

# CORRECTIONAL SERVICE CANADA

CHANGING LIVES. PROTECTING CANADIANS.

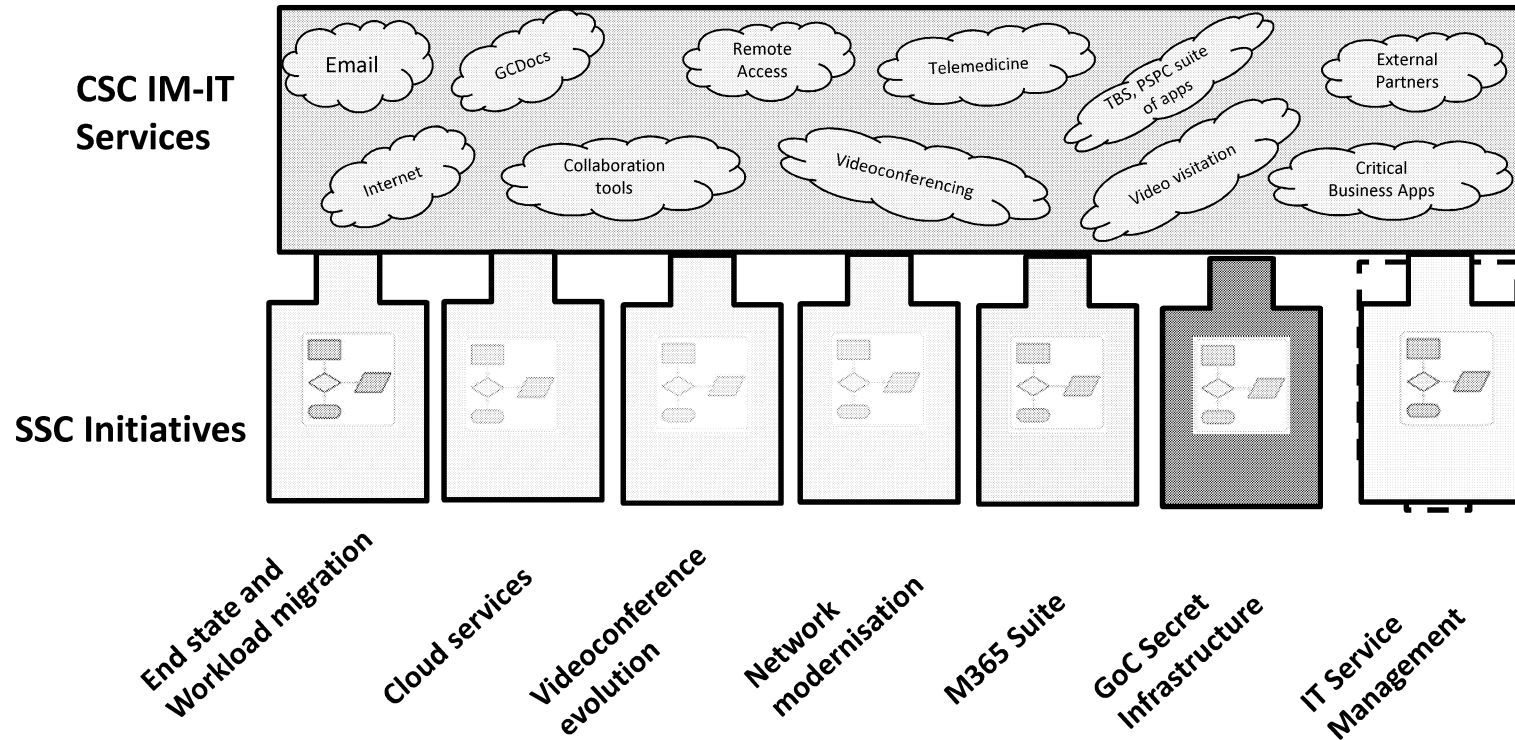


## Network Foundational Services

Draft

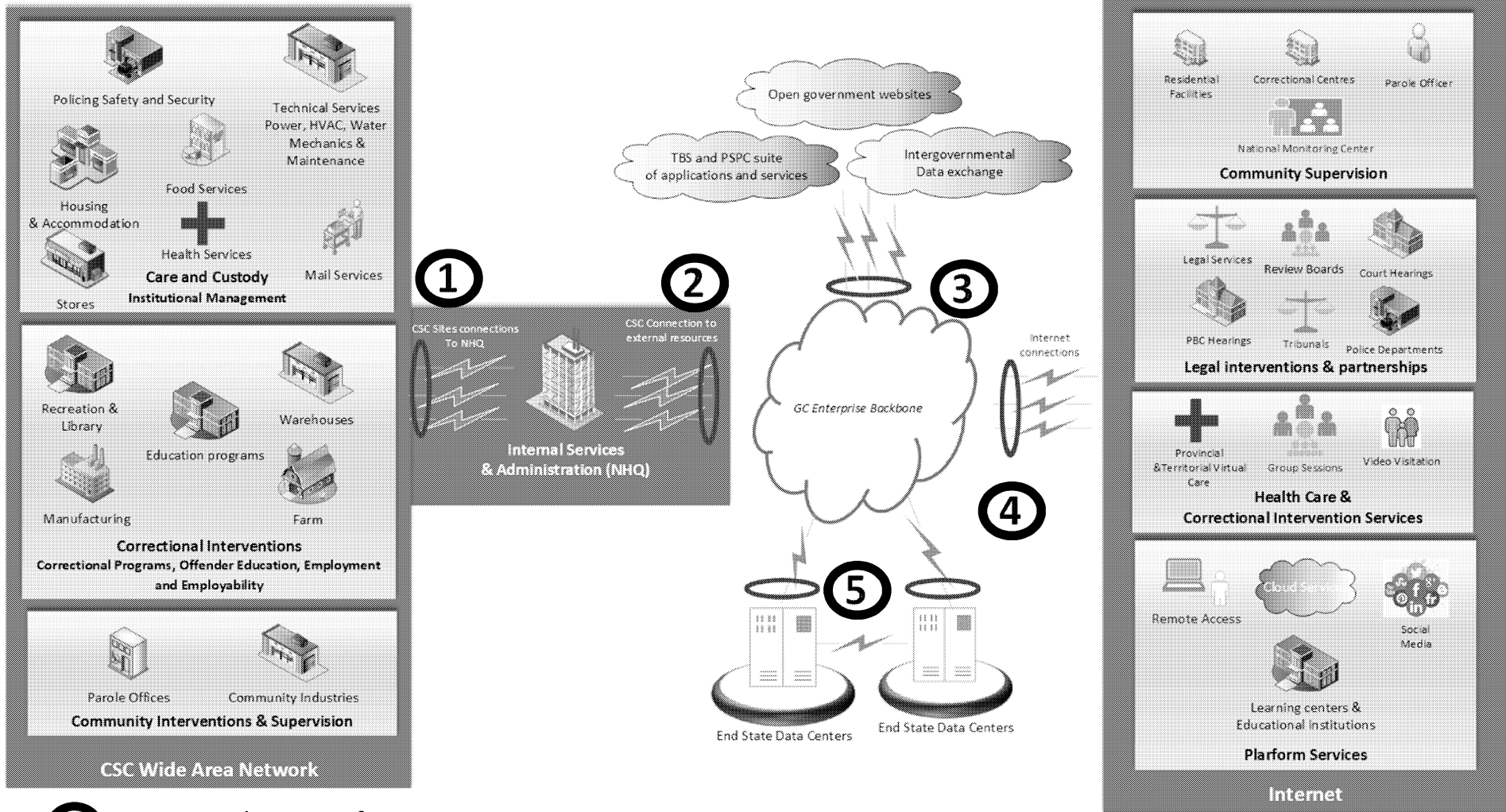


# CSC-SSC INITIATIVES AND SERVICES IMPACTING NETWORK





# CSC NETWORK INFRASTRUCTURE SUPPORTING CSC'S OPERATIONS



Critical points of interest



# PRE-COVID CSC BUSINESS DRIVERS IMPACTING NETWORK SERVICES

- Care and custody:
  - Bill C-83: Structured Intervention Unit
  - Essential Health Services Framework (Suite of Health apps)
  - Use of Force video recording and streaming
  - National Intercept Center and centralized Inmate Telephone System reporting
  - External partners (Federal, Provincial, Municipal, Justice, Courts, Tribunals, Police, Boards, PBC, etc)
- Correctional Interventions:
  - CORCAN Community Industry sites: Indigenous Offender Employment Initiative
  - Educational/vocational/Skills development interventions
  - Distance learning and the supervised use of information technology
  - Video visitation
- Community Supervision:
  - National Monitoring Centre (NMC)
  - Community Residential Facility (CRF) connectivity
  - Parole Officers connectivity & Solusguard/ORR (panic button)
- Corporate services:
  - HR and Financial Operations
  - Legal
  - Real Property, Acquisitions and Materiel
  - Communications



# CSC NETWORK STATUS PRE-COVID

- Aging infrastructure:
  - Aging Fibers providing sites connectivity
  - Unsupported network devices
- Limited network capacity:
  - Sites range from 10Mbps to 100Mbps
  - NHQ Internet link at 600Mbps of which 66% was Social media and Streaming traffic
  - Sites to NHQ link at 1Gbs
  - GC Secure Remote Access (GCSRA) supporting 1,500 concurrent users
- Impact on CSC operations:
  - Network outages
  - Network saturations (Sites to NHQ and NHQ to Internet)
  - Degradation of several IT foundational services: Email, file share, Internet, GCDocs, Videoconferencing, Video streaming, application performance, remote access, etc.
  - Data centers closure and Workload migration (SSC)



# CSC BUSINESS DRIVERS DURING COVID

- Care and custody:
  - Virtual Health Care
  - Virtual Hearings: PBC, Court, Tribunals, Legal, Justice, Human Rights Tribunal, Review Boards, etc
- Correctional Interventions:
  - Video Visitation
  - Virtual Program delivery
  - Virtual Educational/vocational/Skills development
- Community Supervision:
  - Virtual National Monitoring Centre (NMC)
  - Virtual Program delivery
  - Virtual Health care
- Corporate services
  - Virtual Staffing and HR training
  - Virtual Learning and development (Corporate training, NEOP)
  - Virtual Federal Public Sector Labour Relations and Employment Board



# CSC NETWORK STATUS DURING COVID

- Upgrades to increase remote access capability were implemented:
  - Hardware upgrades to allow connectivity from 1,500 users to 10,000 users
  - Ottawa bandwidth increase from 600Mbps to 1Gbps for remote access
  - Social Media blocked to improve remote access performance
  - Reduce general VC consumption to enhance remote access performance
  - Laval bandwidth increase from 20Mb to 100Mb for remote access
- Increased Video Conferencing capabilities
  - Expansion of Video Visitation from 57 to 98 units
  - Onboarding of Ontario OTN virtual care services
  - Onboarding of Atlantic physicians to provide mental care virtually
  - Other regions to follow Atlantic steps in identifying provincial medical college's authorised tools to provide virtual health visits
- Equip and moved the NMC to a Virtual setting
- Fast tracking the Microsoft 365 Cloud Collaboration tools implementation
  - Implementation of Split tunnelling to route M365 and WEBEX traffic from home directly to Internet



# CSC BUSINESS DRIVERS

## “NEW NORMAL”

- Virtual operations and collaboration capability across the board:
  - Care and custody (Health, Justice system, PBC, Review boards, etc)
  - Correctional Interventions (Program delivery)
  - Community Supervision
  - Corporate Services (L&D, HR, Finance, Facilities, etc)
- Use cases:
  - Offender/Staff virtual interactions from any CSC site to another CSC site
  - Offender/Staff virtual interactions from any CSC site to the Community
  - Offender/Staff virtual interactions from the Community to any CSC site
  - Offender/Staff virtual interactions from the Community to the Community
- External partners and organisations adopting their own virtual & collaboration technologies



# CSC's RISKS

- Inability to maintain required levels of operational safety and security in institutions and in the community
- Failure to deliver on GoC priorities: Open government, Digital government, Indigenous initiatives, CSC core programs and services to Canadians
- Limited IM-IT capacity to deliver new priorities and initiatives
- Programs efficiency degradation as CSC moves forward with new initiatives
- Gradual ongoing growth of CSC investments on network capacity without dedicated secured funding



# “NEW NORMAL” NETWORK PRIORITIES

- Focus on key foundational enabling investments first, Network, and then move forward with the full range of new CSC’s initiatives
- Requested SSC for a comprehensive network analysis to avoid future bottle necks:
  - Evaluation of required links from sites to NHQ
  - Evaluation of required NHQ link vs regional sites
  - Evaluation of required NHQ link to GoC backbone, external partners, Internet and remote access
  - Network appliances lifecycle and capacity/scalability requirements
- Address area 1 of CSC Network (WAN/LAN):
  - Perform fiber upgrades at sites and perform network cabling to points of interest at every site
  - Continue upgrading sites’ bandwidth to NHQ
  - Sites to NHQ link upgrade (current 1Gbps to 3Gbps)
  - Network appliances (lifecycle, traffic shaper, proxies, etc)
- Address area 2 of CSC Network (Internet, GoC, External Partners, Remote Access):
  - Dedicated NHQ Internet link to 900Mbps
  - Dedicated NHQ GCSRA link to 1Gbs
  - Traffic Shapers devices to prioritize traffic



# Network Foundation Modernization

## Primary Goal and Objectives

### Initiative Goal:

- Address current demands and anticipated growth in cloud-based services that is fast, secured and reliable network infrastructure to access services from anywhere, at anytime, regardless of the demand and circumstances.
- Support CSC's vision and way forward plan and strategy to transform program delivery through digital services such as offender-based education through interactive virtual platform, video court hearings, remote provisioning of health care services, etc.
- Compliance to Government of Canada mandate in implementing the Treasury Board **Policy and Directive on Service and Digital** that focuses on the client through adoption of a service-oriented design and development of digital operations and services.

### Description:

- The current network infrastructure is outdated, costly to maintain yet not sustainable or scalable to support expanding business needs, namely, cloud-based, video and voice services. Incremental improvements made with limited benefits to keep the lights on.
- The COVID-19 pandemic resulted in a dramatic shift in the GC network landscape, with employees directed to work from home. Modern technologies were adopted, namely, M365 Teams, Webex-enhanced for video court hearings, resulting to high network usage putting our infrastructure at risk.
- CSC is working in collaboration with SSC on government-wide initiative to modernize the GC network infrastructure to realize the vision of delivering end-to-end services to public servants and Canadians.



# Network Foundation Modernization Proposed Initiative Fundamentals

**Strategy:** Pilot program-led initiatives at select institutions to assess overall benefits, interoperability, scalability.

**Dependency:** Adoption of a two-phased approach to enable a digital strategy for cloud-based services.

## Phase 1: Stabilization of CSC Foundational Network

1. Perform cable audits of In-Building networks in the institutions to assess current state
2. Perform network upgrades (based on Recommendations from TEAMS Assessment and other sources)
3. Design Network Topology for modernized services (Cloud, Enterprise, Internet, etc.)

**Phase 2: GC Network Modernization** – in collaboration with SSC GC Network Modernization implementation

- SSC Network WAN Assessment
- S2GC (Secure to ground connectivity) by SSC which provides secure access to cloud services
- Network Assessment & Design SSC + CSC (started Feb 2021)
- Implementation of recommendations from the Assessments & Designs SSC + CSC

**CSC Strategic Outcome:** Deliver a modernized networking infrastructure upgrade to achieve the following:

1. Enable programs and services to support Core Responsibilities defined in the Departmental Plan;
2. Provide those working remotely to function with in-office computing performance equivalence (latency);
3. Allow for scalability for network expansion to deliver Correctional interventions;
4. Realize CSC's vision for virtual delivery of correctional programs (VCPD)
5. Facilitate the adoption and management of operational technology equipment and systems
6. Stabilize current network infrastructure to bring to a state of operational sustainability to support demand usage and growth to support cloud-based technologies on a safe and secure platform.
7. Confirm the state of readiness of CSC's foundational network infrastructure to its modernization that is robust, reliable, scalable, and secure to deliver on expanding business needs.



## Network Foundation Modernization **Summary**

**CSC Priorities Applicability:** Having a reliably performing corporate network is essential for CSC to carry out all priorities listed in the CSC Departmental Business Plans and Priorities, but more importantly to deliver on services critical to our commitment and mandate to provide Public Safety to Canadians.

Seek for investment opportunities as part of the Economic Stimulus GoC plan

Identify and secure up front and ongoing funding to move forward with:

- Fiber upgrades at sites

- Network cabling to points of interest at every site

- Increase bandwidth from sites to NHQ

- Increase NHQ bandwidth to absorb sites incoming traffic

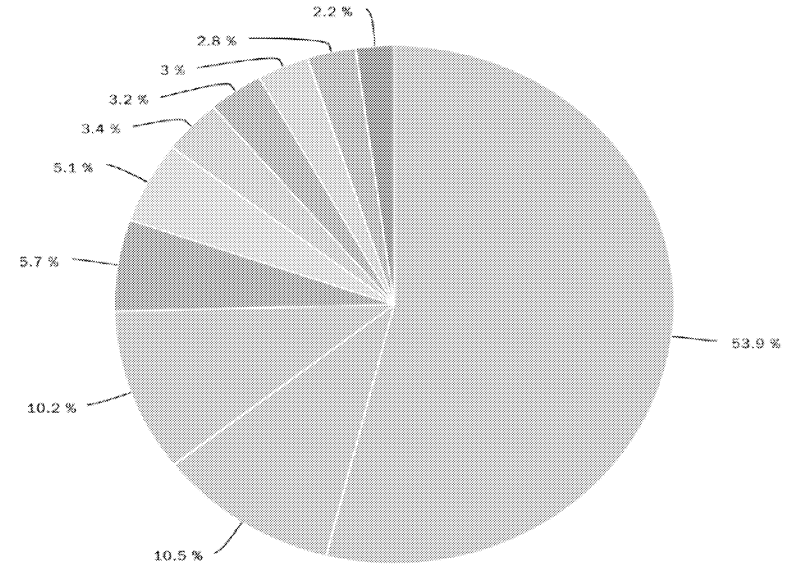
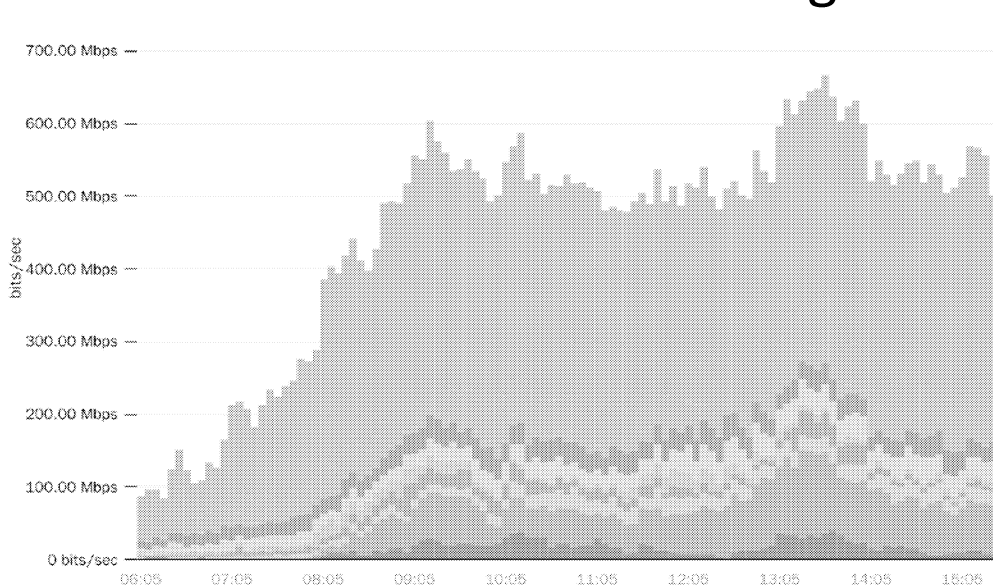


# ANNEX



# CSC NETWORK STATUS (NHQ) DURING COVID CONT..

- Top 4 traffic is GCSRA, secure Internet, WebEx (VC) and Cloud services
- Average usage at 55% with peaks at 72%
- Social media and streaming services are blocked

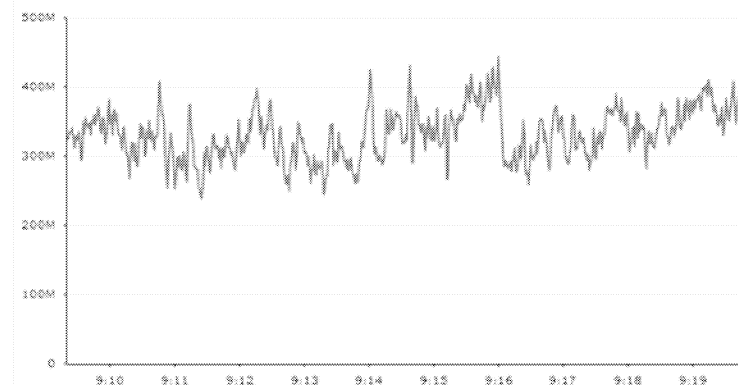
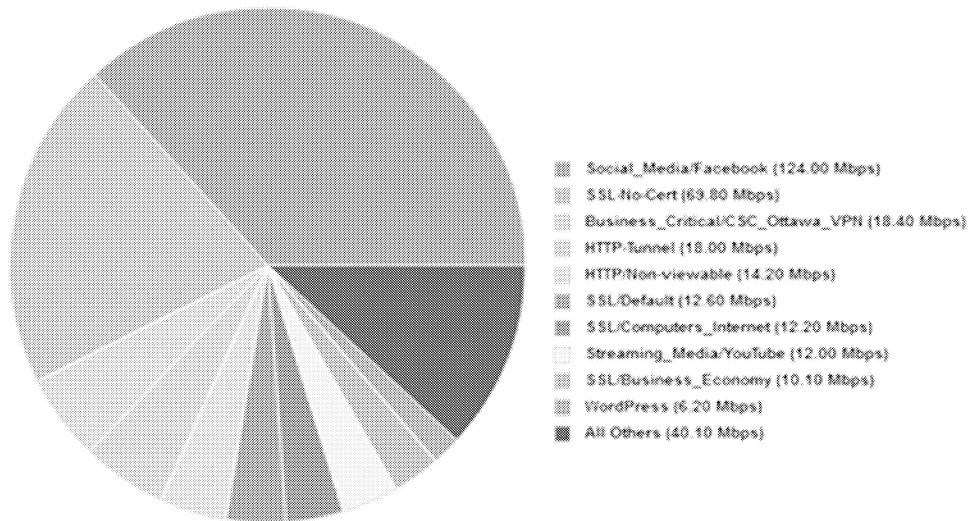


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■ Akamai	■ MSOnline	■ PCO-GCSRA-VPNGates-DC04-DTLS	■ Google	■ Akamai	■ Google	■ AmazonWS	■ O365SkypeForBusiness
■ INET-Webex-RTP	■ O365SkypeForBusiness			■ PCO-GCSRA-VPNGates-DC04-DTLS	■ MSOnline		



# CSC NETWORK STATUS (NHQ) PRE-COVID CONT..

- Top 3 traffic was Social media, secure Internet and GCSRA
- Average bandwidth utilisation was at 75% with peaks at 90%
- Video conferencing (VC) was not in the top 10





# CSC AND SSC ROADMAP IMPACTING NETWORK

