$\wedge \vee \wedge \otimes \wedge \otimes \top$

AVASANT/IAOP Joint Webinar

COVID-19's Impact on Tech Spending Industry Index

Wednesday, March 25, 2020

© 2020 Avasant LLC. All Rights Reserved.

raprietary and Confidential. No part of this document may be reproduced in any form or by any electronic or mechanical means,

ciuaing information storage and refrieval devices or systems, without prior written permission from Avasant LLC

Avasant Thought Leaders



ΛΥΛ ΣΛΝΤ

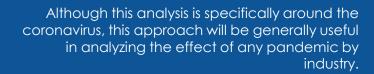


Coronavirus Impact Index by Industry

COVID-19 fears continue to grip the world. In addition to the human tragedy, there is also a massive impact on business. But these effects vary by industry.

COVID-19 is having widespread effects across a wide swath of industries, with direct negative effect on economic performance.

The shutdown of nearly half of manufacturing units in China, which comprises a large percentage of the world's production capacity, is a drag on revenue globally beyond just the manufacturing industry.





\$

COVID-19 Impact Index by Industry

• 11 Industries

- Banking, Financial Services & Insurance
- Energy & Resources
- Healthcare & Life Sciences
- High-Tech & Telecommunications
- Media & Entertainment
- Public Sector
- Retail
- Manufacturing
- Universities & Colleges
- Non-profits
- Travel & Transportation

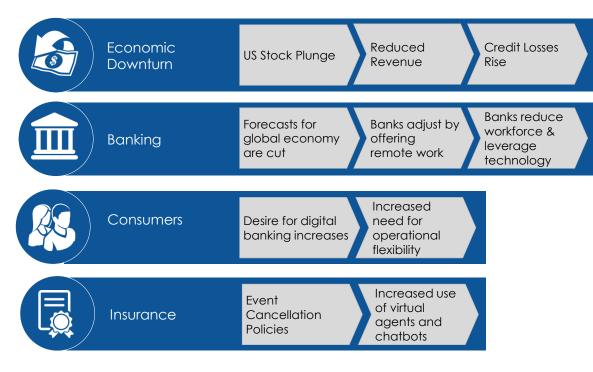
| Categories affected by COVID-19 | anking, inancial Servi Insurance | nergy & | lealthcare & ciences | High Tech & Tele- communications | Media & Entertainment | ublic Sector | Retail | Vanufacturing | Jniversities & Colleges | lon-profits | ravel & ransportation | | | • | Operations Supply Chain | |
|--|--|----------|----------------------|-------------------------------------|--------------------------|--------------|--------|---------------|----------------------------|-------------|--------------------------|--|--|---|----------------------------|--|
| Personnel | ۵ ۳ ۳ ۳ ۳ | A | Ū. | Ť Ŏ | <pre>S II</pre> | J | E | • | • | ž 🌔 | • | | | • | Revenue | |
| Operations | • | • | ٠ | • | • | ٠ | • | ٠ | O | • | ٠ | | | | | |
| Supply Chain | 0 | ٠ | • | ٠ | O | 0 | ٠ | ٠ | 0 | 0 | ٠ | | | | | |
| Revenue | • | • | • | • | • | • | • | ٠ | • | • | • | | | | | |
| Overall Avasant Assessment | 0 | • | • | • | • | • | ٠ | ٠ | • | • | • | | | | | |
| O Minor Impo iource: Avasant, LLC, 2020 | act O | Modera | te () |) Significa | nt (| Major | ● Se | evere | | | Figure 1 | | | | | |



Banking, Financial Services, and Insurance

The impact on this sector could be moderate or severe depending on the size of the decline in stock markets and other factors. Overall impact on the banking, financial services & insurance sector is moderate.

ΛΥΛ S Λ Ν Τ



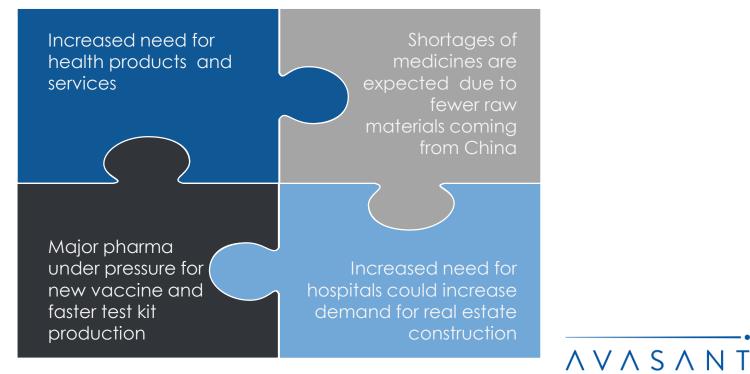
Energy & Resources

The pandemic's impact on energy, utilities, and resources could be quite great for many reasons. Overall impact on the energy & resources sector is major.

| Oil Supply | Reduced use leads to slowed supply chain Longer term impact – millions working remotely may be effective and adopted after recovering, which could drastically reduce gasoline use | |
|------------------------------|--|--------|
| Utilities | Critical operations will need to be managed and maintained Business continuity plan (BCP) mode may require isolation of critical teams to ensure operations Residential power will likely not be directly impacted | |
| Raw Material Shortages | Inventories have swelled due to reduced construction following outbreak Demand for steel and feedstocks reduced If steel and aluminum inventories grow, certain inputs may be affected | ΛνΛςΛΝ |

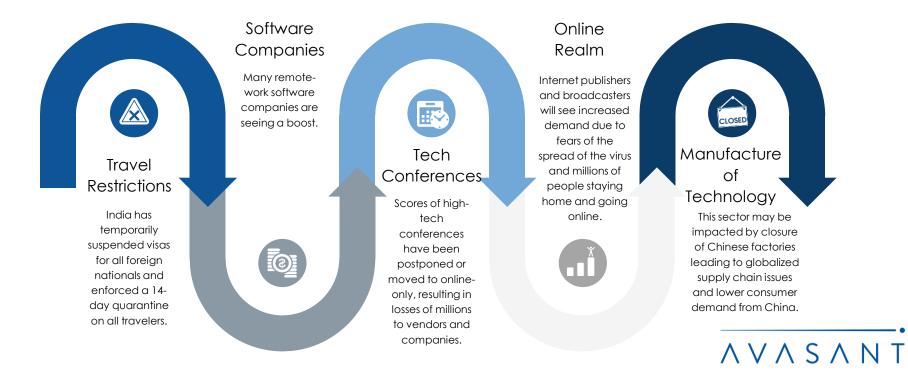
Healthcare & Life Sciences

Overall impact on the healthcare and life sciences sector is major but with mix of potentially positive and negative economic effects.



High-Tech & Telecommunications

This sector will feel a wide range of effects from the pandemic. Overall impact on the high-tech and telecommunications sector is mixed but major.



Media & Entertainment

The media and entertainment sector will experience pain in some areas but newfound demand in others. Overall impact on the media and entertainment sector is mixed but major.



At Home Entertainment Millions of people staying home are increasing revenue for streaming platforms

LIVE S

Studios & Cinemas Income will be reduced as people avoid theatres and premiers are delayed.



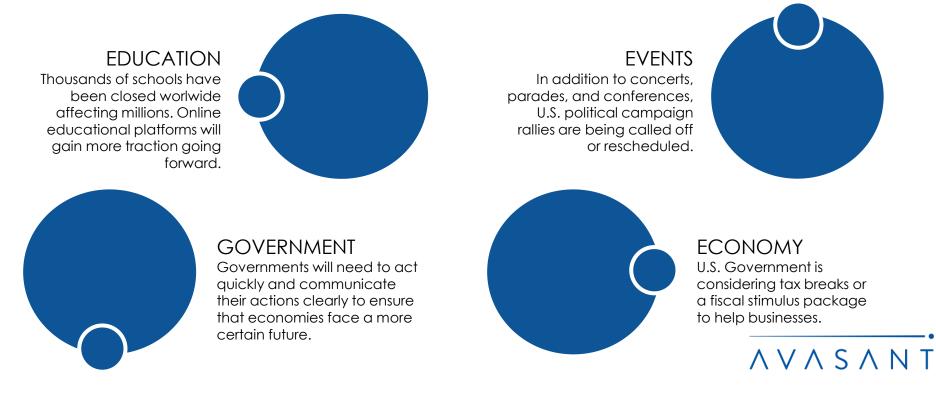
Sports Leagues

Seasons are suspended and delayed with NCAA cancelling March Madness



Public Sector

Governments and other public entities are struggling to cope with the pandemic and the ensuing panic. Overall impact on the public sector is moderate.



Retail

Retailers' revenue will be mostly negatively impacted, with just a few cases positively affected, depending on segment. Overall impact on the retail sector as severe.

Grocery & Drug retail chains have seen an increase in revenues as customers are stocking up. Risks to essential workforce health & supply chain

Online marketplaces like Amazon & retailers are struggling to bring goods into the U.S. and challenges in getting workers to DCs.

Online sales have increased as customers are buying online rather than leaving their homes.

Chinese consumers form 38% of global fashion industry & have all but disappeared. This is now happening with consumers globally for many segments.

$\land \lor \land \lor \land \lor \land \lor$

Manufacturing

This sector will be one of the hardest hit. Overall impact on the manufacturing sector as severe.

Disrupted supply lines could raise price of aftermarket components for globally-made products. Auto, consumer goods and pharma sectors hit badly because of supply issues in China and across the globe Major impact on personnel as most employees can't work from home.

Once the pandemic eases, manutacturers will be challenged to quickly return to full capacity. Also, they will find both supply and demand challenges globally as other parts of the world continue to battle COVID-19 epidemics. Additionally they will encounter transportation and logistics constrains as shipping will be slow to return to normal too.

Λ Λ Λ Λ Λ Λ Τ

Universities

The higher education sector is aggressively dealing with the pandemic, the effects of which could have implications for years to come. Overall impact on the universities sector is major.



Harvard has banned all university-related international air travel at least until the end of April.



Much depends on how long the effects last and if it compromises the fall term.



The International Education Association of Australia warned in March of a AU\$6 billion to AU\$8 billion hit if Chinese students cannot attend the first term.



Long term preparation is needed for economic fallout due to both less revenue from student tuition and fewer international students with higher fees.



Universities and business schools are switching to online teaching and test taking.

Australia has forced many institutions to adapt remote learning and pastoral care for those stranded abroad or returned and are in quarantine.



Nonprofits

Some nonprofits will receive increased funding to combat the pandemic, but overall, a worldwide recession will most likely cause grants and donations to decline. Overall impact on the nonprofits sector is major.



Travel & Transportation

This sector is one of the hardest hit, and the bad news keeps coming. Overall impact on the travel & transportation sector is severe.

Airlines employ some 2.7 million people and are facing more than \$113 billion of lost revenue globally as they continue to cut capacity and take emergency measures to reduce costs.

Along with all the postponed conferences, tens of thousands of business trips and vacations have been canceled. Many cruise ships have been quarantined in ports, and the U.S. State Department advised citizens to avoid cruises during the pandemic. China has closed some transportation systems, and cities such as New York are contemplating curtailing or temporarily closing the subway system.

$\land \lor \land \lor \land \lor \land \lor$

Planning For a Pandemic

Three Scenarios to provide framework planning.

- A low-impact case, such as a limited outbreak that impacts 10% to 20% of the personnel in the primary data center but leaves personnel in the secondary data center location unaffected. There are no restrictions on business travel outside of the area with the outbreak.
- An intermediate-impact case, such as an outbreak that causes a quarantine to be imposed in the area of the primary data center and also causes some unavailability of personnel at the secondary data center. There are some restrictions on business travel.
- A worst-case scenario, such as an outbreak that is nationwide or international and affects 30% of personnel in all locations (up to 40% in worst hit locations), with quarantines imposed extensively and severe restrictions on travel.

Nature of Pandemic vs. Other Natural Disasters

| | Natural Disaster | Pandemic |
|------------------|--|---------------------------|
| Geographic Scope | Local or Regional | National or International |
| Duration | Days/Weeks | Months |
| Threat Target | Facilities, Infrastructure, Systems, and Data | People |
| Nature of Threat | Business Disruption | Degraded Performance |
| Advance Warning | None to Days | Weeks to Months |

 $\wedge \vee \wedge \vee \wedge \vee \top$

Computer Economics Viewpoint

The OECD says the pandemic could potentially cut the year's global growth by half to 1.5 percent for the year instead of the 2.9 percent that the research group had forecast before the pandemic took off.

Global output was about \$86.5 trillion in 2019, so that means \$1.5 trillion of economic activity could be lost in the wake of COVID-19.

In the face of these dire scenarios, a robust business continuity plan that includes scenarios for surviving a pandemic is a must. Not enough enterprises include pandemic scenarios in their continuity plans.



Business leaders should evaluate this impact and what they can do to mitigate risks to their own organizations, as well as to their communities and the world at large. Although many organizations do not address pandemic scenarios in their business continuity plans, the current situation is now compelling many to do so.





Empowering Beyond

Anupam Govil

Partner

Anupam.govil@avasant.com

+1 (310) 643 3030

+1 (512) 577 - 1941

