
Enterprise UX: An Enabler for Legacy Systems Transformation

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About Verizon.

Verizon delivers
the promise of
the digital world.

Fortune rank: #16

2019 consolidated total revenue: \$131 billion

135,400 employees

Wireless leadership

- More than 98% of U.S. population has access to Verizon LTE
- Verizon LTE covers 2.5M square miles
- 117.9M retail connections
- Postpaid churn 0.82%

100% all fiber Fios network

- 6M Fios internet and 4.5M Fios video connections
- Downloads as fast as 940 Mbps and uploads as fast as 880 Mbps

Media and technology

- Combined assets from Yahoo and AOL to create Verizon Media, a diverse house of more than 50 media and technology brands that engage more than 50 billion people worldwide

A Healthy and Vital Industry and Company

Industry

>139 million Americans watch video on

Wireless traffic increasing 60% year-over-year

14.2B connections in the Internet of Things (2019) with 20.4B projected this year

Internet of Everything poised to generate \$14.4 trillion by 2027

>50% of all digital video ad spending is on the mobile platform

Verizon Growth & Investment

\$131.9B total operating revenue*

Twelve consecutive years of dividend increases

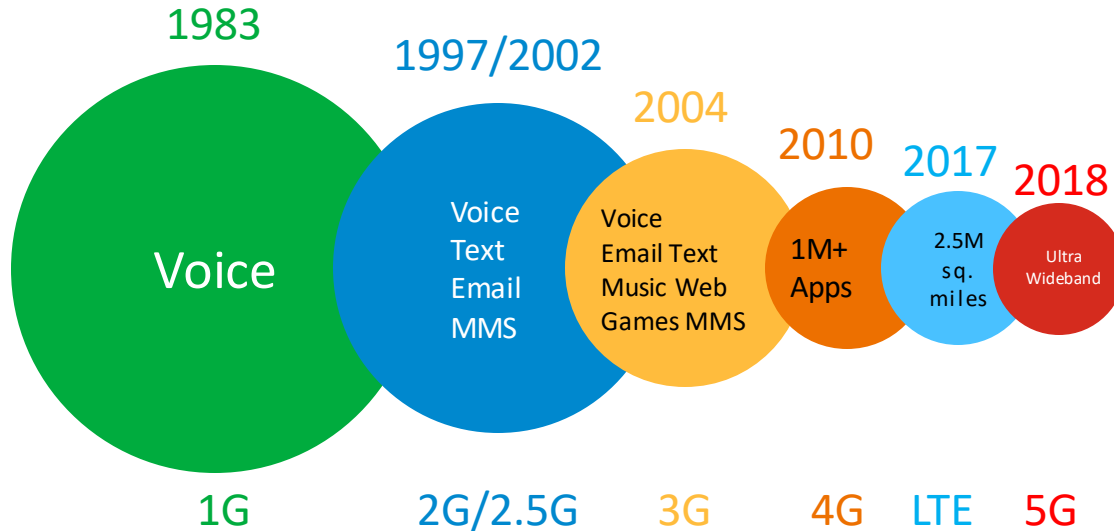
IoT revenues, including Verizon Connect, of 1.5B, up 9.5% year over year*

\$10B in cumulative cash savings by 2021*

2019 Capital expenditures of \$17.7B*

\$239.8M investment in developing employees every year

Leading the Network Evolution



Verizon 2.0

Building tomorrow with the best of today.

“The Fourth Industrial Revolution is coming, and Verizon is bringing the technology that it will be built on.”

- Hans Vestberg, CEO, Verizon

Network Systems Engineering

20+

UI Technologies

110+

Legacy Applications

10K+

Active Users

10K+

Digital facets

10

Network Stacks

100+

Countries Worldwide

We had challenges...

Silos

Technical Debt

Security

Obsolete Technology



We had challenges...

Archaic Interfaces

100+ Applications

Nonstandard Interfaces

Low User Acceptance

```
t root 638 Dec 15 20:10 md5sum
t root 934 Feb 12 18:10 nohup.n
t root 137 Feb 10 08:51 old-ifcig
t root 512 Feb 4 11:08 partition
t root 8774 Jan 25 20:47 portforw
t root 9978 Jan 25 20:47 portwor
t root 2166 Feb 04 01:08 README
t root 4096 Feb 04 09:31 tcpdump
t root 4096 Jan 07 02:31 workspac
```

Center Transformation: Building Next Gen Workforce

Workforce transformation

High expectations

Focus on the task, not the tool

Enable innovation

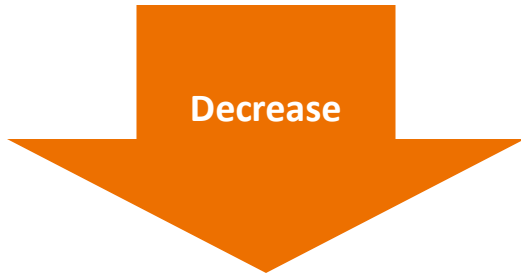
Compare old/new state

Transformation Drivers



Productivity & workflow optimization
User satisfaction
Accessibility

Invisibility of back-end systems



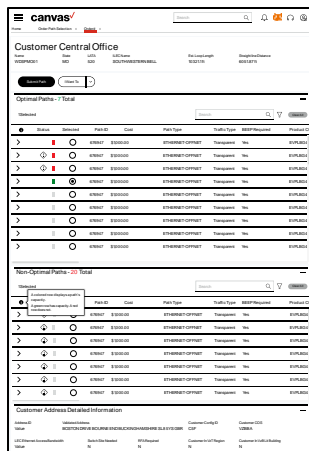
Cost, errors & delays
User frustration
Training requirements

Emotional bond with legacy systems

Our Approach: Enterprise UX

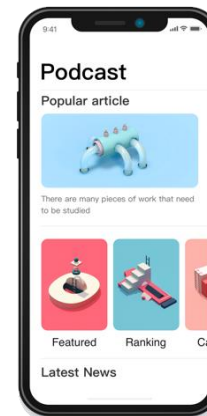
Enterprise User Experience

- Applications built for specific domain
- Applications with broad scope
- Higher complexity
- Low user choice



Consumer User Experience

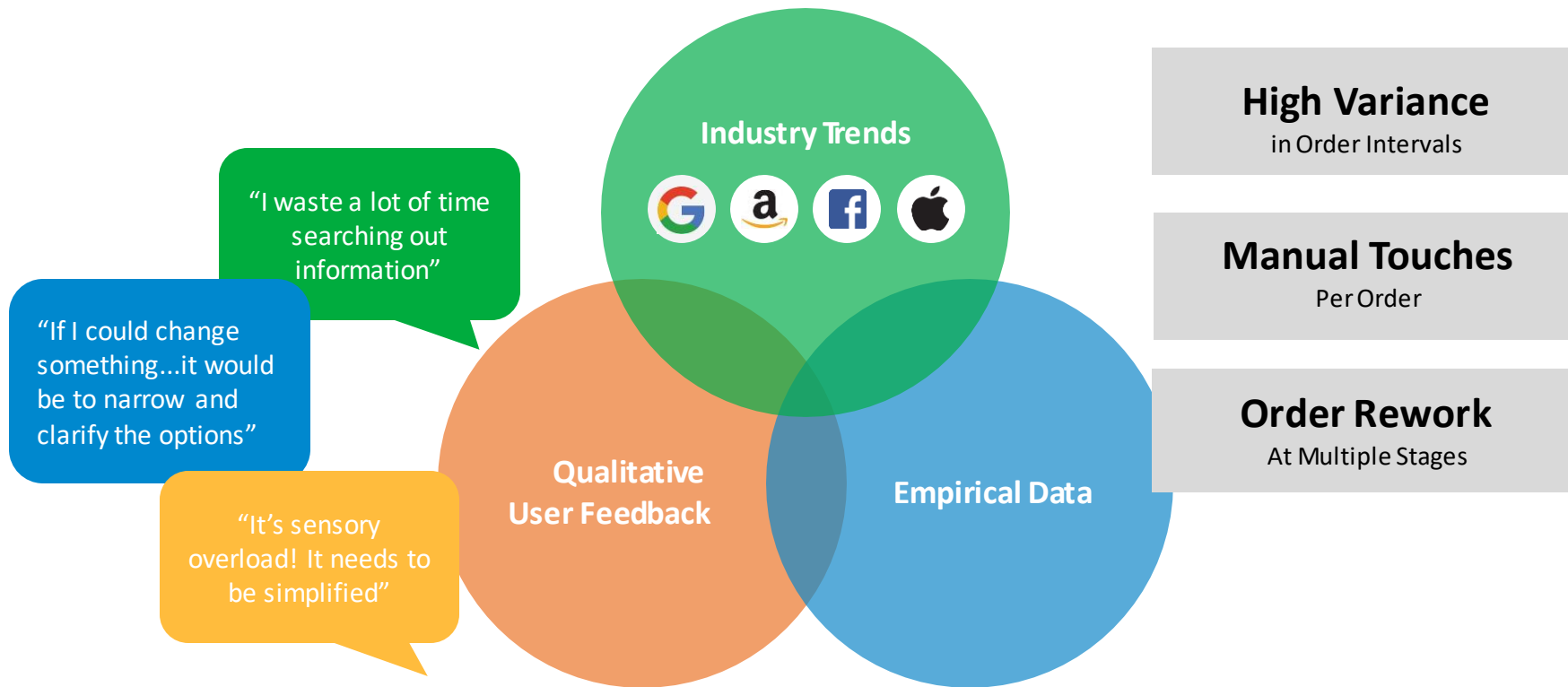
- Applications built for specific task
- Applications with narrow scope
- Lower complexity
- High user choice



Our Approach: Enterprise UX



Our Approach



Measurable Project Targets

Our goal was to significantly enhance user experience for Network and Technology specialists, thereby increasing efficiency, productivity, and engagement.

We set out to accomplish this goal of 'Delivering 1 Platform' and measure our results with tangible reduction in:

>25%

Reduction in Task Time

>50%

Reduction in Clicks

>50%

Reduction in Screens

Our Definition of a Next Generation UX

Adaptive

Bends the technology to the user.

Context Aware

Accounts for context beyond the interface.

Intuitive

Matches user's mental and conceptual models.

Efficient

Straightforward and fast.

Anticipatory

Knows what comes next.

Design Patterns

Increase Efficiency

Guided navigation

Reduce Cognitive Load

'Just enough' information

Increase Intelligence

Search, predictive analytics & chatbot

Promote Collaboration

Cross team communication

Outcome ... *Canvas*

Pervasive & responsive

- Desktop assistant
- Tablet responsive layouts
- Location awareness

High technical capability

- One page application
- Client-side logic, data validation
- Access native system resources
- Interactive chat bot

Reduces cognitive load

- Guided navigation
- Field display automation
- Predictive analytics (“risk score”)
- Visual taxonomy
- Inline help

Reinforces trust

- State feedback
- Persistent save
- Automated error correction
- Swim lanes and status indicators

Outcome ... *Canvas*

Highly performant

- Lazy loading
- Meaningful feedback on operations
- Queued operations

For varied abilities

- Tab-able UI
- Instant form validation
- Walkthroughs and inline help (novice)
- Overrides for guided navigation (expert)

Data-driven decisions

- End user analytics
- Data-driven feature analysis

Promotes engagement

- Personalization
- Game mechanics

Results

60%

Task Time Reduced

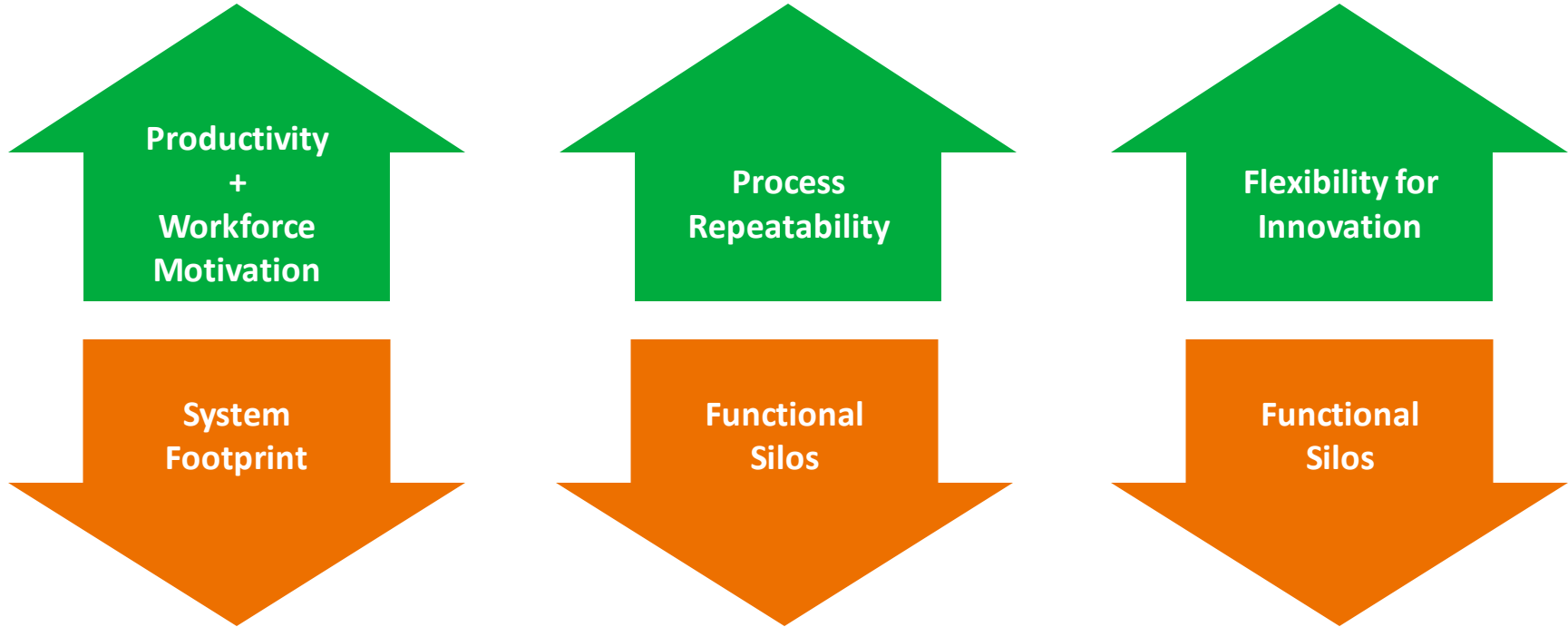
80%

Chair-Swivels Reduced

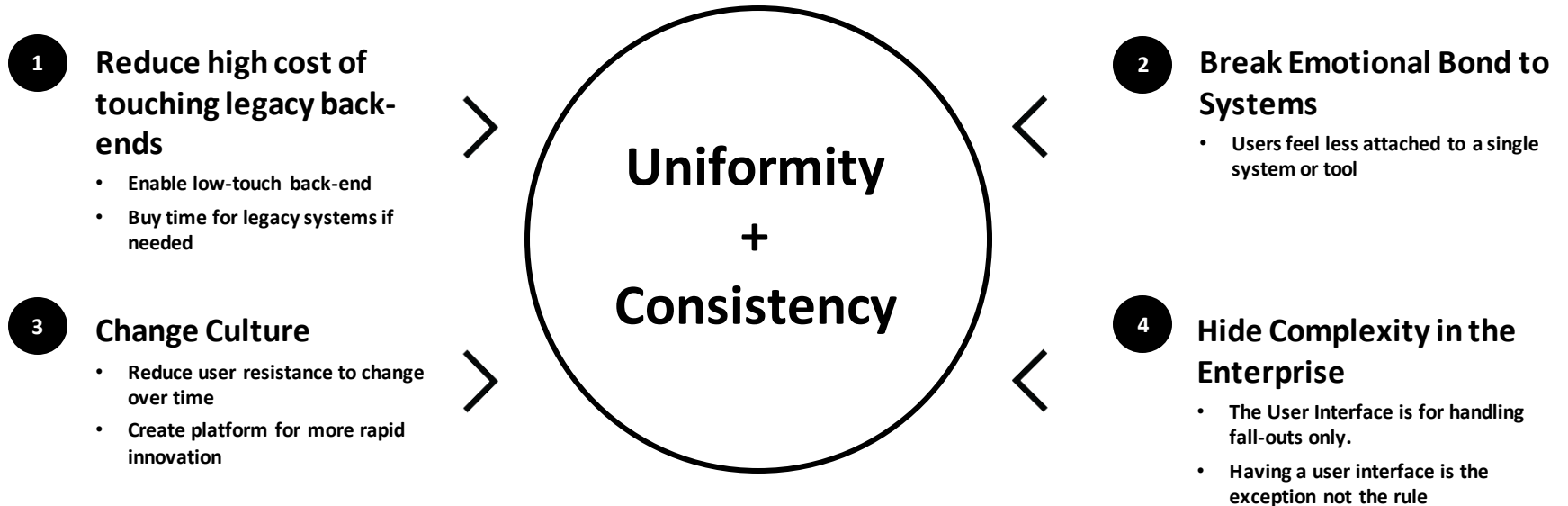
50%

Fewer Clicks & Screens

Benefits Achieved



How UX Approach Benefited Modernization Effort



Lessons Learned

Avoid feature fixation

- Don't obsess over features for the sake of features, obsess over the experience
- Use data to prioritize features
- Identify patterns in feature requests, look for commonalities

Don't underestimate...

- Difficulty of getting access to end users
- Challenges of navigating cultural and structural issues within the organization
- Change management required

UX can't fix everything

- Sometimes, compromises are inevitable when dealing with complex enterprise IT ecosystems
- Pick your battles with legacy IT systems

Find the patterns

- Be skeptical when each stakeholder group claims their use case is completely unique. Often it's another expression of a common pattern.
- Develop with reusability in mind from Day One

The Journey Continues...

- **Reduce UI footprint**
- **Increase automation across portfolio**
- **Increase machine learning use cases**
- **Business process abstraction**

Thank You!