

Measuring the Impact of DMARC's Part in Preventing Business Email Compromise

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The deployment of DMARC is an effective way to limit the spoofing of email from protected domains, however, there has been little research on the economic value of deploying DMARC. This paper shows that there is in fact significant value from deployment of DMARC, even looking at only one specific benefit of many (limited to Business Email Compromise, or BEC) and only from deploying DMARC at one of the higher policy levels.

Since June 2016, the Global Cyber Alliance (GCA) has been working to accelerate adoption of DMARC, an email security standard, by providing a set of easy-to-use tools and campaigns to drive deployment. This paper investigates and measures the economic benefit from that work. Having reviewed the available data, we have chosen to focus on Business Email Compromise (BEC) because it is a rapidly growing issue, with high direct losses, and relevant data is available for analysis from multiple sources¹. We derive a conservative minimum bar estimate for the loss avoidance tied to GCA's initiatives and discuss the potential scale of other benefits gained from DMARC.

¹ According to the 2017 FBI/IC3 Internet Crime Report, more losses were attributed to BEC scams than any other type of threat.

In short, for 2018, the estimated value to the 1,046 organizations that have deployed DMARC at a policy level of "reject" or "quarantine," after using GCA's tool, is likely \$19M (USD). That assumes:

- **Only 1% of BEC emails that a person receives result in a successful BEC attack.**
- **DMARC stops email impersonation, not other attacks, such as phishing/theft of passwords, identity theft, or other compromises of the computer. Note: these other attacks may be impacted by DMARC, but the pathways are diverse, and measurement is impeded by data quality issues.**
- **There are other benefits from DMARC, including benefits for email deliverability and by deploying DMARC at a monitoring level. Again, there are benefits from both, but these costs are not quantified in this study.**
- **GCA's public advocacy and training had no other benefits in encouraging the deployment of DMARC.**

This number scales up rapidly as factors are adjusted. For example, if 5% of BEC attacks result in a user taking action, the prevented loss rises to \$66M. These amounts grow over time, so that if:

1. 1,046 organizations maintain DMARC, but GCA's efforts result in no additional deployments (that unlikely assumption makes this a low-water mark); and
2. The economic impact of BEC grows at 5% per year², then the benefit over 5 years would be approximately \$110M. Projecting over a longer timeframe involves increasing uncertainty.

² The FBI released new numbers as this report went to press, showing a 136% increase in BEC from December 2016 to May 2018. Such rates seem unlikely to sustain consistently over a 5 year period.

Moreover, the \$19M estimate is merely from GCA's activity. GCA's other partners, including nonprofit organizations, commercial vendors, governments, and enterprises are also deploying and supporting the deployment of DMARC. For these organizations, the most-affected 1% of them will save \$302,000 per year solely from reducing BEC through DMARC, even assuming only 1% of BEC emails lead to action. If that number grows to 5%, the loss reduction for that 1% is \$1.3M per year. Adding that up across the Internet is a big number, and that is from BEC losses alone.

In conclusion, if the people in your company will not be fooled by a targeted email that appears to be from your CEO asking for a transfer of funds to a supplier as an emergency matter, you may not worry about BEC. If, however, there is only a 25% chance your CFO might make a mistake, and you are an average size company, it is more likely than not you will lose somewhere between \$8,800 and \$4,700,000 depending on how lucky you are.



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