



THE DATA ANALYTICS WAR ROOM

Lessons Learned from the COVID-19 Pandemic

The COVID-19 pandemic has threatened the health of our communities, businesses, and the global economy.

The stakes are too high to allow room for error when decision-making is often a matter of life or death. From a societal standpoint, both human lives and livelihoods hang in the balance. For many businesses, actions taken in the coming months may determine their survival.

In this climate where the complexity of the problem exceeds the limitations of a judgment-based approach, we must turn to a more powerful tool than human experience alone: data analytics.

Predictive data models are essential tools for ensuring the next hot spot of infection has the right number of beds, medical staff, personal protective equipment, and ventilators on hand.

Data analytics can project how much policy measures—such as stay at home ordinances, the closure of nonessential businesses, or mask mandates—will flatten the curve. And these insights can help local leaders determine the appropriate timing and approach to reopening the economy without unnecessarily risking a resurgence in illness.

In this unprecedented time, we have seen governments and health organizations recognize that no matter the wisdom and experience of leadership, determining the “best decision” requires the examination of a range of factors and consequences that cannot possibly be processed through human judgement alone. Rather, to decide upon the most optimal action to take under such stressful, high-risk conditions, decision-makers must consult the data and look at the models to determine with clarity “what would happen if...”

DATA ANALYTICS-DRIVEN DECISION MAKING IS A BUSINESS IMPERATIVE

In this challenging climate, middle market businesses are doing all they can to stay afloat, from cutting costs to overhauling their revenue models. Under pressure to take swift and decisive action, the most resilient businesses will leverage data analytics to light the way forward.

The business case for transforming into a data-driven enterprise is already well-established: "Insights-driven" businesses grow at an average of more than 30% each year and were predicted to take \$1.8 trillion annually from their "less-informed peers," according to research from Forrester.

While most businesses are shifting focus from capturing growth to preserving value and mitigating risk, data-driven decision-making is no less essential. In fact, it's *more* essential—gut feel doesn't cut it when human lives and livelihoods are at stake.

Business intelligence systems for big data gained popularity in the wake of the 2008 recession. While IT budgets were slashed in 2009, investments in business intelligence platforms continued to tick up, as companies began to recognize the value of information access and real-time insight.

In the 12 years since the last recession, business intelligence tools and techniques have evolved dramatically to meet the demands of the big data environment. Visualization and clustering techniques, for example, are used to more easily inventory and categorize raw data. New data preparation tools can automate the extraction of data into an analytics-ready format. Greater processing power and edge computing has enabled organizations to collect and analyze data from mobile devices and embedded sensors. Advanced analytics and machine learning applications can be used to solve more complex business problems and form a predictive response. These advanced applications are enabling organizations to do far more with their data, from driving new operational efficiencies to detecting anomalies or threats to uncovering emerging customer behaviors.

In a COVID-19 climate, data analytics can help businesses to:



Decide which products and services, capital projects, markets, and people to invest in.



Determine which disruptive events might require a change in strategy.



Monitor for anomalies and patterns that may indicate a threat or opportunity.



Pinpoint the best actions to take if these disruptive events occur.



Smooth friction in the business operations, product portfolios, or supplier relationships that might constrain ability to act with speed.

However, with capital constraints an issue for many during this time, the journey toward operationalizing analytics across the enterprise can and should start small, with ad-hoc adoption of analytics in dashboards and reporting. Even with ad-hoc projects, it's important to keep the end game of [insight-led innovation](#) in mind, which is the premise that today's innovations should pave the way for tomorrow's. Every innovation should enable more informed, data-driven, strategic business decisions down the road.

As companies position themselves to adroitly navigate COVID-19, management teams can learn valuable data analytics lessons from the present pandemic.

COVID-19 LESSON #1

Success Hinges on Addressing “the Data Problem”

Accurately forecasting the trajectory of COVID-19 is easier said than done. Even with the brightest minds in the world on the case, and highly sophisticated artificial intelligence (AI) models, predicting when the current pandemic wave will end with a high degree of certainty still eludes us.

It's a data governance problem. How COVID-19 data is reported varies significantly from country to country, and even from state to state. Some reports include presumptive positives in their numbers, while others do not. Many reports categorize cases by severity or demographics, but don't use the same parameters to do so. Methods of calculation have changed midway, resulting in discrepancies within the same data set. Divergent testing approaches may have also impacted the comparability of the data. Without a uniform reporting standard, the underlying data points that support COVID-19 projection models aren't necessarily reliable.

The lesson for businesses? Insights are only as good as the underlying data on which they are based. A significant portion of enterprise data collected is either trivial, irrelevant with no business value, or cannot be read by the systems in place. Extracting insight from data is also constrained by inconsistent naming conventions, duplicate data, and incomplete records. According to research by Gartner, poor data quality is estimated to cost organizations an average of \$15 million in losses per year and, for some businesses, that figure is much higher.

According to a 2019 IDC infobrief, data workers waste 44% of their time each week on data preparation alone—time that could be better spent on analysis to yield insights. Streamlining the insight discovery process starts with getting your data house in order. Harnessing analytics more effectively can also help bring dark data into the light, yielding significant insights from information that otherwise might grow stale or remain unanalyzed.

COVID-19 LESSON #2

Culture and Talent Can Bring About Data-Backed Thinking—or Hold it Back

As COVID-19 made its way from Wuhan to the United States, California was among the first hit, with the first death in the state traced back to as early as February 6th. California acted swiftly, moving forward with a stay-at-home ordinance before any other state—giving the governor and the hospital systems the valuable time they needed to prepare.

The state has partnered with a broad swath of technology companies from pandemic early warning AI company BlueDot to California-based data giant Facebook. Through these partnerships Governor Newsom has been able to use mapping technology and anonymized cell phone data to evaluate the effectiveness of stay at home policies in real time and spot potential problem areas before it is too late. California's plan for reopening similarly hinges on data-backed contact tracing powered through Bluetooth.

A year ago, this approach, and these partnerships would have been politically and culturally impossible. But the stakes of COVID-19 had led political leaders to shift their thinking and form new alliances—altering the policy decision-making process to mirror the culture prevalent throughout Silicon Valley companies: hinged on data-driven insights.

For many businesses the pathway to exploiting the full benefits of data analytics is helped or hindered by company culture. Perhaps data-driven decision-making is not a part of the company DNA. Current approaches to decision-making may be so culturally ingrained that there is real resistance to doing things differently. This can be especially challenging when these institutionalized practices have achieved desired results in the past, and thus seem effective due to anecdotal evidence. In short: comfort, or even complacency, with “the way we do it” is more handicap than advantage.



How can you encode data-driven decision-making into your business DNA?

- 1. Treat data as invaluable.** Leadership can begin the wave of cultural change by inspiring employees to view data as a lever to unlock business value. That starts with establishing KPIs to measure not only the value of your data assets, but your data *analytics* assets—the dashboards, applications, and tools your organization has at its fingertips. The best way to value these assets is to tie their use to the business decisions and operational functions they power.
- 2. Facilitate smart information sharing.** Data is only as valuable as it is useful. Connect disparate “pockets” of analytics and leverage tools like real-time dashboards designed to summarize relevant insights for key stakeholders.
- 3. Don't silo your data scientists.** A successful analytics function must have direct access to business leaders and a deep understanding of business challenges. A number of structures can work, but it's critical to ensure that those with data expertise and deep business knowhow have the opportunity to work in lockstep to solve difficult business challenges.
- 4. Define what “good” looks like.** Establish policies, protocols, and practices for individual data stewardship responsibilities, provide guidance on how and when data analytics should be used, and formalize the decision-making process.
- 5. Foster data literacy.** While it's unrealistic to turn your company into an army of data scientists overnight, it's critical to train employees responsible for inputting data to do so accurately and to teach business leaders throughout the organization to partner with the data team to extract insights. It is best to offer training right before employees can put these skills into practice—giving them the chance to absorb the concepts.
- 6. Make it part of the job description.** Develop clear roles for data analytics-related responsibilities. Structure compensation and leadership positions to reflect each employee's part in the stewardship of the data they interact with—not just the data they “own.”
- 7. Incentivize good behavior.** Recognize employees for good data stewardship and reward the employees who drive data analytics-related financial or operational improvements.
- 8. Practice what you preach.** Engraining data into decision-making processes is like teaching the workforce to build a new muscle or adopt a new healthy habit. Managers must lead the way by offering data in support of their business decisions and sharing that reasoning with their teams openly. Role modeling these actions can set new cultural norms. Staff should come to believe that in order to build buy-in, you must explore a range of options, weigh tradeoffs, and come to the table with an evidence-based recommendation.
- 9. Manage ethical implications.** With big data comes big responsibility. Consider ethical and privacy concerns to inform a company-wide code of conduct for ethical data use.

COVID LESSON #3

Bring Data Analytics into the War Room

South Korea is a coronavirus success story. South Korea had its first confirmed case of COVID-19 on Jan. 20, the same day as the United States. Four months later, South Korea has a total of just under 11,000 cases and fewer than 300 deaths. The government had relaxed social distancing guidelines—and reinstated lockdowns when data showed it would help prevent a second wave.

While so many other nations have struggled, South Korea managed to successfully flatten the infection curve. What did they do differently? They leveraged data to its fullest extent. A public contact tracing app is used to collect geospatial, transactional, and image and video data to provide a full picture of a confirmed patient's movement, including their location history, when they were there, how long they were there, and even the transportation mode they used to get there and leave. A dependable test kit was rolled out in under three weeks using an artificial intelligence system with big data on pathogen and disease information. Between contact tracing and an aggressive approach to testing, South Korea arguably has the most complete view of the virus in the world—and they've been able to act swiftly because of it. In the words of Lee Sang-Won, an infectious diseases expert at the Korea Centers for Disease Control and Prevention, South Korea has "acted like an army." They brought data to fight the war.

This conversation is now playing out in Washington. During a recent Senate coronavirus hearing, funding for data modernization and the development of predictive analytics capabilities was a topic of interest.

To effectively respond to crisis, businesses should bring real-time insights into the company war room. Speed is of the essence, but fortunately, significant infrastructure investments and integration efforts aren't a prerequisite to getting access to relevant insights. Databases, machine learning components, and data automation tools can all be spun up in matter of minutes. Unlike more complex analytics projects with undefined parameters, if you know what KPIs to track, it's just a matter of mapping your data to these pre-defined metrics.

Of course, this does assume that your data foundation is already in good shape. Ungoverned data requires significantly more time to prepare for analysis. A complete information governance overhaul is impractical when the insights you need are for a crisis scenario, so your best bet is to prioritize cleansing the source data you need to meet specific project requirements.

KEY KPIS FOR YOUR ANALYTICS WAR ROOM

Financial Health – Real-time visibility into your liquidity position and net working capital can help you ensure the accuracy of your cash flow forecast and identify potential cash crunches before it's an issue.

Capital Spending – Do you know where your money is going? Monitor procurement costs and track delivery performance overall to identify cost savings and uncover anomalies. See how you're tracking against individual project budgets as well as budget roll-ups to prevent overspending and ensure resources are appropriately allocated.

Operational Health – Understand the efficacy of business processes and monitor overall business performance to identify inefficiencies and potential vulnerabilities.

Employee Health – Protect essential employees' health through symptom monitoring and temperature tracking, and map compliance to following social distancing guidelines in the workplace. Track remote workers' computer activity and time spent working to gauge productivity and performance levels.

Customer Health – Insight into customer interactions will be critical to protecting revenue and increasing customer satisfaction. Is revenue going up or down? Are customer complaints on the rise? Are payments coming in on time and what is our delinquency rate? Are you responding appropriately to customer contacts and unpaid bills? Access to these metrics can make the difference between losing a customer and keeping them.

Build Your Analytics War Room Today ▶



APPLYING DATA ANALYTICS IN COVID-19

Essential Business Application

Imagine a grocery store struggling to keep pace with demand as household cleaners and pantry staples fly off the shelves. The store may only be allowed to permit a few customers into the store at a time to protect customers from infection. Lines are long, and customers are reluctant to wait only to find that most desired products are missing from the shelves.

The company could capitalize on demand and thrive during these challenging times, but only with accurate, predictive insights.

What if that same store leverages point-of-sale transactions and sensors to collect data, such as: What products are in highest demand? Are customers at specific times of the day (e.g. senior hours) more in need of specific products? Are staples such as bread, eggs, and toilet paper most needed immediately following payday? Is the store becoming congested in particular aisles? How can they rearrange products to optimize customer flow?

By culling, centralizing, and analyzing data from in-store sensors and POS digital payments, the grocer can forecast demand, minimizing food waste and capturing full potential revenue.

Nonessential Business Application

Picture a professional services business which has asked its employees to work from home for the duration of the pandemic. The company is expecting decreased demand during the crisis—and uncertain how much liquidity it will need to bridge through to the recovery. Since it may be able to qualify for a forgivable loan through the stimulus package, the company wants to avoid layoffs if at all possible.

With collection of data on capital expenditures, the ability to forecast demand and analysis of the workforce's productivity while working remotely, the management team may be able to make more informed determinations around: a. how much liquidity they need to procure, b. which costs to cut (e.g. would the company benefit from eliminating their lease and moving to remote only?), and c. how to pivot the business model by offering a new service or realigning talent around an offering with higher demand.

CRISIS MOMENTS CALL FOR EVIDENCE-BACKED DECISIONS

The case for engraining data analytics into business decision-making has been longstanding. But in times of crisis when stakes are raised, time is of the essence and emotions run high, data analytics comes in where human judgement falls short: turning information into insight, evaluating a wide range of potential actions, and objectively predicting their consequences, both intended and otherwise.

CONTACTS

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