

U.S. SMB Internet Outage Impact Report

Study Highlights

- *U.S. Small Businesses will suffer over \$40 Billion in lost productivity due to internet outages in 2020*
- *The brunt of the loss will be felt by the smallest businesses that overwhelmingly do not have internet back-up solutions in place. These businesses will lose \$22 Billion in productivity – the equivalent of just over \$4500 per year/per business establishment*

\$40B in lost productivity due to internet outages projected in 2020

- *Larger businesses have higher rates of wired or wireless back-up solutions – even so, businesses with 20 to 99 employees will suffer just under \$15 Billion in lost productivity, while better protected SMBs in the 100 to 499 category are projected to lose just over \$3 Billion*
- *Despite the over two thirds of survey respondents describing an internet outage as “Critical” or “Extreme” equating to between 75% and 100% productivity loss, the vast majority of SMBs do not have internet back-up solutions in place*
- *Back-up readiness varies greatly depending on which SMB segment is considered. 93% of the smallest businesses do not have an internet back-up solution in place. 67% of businesses with 20 to 99 employees are vulnerable compared to 18% of businesses with between 100 and 499 employees*
- *44% of the largest SMBs have redundant wireline solutions in place, while wireline back-up is practically non-existent within the smallest 1-19 segment (2%)*

93% of the smallest businesses do not have a back-up plan in place

U.S. Market Sizing

The U.S. Business market is measured by the U.S. Census by employee size and reported as firms and establishments. A firm can be thought of as the base company, while establishments are facilities operating under the umbrella of the firm. As a result, there are more establishments than firms in the U.S. As of the latest Census count in 2016, there were approximately 5.7 million firms and 7.4 million establishments in the U.S. These firms and establishments are “employer firms” meaning they employ at least one full time employee. While there are millions of sole proprietorships in the U.S., employer firms/establishments account for 96% of taxable revenues. **This analysis is based on the 6.2 million employer establishments that fall in the 1 to 499 employee segment.**

US Market Sizing – Table

Size	Firms	Establishments	Revenues (Thousands)
1-19 employees	5,130,348	5,184,955	\$3,994,925,968
20 to 99 employees	494,170	687,272	\$3,910,542,918
100 to 499 employees	83,423	360,207	\$3,911,370,787
500+ employees	18,219	1,199,374	\$20,820,970,304

Source: U.S. Census, 2016

As of the last official Census measurement, U.S. small businesses generate almost 12 Trillion dollars in taxable income. This revenue can be roughly divided into three groups – companies with less than 20 employees, those with between 20 and 99 employees, and those that have between 100 and 500 employees. While each category generates a little over \$3.9 Trillion in taxable revenues, the smallest segment represents the largest share of overall establishments by a large margin.

The smallest businesses make up 89% of overall U.S. business firms and 70% of establishments while generating 34% of the \$11.8 Trillion SMB taxable receipts. The 20-99 group represents roughly 9% of both firms and establishments and 33% of SMB revenues. The 100 to 499 group accounts for under 2% of the number of firms and 5% of establishments but contribute a substantial 33% of total SMB revenues. It is noteworthy, that while companies over 500 employees make up less than half a percent of total firms (and 8% of enterprises) they generate almost twice as much taxable revenue as the entire SMB segment combined (\$20.8 Trillion).

Internet Outage Impact on SMB Revenues

The importance of internet connectivity to U.S. SMBs manifests itself in many ways: access to cloud applications, point of sale transactions, electronic correspondence, IP-based communications... the list is a long one. As a result, internet connectivity is directly tied to SMB productivity and ultimately revenues.

This analysis estimates lost SMB revenues due to interrupted or seriously degraded Internet connectivity to be \$40 Billion USD annually. This estimate was generated using the following formula: Annual hourly revenue multiplied by the number of hours of downtime multiplied by productivity decrease.

Potential Lost Revenues = (GR/TH) * I * H	
Gross Yearly Revenue	GR
Total Hours	TH
Productivity Impact	I
Hours of Downtime	H

Methodology Components

Gross Yearly Revenue: SMB revenue is correlated to taxable receipts, which is represented using the \$11.8 Trillion figure cited earlier in this document.

Total hours: Total hours are based on a 40-hour work week for 52 weeks. Consideration was given to larger retail outlets that may stay open for 16 hours or more 7 days a week, industrial plants and manufacturing facilities that may run at full capacity using shift workers 24/7 and other vertical industry categories that do not fit neatly into a 40 hour work week. Sticking with the 40-hour standard assumes the majority of these firms fall into the 500+ employee segment.

Productivity Impact: This metric was generated using survey data that invited SMB technology decision makers to describe the impact on loss productivity an Internet outage would cause. Respondents were invited to estimate potential lost productivity from “critically” to “minimally” associating a percentage range with each category. The data was analyzed based on employee size and vertical market in order to produce a weighted average applicable to the model. Overall hourly productivity loss estimates ranged from 60% (Small construction companies) to 76% (Finance, Insurance and Real Estate category). In general, across the ten vertical markets analyzed, the average estimated productivity loss was 69.4%.

Q. If your company Internet connection fails and your business was left with no connectivity how do you think it would impact your company's productivity?	
Answer Choices	
Critically: If we had no Internet connectivity, productivity would likely decrease to under 10% - maybe even zero	29.12%
Extremely: No Internet connectivity would likely reduce our productivity to somewhere around 10% to 25%	37.92%
Seriously: No Internet connectivity would likely reduce our productivity to somewhere between 25% and 50%	13.44%
Moderately: No Internet connectivity would likely reduce our productivity to somewhere between 50% and 75%	12.32%
Minimally: No Internet connectivity would likely reduce our productivity to somewhere between 75% and 90%	4.96%
Slightly: The loss of Internet connectivity would have almost no impact on our typical business productivity	2.24%

Source: Independence Research Business Transformation Survey, December 2019 N=625

Hours of downtime: This metric was generated from a number of sources, with the most credible drawn from the following study: Bischof, Zachary and Bustamante, Fabian and Feamster, Nick, **Characterizing and Improving the Reliability of Broadband Internet Access** (February 11, 2018). TPRC 46: The 46th Research Conference on Communication, Information and Internet Policy 2018. This report estimates average annual internet downtime at 17.8 hours. It should be noted that the analysis focuses on consumer-grade, best effort broadband networks. As a result, consideration was given to the use of higher quality connectivity solutions such as managed Ethernet and other fiber-based networks. However, as a percentage of smaller SMBs, these enterprise grade connectivity options make up an estimated 3% of overall SMB connections. *(Source: Independence Research, 2019 SMB Broadband Forecast 2018-2023)*

Please note: An adjustment was made in the 20 to 99 and 100 to 499 segment decreasing average internet downtime to 17 and 14 hours respectively due to the higher quality of the broadband network.

Other considerations: Beyond the projected impact on immediate business activity measured in this study by correlating time and money, other damages can result from internet downtime. Loss of reputation, potential customer dissatisfaction prompting a move to a competitor, and other harms are

possible and perhaps probable. This study does not quantify these considerations, despite recognizing their importance.

Existing Internet Back-up

Lost productivity due to an Internet outage can be minimized or even eliminated if the business has a back-up solution in place. Using proprietary survey analysis drawn from multiple SMB surveys, this study estimates the percentage of businesses with existing wired or wireless internet back-up solutions in place. Businesses with back-up systems – either wired or wireless - are considered protected and are not included in the \$40 Billion lost productivity projection.

Results

SMB Segment	% of Total SMB Establishments	Gross Yearly Receipts (Billions USD)	% of Small Biz Revenues	Avg. # of annual business hours Internet outage	% of Gross Yearly Revenue	SMB% - LTE Back up	SMB % - Wireline back-up	Total Back-up %	% at Risk (Billions USD)
1-19 employees	83%	3,995	34%	17.8	0.59%	5%	2%	7%	21.97
20-99	11%	3,911	33%	17	0.56%	19%	14%	33%	14.78
100 to 499	6%	3,911	33%	14	0.46%	38%	44%	82%	3.24

Source: Independence Research, 2019

Analysis

Based on the findings displayed above, it is clear that the smallest segment of the business marketplace is the most vulnerable to internet outages. With just 7% using some form of internet back-up technology, and the vast majority using broadband technologies such as cable modem, DSL and other mass market, best-effort internet connections, the smallest businesses suffer the most network downtime and have little protection against an outage. As businesses get larger and have more resources – as well as more revenue per establishment to protect – wireless and wired back-up improves. However, with just one third of 20 to 99 employee establishments installing back-up technologies, there is still a lot of work to do. At 82%, the 100-499 group is fairly well protected, however at this size, it is surprising that back-up penetration is not closer to 100%.

Conclusion

Based on the analysis offered through this study it is clear that:

- Small businesses **should strongly consider** putting some form of internet back-up solution in place. Network outage downtime averages are just that – an average. Not all broadband networks have the same reliability characteristics. *The impact of more frequent outages* on a particular small business could interfere with annual productivity at a much higher rate.
- Service providers have a **significant opportunity** to help SMBs stay up and running by offering reliable and affordable internet back-up services. Electronic commerce, access to cloud-based applications, IP-based communications and other internet dependent business functions have become critical to the daily activity of businesses across all vertical markets. Small business owners and managers have enough to worry about, *always-on internet connectivity should not be an issue.*