

5.2 OPTIONAL MANAGEMENT AND APPLICATION SERVICES

This section presents Qwest's proposed optional services for the Networkx program. In our selection of optional services, we applied two criteria:

- Does Qwest have a market leadership position in the delivery of the optional service?
- Does Qwest currently deliver the optional service to Federal Agency customers?

The optional services proposed qualify for one or both of these criteria and offer the Networkx Enterprise program a depth of capability that will facilitate transition and service convergence.

5.2.1 DEDICATED HOSTING SERVICES (DHS) (L.34.1.5.4, M.2.1.4)

Qwest's Networkx Dedicated Hosting Services provide a secure and highly available environment for Agency applications, which allows Agencies to free up valuable resources.

Qwest's Dedicated Hosting Service (DHS) is layered on top of our Collocated Hosting Service (CHS) to provide Agencies a worry-free, end-to-end hosting solution. With Qwest DHS, Agencies can outsource the entire management of their hosting environment to Qwest's experts and free up valuable Information Technology (IT) resources to focus on other internal priorities. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

A dedicated server is leased strictly to a single Agency; in addition, other

infrastructure—including Internet connectivity—is also dedicated or leased for exclusive use by the Agency.

[REDACTED]
[REDACTED] Our space, people, and procedures have been certified by several Agencies for sensitive applications.

Qwest has [REDACTED] facilities that are rated at Tier III by the Uptime Institute and a third facility is pending certification. We apply Uptime Institute standards in the design and implementation of all new hosting facilities. This means that Agencies can select centers with additional facility redundancy, assuring 100 percent uptime for power and cooling.

Qwest currently provides hosting services to numerous Government customers. [REDACTED]
[REDACTED]

Figure 5.2.1-1 provides an easy reference to correlate narrative requirements to our proposal response.

Figure 5.2.1-1. Responses to Narrative Mandatory Service Requirements

Req_ID	RFP Section	[REDACTED]
30761	C.2.4.2.2.1 (4)	[REDACTED]
30762	C.2.4.2.2.1 (4)	[REDACTED]
30763	C.2.4.2.2.1 (4)	[REDACTED]
30764	C.2.4.2.2.1 (4)	[REDACTED]
30765	C.2.4.2.2.1 (4)	[REDACTED]
30766	C.2.4.2.2.1 (4)	[REDACTED]

5.2.1.1 Reserved (L.34.1.5.4 (a))

5.2.1.2 Reserved (L.34.1.5.4 (b))

5.2.1.3 Satisfaction of Technical Service Requirements (L.34.1.5.4 (c))

[REDACTED] illustrates how Qwest meets the Networx service requirements. DHS provides management of the hardware, OS, and Web server software on dedicated servers. Collocated Hosting Service provides the groundwork solution for DHS and offers the fundamental elements of space, power and connectivity. This service also includes 24x7x365 call management and escalation procedures.

5.2.1.3.1 Satisfaction of DHS Capabilities Requirements (L.34.1.5.4 (a), C.2.4.2.1.4)

Qwest fully complies with all mandatory stipulated and narrative capabilities requirements for DHS. The following text in 5.2.1.3.1 provides the technical description required per L.34.1.5.4(a) and does

not limit or caveat Qwest's compliance in any way.

Configuration: Qwest will install, configure, and maintain DHS hardware and operating systems of all hosted systems for single server, multi-server and cluster configurations. [REDACTED]

[REDACTED]

Qwest will ensure that a consistent baseline of operating systems are established and maintained. In addition, Qwest will manage version control for the operating systems and implement backup and restore procedures in accordance with established procedures. For system upgrades, Qwest will perform regularly scheduled capacity planning assessments to determine a need for hardware or software upgrades. We will present the assessment findings to each Agency on a regular basis.

Administration: Qwest will implement an integrated, heavily refined best practices approach for managing operating systems. We will ensure that there is a single point of accountability for diagnosing and resolving potential or existing problems to minimize impact. Qwest will apply the same management, monitoring, and security principles to each DHS platform as well as have customized procedures for each Agency's environment.

Qwest will manage Agency resources, including server configuration, disk space usage, directory management, shared resource management and directory services. We will establish a baseline for server usage, including shared resources, disk space management and server management. We will also initiate trending of these parameters to establish historical performance management data and use this data to determine future server requirements. Qwest will also manage user account profiles and verify the accuracy of data contained within them and the directory service entries. Qwest will monitor disk space usage for all servers and implement procedures for preserving disk space for optimal efficiency and availability. We will provide a

comprehensive Operating System (OS) patching service subject to Qwest's change management process.

Monitoring: [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

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[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted content]

[Redacted text block]

Security: Qwest will provide security of the software platform that includes:

[Redacted text block]

Firewall: [Redacted text block]

[Redacted text block]

**Intrusion Detection Services (IDS) – monitoring, real-time alerting,
and reporting 24 hours a day, 7 days a week:** [Redacted text block]

[REDACTED]

[REDACTED] Qwest offers SAS 70, multi-certified, Tier III and IV hosting facilities with total network and critical systems redundancy;

[REDACTED]

Internet Connectivity Benefiting DHS: The Qwest DHS delivers direct Internet connectivity from our CyberCenters™ that provides high availability and scalability. CyberCenter™ Redundancy includes:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Qwest provides Internet bandwidth as needed by an Agency. Qwest offers burstable bandwidth that automatically scales from the Committed Information Rate up to either the full capacity of the interface or the Available Information Rate as agreed on by the Agency.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In addition, Qwest's other data services for Networkx, including Network-Based Internet Protocol VPN (NBIP-VPNS), Layer 2 Virtual Private Network Service (L2VPNS), Private Line Service (PLS), Synchronous Optical Network Services (SONETS), Asynchronous Transfer Mode Service (ATMS), and Frame Relay Service (FRS) are available at the CyberCenters™ for DHS. This enables Agencies to not only build their publicly facing front-end systems, but also provide the back-end connection to their Departments or Agency's WAN environment.

Physical Security Benefiting DHS: [REDACTED]

[REDACTED]

[Redacted content]

[Redacted text block]

Redundant Power Sources Benefiting DHS: [Redacted]

[Redacted text block]

[Redacted]

[Redacted text block]

Redundant Power Configurations Benefiting DHS: [Redacted]

[Redacted text block]

[Redacted text block]

Diesel Fuel Supplies Benefiting Networkx DHS Functions and Dependability: [Redacted]

[Redacted text block]

Fire Protection to Benefit DHS: [Redacted]

[Redacted text block]

Detection Benefiting DHS: [Redacted]

[Redacted text block]

Reporting to Internal CyberCenter™ Personnel: [Redacted]

[Redacted text block]

[Redacted]

Reporting to External Fire Authorities: [Redacted]

[Redacted]

Type of System and Code Compliance: [Redacted]

[Redacted]

Computer Room Air Conditioning: [Redacted]

[Redacted]

Computer Room Air Conditioning Benefits: [Redacted]

[Redacted]

[Redacted text block]

Dissipation of Heat: [Redacted text]

[Redacted text block]

[Redacted text]

Measurement and Customization: [Redacted text]

[Redacted text block]

[Redacted text]

Reporting and Documentation: [Redacted text]

[Redacted text block]

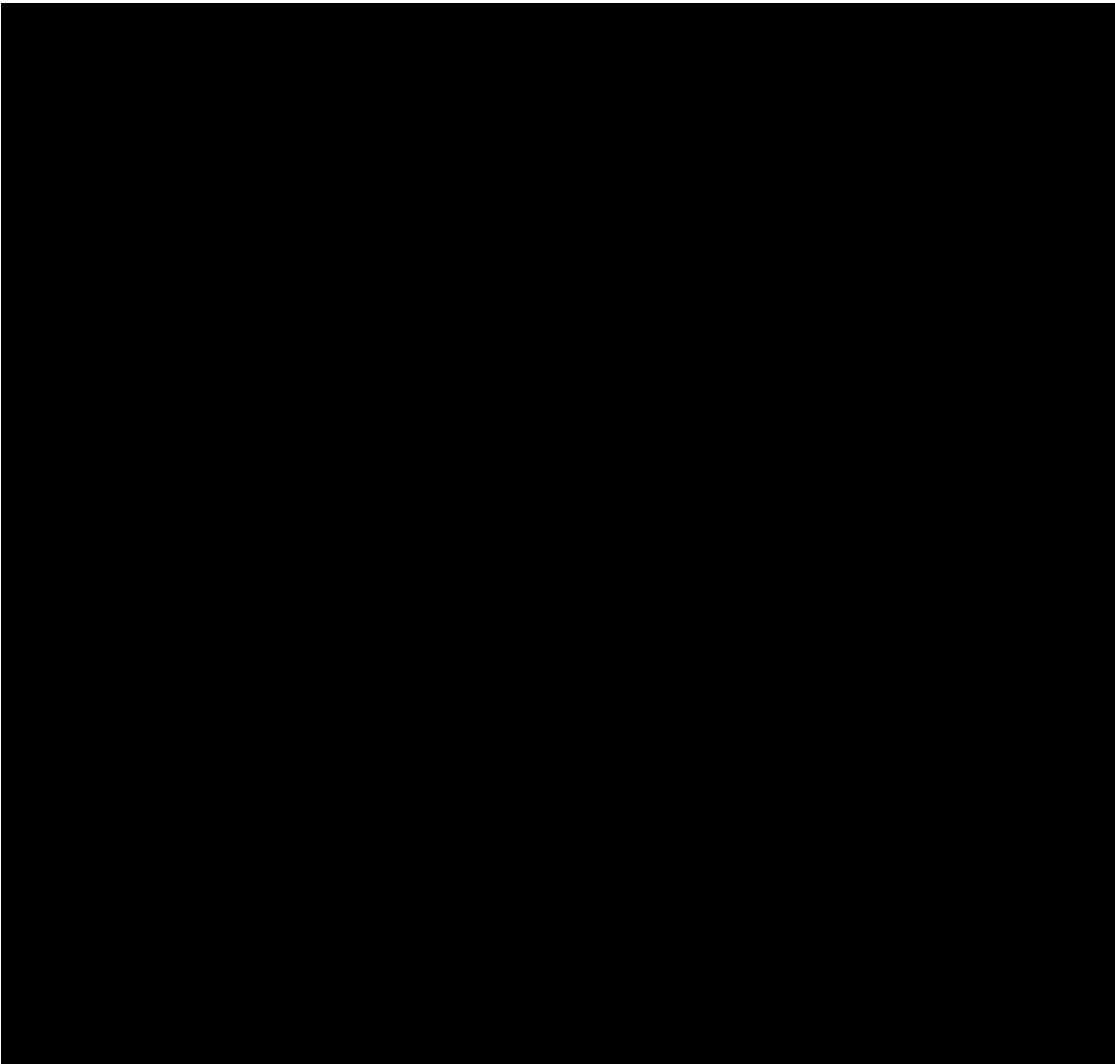
5.2.1.3.1.1 Application Hosting [Optional]: Customer Relationship Management (CRM), Database Systems, Document Management, EMail/Messaging, Enterprise Resource Planning, Human Resource Applications (Req_ID 30761, 30762, 30763, 30764, 30765, and 30766)

This section addresses the DHS Application Hosting Optional requirements under the Request for Proposal (RFP) Sections L.34.1.5.4 (b) (1 to 6) and C.2.4.2.2.1 (4).

[REDACTED]

Managed Services offerings provide Agencies with access to flexible, reliable, and cost-effective solutions that are custom-tailored by professionals experienced in industry-leading business processes and technology solutions. As a result, Agencies are able to realize recurring value quickly and dramatically while reducing cost and mitigating risk.

The diagram in [REDACTED] depicts the layers of service that are necessary to provide a fully Managed Services platform—from maintaining the operating platform and basic network interfaces to managing the systems and application software that affect daily business decisions. These services are required in some form, regardless of the specific applications being supported.



This approach may involve multiple entities with different skill sets acting in concert. Typically, the dividing line between the hosting environment and the applications management environment is at the database layer.

[Redacted]

[Redacted]

[Redacted] Qwest provides the operational DBA component downwards. This includes all backup and recovery, database scripting and tuning that go along with the work database type management. This division of labor and concentration on core competencies

helps to ensure optimum application availability and proactively detect and respond to potential problems, at both the operating and the application layer.

[REDACTED]

5.2.1.3.2 Satisfaction of DHS Features Requirements (L34.1.5.4 (b), C.2.4.2.2.1)

[REDACTED] provides a snapshot of Qwest’s technical approach to DHS. Qwest fully complies with all mandatory stipulated and narrative features requirements for DHS. The text in Figure 5.2.1-6 provides the technical description required per L.34.1.5.4(b) and does not limit or caveat Qwest’s compliance in any way.

Figure 5.2.1-6 Qwest’s Technical Approach to DHS Features

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

**5.2.1.3.3 Satisfaction of DHS Interface Requirements (L34.1.5.4 (c),
C.2.4.2.3)**

Qwest fully complies with all mandatory stipulated and narrative interface requirements for DHS. The following text in 5.2.1.3.3 provides the technical description required per L.34.1.5.4(c) and does not limit or caveat Qwest's compliance in any way.

Qwest provides Internet connectivity at each DHS CyberCenter™ facility. [REDACTED]

[REDACTED]

In addition to our nationwide SONET rings, Qwest also has a completely separate regional network [REDACTED]

[REDACTED]

[REDACTED] This configuration enables these three locations to participate in the routing of access and backbone traffic, providing significant load-balancing and reconfiguration options in the event of a switch, router, or even a complete POP failure.

5.2.1.4 Achieving Quality of Service Goals (L.34.1.5.4 (d))

Qwest meets the Networkx Quality of Service (QoS) standards shown in **Figure 5.2.1-7**.

Figure 5.2.1-7 Qwest Meets or Exceeds the Networkx QoS Goals

Key Performance Indicator (KPI)	Service Level	Performance Standard (Threshold)	Acceptable Quality Level (AQL)	[REDACTED]
Availability (Internet Connection)	All	99.99 %	≥ 99.99 %	[REDACTED]
Availability (Web Site)	Routine	99.7%	≥ 99.7 %	[REDACTED]
Time to Restore (TTR)	Without Dispatch	4 hours	≤ 4 hours	[REDACTED]
TTR	With Dispatch	8 hours	≤ 8 hours	[REDACTED]

Qwest addresses each as follows:

Availability – Internet Connection: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Availability – Web Site: Qwest’s IT resources actively manage DHS configurations, including hardware, such as servers, routers and switches; software, such as firewalls and load balancers; and operating systems, [REDACTED]

[REDACTED]

Qwest maintains an up-to-date standard operating environment that enables us to manage multiple Agency environments. While each Agency may have

unique characteristics, Qwest manages uniformly across a broad range of customer environments because all components are based on the same standard operating principles.

Time to Restore: Qwest has processes and procedures in place to ensure that the TTR from a power or Internet connectivity outage [REDACTED]. This benefit and associated resources will be available to Agencies.

Qwest's method for measuring the aggregated-based KPIs (availability, bit error rate, grade of service, jitter, latency, and response time) will be based on multiple incidents of service delivery, aggregated at the highest level of the Agency Hierarchy Code involved and averaged over a calendar month.

5.2.1.5 Proposed Service Enhancements (L.34.1.5.4 (e))

[REDACTED]

5.2.1.6 Qwest Experience (L.34.1.5.4 (f))

[REDACTED]

[Redacted content]

[REDACTED]

5.2.1.7 Approach to Performance Verification (L.34.1.5.4 (g))

Qwest's Network Services Verification Test Plan details the standard test procedures that are used by the Agency to verify that the services delivered under the contract meet the Key Performance Indicator (KPI)/Acceptable Quality Level (AQL) thresholds for the ordered service as specified in Section C.2, Technical Requirements, prior to delivering the ordered service to the Agency. Qwest is further proposing standard commercial acceptance testing procedures and thresholds to verify acceptable performance and KPI/AQL compliance.

The Network Services Verification Test Plan describes the process and procedures for verification testing of individual services ordered under the contract as well as the change procedures for adding service-specific test plan attachments. Qwest will notify GSA's PMO of any changes to its Network Verification Test Plan, such as the addition of a service-specific test plan and how Qwest plans to request and receive approval from GSA.

DHS performance integrity will be verified through reporting on the Qwest Control Network Portal, as shown in [REDACTED]. In addition, our well proven, proactive monitoring and management processes ensure fulfillment of the Time To Restore (TTR) AQL. In addition to tracking TTR compliance, Qwest has implemented a continuous feedback loop that is applied to problem resolution. Whenever a key or critical DHS Network-required performance level is breached, Qwest conducts a thorough review of the issue from two points of view:

[Redacted content]

[Redacted content]

5.2.1.8 DHS Delivery Impact on Network Architecture

(L.34.1.5.4 (h))

Qwest's DHS is offered globally and hosted at our advanced CyberCenters™ that are geographically dispersed around the country. [REDACTED]

[REDACTED] This provides robust and secure high-speed interconnection accessibility to Agency locations.

[REDACTED]

Qwest has designed and engineered our CyberCenters™ to be fully integrated with our transport services; there is no impact to the Network Architecture to support DHS.

5.2.1.9 Approach to Satisfying NS/EP Requirements (L.34.1.5.4 (i))

As defined in RFP Section C.5.2.2.1, DHS is not a National Security and Emergency Preparedness (NS/EP)-impacted service. Qwest's overall support of the NS/EP requirements can be found in Section 3.5.1, and our NS/EP plan can be found in Appendix 2 to the Technical Volume.

5.2.1.10 Approach to Assured Service in the National Capital Region

(L.34.1.5.4 (j))

Qwest understands the Government's requirement to assure performance of network services in and around the National Capital Region (NCR). [REDACTED]

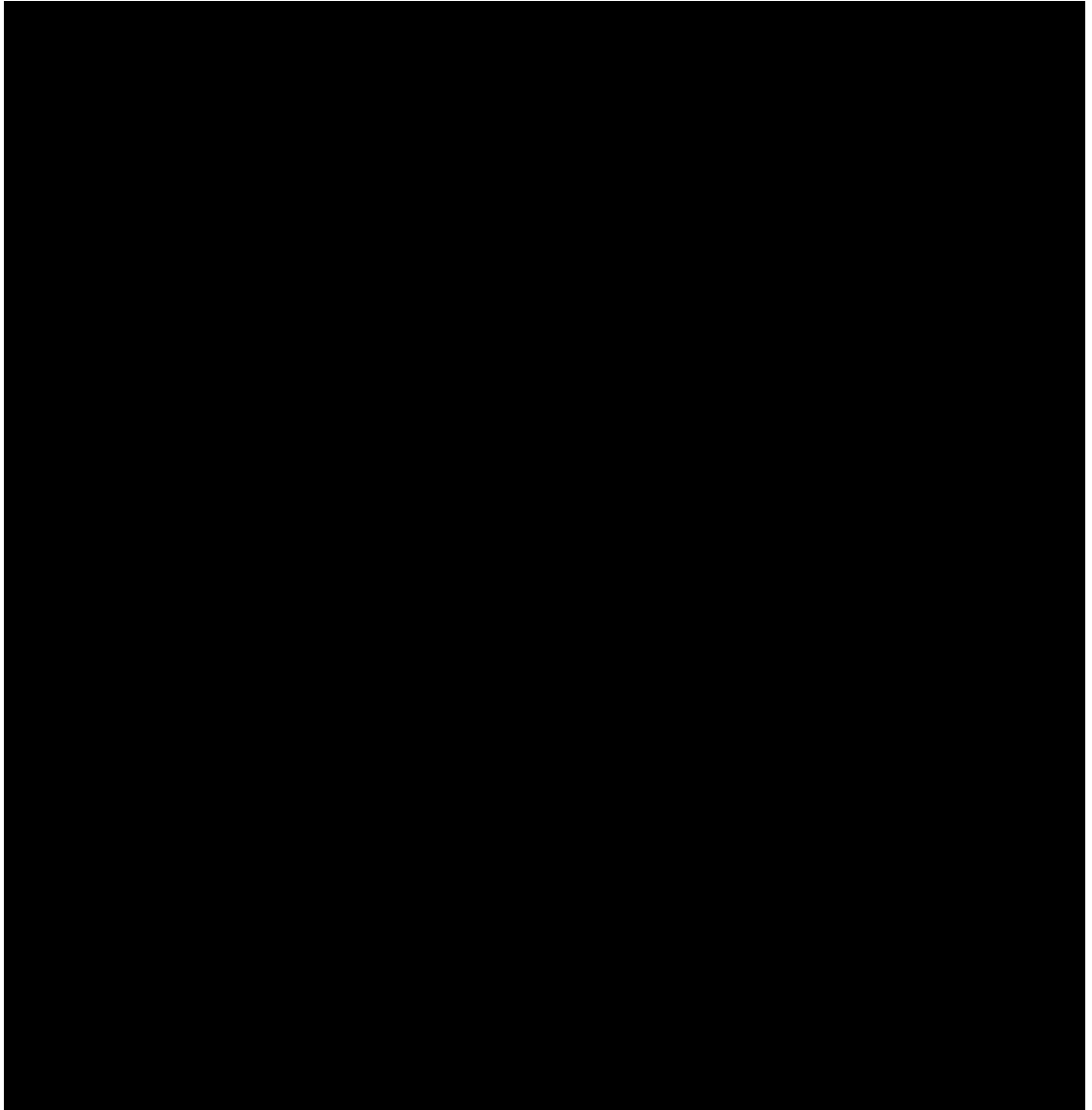
[REDACTED] Each of these gateways provides complete redundancy to access Qwest's nationwide and international network capabilities as well as regional voice and data services. [REDACTED]

[REDACTED]

[REDACTED] has diverse and redundant transport facilities to separate Points of Presence to maximize service survivability. In addition, DHS configurations may, at an Agency's option, be backed up in hosting centers outside of the NCR.

Qwest is already a leading provider of network services in the NCR with robust network architecture to ensure service continuity in the event of significant facility failures. Qwest has engineered critical services to meet the requirements of each Agency to eliminate single points of failure for their network services. Qwest will update and provide full NS/EP documentation, as required, upon a notice to proceed by the Government.

[REDACTED] shows both the logical configuration of the major transport facilities as well as the services provided at each POP.



[REDACTED]

[REDACTED]

[REDACTED] This configuration enables these three locations to participate in the routing of access and backbone traffic, providing significant load-balancing and reconfiguration options in the event of a switch, router, or even a complete POP failure.

Qwest has also acquired OnFiber, a metro SONET and Ethernet provider with yet another diverse network in the NCR. This gives Qwest at least three regional fiber optic networks to use to ensure redundancy and survivability in the greater Washington D.C. area. In effect, this means that Qwest can completely avoid Washington, D.C. to continue to provide services in an emergency.

5.2.1.11 Approach to Meeting Section 508 Provisions (L.34.1.5.4 (k))

According to RFP Section C.6.4, Section 508 Provisions Applicable to Technical Requirements, Section 508 provisions are not applicable to DHS. Qwest has fully described our approach to satisfying Section 508 requirements for applicable offered services in Section 3.5.4, *Approach for Meeting Section 508 Provisions*, of this Technical Volume.

5.2.1.12 Approach to Incorporating Technological Enhancements and Improvements (L.34.1.5.4 (I))

Qwest has mature processes that enable us to envision, research, evaluate, engineer, deploy, and operate new or emerging services, including DHS. Driven initially by the Chief Technology Office, Qwest evaluates new products and technologies for incorporation into the Qwest network, in partnership with Qwest Product Management.

[Redacted text block]

[Redacted text block]

[Redacted content]