Rapid Response: Pitney Bowes

The market's need for external cyber risk ratings. Greater transparency on cyber governance will do more than just tick boxes at the board level. It will help company leadership, stockholders and bondholders avoid significant market losses.

<table>
<thead>
<tr>
<th>CBH Cyber Governance Rating</th>
<th>Type of Attack</th>
<th>Operational Impact</th>
<th>Est. Financial Impact</th>
<th>Similar examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>★★★★★ Oct 2019</td>
<td>Ransomware / Business Interruption</td>
<td>Lost Revenue, est. 12M Increase in OpEx, Likely Customer Churn</td>
<td>$25-35mn in EBITDA over 12M, Possible Credit Downgrade</td>
<td>Maersk, Norsk Hydro, Mondelez</td>
</tr>
</tbody>
</table>

Pitney Bowes Corporation (PBI) is the latest canary in the coal mine

A cyber risk rating would have mitigated some of the market losses for Pitney Bowes shareholders in Q1 of 2019. Following this latest attack, an SEC-disclosed cyber rating would help highlight what we expect will be a future downward revision of $25-35mn in annual EBITDA from the company as a result of continued poor cyber governance.

Two incidents of poor technology management in less than one year

PBI will likely incur unexpected financial losses due to disrupted operations from an October 2019 ransomware attack. In an earlier incident in Q1 2019, the company took an unexpected $9mn charge on the mismanagement of the technology it provided to customers. The Q1 incident had a material financial impact on PBI missing earnings estimates, sending the share price lower. These losses to shareholders could have been avoided with a publicly available ‘cyber governance rating,’ similar to the credit or equity analyst ratings the market relies on. A cyber governance rating would have signaled to shareholders that PBI’s poor governance was already contributing to value loss and would leave the company vulnerable to further significant financial losses in the event of a breach.

We expect the October incident (again, due to poor cyber governance) to lead to a series of future earnings disappointments. Despite a recent bounce off of 2019 lows, PBI shares are likely to be soggy as the market will have new questions over the company’s ability to execute on its “digital transformation” strategy, critical for converting its declining ‘old-economy’ profits into future ‘technology-driven’ growth. This latest incident reconfirms that the company has been underinvesting in securing the technology stack and operations that PBI claims are critical to its future success. PBI’s ability to manage the downside risks of this digital transformation is the company’s key risk going forward. Without cyber governance transparency, shareholders cannot gain a picture of how well or poorly these risks are being managed.

Past underinvestment means higher costs and lower cash flows in the future

Based on our cost estimates from other ransomware attacks at public corporations (attacks that disrupt business operations, like at Maersk and Norsk Hydro), we believe fixing the problems related to the cyber attack, as well as correcting the underinvestment in technology security, requires PBI to spend significantly more money than it has budgeted for. These higher costs will lead to lower-than-expected EBITDA in coming quarters that will likely further depress the already underperforming share price. On top of that, there is also a risk to downgrades of PBI’s credit rating (now on negative watch by Moody’s). The company must redeem more than $2bn in bonds in the next five years.
What do we mean by cyber governance?

Cyberhedge created the performance metric of a cyber governance rating as a way to compare how companies manage their technology investments and network security. The rating is used in the financial industry alongside investment metrics like Return on Equity or Assets (ROE/ROA) or Earnings per share (EPS). We define a corporation's cyber governance as 'the financial impact resulting from how companies manage the operational risks of their technology investments.' Our Cyber Governance Indexes are priced daily and demonstrate market-based proof that better cyber governance does outperform the market and vice versa. For more details, see our CBH ratings.

Research

**Ryan Dodd**, Founder and CEO, Cyberhedge

**Chris Nolan**, Senior Research Analyst, Cyberhedge

Disclaimer

The Cyberhedge Research (the "Report") is not an offer or recommendation to buy or sell or a solicitation of an offer to buy or sell any security or instrument or to participate in any particular trading strategy or be construed as to be a representation or warranty of Cyberhedge (whether express or implied) or its affiliated entities (collectively, the "Cyberhedge Parties" or "Cyberhedge") regarding the advisability or appropriateness to invest in any security or instrument.

The information and opinions in the report were prepared by Cyberhedge or one of the other Cyberhedge Parties. Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Cyberhedge makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in the Report are provided for reader convenience only. Cyberhedge neither endorses the content nor is responsible for the accuracy or security controls of these websites.

Further, none of the contents of the Report is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Reproduction, redistribution or any other form of copying or transmission of the Report without Cyberhedge’s prior written consent is strictly prohibited. Without limiting the generality of the foregoing, the Report and other Cyberhedge intellectual property you access via the Cyberhedge website may not be used as a basis for any financial instruments or products (including, without limitation, passively managed funds and index-linked derivative securities), or used to verify or correct data in any other compilation of data or index, or used to create any other data or index (custom or otherwise), without Cyberhedge’s prior written permission.

In no event shall any of Cyberhedge, its affiliates, any of its or their direct or indirect information providers nor any other third-party involved in, or related to, compiling, computing or creating any of the information contained in the Report (collectively, the "Cyberhedge Parties") have any liability to any person or entity for any damages, whether direct, indirect, special, incidental, punitive, consequential (including, without limitation, loss of use, lost profits or revenues or any other economic loss) arising in any manner out of your use or inability to use any of the information or data contained in the Report, even if such party might have anticipated, or was advised or notified of, the possibility of such damages.

You agree to indemnify, defend and hold harmless the Cyberhedge parties from and against any claims, losses, damages, liabilities, costs and expenses, including, without limitation, reasonable attorneys' and experts’, fees and costs, as incurred, arising in any manner out of your use of, or inability to use, any information or data contained in the Report.

You acknowledge that (I) the Report and all components thereof constitute copyrighted, database righted, trade secret and/or proprietary information of substantial value to Cyberhedge, (II) that you receive no proprietary rights whatsoever in or to the Report or data or information contained therein, and (III) that title and ownership rights in and to the Report and all the rights therein and legal protections with respect thereto remain exclusively with Cyberhedge. You shall not, and shall not assist any third-party to, assert any rights in the Right or any component thereof or challenge Cyberhedge’s rights therein.

None of the material, nor its content in the Report, nor any copy of it, may be altered in any way, transmitted to, copied or distributed to any other party, without the prior express written permission of Cyberhedge. Cyberhedge will not treat recipients of this report as its customers by virtue of their receiving this report. The legal entities and potential investments in such entities contained or referred to in the Report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about such investments or investment services. Nothing in the Report constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances, or otherwise constitutes a personal recommendation to you.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this Report. They do not necessarily reflect the opinions of Cyberhedge and are subject to change without notice and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results.

The information we provide is being directed only to persons we believe to be financially sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies. If this is not the case, we ask that you inform us immediately.

We and our affiliates, officers, directors, employees, and contractors, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in the Report.