DataArt

"Brave New World":

Information Technology in the Post-COVID Environment

The coronavirus pandemic is perhaps the most far-reaching event in modern memory. Around the globe, long months of lockdown have touched every aspect of life: how we work, how we shop, how we communicate, and how we occupy ourselves when almost every recreational activity outside the home has been forbidden.

As countries around the world start to reopen gradually, normal isn't quite what it used to be. Social distancing and masks are the order of the day, and businesses are operating during limited hours, and with new policies to keep employees and consumers safe. Many industries will see far-reaching changes as a result of the pandemic. For example, now that remote work on a broad scale has proved successful, many employees are likely to continue working remotely. Some technologies will receive a huge boost, while others are no longer relevant. Some industries will suffer while others leverage new opportunities created by COVID-19. This paper will examine the changes our IT professionals anticipate on an industry-by-industry basis.

Content

Travel

Broadly speaking, the travel industry was in cardiac arrest during the pandemic. Most sources point to 50-60% unemployment in the principal segments of the industry. Hotel occupancy rates dropped nearly 95% globally within just a few weeks. Airline capacity dropped by nearly 80% at the peak of the quarantine. Many transaction-based companies in the distribution supply chain cut staff to a "keep the lights on" level. Travel companies were literally flooded with cancellation requests, and processing times for refunds and cancellations spiked to 30-90 days.

Creating a touchless experience

Once the COVID crisis has passed, we believe that travel companies will employ IT solutions to establish scalable operations and implement "safety" measures that will resonate with the public. Contactless tech will proliferate; facial recognition, voice activation, and digital check-in will be the operational baseline. Human interface controlled operational barriers could extend

the time it takes to return to 2019 volume and capacity. The convergence of MedTech and TravelTech will be a trend to watch for.

Digital momentum will build exponentially as technology in companies across the industry leapfrogs previous obstacles to fully embrace digital tech advantages. Digital will play a part in crowd control and limit service volume according to capacity ratios. Digital technology will also serve to better alert "controllers" to potential risks in areas like corporate duty of care or cleaning and maintenance. Some industry specific movements will tap into this momentum like NDC (New Distribution Capability).

Technologies that enable organizations to engage with their customers in a hugely scalable way, like chat bots and omni-channel communications, will increase.

Travel and hospitality operators that can't compete with the new standards of cleanliness and hygiene that have been created by the strongest companies, will lose out or combine to create other sanitization benchmarks. Software to track and record touch-based self-service kiosks will be eliminated or replaced with contactless options.

Anything that requires "touch" will either be moved onto customer devices or employ voice-activated interfaces. Businesses will move away from remote controls, key cards, self-service kiosks, elevator buttons, light switches and the like, and will replace or augment them with app driven options, voice driven interfaces, presence sensors, and similar technologies.

Productivity will be the priority

"Productivity enhancers" will be prioritized over "sales enhancers". Local (less than a 400-mile drive) experiences and staycations will increase, creating an opportunity for local, smaller attractions able to market themselves together with others as mini-destinations.

Mobile and contactless technology will be the primary tools for engaging with the customer for the end-to-end travel shopping and fulfillment experience.

Cleaning technologies will be added almost universally over time. However, change will be slow due to the capital expenditures required. UV treatment systems for escalator rails, elevators, hotel rooms, bathrooms, aircraft, and cars will be used. Prices will come down with volume and we will see UV cleaning and purification technologies become pervasive over time.

Technologies will be developed to count occupants and determine whether spaces are within occupancy limits and proactively report violations. Companies may have an obligation to prove that they are in compliance with social distancing. With everything and everyone going online / digital, we will see a surge of security breaches, fraud, and hacking. Soon IT security will be at the top of everyone's agenda.

The business model for many hospitality and travel companies will change quite dramatically – from airlines flying under capacity to restaurants with fewer tables to create distance. Increased cleaning costs will be a factor and these businesses will have to find other ways to reduce costs and become more efficient. As a consequence, they'll focus on productivity enhancing technology. Virtual events, technology virtualization, and home delivery services will likely enjoy significant growth. Smaller operators, badly hit by the downturn in consumer spending, will close permanently or be acquired by larger competitors. The use of Intelligent Automation (IA) technologies will accelerate as companies strive for greater operational efficiencies.

Industries will consolidate, and consumers will relinquish more personal data

Industry consolidation is likely, and the cash rich dominant players will horizontally and vertically integrate to create more upstream and downstream revenue opportunities. Data and analytics will be leveraged to develop a more personalized customer experience with more opportunities for upselling and cross-selling.

Health screening and immunization data are likely to be integrated into customs and border control processes as well as airport security screening processes. Contact tracing technologies could end up being a boom for technologies and platforms benefiting from or requiring personalization. While there are privacy concerns aplenty, the introduction of contact tracing could lead to some new opt-in models in which consumers give up more data about themselves and those with whom they have been in contact in return for some form of benefit. This may be the case even if that benefit is not personal and is for the greater good – public health data, environmental data, etc.

Finance

Realistically speaking, it's challenging to predict the conditions businesses will face in the post-COVID environment. Certainly, economic uncertainty is at its peak. However, anecdotal evidence suggests, surprisingly, that executive stress levels have declined. Although senior executives report greater challenges, most also note rising productivity. By eliminating commuting and the many interruptions that occur during the workday in an office, COVID has created 1-3 hours of extra time in the daily schedule. People use this time to acquire new knowledge, spend more time with loved ones and generally reduce stress, which improves cognitive function. Executives are using new knowledge to revisit past decisions and create new visions of the future. At DataArt, we see how creative thinking is emerging among our clients, who are constructing "2.0" visions of their systems and proactively seeking technology consulting.

But what does this really mean? Business and technology leaders are becoming more open to transformations. COVID's "stress test" has "visualized" the industry's characteristics, values, and weaknesses. This combines with new knowledge to create a stronger idea of what is needed to drive business forward.

Institutional business has experienced less impact than the retail segment

Finance has embraced computers, electronic trading, and digitalization for quite some time, so the virus didn't impact it as severely as travel and hospitality or live sports and entertainment. The companies most negatively affected are retail banks and wealth managers who have lost access to their clients. The evident winners are distressed asset managers who can use this opportunity to buy undervalued companies and profit from the recovery when it arrives. Initially, work-from-home orders caused some chaos, but all of our asset management clients have since recovered and successfully transitioned to a fully remote mode of operations. Needless to say, DataArt teams have continued to interact with clients remotely, so for us, the switch was business as usual.

Accelerated digital transformation

Microsoft CEO Satya Nadella, famously said, "We've seen two years' worth of digital transformation in two months." This is the most accurate description of the current environment. DataArt clients have doubled the push toward digitalization and self-service products. Those who still have onsite data centers are accelerating their cloud adoption programs. One of the exciting consequences of an accelerated switch to remote work is the increased interest in enterprise knowledge discovery tools. Companies are sitting on a treasure trove of data about their customers and their businesses. Previously, if you needed to know something, you casually questioned the right people during routine office interactions. Working remotely, the ability to contact other people is limited, and a digital self-service interface of all enterprise data starts to make a lot of sense.

The remote work genie is out of the bottle for good

Remote work is here to stay as firms face a shortage of office space caused by social distancing requirements. Many businesses have already announced that employees should remain at home until the end of the year. The option to work remotely permanently is no longer exotic. The only way to stay accessible while working from home is to adopt modern online communication tools like Microsoft Teams or Zoom. Inevitably, the range of situations in which instant messaging is acceptable has broadened significantly, which in turn should expand the use of conversational interfaces and omnichannel solutions. For example, clients would no longer alternate between calling or emailing the bank to issue a secure instruction and then log onto online banking to see the results. Rapidly maturing communication tools would blend into online banking, offering a single interface for everything.

Legacy business processes will go the way of the dinosaurs

The COVID-19 crisis will have profound implications on IT priorities in 2020 and beyond. It will turbo-charge and accelerate the digital transformation that has been happening for the better part of the last decade. Many of the legacy business processes that rely on paper documents and person-to-person interactions will need to be re-imagined and transformed to work in the remote and distributed environment. We should expect that organizations will put an even greater emphasis on digitizing interactions with customers, suppliers, partners and other external stakeholders. Intelligent automation technologies will play an important role in this transformation, but the focus will shift from automating individual tasks or automating processes "as-is" to business process reengineering. Organizations will need to learn how to

engage, manage and help their employees grow in this environment. A lot of focus will be placed on team management and collaboration tools, and entirely new approaches will need to be invented to build distributed teams that not only work effectively for existing employees but are also effective at onboarding and making new employees productive. With more work happening outside of the office, security will be of paramount importance. Some jobs in regulated industries that must be done in the office will have to move to the remote working model, with many implications for security and compliance.

Insurance

Customer behavior has changed, with consumers traveling and spending less. In response, insurance companies have begun to introduce usage-based auto insurance, where customers pay less if they drive less. Because of the economic impact from the pandemic, new auto sales have dropped dramatically, and consumers may switch from buying new cars to used vehicles. As a consequence, demand for auto warranty insurance could increase. With consumers traveling less and driving shorter distances, electric vehicles are also likely to become more popular as prices for electric cars are dropping. Electric vehicles entail new risk exposures that are yet to be fully evaluated by insurance companies.

With face to face meetings impossible, interactions with customers have also been affected. Agents and adjusters are finding their work more challenging under the circumstances. Call centers are also feeling the impact, as health concerns force a scaling back.

Because human interaction patterns have changed and it is almost impossible to meet face to face at the moment, it is difficult to underestimate the value of digitalization. Companies that invested in digital innovations to improve the customer experience will certainly benefit. However, it's still not too late to invest. For example, companies that delayed modernizing core systems should start to do so now, given the changing needs in the market.

It is obvious that insurance companies must innovate and improve the user experience and automate underwriting and policy issuance as well as billing and claims adjustment. Since

claims adjustment has become a problem due to the inability to make in-person inspections, there will be huge demand for virtual inspections using cell phones. It will also be more expensive to operation giant call centers in the "new normal," so companies will need to move services that require human interaction online. Customers will be able to buy policies online, agents will have access to web-based client interfaces, and adjusters will be able to schedule virtual inspections.

Healthcare

The healthcare industry has obviously been more impacted by COVID than any other sector. With hospitals overwhelmed by COVID patient care and lacking supplies, all patients not severely ill or experiencing life threatening injuries have been forced to postpone procedures or seek care remotely. Telehealth and virtual health screenings are on the rise and this will likely continue post-COVID. Although demand for telehealth will likely drop when restrictions are softened, it will unlikely ever return to the pre-COVID level. While the technology has existed for a few years, people were reluctant to use it, largely because of habits developed over decades. However, the pandemic left no choice, and there was simply no offline option for many. Telehealth will never replace traditional visits in many situations, but there is no reason it can't replace many types of in-person visits. According to American Medical Association and Wellness Council of America, almost 75% of all doctor, urgent care, and ER visits "are either unnecessary or could be handled safely and effectively over the phone or video". The pandemic forced a significant increase in telehealth adoption, but online pharmacies are also on the rise. Why going to a brick-and-mortar store and face exposure to COVID when you can call your doctor and ask for prescriptions through Capsule or PillPack?

Health screening will become a prerequisite for travel

While pandemic related changes in health screening will certainly impact the patient experience, be it the online check-in process, physical, or in-patient admission, the greatest impact will be from travel-related health screening. There is no doubt that this will become a part of the standard airport screening process across the world. Naturally, the speed of adoption will vary, depending on the jurisdiction, but it should be expedited since some degree of global coordination is unavoidable (think of IATA). The specific implementation that will be considered the de facto standard is still up in the air. It may come in the form of a contactless temperature check, express blood tests at the airport, or a health passport, similar to that which CLEAR has just introduced. Regardless of the specifics, there will be substantial changes to our experiences as patients and travelers.

Mental health services can be offered virtually as well

Another segment of Telehealth is TelePsychiatry and virtual addiction services such as Monument. Between social isolation and excessively high unemployment that is approaching Great Depression levels, we will likely see a rise in the need for these kinds of mental health services. Unfortunately, there is also an elevated risk of alcoholism, drug addiction, depression, and suicide that is likely to last for some time to come.

Business-led innovation in response to global disruption

Businesses are taking the lead in many areas of innovation, and in the UK the government has even authorized extra funds for innovative ideas to help manage the COVID crisis. Governments are also relaxing and/or expediting the regulatory process applying to medical devices that could help high-risk COVID patients. Easing regulations will help make it possible to adopt new technologies and solutions more quickly.

The pandemic has created new opportunities and technologies

Telemedicine has exploded due to the pandemic and the popularity of this option has given rise to new applications of the medium. Wellness and fitness apps and mental health apps are springing up like mushrooms after a rainstorm. Telehealth will also make healthcare more affordable and accessible, particularly in remote regions, while AI-powered decision support will make telemedicine more accurate.

AI-powered solutions have been developed to help doctors perform COVID triage. Pandemic modeling has made a quantum leap in sophistication and can be used to help predict how disease will spread, how various regions will be impacted, and more. It is a vital tool in informing decisions by governments and public health officials.

Retail

Retailers lacking an online presence have been the most severely impacted by COVID, and in order to survive they will have to integrate an omnichannel strategy that reflects the shift to online shopping. This can entail a considerable investment, and many will need to consider a mixed strategy. The crisis has also increased the value of engaging with customers and differentiation through services, such as online delivery. A rapid and significant increase in demand for certain retailers (3-5 times high season volume) revealed the fragility of the supply chain. Standard demand projections and just-in-time deliveries resulted in empty shelves. Some retailers were even forced to shut down their websites to lack of merchandise. Companies are also realizing that they need to focus on developing online strategies to build customer loyalty.

Changing consumer behavior

The lockdown has changed consumer behavior and consumers will spend less due to a variety of reasons, from economic pressure to a reassessment of values. As online shopping increases, foot traffic in brick and mortar stores will decline and retailers will have to adjust to this change.

Shifting strategies

Retailers will be forced to rethink their strategies, adapting to new circumstances and becoming more flexible. IT strategy will also focus on agility, with companies poised to make changes quickly and adopt new technologies rapidly as necessary. Firms will introduce combined fulfillment centers, with delivery from warehouses and the closest stores. Retailers will also cement partnerships with third parties for enhanced delivery capabilities. DataArt recently conducted a survey, which found 40 % of respondents will transform 50% of their businesses, while 33% will change their businesses completely and 11% will transform their core business, while only 9% will maintain the status quo.

Digital solutions will enhance the customer experience

With fewer brick and mortar store and fewer "offline" customers, retailers will look for ways to focus on the individual shopper. Customers will be targeted with personalized and exclusive merchandise, and offered every option to make the experience appealing – same-day delivery, easy returns, etc. Fulfillment and rapid delivery will be a point of emphasis. Brick and mortar locations will also benefit from IT solutions such as virtual lines, AR navigation, virtual fitting and more. Given the necessity of social distancing, retailers will also employ contactless payment and fulfillment. Self-service checkout and self-scanning will also become standard technologies. Every retailer will need to offer online integration and using data insights to enhance the customer experience will gain traction. RFID will allow for better inventory management, which will ensure that customers are not frustrated by merchandise being out-of-stock.

New opportunities for retailers

The pandemic has forced consumers to make many changes in their behavior, and one ancillary benefit is that people are becoming more open to trying new services that they might otherwise have shown little interest in. Local businesses are likely to benefit for several reasons. First, consumers are actively making efforts to support small, local businesses as they have been hard hit by the pandemic. Moreover, vulnerabilities in the global supply chain have demonstrated that small businesses selling locally produced goods can be more dependable in certain situations. Naturally, businesses that have a strong online presence and offer delivery will have the advantage over businesses operating only a physical store.

Media

No industry has been left unscathed by the COVID-19 pandemic, and media & entertainment is no exception, though the effects vary substantially across subsectors. While live music and sports have been completely shut down alongside other in-person events, video streaming and gaming sectors are booming. Certain print and digital subscriptions have also experienced surges in the last few months. Yet, all media & entertainment sub-sectors face the same uncertainty, with many struggling to monetize digital traffic and produce new content or having to reinvent their businesses entirely to adjust to the new reality.

New technologies will be necessary to keep businesses relevant

According to a recent EY survey, leading media and entertainment executives expect improving productivity and exercising cost-control to be an IT priority as the world gradually moves into the new normal. Process automation will be one of the main drivers short-term. At the same time, the industry must accelerate the transformation and adoption of new technologies and new business models to remain relevant in the long-term. Cloud, AI, and 5G will be technology drivers behind the M&E industry advancement in the digital ecosystem.

We also see growing concerns over data privacy as governments need greater access to personal data to counter the spread of Covid-19 and the threat of future viruses. Google and Apple recently partnered to develop a contact tracing platform using Bluetooth technology to help contain the spread of the virus, which has raised privacy concerns. Demand for data privacy and security services will grow in response to these concerns.

Demand for in-home entertainment will shape the consumer market

Greater demand for in-home entertainment will continue to shape the consumer market even after the lockdown restrictions are lifted. In-person entertainment such as movie theatres, theme parks, galleries, and museums will have to augment experiences with digital features.

The crisis has had a significant effect in de-stigmatizing virtual life and building trust in technology among consumers. Millions of consumers have tried online grocery shopping for the first time, many of whom would never have done so were it not for Covid-19. They have

discovered it not only works well but is also highly convenient. The experience may very well alter their grocery buying habits after Covid-19. Similarly, providers and innovators of virtual experiences are seeing renewed interest in their services from consumers across the music, sports and art industries. This will in turn stimulate new thinking, business models and practices in M&E industries.

Touchless service is key

We may see a significant decline in touch technologies (except personal devices), which will be replaced by touchless image recognition tech. Services and any group experiences or gatherings obviously are, and will be, affected. Concerts, sports events, conferences, museums, galleries, theme parks, movie theatres, restaurants, clubs, live event venues – and the entire array of vendors who served these segments, will feel the impact. Will they die out or move into the digital realm? It remains to be seen.

Streaming and virtual technologies will gain ground

Video streaming, including live streaming, will be in higher demand than ever, and the rise of user-generated content will continue to surge. We already saw Hollywood studios move releases from the big screen to streaming platforms, or at least remove the windows between the theatrical and digital release. We expect this trend to continue in the post-COVID reality.

More M&E businesses are adopting immersive and virtual technologies, either striving to augment in-person experiences or moving completely into the digital sphere. From virtual concerts to virtual showrooms for digital arts, the move into VR was slow before the pandemic but will likely accelerate in the near future.

Accelerated opportunities for digital service providers

What this pandemic has demonstrated is how vital digital services are for internal business processes. The collective lockdown and the need for social distancing created massive opportunities for virtual production and collaboration tools. For example, the demand for web-conferencing and live streaming platforms went through the roof. A major shift to remote operations will continue to change the way creative industries work. There's no doubt that we will see more technology developments in remote engagement and collaboration.

About DataArt

DataArt is a global software engineering firm that takes a uniquely human approach to solving problems. With over 20 years of experience, teams of highly-trained engineers around the world, and deep industry sector knowledge, we deliver high-value, high-quality solutions that our clients depend on, and lifetime partnerships they believe in.

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