# Enterprise Connectivity: Downtime Benchmarks by Industry

2026 Research Report

**$1–1.5T**
Global Annual Downtime Loss

**30–150 hrs**
Downtime per Company Per Year

**30–50%**
Downtime Reduction with SD-WAN



## Executive Summary

Enterprise connectivity is now a critical foundation of business operations, yet downtime remains a significant and costly risk across all industries.

This report shows that enterprises experience 30 to 150 hours of downtime per year per company, equating to real-world uptime levels of ~98.5% to 99.5%—below the availability required for many mission-critical systems.

**The financial impact is substantial:**

- **Globally:** Downtime contributes to approximately $1–1.5 trillion in annual losses
- **Per industry:** Losses reach tens to hundreds of billions annually, led by manufacturing, retail, and energy
- **Per company:** Downtime costs range from $100,000 to over $5 million per hour, highest in finance, payments, and healthcare

Analysis of root causes shows that around 70% of outages stem from human error (~40–45%) and network failures (~25–30%), with software, hardware, and third-party issues making up the remainder. This highlights that most downtime is preventable with better automation, monitoring, and resilient network architectures. The business implications are severe: downtime disrupts revenue, compliance, operational efficiency, and customer trust, particularly in industries with real-time dependencies such as finance, telecommunications, and healthcare.

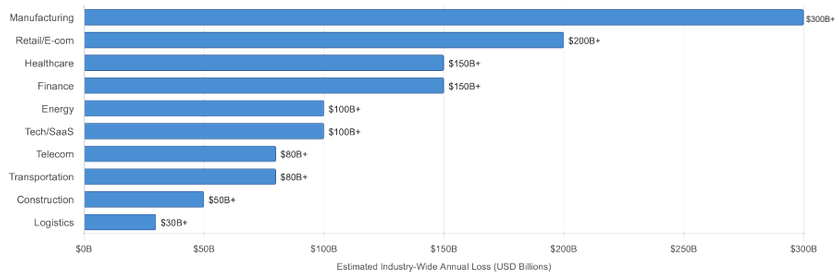
Industries with real-time dependencies—such as financial services, telecommunications, and healthcare—require ≥99.999% availability, where even minutes of downtime have material impact. Organisations adopting SD-WAN and software-defined connectivity can reduce downtime exposure by 30–50%, improving resilience, performance, and cost efficiency.

> **"Around 70% of outages are driven by human error (~40–45%) and network failures (~25–30%), highlighting structural limitations in traditional network architectures."**

Sources: ITIC 2024; Splunk / Oxford Economics 2024; Uptime Institute; Siemens 2024; New Relic 2024

| $1–1.5T | 30–150 hrs | 30–50% |
|---|---|---|
| Global Annual Downtime Loss | Downtime per Company Per Year | Downtime Reduction with SD-WAN |

**Figure 1 — Industry-Wide Annual Loss (USD Billions)**

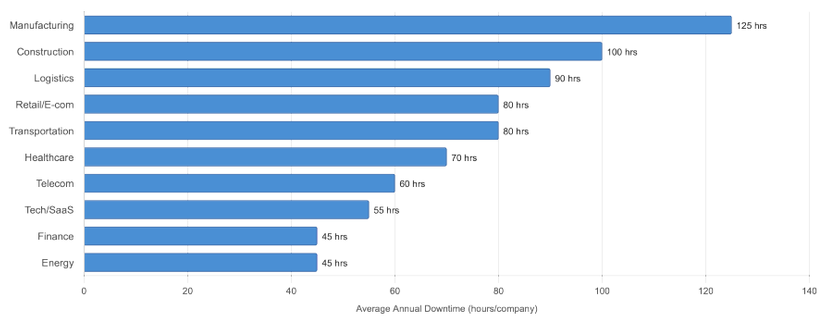



*Source: Splunk / Oxford Economics Global 2000 Report 2024; Siemens True Cost of Downtime 2024.*





**Figure 2 — Average Annual Downtime per Company (hrs/yr)**




*Source: ITIC 2024; Splunk / Oxford Economics 2024; Uptime Institute; Siemens 2024.*

## 1. Introduction — Connectivity as Mission-Critical Infrastructure

Enterprise connectivity has evolved into critical infrastructure underpinning nearly every core business function. Modern organisations rely on always-on digital systems to operate, transact, and deliver services in real time. Connectivity now directly enables:

- Telecommunications networks and inter-carrier routing
- Cloud applications and distributed architectures
- Remote and hybrid workforce environments
- Real-time IoT, automation, and operational systems
- Digital transactions and payment processing infrastructure
- Energy grid and industrial control systems

As a result, connectivity failures no longer represent isolated IT incidents – they are enterprise-wide operational disruptions with immediate financial and systemic consequences.

In sectors such as financial services and payments, even milliseconds of disruption can interrupt transaction flows and trigger compliance issues. In telecommunications, outages propagate across dependent systems, amplifying impact across multiple industries. **Across large enterprises, over 90% report downtime costs exceeding $100,000 per hour, with mission-critical sectors frequently exceeding $1M–$5M per hour per company.**

> **Connectivity resilience is now a board-level priority, directly tied to revenue protection and operational continuity.**

Sources: ITIC 2024; Uptime Institute 2024; Splunk / Oxford Economics 2024

## 2. Business Implications

**Downtime is a direct financial and strategic risk.**

| Industry-Wide Impact | Per Company Impact | Role of SD-WAN & Enterprise Internet |
|---|---|---|
| • Hundreds of billions in aggregate losses<br>• Systemic risk in interconnected industries | • Multi-million-dollar annual losses<br>• Revenue, compliance, and productivity risks | Modern connectivity solutions enable:<br>• Active-active network resilience<br>• Reduced downtime by 30–50%<br>• Guaranteed performance for critical applications |
| **Outcome: Significant cost reduction and improved operational stability.** | | |





## 3. Research Scope & Methodology

### Scope

This report benchmarks downtime across ten industries:

- Logistics
- Retail & E-commerce
- Energy
- Manufacturing
- Healthcare
- Finance & Banking
- Construction
- Telecommunications
- Technology / SaaS
- Transportation & Mobility

### Methodology

This analysis is a meta-analysis of existing studies, systematically synthesizing findings from multiple research sources. By aggregating and comparing data across these studies, it provides realistic and standardized benchmarks that are directly comparable across industries.

**Data sources:**

- ITIC 2024 Hourly Cost of Downtime Survey
- Splunk / Oxford Economics Global 2000 Report (2024)
- New Relic Observability Report (2024)
- Uptime Institute Annual Outage Analysis
- Siemens "True Cost of Downtime" (2024)
- EMA Research (2024)

| Metric | Definition |
|---|---|
| Downtime per company (hours/year) | Derived from cloud baseline (14–18 hrs) + industry-specific operational exposure multipliers |
| Industry-wide downtime impact | Calculated using average downtime × estimated number of large enterprises in each sector |
| Cost per hour (per company) | Based on ITIC and sector-specific benchmarks |
| Annual impact — Per company | Downtime hours × hourly cost |
| Annual impact — Per industry | Aggregated estimate across large enterprises |

> ■ **Scope Note:** Figures represent large-enterprise benchmarks (typically 1,000+ employees). SME environments may experience different downtime profiles. All cost estimates are directional and based on synthesized secondary research.

## 4. Enterprise Connectivity Availability Standards

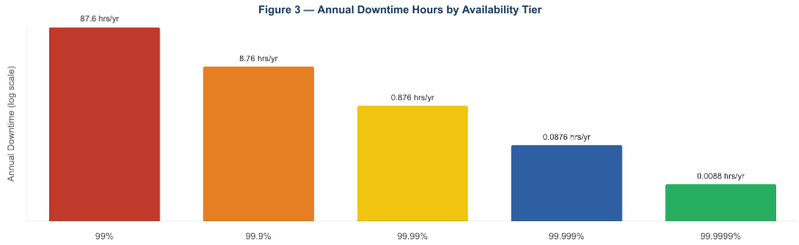
Payments and telecom systems increasingly require **≥99.999% uptime** due to real-time dependencies.

| Tier | Uptime % | Max Downtime / Year | Typical Use Cases |
|---|---|---|---|
| **Three Nines** | 99.9% | ~8.8 hrs | Non-critical systems |
| **Four Nines** | 99.99% | ~52.6 min | Enterprise IT, e-commerce |
| **Five Nines** | 99.999% | ~5.3 min | Finance, healthcare, telecom |
| **Six Nines** | 99.9999% | ~31.5 sec | Payments, exchanges, energy systems |

Table 1 — Availability Standards by Tier. Source: Uptime Institute; industry benchmark synthesis.

> ■ **Key Insight: Each additional "nine" reduces downtime by ~90%, with disproportionate financial benefits in high-cost industries.**

**Figure 3 — Annual Downtime Hours by Availability Tier**



## 5. Downtime Benchmarks & Causes by Industry

| Industry | Downtime (hrs/yr per company) | Real Uptime % | Cost / Hour (per company) | Annual Impact (per company) | Annual Impact (industry-wide) |
|---|---|---|---|---|---|
| **Manufacturing** | 100–150 | 98.3–98.9% | $50K–$200K | $25M–$40M | $300B+ |
| Construction | 80–120 | 98.7–99.1% | $100K–$300K | $10M–$30M | $50B+ |
| Logistics | 70–110 | 98.8–99.2% | $200K–$500K | $20M–$50M | $20–40B |
| Retail & E-commerce | 60–100 | 99.0–99.3% | $800K–$1.5M | $80M–$150M | $200B+ |
| Transportation | 60–100 | 99.0–99.3% | $300K–$1M | $30M–$80M | $80B+ |
| Healthcare | 50–90 | 99.0–99.4% | $1M–$5M+ | $50M–$200M | $150B+ |
| Technology / SaaS | 40–70 | 99.2–99.5% | $300K–$1M | $20M–$70M | $100B+ |
| Telecommunications | 40–80 | 99.1–99.5% | $500K–$2M | $40M–$120M | $80B+ |
| Finance & Banking | 30–60 | 99.3–99.6% | $3M–$7M | $100M–$300M | $150B+ |
| Energy | 30–60 | 99.3–99.6% | $1M–$2.5M | $50M–$120M | $100B+ |

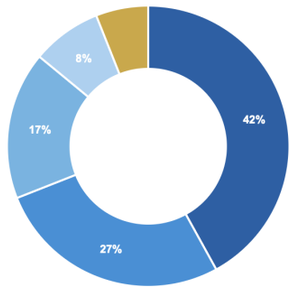
Table 2 — Ordered by downtime per company (high to low). All cost and impact figures are per company unless labelled industry-wide.
Source: ITIC 2024; Splunk / Oxford Economics 2024; Siemens 2024; Uptime Institute.

### Root Causes of Downtime (Cross-Industry)

> ■ **Key Insight: ~70% of outages are driven by human error and network failures, highlighting the importance of automation and intelligent connectivity.**

Sources: ITIC 2024; Gartner

### Figure 4 — Cross-Industry Root Cause Distribution




**42%**
**Human Error (40–45%)**
Misconfiguration, failed updates, change management gaps

**27%**
**Network Failures (25–30%)**
ISP outages, hardware faults, routing instability

**17%**
**Software Issues (15–20%)**
Application bugs, failed deployments, dependency failures

**8%**
**Hardware Failures (8–12%)**
Physical infrastructure and device failures

**6%**
**Third-Party (5–8%)**
Cloud provider incidents, SaaS dependencies





## 6. Downtime Per Industry

### Logistics

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $20M–$50M | 70–110 hrs/yr | 280K-450K/hr |

- Industry-wide: supply chain disruption, delivery delays
- Per company: real-time IoT and visibility system loss

### Retail & E-commerce

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $80M–$150M | 60–100 hrs/y | 1,3M-1,5M/hr |

- Industry-wide: $200B+ in direct revenue loss annually
- Per company: cart abandonment, peak-period outages

### Energy

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $50M–$120M | 30–60 hrs/yr | 1,6M-2M/hr |

- Industry-wide: grid instability, operational risk
- Per company: regulatory and safety exposure

### Manufacturing

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $25M-$40M | 100–150 hrs/yr | 250K-260K/hr |

- Industry-wide: highest loss of any sector at $300B+
- Per company: production stoppage, equipment downtime

### Healthcare

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $50M–$200M | 50–90 hrs/yr | 1M-2,2M/hr |

- Industry-wide: $150B+ driven by patient safety & compliance
- Per company: EHR, imaging and care coordination failures

### Finance & Banking (incl. Payments)

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $100M–$300M | 30–60 hrs/yr | 3,3M-5M/hr |

- Industry-wide: $150B+ — transaction failure, regulatory penalties
- Per company: highest cost/hr of any sector

*Critical note: Payments require five to six nines availability*

### Construction

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $10M–$30M | 80–120 hrs/yr | 120K-250K/hr |

- Industry-wide: $50B+ from project delays and coordination failures
- Per company: coordination inefficiencies, supply chain issues

### Telecommunications

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $40M–$120M | 40–80 hrs/yr | 1M-1,5M/hr |

- Industry-wide: multi-industry cascading outages
- Per company: backbone role amplifies true cost

*Critical role: Backbone for all digital services*

### Technology / SaaS

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $20M–$70M | 40–70 hrs/yr | 500K-1M/hr |

- Industry-wide: $100B+ from SLA breaches and customer churn
- Per company: downstream B2B client impact

### Transportation & Mobility

| ANNUAL IMPACT (per company) | DOWNTIME PER COMPANY | COST PER HOUR |
|---|---|---|
| $30M–$80M | 60–100 hrs/yr | 500K-800K/hr |

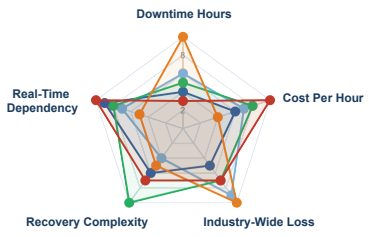
- Industry-wide: fleet disruption, scheduling failures
- Per company: real-time tracking and routing loss

Source: ITIC 2024; Splunk / Oxford Economics 2024; Siemens 2024; Uptime Institute. Risk Score 1–10: blended assessment of downtime volume, hourly cost, recovery complexity, and real-time dependency.

## Comparative Industry Risk Analysis

Multi-dimensional comparison of five key industries across downtime hours, hourly cost, industry-wide loss, recovery complexity, and real-time dependency.

### Figure 5 — Multi-Dimensional Industry Risk




**Finance & Banking**
Highest cost/hr ($3M–$7M) and real-time dependency. Lowest downtime hours but highest financial consequence per minute of outage.

**Manufacturing**
Leads on downtime volume (100–150 hrs) and industry-wide loss ($300B+). Largest absolute operational exposure of any sector.

**Healthcare**
Highest recovery complexity — regulatory, patient safety, and care continuity requirements compound the cost of every outage.

**Telecommunications**
Backbone infrastructure. Elevated real-time dependency — outages cascade across all dependent digital services and industries.

**Retail / E-commerce**
Moderate downtime hours but very high industry-wide loss ($200B+) driven by transaction volume and peak-period sensitivity.

**Scoring Methodology (0–10 per axis)**
Downtime Hours: normalised to 125 hrs max = 10. Cost/Hr: normalised to $7M max = 10. Industry Loss: normalised to $300B max = 10. Recovery Complexity and Real-Time Dependency: qualitative scores anchored to source narratives (ITIC 2024; Uptime Institute).





## 7. Strategic Recommendations — SD-WAN–Led Connectivity Transformation

To effectively reduce downtime and ensure consistent application performance, organisations should prioritise the adoption of SD-WAN–driven connectivity architectures, which consolidate multiple resilience and optimisation capabilities into a single solution.

1. **Intelligent Traffic Routing & Application Awareness**
   SD-WAN enables real-time, application-aware routing, ensuring critical traffic (e.g., payments, voice, cloud apps) is prioritised and delivered over the most optimal path.
2. **Built-In Resilience & Automatic Failover**
   Active-active connectivity across multiple ISPs eliminates single points of failure, with instant failover maintaining service continuity without manual intervention.
3. **Performance Optimisation Across Hybrid & Multi-Cloud Environments**
   SD-WAN dynamically selects the best-performing paths to cloud and SaaS applications, reducing latency, packet loss, and service degradation.
4. **Integrated Visibility & Predictive Monitoring**
   Centralised dashboards provide end-to-end visibility across network and application performance, enabling proactive identification and resolution of issues before they impact operations.
5. **Reduced Operational Risk Through Automation**
   Automation of routing, failover, and policy enforcement minimises human error — the leading cause of outages — while simplifying network management at scale.

> **A well-implemented SD-WAN solution can reduce downtime exposure by 30–50%, while improving performance, resilience, and operational efficiency — making it a critical foundation for enterprise connectivity.**





## Appendix & References

### A. Supplementary Data: Downtime Cost Matrix

| Industry | Industry-Wide Annual Loss | Downtime per Company (hrs/yr) | Cost / Hour (per company) | Annual Impact (per company) |
|---|---|---|---|---|
| Manufacturing | $300B+ | 100–150 | $50K—$260K | $25M–$40M |
| Retail & E-commerce | $200B+ | 60–100 | $800K–$1.5M | $80M–$150M |
| Healthcare | $150B+ | 50–90 | $1M–$5M+ | $50M–$200M |
| Finance & Banking | $150B+ | 30–60 | $3M–$7M | $100M–$300M |
| Energy | $100B+ | 30–60 | $1M–$2.5M | $50M–$120M |
| Technology / SaaS | $100B+ | 40–70 | $300K–$1M | $20M–$70M |
| Telecommunications | $80B+ | 40–80 | $500K–$2M | $40M–$120M |
| Transportation | $80B+ | 60–100 | $300K–$1M | $30M–$80M |
| Construction | $50B+ | 80–120 | $100K–$300K | $10M–$30M |
| Logistics | $20–40B | 70–110 | $200K–$500K | $20M–$50M |

Table A1 — Source: ITIC 2024; Splunk / Oxford Economics 2024; Siemens 2024; Uptime Institute.

### B. Citations & Bibliography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## Use a Free Downtime Cost Calculator to:

- Estimate your annual downtime cost (per company)
- Model cost savings from improved uptime
- Quantify ROI from SD-WAN and enterprise connectivity

**Try the Downtime Calculator to identify your savings potential**

**Disclaimer:** This report is a meta-analysis for informational purposes only. All financial figures are synthesized estimates based on published secondary research and should not be construed as definitive financial projections.

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