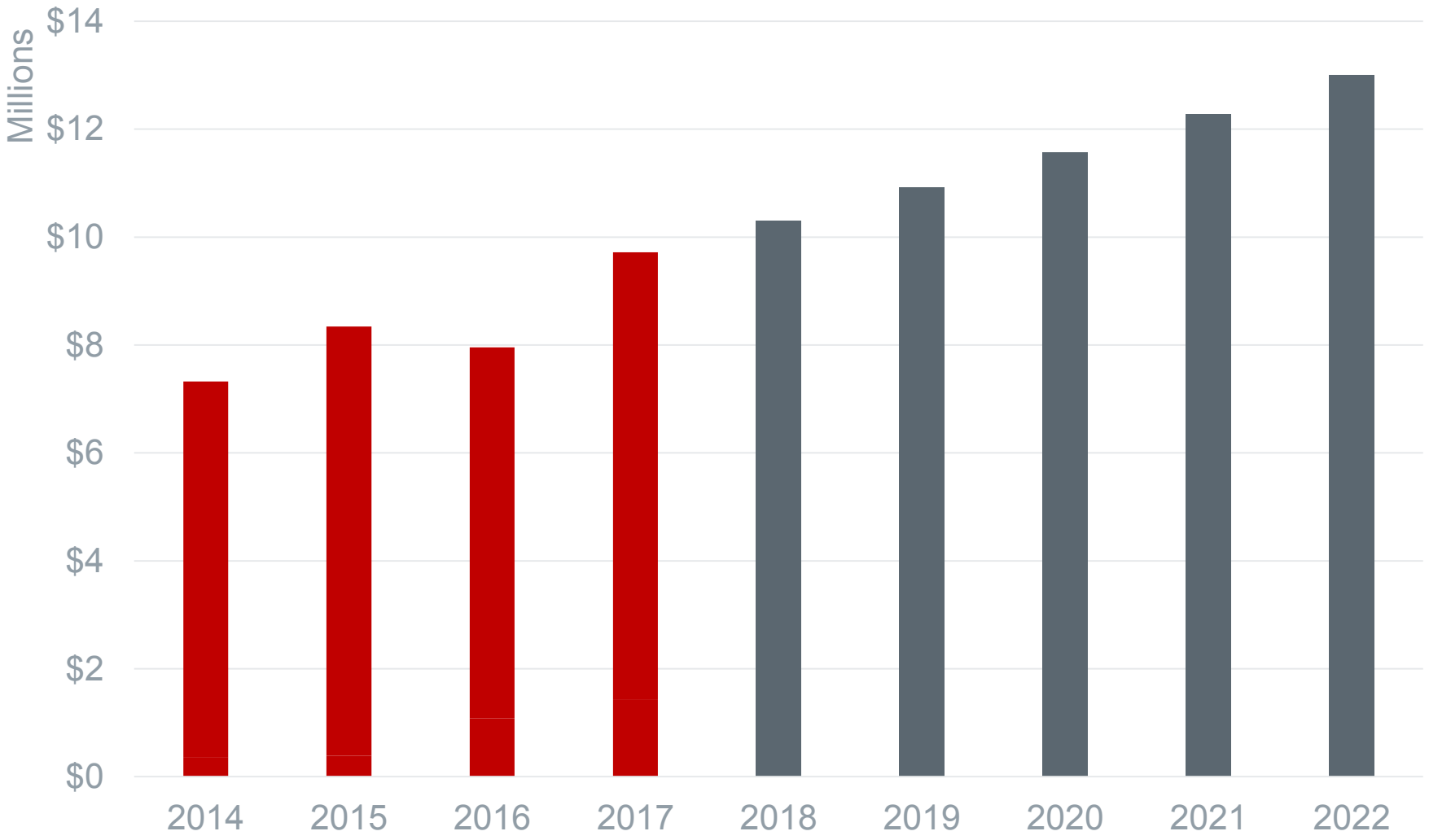
II. Usage Monitoring and Fit for Purpose

- Ensuring titles are really needed and are being used
- Joint effort between IT and other Business Units

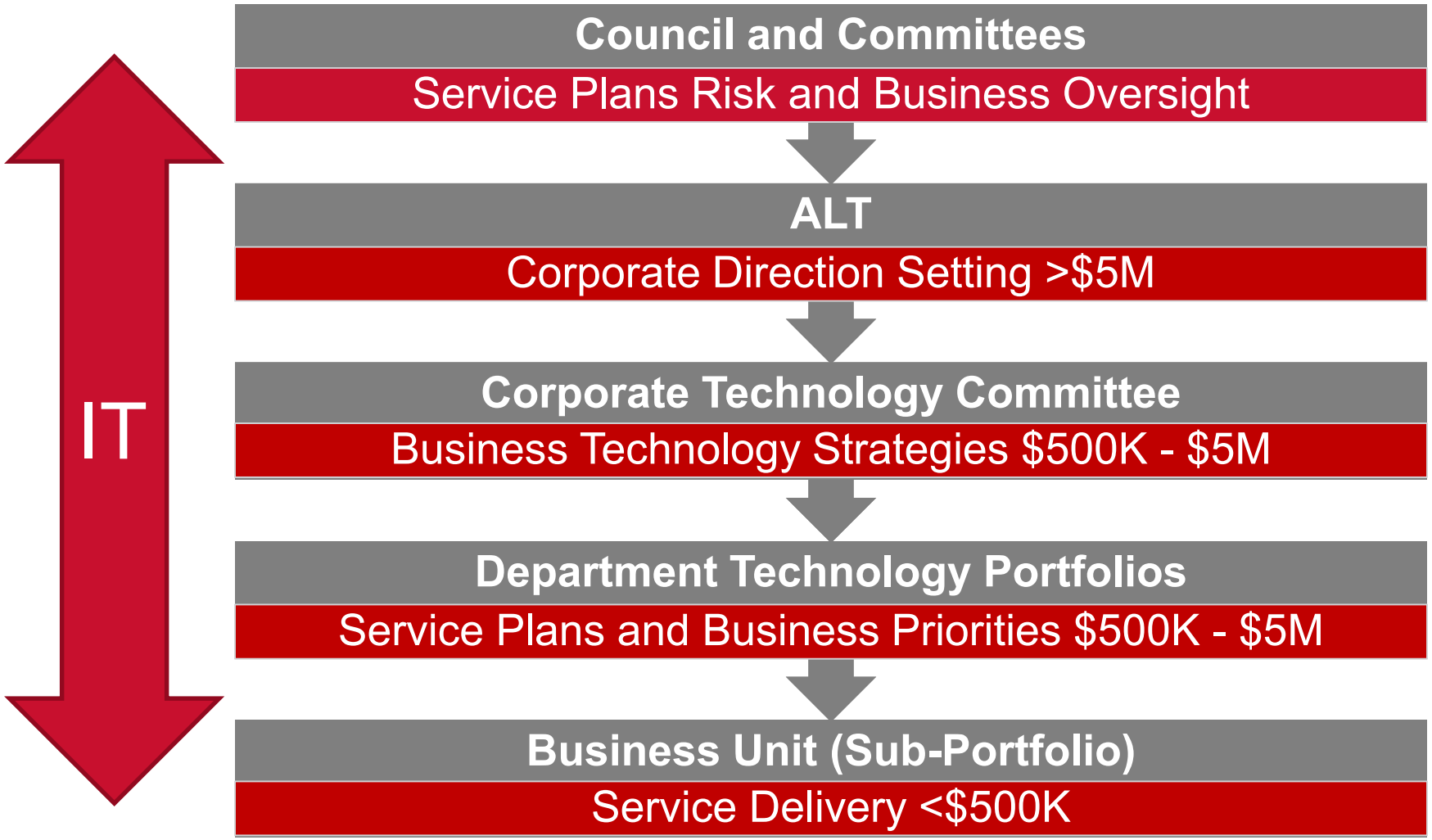
III. Application Portfolio Management - ZBR

IV. Always looking for lower cost alternatives wherever possible

Software – Operating Expenditures Actuals and Projections (2018-2022)



Technology Governance - Approval Threshold



Corporate Technology Plan

The Enterprise Platform Portal showcases the strategies and capabilities of the various technologies available to business units. The tools below will help you develop and understand the technology at your disposal.

Enterprise Platform	An interactive diagram showing relationships between Business context, Enterprise capabilities, and Enterprise applications and functions.
Enterprise Applications Roadmap	An interactive diagram showing planned or in-progress Enterprise Application Initiatives on a timeline.

mycity/techplan

IT Benchmarking & Performance Management

Understanding our Performance

Measures

- External benchmarking studies
- Client Satisfaction
- Employee Satisfaction
- Vendor performance measures
- Infrastructure measures

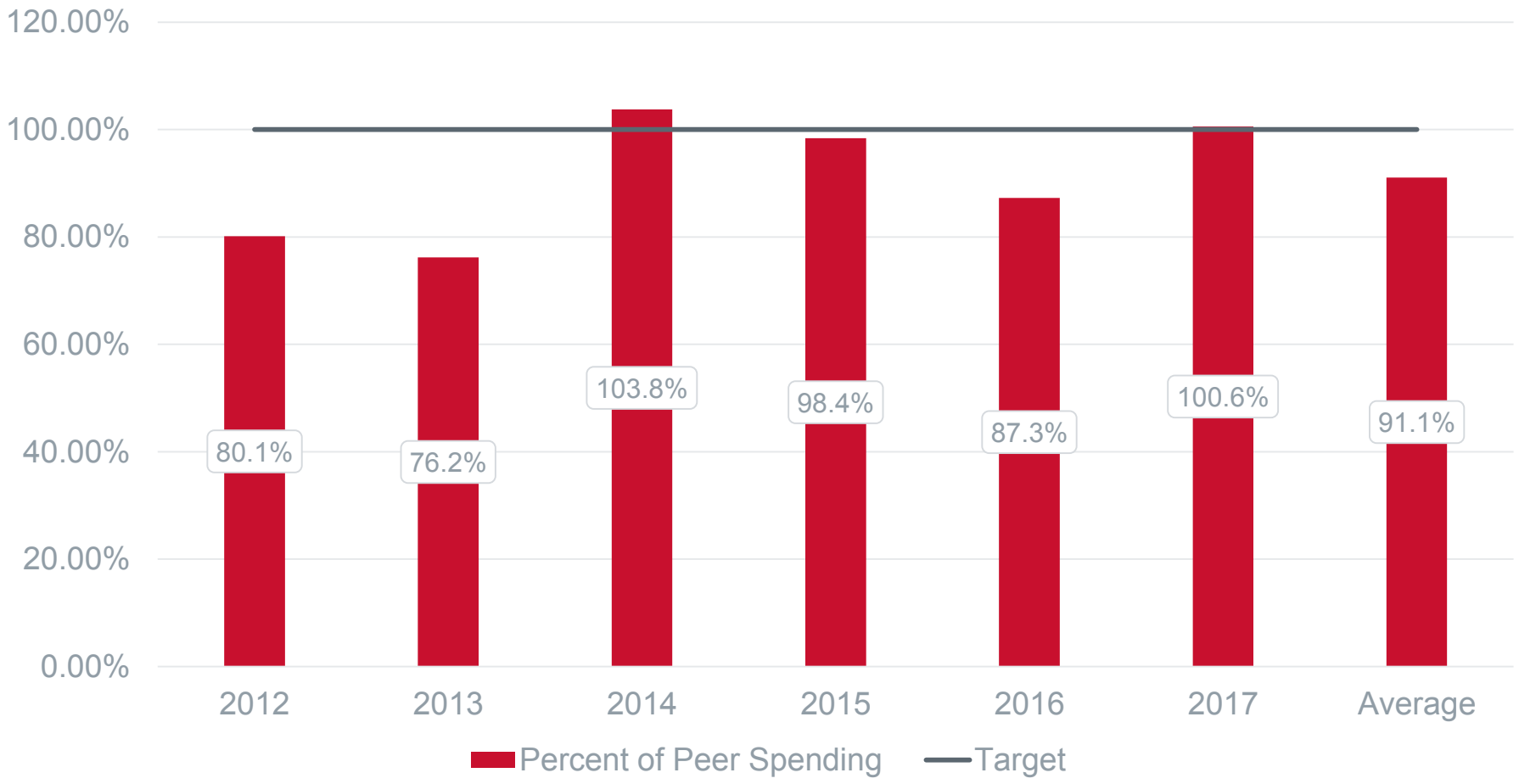
Reviews

- Industry advisory services
- Process maturity assessments
- Quarterly review on business plan, budget, and workforce

Reporting

- Annual IT Risk Assessment Report
- Bi-Annual Accountability report to Council
- Quarterly governance report to ALT

IT Cost Per User as a Percentage of Peer Organizations



Source: Micromation (2012-2014), Gartner (2015-2017)

Client Satisfaction with IT

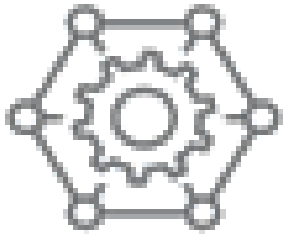
Client Satisfaction	Result	Trend
Overall client satisfaction		
Satisfaction with IT Products and Services		
Satisfaction with IT Service Delivery		
Attitudes Toward IT Service Provision		
Benefits realization of new IT system(s)		

Green: >80%
Yellow: 70-79%
Red: <70%

Source: 2017 IT Client Satisfaction Survey

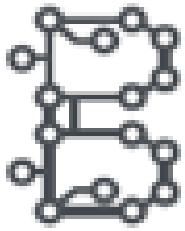
What's Coming: Disruptive Technology Trends

Artificial Intelligence



Robotic Process Automation

Virtual Reality & Augmented Reality



Blockchain

5G Wireless

Questions?