In this issue of Insurance Valuation TODAY, we cover topics of interest for insurance professionals, risk managers and others that need to determine insurable values and replacement costs of real and personal property. We are excited to bring you several featured articles that discuss historic properties for insurance purposes, valuation preparedness in the hardening insurance market and how to protect your company from cyber-related problems and scams associated with the COVID-19 pandemic.

Included in this issue is a cost trend update providing construction and equipment cost indices for the U.S., UK, Italy, Brazil, Canada and Spain that can be applied to building and equipment historical costs to determine indicators of replacement cost. These indices are monitored, gathered and analyzed in a retrospective manner. Given the current economic environment, the impacts on both construction and equipment costs are unknown. We will continue to monitor the indices and expect to include new indicators in upcoming cost trend updates.

We hope you find this newsletter useful and encourage you to contact us if you require additional support.
U.S. Cost Trend Update
August 2020

Construction Cost Indices

Through the first half of 2020 we are seeing construction costs flat, certainly below historical average increases. All four indexes show increases for 2020 between -0.4% and +1.0%. Steel prices, a leading indicator of construction indices, stabilized at $662 per metric ton in 2016, increased to an average of $767 per metric ton in 2017, jumped up to an average of $907 per metric ton in 2018 and dropped significantly in 2019 to $668 per metric ton. Through August 2020, steel dropped slightly to $603 per metric ton for the month and has been on a slight downward trend in 2020 from a high of $644 in January. Overall this represents a decrease in steel prices of approximately 10% to-date in 2020 from the 2019 average price and decrease of 40% from the 2018 high of $1000 per metric ton.\(^1\) With regards to labor, wages continue to rise, more experienced individuals are entering the workforce, however, there is a limit to the availability of qualified individuals. Given the delay in construction projects which occurred during the shutdown, there is certainly increased demand for contractors, labor and materials. The average wages for those working in construction have increased at an annual rate of 2.5% over the last 12 month period.\(^2\)

<table>
<thead>
<tr>
<th>Index</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Jan. 2020 - July 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENR – Building Cost Index(^3)</td>
<td>3.30%</td>
<td>3.30%</td>
<td>1.70%</td>
<td>0.20%</td>
</tr>
<tr>
<td>FM Global – U.S. Industrial Buildings Average(^4)</td>
<td>1.20%</td>
<td>5.20%</td>
<td>1.70%</td>
<td>0.00%</td>
</tr>
<tr>
<td>RSMeans – 30-City Average(^5)</td>
<td>4.00%</td>
<td>5.50%</td>
<td>2.10%</td>
<td>-0.40%</td>
</tr>
<tr>
<td>Marshall &amp; Swift, U.S. Average(^6)</td>
<td>+2.7 to</td>
<td>+3.2 to</td>
<td>+0.0 to</td>
<td>+0.5 to</td>
</tr>
<tr>
<td></td>
<td>+3.7%</td>
<td>+6.0%</td>
<td>+1.3%</td>
<td>+1.0%</td>
</tr>
</tbody>
</table>

Note: The range of change shown by Marshall & Swift represents different classes of construction.

Equipment Cost Indices

Three sources for equipment cost indices had significant increases in 2018 compared to the previous three years, with the annual increases in 2019 retreating back towards historical averages in all three indicators which is also consistent with the first six months of 2020.

<table>
<thead>
<tr>
<th>Index</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Jan. 2020 - July 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marshall &amp; Swift/Boeckh - Industrial Equipment Avg.(^5)</td>
<td>2.60%</td>
<td>4.80%</td>
<td>0.80%</td>
<td>0.60%</td>
</tr>
<tr>
<td>U.S. Bureau of Labor Statistics - Producer Price Index for Finished Goods, Capital Equipment(^4)</td>
<td>0.90%</td>
<td>2.70%</td>
<td>1.10%</td>
<td>0.20%</td>
</tr>
<tr>
<td>FM Global - Industrial Equipment Composite(^4)</td>
<td>1.20%</td>
<td>2.80%</td>
<td>1.90%</td>
<td>0.80%</td>
</tr>
</tbody>
</table>

Take care when selecting an index to track the rate of cost change for your company’s capital equipment. The three indices in the table above all track average capital equipment cost change percentages, and indicate the differences that have occurred over the past four years. Developers—as well as insurance brokers, underwriters and valuation consultants—can all recommend appropriate indices for your particular facilities. Select one that represents your capital equipment as closely as possible; there are significant differences between the average indices shown here and specific industrial-sector indices. Always remember that cost indices are just average indicators of change; they are not absolutes, and there is no average building or average assemblage of equipment. After five to seven years, you should establish a new replacement cost basis by using a qualified valuation consultant.

Sources
1. MEPS (International), Ltd. All carbon steel products composite price and indice
4. FM Global, Industrial Cost Trends
5. RSMeans, Construction Cost Indices, 30-City Average
International Cost Trend Update

UK

<table>
<thead>
<tr>
<th>Index</th>
<th>Source</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>BUILDINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Cost Index</td>
<td>BCIS</td>
<td>4.2%</td>
<td>3.6%</td>
<td>2.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Tender Price Index</td>
<td>BCIS</td>
<td>12.8%</td>
<td>4.8%</td>
<td>0.8%</td>
<td>0.4%</td>
</tr>
<tr>
<td>M&amp;E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinery and Equipment</td>
<td>ONS</td>
<td>2.7%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Metal Forming Machinery and Machine Tools</td>
<td>ONS</td>
<td>2.9%</td>
<td>5.4%</td>
<td>1.1%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Food, Beverage and Tobacco Processing</td>
<td>ONS</td>
<td>1.1%</td>
<td>1.7%</td>
<td>5.8%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

Since the economic crash in 2008 and the sharp decline in building costs the following year, the UK construction sector has shown a period of stability as noted by the cost increases of between 1-4% year-on-year, as per BCIS’s Building Cost Index. Forecasts predict that construction costs will see rises of c. 3-4% a year over the next four years although this should be treated with some caution due to the current political uncertainty in the UK and the COVID-19 pandemic. It is unclear how social distancing measures at construction sites will impact costs, but provisional figures from BCIS do not show a dramatic change.

The cost of machinery and equipment in the UK has also noted increased stability with prices rising on average by 1-3% over the past four years. The exception to this is the machinery and equipment for the production of food, beverages and tobacco which showed increases of 4-6% per annum over the past 18 months.

Italy

<table>
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<tr>
<th>Index</th>
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<tbody>
<tr>
<td>BUILDINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Cost Index - Residential Building (1)</td>
<td>ISTAT</td>
<td>0.5%</td>
<td>1.4%</td>
<td>0.6%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Building Cost Index - Industrial Building (1)</td>
<td>ISTAT</td>
<td>1.9%</td>
<td>2.9%</td>
<td>0.3%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>M&amp;E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinery and Equipment (1)</td>
<td>ISTAT</td>
<td>2.3%</td>
<td>3.3%</td>
<td>0.2%</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Electrical Machines and Materials (1)</td>
<td>ISTAT</td>
<td>1.1%</td>
<td>0.7%</td>
<td>0.0%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Mineral Coal (2)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Metallic Minerals Extraction (1)</td>
<td>ISTAT</td>
<td>2.1%</td>
<td>-0.4%</td>
<td>0.3%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Metallic Minerals Machinery (1)</td>
<td>ISTAT</td>
<td>0.6%</td>
<td>0.6%</td>
<td>1.0%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Metal Forming Machinery and Machine Tools (1)</td>
<td>ISTAT</td>
<td>1.3%</td>
<td>1.3%</td>
<td>0.3%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

Note:
(1) ISTAT (Italian National Institute of Statistics)
(2) Italy does not have mineral coal activity.

Italian trends are strongly influenced by the lack of growth in the Italian economy. This behavior is visible both in the construction and industrial sectors.

After an increase between 1%-3% during the two-year period 2017-2018, the construction sector has shown a cost index close to 0% in the last two years.

The cost of machinery and equipment has also noted a period of increase followed by a decrease culminating in negative trends in the first six months of 2020 likely caused by the COVID-19 lockdown.
Despite the sharp reduction in economic activity observed at the end of March and throughout April, several indicators point to a resurgence of economic activity in May. An important factor for this recovery is the effective implementation of emergency aid, which covered a substantial portion of the income of informal workers and those in a vulnerable condition. Under the assumption that the process of gradually easing restrictions on mobility and the functioning of economic activities that began in June will continue, the gradual recovery of GDP is projected in the third and fourth quarters of 2020. The projected drop for the year is 6%, but the recovery path in the second half will leave a carry-over of almost 2% for 2021, that has a projected growth of 3.6%.

The pandemic temporarily interrupted the Brazilian economy’s fiscal consolidation. During the period of health and economic crisis, the priority became the protection of people’s lives and health, as well as the preservation of jobs, income and companies. Thus, the government launched a wide range of emergency measures to support health and the economy, many of which involve a significant fiscal cost, both on the expenditure side and on the revenue side. Due to the fiscal deterioration caused by the pandemic, the general government’s gross debt (DBGG) as a proportion of GDP is expected to increase from 75.8% at the end of 2019 to 93.7% at the end of 2020. Despite expectations that emergency measures do not extend beyond 2020, the COVID-19 crisis has also increased the country’s fiscal challenges for the future, which will emerge from the crisis with a much higher public debt, and much lower levels of production and revenue than before. Therefore, the fiscal effort that was being carried out will have to be reinforced in order to reaffirm the commitment to the balance of public accounts and a sustainable trajectory for public debt.

MITMA: Ministerio de Transportes, Movilidad y Agenda Urbana
INE: Instituto Nacional de Estadística

In July, the annual rate of the general Industrial Price Index (IPRI) was -4.8%, more than one point above that registered in June. The industrial sectors with the most influence on the decrease in the annual rate of the general IPRI, by the economic destination of the goods, were:

- Energy, saw a rate increase of three points, to -13.7, due to increases in the prices of the electric power generation, transmission and distribution and oil refining, which were higher this month than in July 2019.
  
  While to a lesser extent, also of note was the increase in the prices of gas production; pipeline distribution of gaseous fuels through mains, which fell last year.

- Intermediate goods, with a rate of -2.2%, was seven-tenths above that of the previous month. This behaviour is a result of the increase in the prices of manufacturing of basic precious and other non-ferrous metals and of manufacturing of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms, compared with the decrease recorded in 2019.

  On the other hand, the only industrial sector with a negative influence was non-durable consumer goods.

- Non-durable consumer goods had an annual variation decrease by one-tenth, standing at 0.4%. Notable in this evolution was the drop in the prices of graphic arts and related services, which increased in July of the previous year.

  While in the opposite direction, also noteworthy was the rise in the prices of processing and preserving meat and producing meat products, which were higher this month than in 2019.
Prices for residential building construction rose 0.5% in the second quarter of 2020, while the cost of non-residential building construction edged up 0.1% due to low demand for commercial building construction and increased competition. New construction projects slowed considerably in the wake of COVID-19, with the value of building permits issued by Canadian municipalities falling 17.1% from March to April, including a record 14.2% decline for single-family dwellings. Projects that were approved and began during the first quarter may have also been delayed or paused due to provincially mandated shutdowns, supply chain disruptions and labor shortages. This may have impeded the ability of some contractors to allocate resources to bid for new projects, further delaying the price impact of COVID-19 on building construction prices. Market uncertainty, coupled with supply chain disruptions and the ongoing adjustment to the new normal way of working, may continue to impact building construction prices in subsequent quarters.

Prices for products manufactured in Canada, as measured by the Industrial Product Price Index (IPPI), rose 0.4% in June, driven mainly by higher prices for energy and petroleum products which increased 11.7%. Excluding energy and petroleum products, the IPPI declined by 0.6%, mostly due to lower prices for motorized and recreational vehicles (-1.4%), electrical, electronic, audiovisual and telecommunication products (-1.1%) and pulp and paper products (-1.2%).

Canada

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<tr>
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<tbody>
<tr>
<td>BUILDINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential (apartment, house, townhouse)</td>
<td>StatsCan</td>
<td>5.4%</td>
<td>5.2%</td>
<td>2.3%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Non-residential (commercial, industrial, institutional)</td>
<td>StatsCan</td>
<td>2.7%</td>
<td>4.9%</td>
<td>2.2%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Industrial buildings</td>
<td>FM Global</td>
<td>3.4%</td>
<td>4.0%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>All buildings</td>
<td>M&amp;S</td>
<td>2.7% to 3.5%</td>
<td>2.9% to 5.6%</td>
<td>-0.3% to 0.6%</td>
<td>0.3% to 1.2%</td>
</tr>
</tbody>
</table>

M&E

| Industrial Product Price Index (IPPI), Total | StatsCan | 2.3%  | 2.0%  | 0.6%  | -3.2%                  |
| Industrial Product Price Index (IPPI), excl. energy and petroleum products | StatsCan | 1.1%  | 3.0%  | -0.3% | 1.1%                  |
| Machinery and equipment price index (MEPI), domestic | StatsCan | -0.6% | 1.6%  | 0.3%  | -0.2%                  |
| Machinery and equipment price index (MEPI), imported | StatsCan | -3.7% | 5.8%  | 0.6%  | 1.9%                  |

Note:
* StatsCan MEPI as of Q1-2020

The Machinery and Equipment Price Index (MEPI) provides estimates of price changes for machinery and equipment purchased by industries in Canada.

Sources

StatsCan, Statistics Canada (Building construction price indexes - composite trends based on 11 census metropolitan areas)
StatsCan, Statistics Canada (Industrial product price index (IPPI) by North American Product Classification System)
StatsCan, Statistics Canada (Machinery and equipment price index (MEPI), by industry of purchase)
FM Global (Canada Cost Trends, Industrial Buildings - Canadian Average)
M&S, Marshall & Swift Valuation Service (Canadian National Average - comparative cost multipliers)
Appraisal of Historic Properties for Insurance Purposes

The National Park Service’s National Register of Historic Places lists more than 95,000 properties, representing over 1.4 million individual resources—buildings, sites, districts, structures and objects. Almost every county in the U.S. has at least one listing in the National Register.

Per the U.S. Department of the Interior, to be evaluated as a national historic landmark, a building, site, district, structure or object should, among other criteria,

- Be associated with a historic event of historically important person;
- Have architectural significance;
- Represent an idea or ideal of the American people; or
- Have the potential to provide information of major scientific importance.

A “historic building” means a building listed in a federal, state, county or municipal historical register. “Historic property” can also mean any property constructed or produced prior to 1940 if it has historic value to the community in which it is located.

If a historic structure is damaged, what are the requirements for reconstruction?

According to the National Park Service U.S. Department of the Interior, reconstruction is defined as “the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.”

This is mirrored in insurance policy documents, with typical extracts defining the value of a covered historical building in the event of a loss or damage as follows:

- For visible features, if the same workmanship, building and architectural materials are reasonably available, the valuation of the repair, rebuild or replacement will be based on the workmanship and architectural materials that are reasonably available; or,
- If the same workmanship, building and architectural materials are not reasonably available, the valuation of the historical building will be based on the cost to repair or replace with workmanship, building and architectural materials that closely resemble those that existed before the loss or damage occurred.
- Reasonably available is defined as workmanship and expertise within 500 miles, and materials that can be legally purchased anywhere in the world.
- For nonvisible building features, such as interior structural systems or mechanical systems, the valuation will be based on the cost of more readily available modern materials and technology.

The importance of a full-scope appraisal

Maintaining a realistic insurable value for the reconstruction cost of historic buildings can be challenging. Historical structures are often renovated and/or restored multiple times over their lifetime. While these renovations do not add value, they cure physical depreciation. Adding the cost of renovations to the base cost of a historical structure will exaggerate its insurable value. Also, the cost to renovate a building can exceed the cost to reproduce it new when all aspects of renovation costs, including the preparation/demolition costs, are considered.

Trending buildings over a long period of time is not advisable. Trends are average guides to the change in construction costs of average buildings. Once a trend is used for eight to 10 years, it will diverge from actual construction costs, and a new reproduction cost should be established using an appraisal.

The key to successful appraisal of any building is being able to break it down into its component parts. Applying this to historic buildings presents many challenges, including:

- Lack of plans, scale drawings or construction records
- Complex detail, elaborate or ornate design
- Materials and/or construction methods no longer in use
- Unique craftsmanship that might no longer be available
• Whether the entire structure should be considered historic, or just a portion (e.g., just the façade is historic and the remainder of the building has been renovated/replaced with modern construction)

• Inherent or built-in fine arts feature (stained glass, murals, etc.)

• High-value built-in special features such as organs (church), carillons, clocks, towers, spires, chandeliers, etc.

• The on-site inspection portion of the appraisal will include:
  – Extensive photography
  – Detailed measurement and drawing of floor plans
  – Comprehensive identification and quantification of construction materials and special features

When researching the current reconstruction cost of a historic building, it is not possible to apply a simple model costing approach. Rather a detailed segregated cost analysis is required. Cost adjustments must be made for material quality and design, and unique materials and craftsmanship are researched with industry sources. Final conclusions are then compared with similar properties to ensure they are reasonable.

Duff & Phelps has appraised historic properties as diverse as:

• State capitols in Alabama, Minnesota, Georgia, Virginia, Rhode Island and Connecticut

• Churchill Downs

• Historic buildings on university campuses throughout North America

• The Alamo

• The Shedd Aquarium (Chicago, Illinois)

• Vizcaya Museum (Miami Gardens, Florida)

If you have not had your historic properties appraised recently, talk to Duff & Phelps to ensure that you are not over insuring or underinsuring these noteworthy assets.
Valuation Preparedness

Everywhere we look change is happening—ironic given that many of us have spent the last 4-5 months in the same place, with the same daily routine.

Over the past two years, the hardening insurance market and the lockdown has brought about multifaceted change to the world of traditional property valuation, affecting our business processes, service options, our reporting methods and our client base. In short, buyers want more for less—less time, less money and less disruption to normal business operations. They require smart valuations.

Smart valuations deliver a conclusion quickly, with results reported virtually or via a portal. They produce data which is useful to the whole insurance community, not just the insured. Today, valuations should also align with the culture of the engaging business and be transparent, digitally capable and with strong ESG policies. This requires a level of emotional and technical intelligence previously unnecessary for the provision of insurance valuation.

It is achievable but requires preparedness. Duff & Phelps has developed a valuation framework to assist clients and members of the insurance community to transition towards smart valuations.

Firstly, knowledge of assets is the key piece of the valuation puzzle, no matter which approach is used. High-level information required to scope out a valuation is readily available in the property schedule and serves as an overview that enables the valuer to qualify the appropriate methodology and service options to suit the individual client.

Then, we need to drill down to the next level of detail, and this is usually where time lags can occur if you are not prepared.

We often find that with large property portfolios, with hundreds of locations, that data is missing, or the quality of fixed asset registers varies immensely between sites. It is important for a risk manager to ascertain the reliability of the data and understand policies around additions or deletions. Having a conversation with data controllers should quickly enable risk managers to rank the risk of quality/accuracy associated with relevant data sets. This may need to be done at a regional or local level—perhaps a time-consuming task, but crucial to establish the reliability of the data.

A lack of information can significantly delay the valuation process, so running through the Duff & Phelps preparedness checklist should accelerate the valuation process and provide a better understanding of available data, opening up the scope for technology-based methodologies.

A risk manager should also understand and convey to the valuer the drivers for having the insurance valuation performed. Determining how the valuation will be used and who will rely on it ultimately dictates how it should be structured, executed and reported.

This year, we have been engaged by risk managers of large corporations to carry out diagnostic portfolio value checks. These companies need a regular rolling valuation program, but securing the internal budget without a detailed business plan isn’t a viable option. So, we break down and benchmark costs and savings, determine which portfolio locations pose an issue in terms of risk and set out a valuation plan for the short and medium-term.

For some clients, organizational consistency and cultural alignment are drivers. So, engaging with a likeminded business can be almost as important as the product itself. This year, for the first time, our ESG policies were examined and scored as a part of the provider selection process.

Conversely, the main driver for a lot of clients is to be able to say that an independent insurance valuation has been completed, perhaps to satisfy a requirement on the policy.

People play a huge part in the preparedness framework. A risk manager needs to identify all the key individuals who would potentially be involved in the exercise. When considering a valuation program, knowing who the risk and insurance manager needs to have the conversation with is imperative. Who are the data controllers, how many people need to buy in to the exercise to maximize efficiencies, and when does the conversation about budget need to be held with the finance function?

Clients who are new to insurance valuations should appreciate the people factor and the coordination effort required with the site teams. A business may have multiple divisions with representatives at each site. The risk manager should provide contacts at each site and try to pin down who has the best knowledge of the location and processes.
Another consideration is buy in. A risk manager should convey to all stakeholders the reason for the exercise. They should also explain to stakeholders what their role and responsibilities will be, and the associated level of time required. Duff & Phelps provides a variety of communications outlining the purpose of the exercise and how it will be achieved, so that feedback and any unforeseen impact on the business can be managed. Subsequently, the feedback allows the program or methodology to be appropriately adjusted.

Insurers also play a key part in valuations. If they have pushed for an independent insurance valuation to be carried out, then speaking to them about their expectations is prudent. In a hardening market preparing and presenting a well-managed risk may not only allow for negotiation on rates or level of cover but could be the difference between securing a placement or not. Insurers also often like to see values for critical plant and machinery itemized on a report and may be more inclined to fund part of the exercise if they are involved in the scoping discussions.

All elements of the preparedness framework affect the overall timing and approach. A risk manager should always map out a timeline for the insurance valuation exercise ahead of commencement. This is crucial to achieving conclusions efficiently and ahead of renewal.

There is a clear link between preparedness, efficiency, approach and deliverables.

For more information please contact Rebecca Fuller at Rebecca.Fuller@duffandphelps.com or Mark Bobber at Mark.Bobber@duffandphelps.com for a copy of the Valuation Preparedness Framework and worksheets. Alternatively take our preparedness questionnaire.
How to Protect Your Company from Cyber-Related Problems and Scams Associated with the COVID-19 Pandemic

In recent weeks, our cyber experts have been collecting intelligence from a variety of sources, including government agencies worldwide, on how cyber criminals and nation-state actors are taking advantage of the confusion and problems relating to COVID-19. The following notes are provided as general guidance to bolster awareness and help avoid social engineering attacks.

Phishing Attacks Leveraging the WHO, CDC and Other Government Agencies
Cyber criminals recognize that corporations and public-sector institutions are anxious to learn the latest authoritative information concerning COVID-19. They take advantage of this to create opportunities to induce employees to open emails and click on links. They may do this by crafting compelling subject lines (such as COVID-19: Latest Updates from the Centers for Disease Control) and using URLs similar to the official addresses—perhaps with the addition of a dash or a change from ".com" to another top-level domain.

Their objective is to compel the email recipient to take an action like clicking on a link which results in the downloading of malware ranging from ransomware to remote access trojans providing the criminals with ongoing access to your network. While our usual advice is "trust but verify," the reality here is that you must be very careful about what you trust at all. Make note:

- The UK’s National Health Service COVID-19 information is available at https://www.nhs.uk/conditions/coronavirus-covid-19/
- Many other countries have also established official websites to collect and distribute authoritative information.

Be careful about any links included in emails pretending to come from official agencies and before you accept information, be sure it is coming from a known official and accurate source.

Protect and Test Your Offline Backups
Ransomware may only be the tip of the iceberg. We are seeing increasing reports of ransomware being deployed only after criminals carefully examine the network, often looking to identify backup files (even if they are in a remote “cloud-based” system) so that they can have the ransomware encrypt not only your primary files, but your backup as well. If they succeed, the victim will be more likely to feel that they must pay the ransom to restore their operations.

Particularly troubling is the growing trend of ransomware attackers stealing sensitive employee, customer or intellectual property such as business plans, financials or trade secrets, and using the ransomware to cover their tracks. Even if you pay the ransom and regain control of your files, the criminals may have a copy that they can sell on the dark web.

Carefully Inspect Before Engaging Charitable Organizations
We have seen the rapid rise of sites seeking contributions ostensibly to assist those affected by COVID-19. Unfortunately, while there are many valid sites, criminals want to exploit the charitable nature of individuals and corporations and get them to send funds to fake donation sites. Certainly, we encourage individual and corporate charitable donations to assist those in need of help in a crisis, but we strongly recommend that contributions be made through known and thoroughly vetted charitable organizations.

Examine and Strengthen Remote Work Capabilities and Security
Many organizations are continuing to have their employees work from home. While some organizations have planned for this eventuality and have engineered their networks to provide appropriate security and privacy controls, others have not done so, and are being forced to make rapid changes to accommodate displaced workers. Rapid changes may not have permitted the time to put adequate controls and security measures in place. Here are a few areas to focus on:

- Employees working from home may need to print out non-public or sensitive material, and they will need a way to safeguard that material. Providing them with a cross-cut shredder or a box to store the material until they can bring
it to the office for proper disposal is vital. If employees are going to need special forms or other materials, make sure it is provided to them.

• Connecting to the company network through a virtual private network (VPN) connection should be a requirement. Be sure your technology team has assured a sufficient number of simultaneous VPN connections for a worst-case remote work scenario.

• Remember that travel limitations may require your technology team to work remotely. Can they carry out their functions if they are remote? Can they be reached through your phone system if your help desk must be operated remotely? We proposed a few key questions related to the sustainability of IT in a crisis in a previous article—now is the time to ask the right questions and demand answers.

The one thing that is certain is that cyber criminals are hard at work looking for ways to take advantage of work disruptions associated with COVID-19 and governments’ orders designed to reduce the spread of the disease. Don’t let your company’s technology be an avoidable victim.

Duff & Phelps and Kroll continue to monitor developments relating to crisis response, cyber threats, valuations and financial stress caused by the COVID-19 pandemic. We will continue to provide guidance as we gather and analyze information from our client work and our analyst’s evaluation of information available to us through official and other sources. If our experts can help you assess and manage the risks to your business, contact us as soon as possible. Additional guidance is available in our Coronavirus Resource Center.
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