Our User Experience Transformation Journey

Alex Philips
CIO

©2019 NOV | Proprietary and confidential.
Introduction – Who is NOV?

A leading provider of technology, equipment, and services to the global oil and gas industry

**NOV powers the industry that powers the world.**

36,000 Employees
635 Locations
66 Countries
$8.45 Billion Revenue 2018 (Fortune 388)
$8.56 Billion Market Cap – NOV (NYSE)
300+ Acquisitions in last 20 years
My job over the past 22 years...

Making the user experience awful!
The IT vs. user experience challenge

- **Local servers**: Fast access but costly and complex
- **Centralized data centers**: Slower app access
- **Mesh network**: Faster traffic but no visibility
- **Hub-and-spoke network**: Increased network latency
- **Fast user experience**: Local servers
- **Slow user experience**: Centralized data centers
Dealing with the trade-off

Convenience

Security Risk Level

Weak
No Password

Password

Secure Password

Two Factor

Challenge

Facial Biometrics

Thumbprint

Full-Time Webcam

In-Person

Strong

Convenience

"The Trade-Off"

Security
Phase 1: Security Transformation

APPLIANCES TO CLOUD
Appliance *hell*

- Performance & latency
- Administration complexity
- SSL inspection
- Mobile user visibility

Network nodes represent Internet, SaaS, IaaS, and other services.
Direct-to-cloud architecture

Full security stack as service | Fast user experience | Full SSL inspection
Improved SSL threat visibility

Traffic volume by protocol

- SSL: 86% of NOV traffic is encrypted
- HTTP

Advanced threats blocked in SSL traffic
By Transactions

- 225.9 K: Spyware Callback
- 45.2 K: Malicious Content
- 24.0 K: Cross-site Scripting
- 6.8 K: Phishing

86% of NOV traffic is encrypted
Full protection for ALL users

Office users: 15,107 Users
Mobile users: 12,393 Users
Total: 27.5K Users

Mobile users: Advanced threats blocked
(By Transactions)

- Spyware Callback: 137.0 K
- Malicious Content: 27.0 K
- Phishing: 6.3 K
- Crypto Mining: 4.7 K
- Adware/Spyware Sites: 1.5 K
- Cross-site Scripting: 1.2 K
- Suspicious Content: 1.0 K
- Browser Exploit: 817

970.3 TBs processed (June, July, August)
Computer wipe & reimage

Pre-Zscaler
Computer wipe & reimage

Pre-Zscaler

Jan 2013  Aug 2016  Aug 2019
Phase 2: Network Transformation

SD-WAN AND OFFICE 365
Hub-and-spoke to direct-to-cloud (SD-WAN)
Applications: Move to a modern cloud platform

Proposed legacy access
Modern, fast user access

Customer’s network

ExpressRoute circuit

Partner edge

Primary connection

Secondary connection

Microsoft edge

Microsoft peering of Office 365,
Dynamics 365, Azure public services (public IPS)

Azure private peering for virtual networks
What were the results?

4x cost reduction on MPLS

10-20x faster user experience

150 local breakouts

455.1 TB of Office 365 traffic in the last 6 months
The user experience journey

- SD-WAN network
- SSL decryption
- Centralized into Zscaler ZIA
- Appliance hell
- Modern architecture & SaaS apps

Slow user experience → Fast user experience
Phase 3: Application Transformation

ZERO-TRUST ACCESS
What’s inside or outside the network?

Repositories, content and docs

Office 365

SharePoint

Data center

No VPN

VPN
It’s time to retire that VPN!

User experience
Nobody liked using it!

Cloud and mobility
There is no “on or off” network any more

Increased risk
VPN increases attack surface and lateral movement
A zero-trust approach to access

Users are never on the network (ZTNA)

No more VPN gateways appliances!

Fast experience drives adoption and reduces risk

Over 7,500 private apps discovered and secured

Over 20,000 users per month
Two forward-looking initiatives

B2B AND USER EXPERIENCE
B2B for NOV

- Provides an attack surface
- Places unknown entity on network
- No device posture visibility
- Resources subject to DDoS

200 internet facing B2B customer apps
User experience monitoring

Challenges

“Are my SaaS SLAs being met?”

“How is the experience after moving to Office 365?”

“Is my new carrier connected to my SaaS apps properly?”

NOV event logs and network traces aren’t answering the questions

Hard to pinpoint problem to device, app, or network – or a combo?

Finger-pointing leads to in-fighting
THANK YOU!