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# Winegrowers Respond to Climate Change

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*As one of the most climate-dependent disciplines in the world, the winegrowing industry has been hit particularly hard by the effects of global warming. Even minute changes in temperature and precipitation can have devastating effects on the chemistry and flavor of a wine. Many winegrowers are now taking steps to not only mitigate damages to their own livelihood, but to also aid in the long-term sustainability of the world around them. Here are some of the main ways that winegrowers everywhere are taking action.*

## Reducing carbon emissions

Arguably the most quintessential approach to fighting climate change is by addressing it at its source – reducing carbon emissions. Not only does achieving carbon neutrality have a direct effect on the success of the vineyard, but also in the overall health of the planet.

There are a multitude of different paths that vineyards are taking to achieve carbon neutrality. In general, there has been a significant focus on the implementation of renewable energy. [Fetzer Vineyard](#), the first Zero Waste certified wine company in the world, has been operating from 100%



renewable energy since 1999. Additionally, they've also implemented an eco-friendly wastewater treatment system that uses 85% less energy than traditional systems.

Other significant sources of carbon emissions in the winegrowing industry come from packaging and shipping. According to Dr. Richard Smart, an Australian viticulture expert, as much as [68% of CO2 emissions in the winegrowing industry stem from the transport and shipping of wine](#) in heavy glass bottles. Glass bottles often weigh as much as their contents, take up excess space due to their shape, and are frequently recycled improperly. Suggested solutions include bulk shipping (shipping wine in large containers to be bottled at their destination) and the use of eco-friendly bottles or even aluminum/cardboard packaging.





## Improving soil health

Soil health has been a long-time key player in both local and global sustainable farming. With poor land management being among the largest contributors to climate change, many farmers and winegrowers are turning to a process known as [carbon farming](#), in which practices are implemented that improve the rate at which CO<sub>2</sub> is absorbed from the atmosphere and into the soil. Although [some experts have doubts regarding the effectiveness of improved soil management in fixing long-term climate change](#), many of the practices associated with carbon farming remain beneficial in other ways.

The process of tilling, which aerates the soil by removing organic matter, releases large amounts of CO<sub>2</sub> into the atmosphere. As a result, some winegrowers are turning towards more sustainable forms of soil management, like adding compost or cover crops. Even the [U.S. Department of Agriculture has been advocating for no-till farming](#) since the Dust Bowl of the 1920s in an effort to prevent soil erosion. Outside of carbon farming, improved soil quality can improve resiliency against drought, extreme heat, and other symptoms of climate change.cannabis.

## Using more diverse vines

In the face of increasingly hot and dry climates, it may be optimal to turn to vines that perform better in less ideal conditions. Some vineyards feel it's best to accept the inevitable and make the most of it. For example, the Bordeaux Wine Council of Bordeaux, France, has recently [authorized the introduction of 6 new heat-resistant grape varieties](#) to be planted in the region. By using grapes with varied ripening periods, winegrowers to able to account for the increasing disparities between seasons as a result of climate change.

The use of agrobiodiversity (or the variation within crops) has been a long-time suggested practice in mitigating the effects of climate change. A

[recent study](#) measuring how intraspecific diversity influences crop loss found that a highly diverse cultivar selection more than halved projected losses in current winegrowing areas under a 2°C warming scenario. Not only does this have implications for short-term solutions for current vineyards, but also long-term implications for the future of the industry as a whole.







## Reducing water waste

The warmer and drier conditions associated with climate change will have serious implications for the water availability of winegrowing regions. As a result, many farmers are investing in state-of-the-art irrigation and water conversation systems in order to make the most of their resources and reduce waste. Not only does this allow the farmers to adapt to the challenges of harsher climates, but also lessens the harm to nearby communities and other farms.

In a [recent study](#), researchers found that the implementation of precision irrigation using specialized sensors and a NDIV-generated map could increase the profitability, water use efficiency, and yield of a vineyard. The intersection of agriculture and modern technologies like data analytics continues to grow as more and more winegrowers are recognizing the risks of inefficient water use in the face of climate change.

Some farmers have even gone so far as to ditch irrigation in favor of relying on rainwater and better soil management. The [Deep Roots Coalition](#), an anti-irrigation advocacy group based out of Oregon, has been educating vineyards on the threats of unsustainable water use and the benefits of dry farming since its founding in 2004. [Brad McLeroy](#), the winemaker at coalition member Ayres Vineyard, [says their vines are better equipped to handle drought conditions](#) as they've been trained to reach deeper into the soil as opposed to growing horizontally.□

## The winegrowing industry needs to act now

With the effects of climate change becoming increasingly apparent, it's critical that winegrowers take the necessary steps to protect both themselves and the world around them. The future of both the winegrowing industry and the communities they impact are dependent on the actions they take now.

**To read more about what's new in the wine and spirits industry, check out our white paper on the 5 Trends in the Beverage Alcohol Industry.**

**CHECK IT OUT**



# High-Value Employee-Facing UX

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*Typically, the discussion surrounding user experience (UX) tends to focus predominantly on customers. However, the recent transition to remote work during the pandemic demonstrated the increasing importance of high-quality UX in enabling employee success. Many organizations invest significant resources in implementing advanced analytics solutions, yet still fail to gain any valuable insights or observe any returns in productivity due to poor employee engagement.*

Gartner®, Inc, which delivers actionable, objective insight to executives and their teams, “examines the impact of employee UX on key business outcomes and identifies employee-centric practices for software engineering leaders to deliver a high-value employee UX.” As we move forward from the pandemic and organizations look to make the most of their data, it’s critical that IT managers prioritize the user experience of their employees.

(All citations contained in this article are sourced directly from: Gartner, Inc., “Proven Design Principles to Deliver a High-Value Employee User Experience”, Applications and Software Engineering Research Team, 12 May 2020. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission)

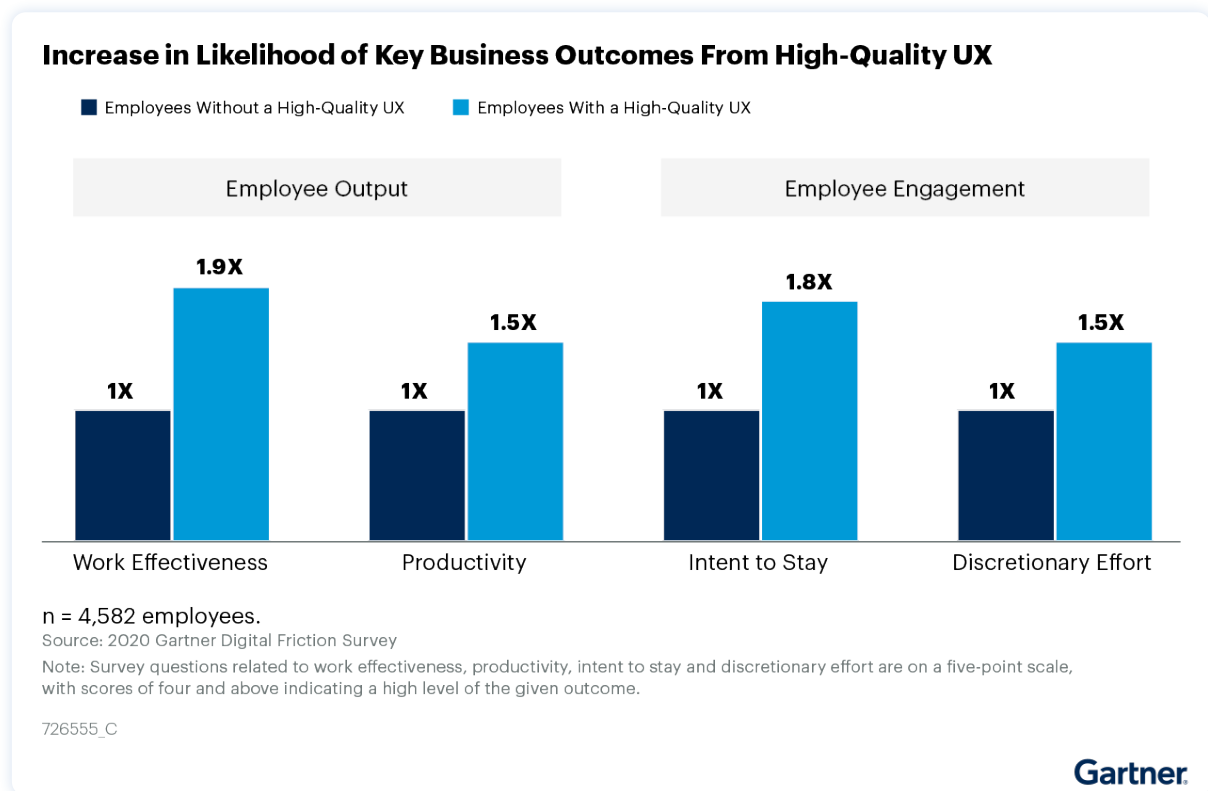


## High quality UX is strongly correlated with productivity and work effectiveness

In many organizations, good UX is often considered a luxury or supplemental feature when compared to other analytics objectives like cost and function. This can often be attributed to a lack of support and understanding from upper-level leadership regarding the role that UX plays in facilitating output and operational efficiency.

In its recent study, Gartner found that “a high-quality employee UX has the greatest impact on employee work effectiveness, increasing the likelihood an employee will have high work effectiveness by 1.9 times.” Gartner further states, “Employees with a high-quality UX are also 1.5 times more likely to have high levels of productivity as indicated by high output per hour worked.”

The encompassing aspect that UX plays across all employee functions should make it a priority for any IT department. Making the most of an organization’s analytics entails investing in the design principles and methodologies that best enable employee success.



## Incorporating employee feedback and expanding application freedom can enhance UX quality

One of the best ways to find how to best enable employee success with analytics is to simply incorporate them in the design process. Employee-centered design means that employees need to be able to provide feedback and voice their needs in developing operational systems. This can take many forms from employing surveys and interview panels to providing departments with more flexibility in choosing their own tools and solutions.

Gartner found that, “employees who are given the opportunity to provide feedback on ways to improve the design and usability of existing applications and on new applications before they are deployed are at least 3.9 times more likely to have a high-quality UX.” Acquiring actionable user input can be achieved through a variety of methods that include built in feedback measures, user satisfaction surveys, and holding focus groups. For upcoming applications, employees can also be invited to test prototypes and try new vendor solutions.

Furthermore, Gartner also found that, “employees with greater choice and flexibility are at least 2.1 times more likely to have a high-quality UX.” Measures like governance frameworks and approved technology lists allow organizations to increase employee freedom while also mitigating the possibility of unnecessary costs, technology compatibility issues, and security risks.

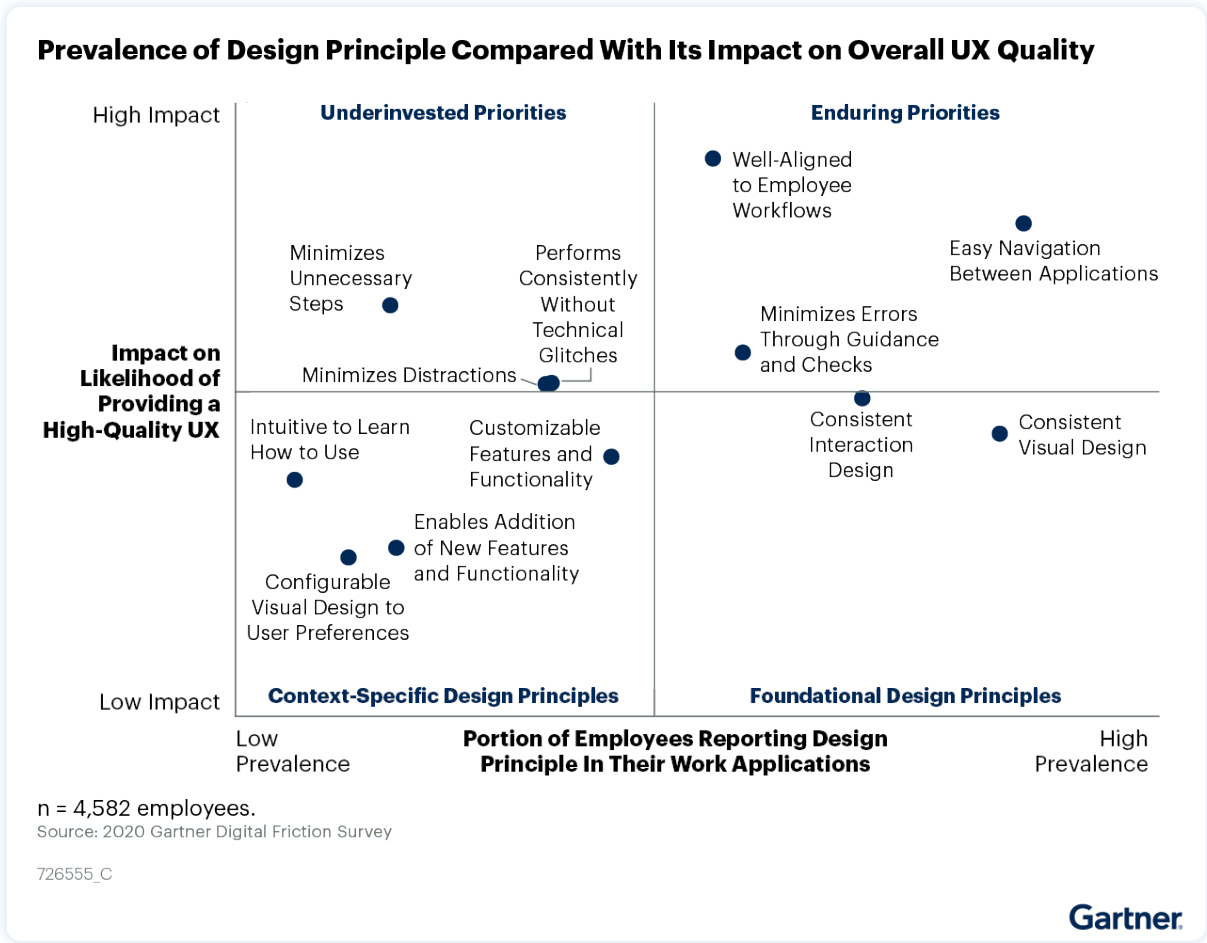
Labor-saving solutions that align with workflows are the best method for attaining high-quality employee UX

There are many principles that software teams can apply in designing analytics solutions for employee use. Overall, employees benefit most from implementations that reduce labor and streamline how employees navigate from one task to the next. Not only does this improve overall employee efficiency (and in turn, that of the business), but it also promotes employee engagement and satisfaction.

In its report, Gartner identified some of the best practices for attaining high-quality employee UX. According to Gartner, “Design principles that are both highly prevalent and have a large impact on UX quality are priorities that organizations should continue to emphasize. These include ease of navigation between applications, alignment with workflows, and guidance and checks to minimize errors.”

Considered to be both highly prevalent and having a large impact on employee UX, these features should continue to be emphasized by software engineers and IT departments.

By prioritizing certain design features over others in promoting employee UX, organizations are better able to make the most of their analytics resources and see a greater return on investment. The key to successful UX design is establishing clear-cut objectives and well-defined pathways for achieving them.



High-quality UX can no longer be viewed as optional

As the world continues to advance and people increasingly rely on the power of analytics in their decision making, organizations must advocate for and prioritize high-quality UX for their employees. Better UX leads to increased productivity and reduced resource waste, ensuring that organizations are making the most of their data. □



# Surprising Danger to Water Supply



by **Meredith Galante**,  
Contributing Writer

*Consumers have grown accustomed to online hacks that affect credit cards or personal information, but after a recent hack of a Florida's town's [water supply](#) and a [Texas gas line](#), a new fear has arisen...as well as a new frontier to protect.*

In 2021, 12% of all cybersecurity attacks were focused on energy and utilities, according to [Cobalt](#).

Cybersecurity experts have long warned that insecure remote work software presents a significant source of weakness vulnerable to hacking. Hacking utilities can be inconvenient at best or dangerous and deadly at worst.

Technology will only continue to control more of the utility space, but what are the risks?

## Recent hackings pose public health issues

Earlier this year, hackers jeopardized the water supply of Oldsmar, Florida, gaining access to a water treatment facility by using dormant remote access software. In simpler terms, the bad guys weren't even there when they took control of the precious water supply.

According to CNN, the treatment plant utilized multiple computers running on an aging version of Microsoft Windows to help monitor the facility remotely. All of the computers shared a single password to manage the plant.

The hackers briefly changed the levels of [lye](#) in the drinking water—which could have poisoned the drinking water of thousands of Florida residents.

Sheriff Bob Gualtieri of Pinellas County said in a press conference following the event that the level of sodium hydroxide—the main ingredient in drain cleaner—was changed from 100 parts per million to 11,100 parts per million. If the 15,000 residents of Oldsmar drank the water at this level, they could have been poisoned.

"This is dangerous stuff," Mr. Gualtieri said. "It's a bad act. It's a bad actor. It's not just a little chlorine or a little fluoride—you're basically talking about lye."



The cyber breach lasted less than 5 minutes, and luckily the town averted danger.

In the past, "You had to get past the guards with the guns, the fences, the video cameras, all the physical security measures in order to get access," Eric Cole, a former CIA cybersecurity expert and author of the upcoming book *Cyber Crisis* told CNN. But 2020 forced the majority of Americans to work from home. "These systems were never designed for that purpose, and proper security was never put in place."

"I think what this shows us is it doesn't matter who you are, whether you're an individual, a small company or a large company, if you have vulnerabilities you're going to be discovered, and you are a target, and cybersecurity is your responsibility," Cole said.



Image credit: Andriy Blokhin—stock.adobe.com

## Hacked gas pipeline causes run on pumps

Colonial Pipeline, the largest petroleum pipeline between Texas and New York, temporarily needed to shutter its operations after a ransomware attack in early May.

The private company admitted a hacker held its data hostage and demanded ransom to return access.

A shutdown of the 5,500-mile pipeline was another example of how the United States' utilities face danger from cybersecurity breaches. The shutdown left airlines worried they'd be low on gas and average consumers sitting in line to ensure their gas tanks were filled.

"Even a temporary shutdown will likely drive already rising national retail gas prices over \$3 per gallon for the first time since 2014," Jay Hatfield, chief executive of Infrastructure Capital Management and an investor in natural gas and oil pipelines and storage, told The New York Times.

Within two days of the shutdown, the national average for a gallon of regular gasoline rose by 2 cents.

## What utilities can do to protect themselves from hackers

Siemens and the Ponemon Institute released a report in 2019 stating 56% of utilities faced a cyberattack that year. So, more than half have already been put at risk.

Regardless if the utility is a public entity or a privately-held company, updating the software the system runs on and regularly running pen-tests can help protect against hackers and cybersecurity breaches.

Many companies may feel pressured to move operations to cloud-based solutions to accommodate remote work, but it's essential not to migrate the data until it's secure.

Investing in software that monitors for breaches can also help ensure any hacks are detected and quickly stopped. □





# Leveraging Cannabis Analytics



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*The introduction of laws in many states permitting the cultivation, distribution, and consumption of cannabis products has spurred a massive influx of new cannabis-related businesses, and with it a massive amount of raw data. With 36 states now legalizing cannabis for either recreational or medical use (or both) and a new, cannabis-friendly administration, that number is only going to continue to grow. According to a report by [Grand View Research](#), the global market for marijuana is predicted to grow to an incredible \$70.6 billion by 2028. People can no longer deny the legitimacy and potential of the emerging industry, but how do entrepreneurs and rising companies navigate the messy and complex world of cannabis?*

The key, as with all large industries, is understanding and utilizing available data to enable fact-based decision making. For the first time in history, businesses have access to an incredible supply of raw data due to the sudden explosion of legal cannabis operations. With the high level of competition, low differentiation among products, lack of historical data, diverse and complex regulations, and heavy marketing expenses, it's critical that organizations learn how to use data to facilitate operations and produce actionable insights. Businesses must adopt the mindset that data is integral to decision-making at every level of the supply chain.

## Cultivation

The future and long-term sustainability of the cannabis industry depends directly on the success of its cultivators. As the suppliers and initial step of the cannabis supply-chain, cultivators must manage their inventory to reflect the demands of the market and ensure that their sellers have access to the products that consumers want. Managing an effective cultivating operation, optimizing sales, and satisfying regulations in place all but necessitates the implementation of actionable data analytics.

On the farm and in the greenhouse, analytics plays a critical role in managing environmental factors that are key to cultivation such as humidity, temperature, and pH. Additionally, by analyzing raw data and crossing it with results from other sources, [AI algorithms can identify the optimum growing conditions for any given strain](#). In an industry where even minute changes can have a significant effect on the resulting final product (and in turn, profits), it's critical that cultivators always have access to precise and reliable data.

Collecting data can come in many forms, from human observation to advanced IoT sensors. Modern outdoor growing operations use sophisticated equipment to make adjustments that reflect weather conditions, while indoor operations rely entirely on data measurement systems to ensure an optimal artificial growing environment. Furthermore, larger farms depend on automation to monitor their crops and manage their broader range of systems. Having access to real-time data during an equipment failure or environmental emergency can mean the difference between a successful harvest or a devastating accident.



## Distribution and delivery

Regardless of industry, the distribution and delivery side of a business [depends almost entirely on data to ensure that their product ends up in the right hands](#). As the middleman between suppliers and retail, distribution channels have many streams of data they're responsible for incorporating in their decision making. The logistical hurdles posed by the distribution side of most industries are only exacerbated by the complex regulations and short shelf-life surrounding cannabis.

Efficient data use in the cannabis industry plays a critical role in optimizing schedules, coordinating operations between growing facilities and dispensaries, maximizing cargo-loads, adhering to regulations, and minimizing risks across the value chain. Additionally, cannabis is unlike many other industries due to its fast-paced nature and rapidly changing competitive landscape, forcing businesses to constantly update their supply-chain. Such sudden shifts require real-time data and insights to ensure that businesses can adapt to the market in a timely manner.





## Sales

The recent eruption of cannabis into the mainstream has [driven a surge in new products, new businesses, new locations, and even new consumers](#). The huge amount of potential in the industry also means a huge amount of data, and it's critical that businesses utilize this data to keep up with market trends.

Recent advances in AI play a huge role in tracking consumer trends and identifying purchasing habits. By analyzing raw data originating from sales tracking systems, point-of-sales systems, consumer websites, applications, and social media, businesses can paint a better picture of their targeted audience and develop strategies to reach them. This ensures that organizations aren't wasting time and resources on low-value products and that their inventory reflects market demand.

Furthermore, data is critical to tracking sales team performance and establishing benchmarks. Sales departments are responsible for generating revenue for the company, and poor data use can mean substantial losses in potential profits.

## Marketing

Just like with sales, marketing teams rely on data input from many channels to learn about consumer behavior. In the modern age, branding, public image, and even product naming plays a significant role in consumer purchasing habits. For this reason, cannabis businesses need to leverage effective analytics in identifying how to best appeal to their targeted demographics.

Data collection methods have come a long way in the past few years, and new technological advances allow analysts to pinpoint with greater accuracy which of their marketing strategies are working and which aren't.

Data on consumer behavior is also key to expanding into newer segments and reaching new customers. Predictive analytics provides businesses with the information necessary to plan ahead and create long-term marketing strategies that reflect the evolving demographics.



## Regulatory compliance

The greatest obstacle to starting a business in the cannabis industry is, without a doubt, adhering to the many [local, state, and national regulations surrounding cannabis cultivation and distribution](#). Although the cannabis legalization movement has come far since it first gained traction in 1996, many states still maintain strict requirements in terms of product quality and distribution. Currently, most of these requirements are monitored and enforced through data collection systems.

By employing analytics, organizations can automate their data submission process and ensure that they are compliant with regulatory measures. This not only reduces the time wasted by employees on manual labor, but also reduces the risk of human error and oversight. In such a strict and regulated industry, it's critical that businesses always have access to accurate and reliable real-time data.

## Learn more

Success in the cannabis industry will require the implementation of advanced technologies that can harness the potential of businesses' data and facilitate complex operations. [□](#)

**To learn more about what analytics can do for your cannabis organization, check out Dimensional Insight's new cannabis website.**

**[CLICK HERE](#)**



# Healthcare Analytic Trends

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*As we transition to 2022 and look to the future, healthcare organizations must reflect on the trends of the passing year to better understand the direction that the industry is headed. Especially with the substantial changes prompted by the onset of COVID-19, many of these trends will have enduring implications for the healthcare industry for years to come.*

In their recent release of [The State of BI, Data, and Analytics in Healthcare in 2021 Research Insight](#), Dresner Advisory Services dives into some of the biggest developments in healthcare analytics of the past year. Success in the future requires that businesses be diligent now about the current trends driving healthcare technology.

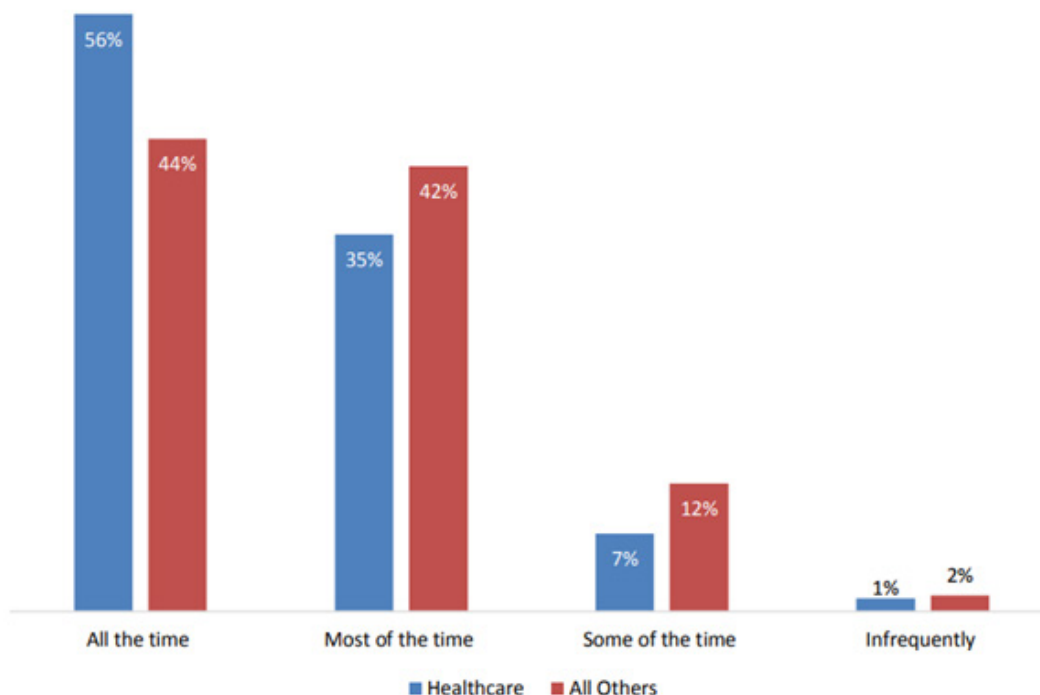
## More data-driven than other industries

Due to the implications that proper decision-making has when it comes to patient health, it's not particularly surprising that healthcare places a great emphasis on proper data usage than other industries. When human lives are on the line, there is no room for guesswork or mistakes.

According to the research insight, overall technology adoption and data literacy in healthcare exceeds other industries. Additionally, although the application of business intelligence in decision-making was already wide-spread within the industry leading up to the pandemic, the emergence of COVID-19 fueled major advances in how data was utilized in achieving outcomes.

Dresner found that analytics saw increased use at other functional levels, especially in operations and finance. Organizations made significant investments into streamlining claims processing and ensuring that hospitals had sufficient resources to properly care for the sudden increase in patient-load.

### Data-Driven Decision-Making

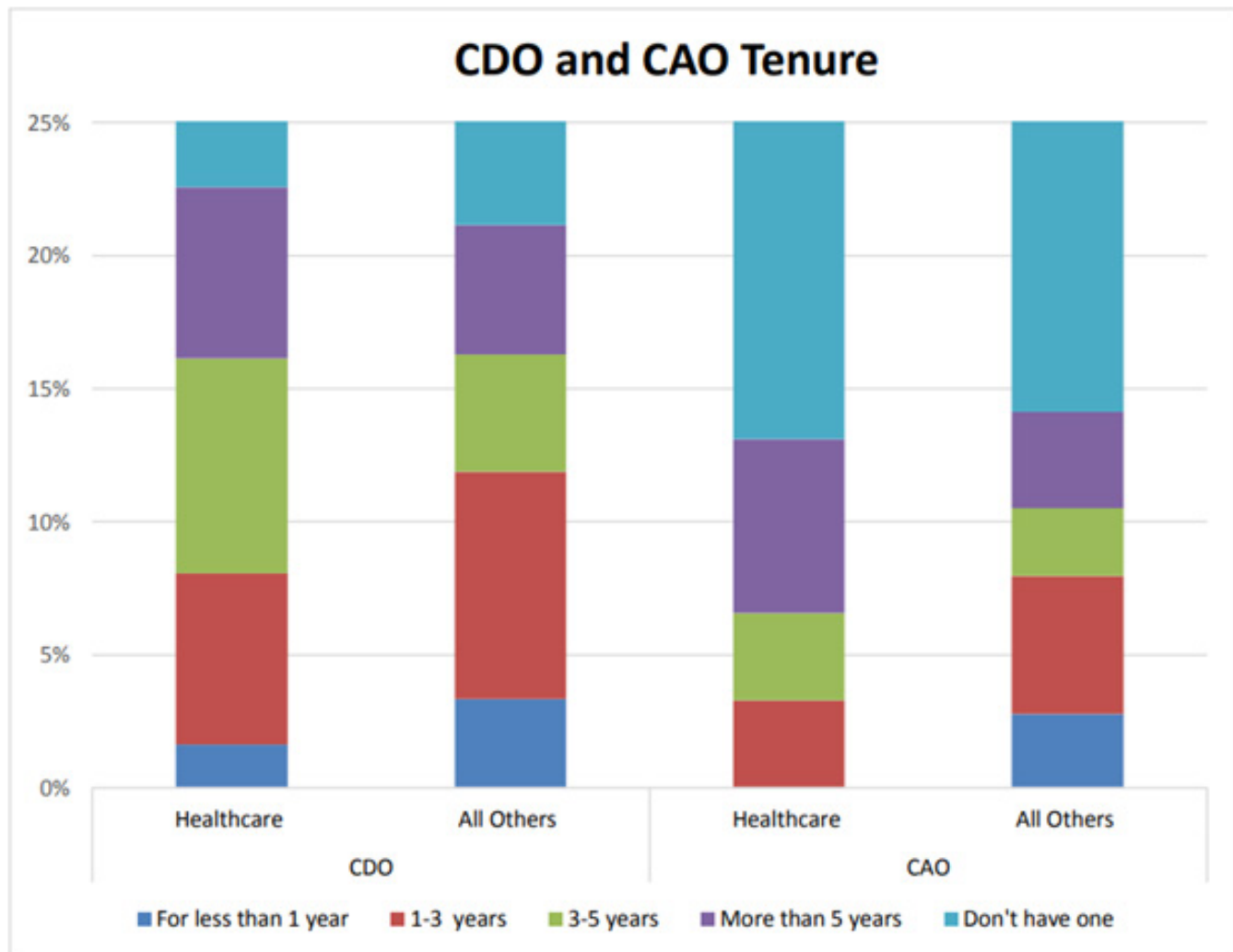


Source: Dresner Advisory Services

## Leadership advocacy is key

In most organizations, support for data-driven results usually starts at the top. In order to establish an environment where data is used in decision-making, senior management have to demonstrate their own trust and reliance on the data first. Implementing an executive role with decision-making abilities across multiple functions who can advocate for the application of data-driven results can encourage its use within other employees.

With this in mind, surprisingly few healthcare organizations actually possess a chief data officer (CDO) or chief administrative officer (CAO). According to Dresner, 77 percent of healthcare organizations lack a CDO, and 87 percent lack a CAO. Many healthcare organizations would benefit from working towards establishing a dedicated administrator responsible for managing and incorporating analytics within their company.



Source: Dresner Advisory Services



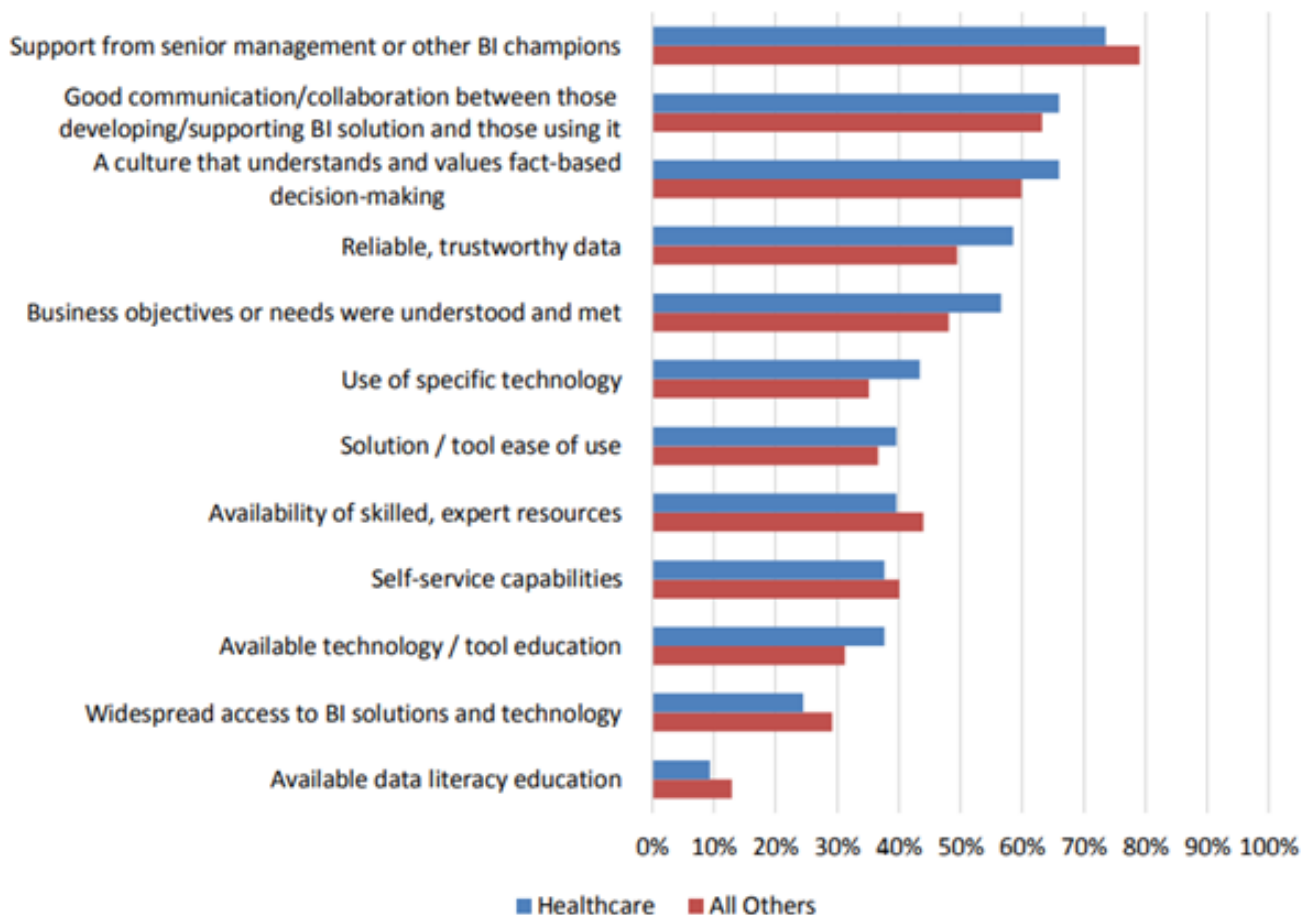
## Soft factors enable BI success

Although business intelligence itself is a technology, many of the elements responsible for its successful implementation are in fact soft factors. On top of support from upper leadership, Dresner found that success with business intelligence relies on a data-friendly work environment and good communication and collaboration.

One of the greatest obstacles to the successful implementation of analytics is garnering trust for the data and encouraging staff to use it in their day-to-day decision-making. Healthcare users are slow to adopt analytics for a variety of reasons, which can be anything from an aversion to unfamiliar technology to a workforce that is hesitant to share data between different departments or even other physicians.

Data-literacy programs can be implemented by organizations to encourage the use of data in decision-making and support better data governance. Better data governance within a single function or team can have wide-reaching implications for the organization as a whole and in turn enable other departments to make more informed decisions.

### Factors for BI Success

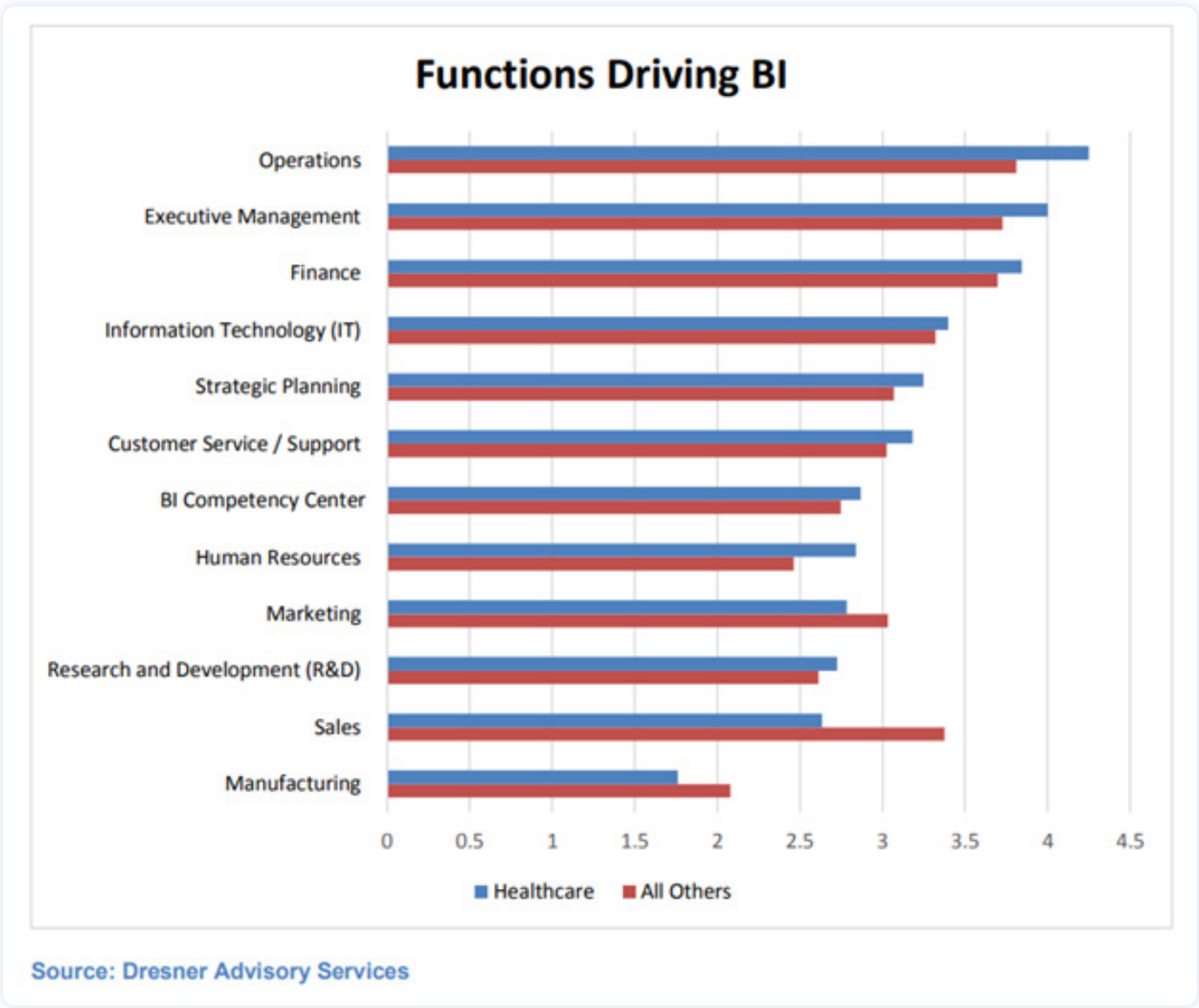


Source: Dresner Advisory Services

## Enterprise-wide data initiatives

Due to the high-stakes nature of the healthcare industry, healthcare organizations place particularly high emphasis on pursuing BI initiatives. According to Dresner, healthcare prioritizes all BI objectives higher than other industries, especially when it comes to decision making and improving operational efficiency.

Furthermore, Dresner also found that healthcare’s greatest difference from all other industries is their use of BI in achieving regulatory compliance, which is likely due to HIPAA and patient data-privacy requirements. Healthcare faces much stricter data reporting requirements compared to other industries and as a result exhibits a greater dependence on sophisticated and advanced BI tools.



### Learn more

The unique circumstances of the healthcare industry means hospitals and other providers have novel challenges that require their own specialized approach. Making the most of your organization’s BI is all about having the right mindset and the right tools. ☐

To learn more about the top healthcare BI trends, check out Dresner’s full research insight

[HERE](#)



# Upcoming Events

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## HIMSS 22

*Orlando, FL | March 14-18, 2022 | Booth #949*

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