

# The Power of AI in Healthcare

It is no doubt that the usage of natural language processing and machine learning has transformed the way healthcare is delivered. By analyzing and interpreting massive amounts of data, AI has helped doctors and researchers make better decisions. Decisions for diagnosis of diseases, management of clinical data or patient information, creation of pain management systems, the discovery of new drugs, and even treatment of ailments. AI has dug its roots so deep down in healthcare that there is a company, **Insilico**, that uses deep learning and AI to help escape the fate of aging. Having advanced to this level with technology still doesn't guarantee a full take-over of human-managed systems by artificial intelligence. Human input is the nucleus of AI.

In a global crisis such as the COVID-19, the most cardinal application of Artificial

Intelligence is to facilitate researchers to unearth a vaccine at the earliest. Perfect annotations are required to achieve this and it can only be provided by humans. Even the validation of discoveries needs the intervention of humans.



It is now clearly visible around the world that countries that were aware of COVID-19 were better prepared than others to tackle and control the spread of the pandemic. **Bluedot**, a Canadian AI startup that was born in the time of SARS, spotted COVID-19 nine days before the World Health Organization released a statement about the same. The company tracks, locates and conceptualizes the spread of infectious diseases using big data. This prediction is all based on the data that it collects and all this data is human recorded. The collection of high-quality data is one of the biggest challenges that face this industry and human support for this, is inevitable.

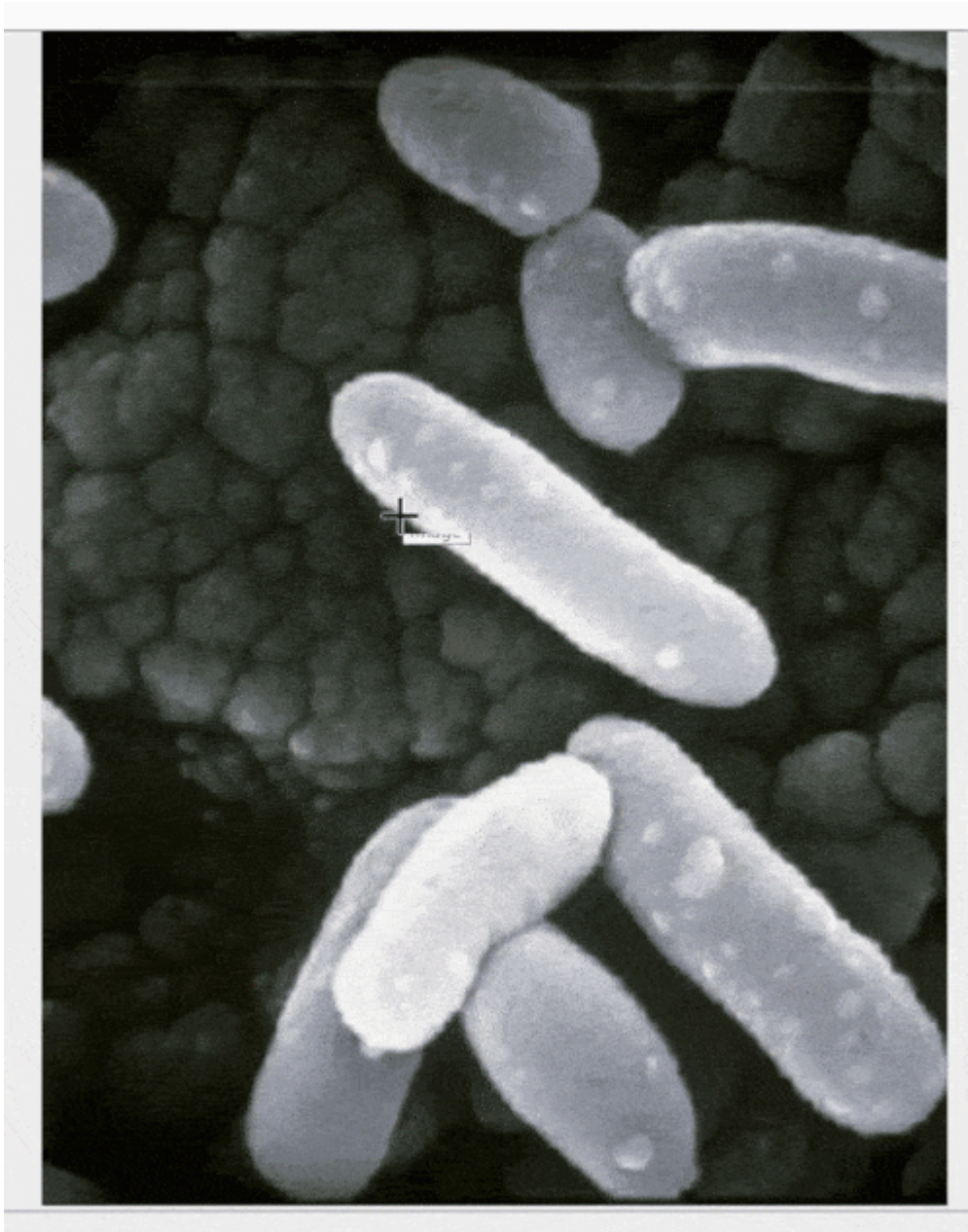
A recent [McKinsey](#) review predicted healthcare as one of the top 5 industries of growth for Artificial Intelligence. Automating and operationalizing health-care access, using big data to track the impact of a virus around the globe, effective screening systems are just some of the major AI involvements. It is said that AI is likely to be the best thing or the worst thing to happen to humanity. But one thing is sure, the path that it will follow will be determined by mankind.

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## Data Annotators: A Doctor's Best Friends





Imagine an algorithm that detects the presence of the COVID-19 virus through a lung scan? If this technology was readily available all over the world, then the way we dealt with this pandemic would have looked dramatically different. The good news is, this is a possibility in the near future as technology and artificial intelligence penetrate the healthcare world.

Medical images account for at least **90%** of all medical data today. They are by far the largest and fastest-growing data source in the healthcare industry and this voluminous amount of data poses equally large challenges for diagnosis. Having to deal with these data adds a tremendous amount of stress to medical workers,

patients, and healthcare systems. Well-designed technology can significantly reduce the time taken to arrive at diagnosis, improving health outcomes and in some cases, saving lives.

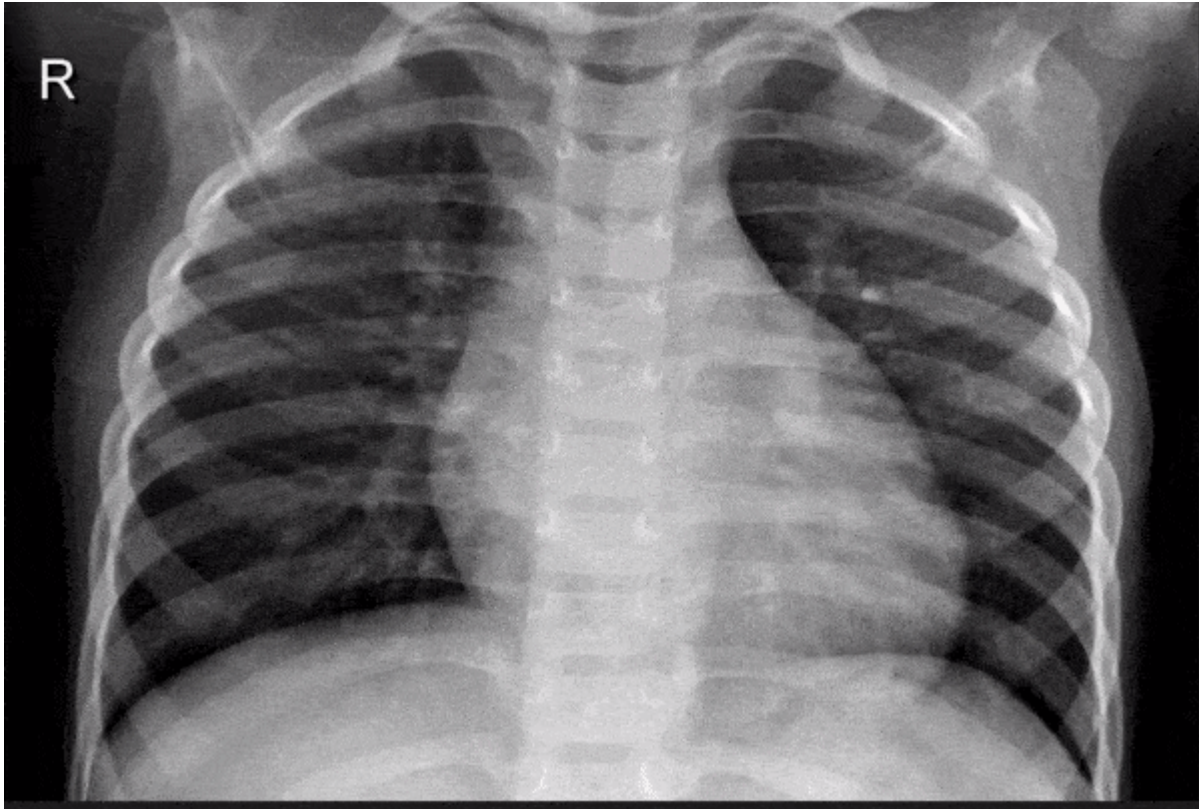
Diagnosis is a critical element in the care of many patients. Achieving quick and accurate diagnosis of disease is crucial to patient outcomes, and ensures that patients get timely access to the treatments they need. For physicians, a faster diagnosis means more time spent treating and caring for their patients. However, in hospitals around the world, medical diagnosis times can drag on as physicians struggle to acquire necessary testing and information. In these cases, Artificial Intelligence and Machine Learning can serve as a helpful tool. **Research** increasingly shows the many ways that artificial intelligence can aid doctors and healthcare systems throughout the patient cycle, from helping detect and classify diseases using medical scans, to aiding in the selection of a treatment course.

## **Enable Algorithms to Read Scans through Data Annotation**

**The Medical Futurist** claims that data annotators are the unsung heroes of artificial intelligence development. Though drawing lines and deciphering pictures might not sound complex, the scale of data to be annotated and the lack of experts available to do so poses a tough challenge. But successful adoption of training algorithms allow physicians and other healthcare workers to focus on the servicing and caring rather than documenting.

IndiVillage has worked with multiple healthcare organizations looking to improve their AI technology to aid in accurate, timely diagnosis of diseases, such as annotating lungs in chest X-rays. In this case, we annotated medical scans of lung nodules to identify anomalies and feed the annotated data back into their system's algorithm. Using pixel segmentation to annotate lung scans, we effectively train their AI system. Our team of annotation experts quickly acquainted themselves

with the client's specific requirements and received training on the anatomy of the human lung and varying types of anomalies that arise in lung scans. Our team generally begins work by identifying abnormalities, looking at approximately 400 images over a three month period. Each image is studied and accurately labelled to create high-quality training data to feed the client's algorithms.



IndiVillage's efforts have aided in training data that the client utilized in their AI technology for faster detection of pulmonary abnormalities, thus reducing overall diagnosis time. This has allowed doctors to focus more on treating the patients than being absorbed in reading a multitude of reports.

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# **Five reasons to integrate AI into your Healthcare Business Now**

Artificial Intelligence has now set the foundation for future growth in almost all industries, and healthcare is no different. Through Computer Vision and Machine Learning, algorithms are being trained to execute to perfection - annotation of images, videos, text, and data. But the delicacy of this field and its direct influence on human life, demands faultless performance. While there is constant research undergoing with these technologies, the best way to adapt to AI is to ease into practical usage which is done by taking small steps before establishing it in a large manner. Additionally, training algorithms with continuous data is what helps attain accurate automation, and hence, starting early is always

advantageous. Read along to find five reasons why you should consider integrating Artificial Intelligence into your healthcare business now!

## End To Endless Documentation

An alarming fact is that **86%** of the mistakes made in the healthcare industry are administrative. If that isn't unnerving, another study by **techceocouncil** stated that three out of every ten tests are reordered because the results cannot be found and patient charts are missing 30% of the time. The stress on proper maintenance of electronic health records could not have a higher priority. AI has the capability to handle unprecedented amounts of data in real-time while eradicating the possibility of human errors and also reducing the manpower needed to maintain these resources.





# Medical Image Annotation

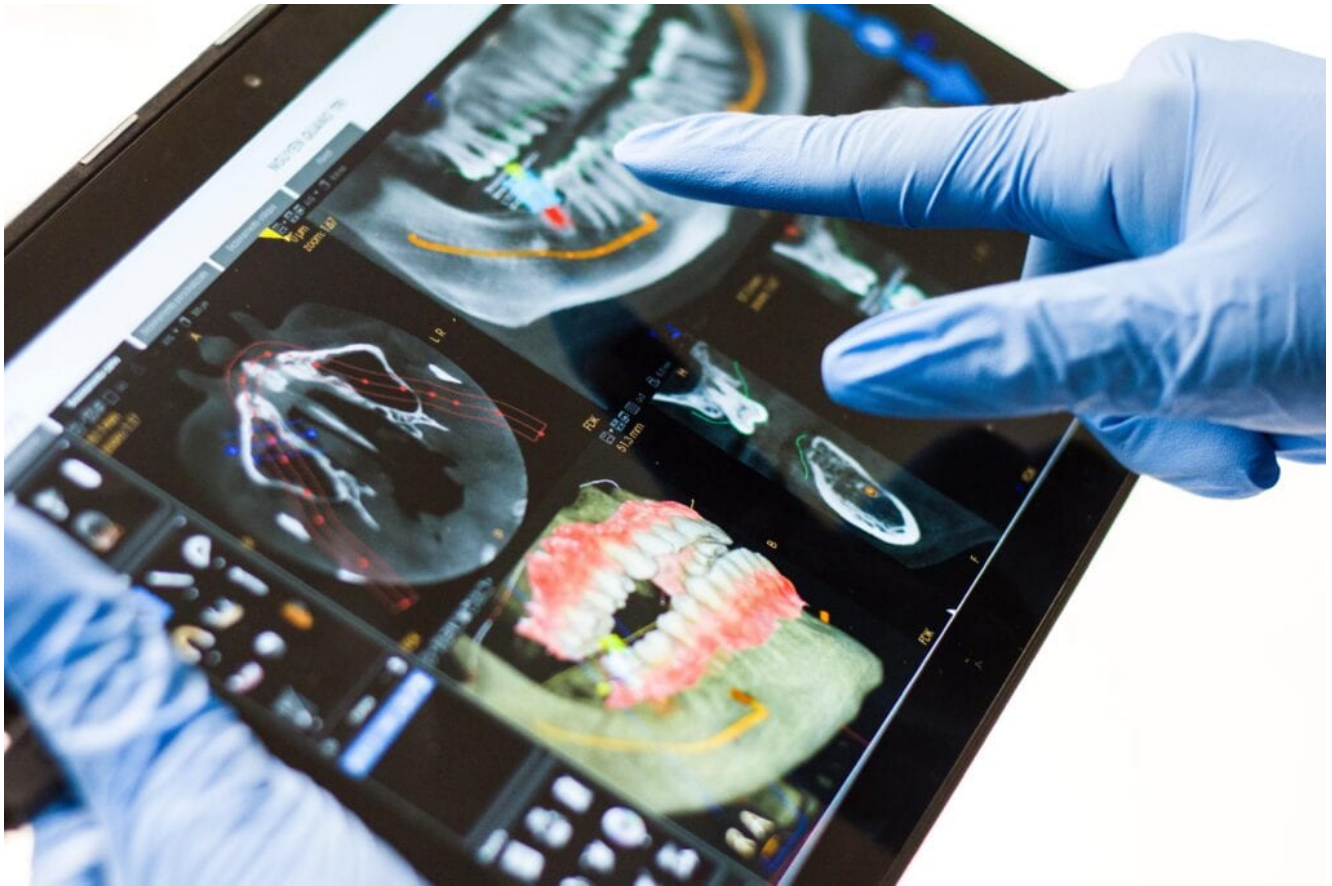
Enabling algorithms to read scans through data annotation is one of the most commonly seen applications of Artificial Intelligence. CT Scans, Ultrasound, MRIs, and other scans are labeled by annotators for machine learning training. It helps in the early detection of anomalies in scans, speeding up the process to recovery, and allowing more time for patient care.

## AI-Assisted Diagnosis

The COVID-19 pandemic has given rise to remote operation of businesses and a world of opportunities in this arena of the healthcare sector. Providing remote access to 24/7 service on mobile phones with questions from patients establishes a groundwork of treatment. **Intelligent Virtual Assistant and Medical Virtual Assistant** collect details of patients such as patient history, insurance details, demographic information, and this helps increase patient engagement.

## Intelligent Medical Machinery

Robot-assisted surgeries were invented two decades ago and since then have been helping surgeons perform complex procedures with precision and accuracy. While smart devices are all around us in daily life, the impact of the same in healthcare is tremendous. An asthma monitoring machine, an AI-powered insulin pump, and an AI drill for ortho are some existing **examples**. It would be easier to start with smaller equipment and training the staff to be able to work on those before moving to high stake machinery.



## Save Time and Cut Costs in the Long Run

Both for the patient and the doctor, the adoption of AI in healthcare would eventually lead to affordability and efficiency after an initial investment. Predictive medical care, providing custom drug treatment, the discovery of drugs, automation of humdrum documentation, and access to remote delivery of medical assistance would create well-oiled healthcare providing organizations.

## Conclusion

The healthcare sector is being revolutionized by Artificial Intelligence, and only the ones who hop on the train will be able to reach the destination. In some form or another, AI is already a part of your business but what more can you do to ensure a stronger influence? If you'd like to know more, talk to us.



# **Prepare your E-Commerce Business for Q4**

When the entire world was forced to shut down due to a global pandemic, the spotlight steered towards the E-Commerce industry. These companies then



gained a once in a lifetime opportunity where consumers had to resort to online shopping for the most basic things. Though the businesses had to spare an initial amount to adapt to the situation, their unprecedented overall growth is now clearly visible in their profits. The world's largest online retailer, Amazon has recorded the **biggest profit** in 26 years of its existence, all thanks to COVID-19.

Q4 is a competitive and profitable time period for online retail companies as holiday season engulfs this quarter. Having worked with the E-Commerce Industry for a decade now, we at IndiVillage have first-hand experience in pre-sales data management for product listing and cataloguing and post-sales experience of client servicing using audio transcription and voice annotation. With this knowledge, we list below the key points E-Commerce businesses should keep in mind while preparing for this quarter.

## **Seller Verification is Crucial**

For all E-Commerce businesses that support third party sellers, then the first step to onboarding these sellers is verification of their credentials. Be it confirming the authorization certificates, trademark verifications or self-declaration certification for independent sellers. Ensuring that this process is well established within the company provides credibility for the entire E-Commerce business merely because the sellers would be validated. This exercise also builds a sense of trust within the consumer's mind and most importantly prevents fraudulent sellers from making their way into the organisation. For B2B organisations, we at IndiVillage verify each seller by their identity of brand owners, authorised distributors or independent dealers. Similarly, for B2C organisations like **Amazon Saheli** (Amazon's initiative to bring to the fore locally made products from women entrepreneurs in India), we verify the information that has been locally collected and create accounts for these sellers.



## Perfect Product Description and Cataloguing can go a long way

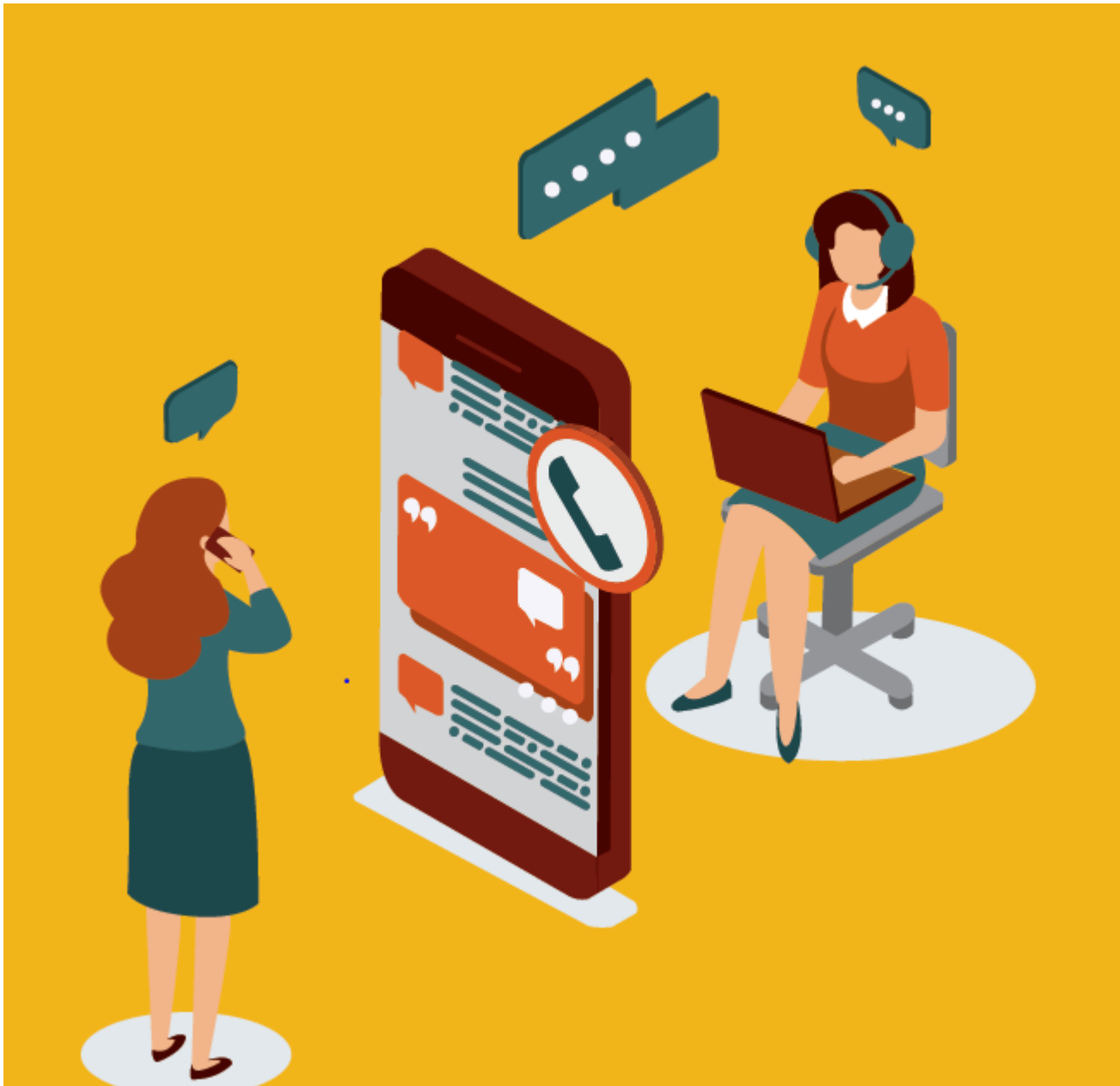
It has been noted that **23%** of product returns are due to inaccurate product descriptions or lack of high quality images. Buyers do not trust the product or the platform selling the product if the listings are not standardized. When you have too many products that have to catalogue, the workforce required to do the same is also high. Capturing and processing of data is what sets the base for any online marketplace. There has been an exponential growth of data in the past few years, and this is one of the main challenges that threatens the foundation of any E-Commerce business. In order to resolve this issue, we can help you in managing a

vast expanse of data while maintaining its quality like we have for organisations like **Amazon Prime Now**, **Rankona Mazon** and **Mercato**.

## **A Picture Is Worth A Thousand Words**

It is no hidden secret that a good picture holds a consumer's attention for longer than a bad one, **65%** of the time to be precise. Only after grabbing that attention, will the perfect product description come handy. As an E-Commerce business, the major disadvantage is not being able to provide the 'touch and feel' factor that consumers look for while shopping. The only way to overcome this is to have flawless images that follow the same standard. But it is practically impossible to have the same photographer or designer create all product images and this is where outsourcing this work to tech genies like IndiVillage will save the day. Following **GS1 Standards**, IndiVillage has worked on scores of images while product listing for multiple organisations, **Syndigo** being one amongst them.





## It Takes Months To Gain A Customer, Seconds To Lose One.

AI is increasingly being utilised to improve customer experience. In AI, **annotation** is a technique used to create training data for computer vision. This training data aids machines to interpret new data in accordance with the trained algorithm with reduced human intervention. Constant input of training data enhances the AI algorithm and makes it progressive. The applications of image and voice annotation is innumerable, one of them being to enhance customer experience. For example, IndiVillage provides audio annotation services to

**Swiggy**, India's largest food tech company that uses artificial intelligence to deliver food to consumers from selected restaurants. Dealing with millions of orders in a single day, their customer lines are constantly ringing. The challenges for a machine to decipher this data is with respect to the size of the data, the speed at which it is arriving and most importantly the complexity of the mix of languages that is used, given India's diversity. We at IndiVillage receive the data, and transcribe it, in both scripts of Hindi and English with timestamps leading to the millisecond. This helps eradicate the three major challenges, ensuring that the Swiggy team can now focus on enhancing the customer experience while we train the machine to understand it.

## Conclusion

Apart from the above mentioned points, there are many other factors to consider while planning for the holiday season. But these are specifically mentioned here because we at IndiVillage can take these challenges into our domain, leaving you to attend to other requirements. Want to know how we can help scale your E-Commerce business this quarter? Talk to us now!

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## **Doing Good is good for business**

The current pandemic has upended the economy, healthcare and generally all social systems on an unprecedented scale. It has also forced our collective attention to focus on the absolute essentials – connectedness, health and sustainability.

As the world wakes up to the need for inherent resilience driven by shared responsibility, it has become imperative to embed purpose and conscience into every aspect of civil society. Businesses, with their substantial role in driving progress, are set to be at the heart of this change. They can no longer afford to operate with a myopic focus on profitability or shareholder earnings. They must have a purpose – a broader vision – one built on driving stakeholder value through a model that balances priorities across people, profits and the planet. In line with



this understanding, a new wave of companies are starting to drive the next generation of business growth centred on the philosophy that profits and purpose can, and should, be interlinked. Very visible amongst these are certified B-Corporations.

B Corp certifications (the 'B' stands for beneficial), are issued by B Lab, a non-profit organisation headquartered in the US and awarded to companies based on a comprehensive assessment of their performance in five areas - governance, workers, environment, customers, and community. Certified B Corps are then required to integrate stakeholder governance into their articles of association, making operating with purpose essential to their business model. This is the new breed of business.



As a social enterprise with *Impact Sourcing* at the heart of our philosophy, IndiVillage is the first Indian ITES company to be certified as a B Corp. Our offices in rural India make a substantial impact on the lives of the local community by providing the local educated youth with full and productive

employment opportunities and uses its profits to foster greater community development. By providing access to employment to populations that have none, we believe that impact sourcing won't just benefit society at large but will revolutionise the world's understanding of scale and growth delivered in lockstep with social impact. We are bullish about the scalability of our model and its capacity to drive progress while offering exceptional value and quality to our clients. This is evidenced by the fact that some of the world's leading companies like Amazon and Swiggy partner with us for our technical capabilities.

Integrating purpose and social responsibility into the business, however, takes more than just belief. The journey requires time, investment, and diligence to ensure continued success and improvement. The altruistic aspect of our model is balanced by a laser focus on high-quality services, world-class processes, and an elaborate employee development program complete with skills training and individual mentoring.

After all, responsibility doesn't just end with running sustainability, it also requires organisations to make investments in the communities where they exist, giving back and paying it forward in equal measure.



We've lived far too long in an environment dominated by earnings over equality. Friedmanesque capital values have run their course as companies start to become change agents in the new era of business. Now that we are at a stage where those goals are not just compatible but complementary, companies must take note and evolve accordingly. Development can't be left under the purview of governments and philanthropy. It needs capital and vision, both of which the private sector is well placed to offer.

As we make our way through this phase, unlearning and adapting at every step, it is clear that change is here to stay. Most importantly, with the arrest of the pandemic heavily reliant on shared responsibility, COVID-19 has made us realise that no one is an island. We cannot survive in isolation. The opportunity that an unfavourable situation creates, often forcibly, is space for introspection. If supplemented by action, this process can be truly transformative.





# **The Promise of Impact Sourcing in a Post-COVID World**

“Outsourcing” used to be a dirty word. The practice called to mind an image of employees on the other side of the globe, working in cramped conditions for little pay, and of businesses who prioritized cost-cutting measures over employee welfare. However, over the last decade the practice of outsourcing, and the world of work at-large has been changing. The call-center model of the early 2000s has been largely replaced by one of complex, digital microwork. And the welfare of sourced employees is an increasingly important consideration for buyers and suppliers alike. Impact sourcing has risen in popularity by marrying impact for workers with returns for businesses. And in the aftermath of the COVID-19

pandemic, this new model might have more promise than ever before.

## What is Impact Sourcing?

The Global Impact Sourcing Coalition **defines** impact sourcing as a business practice where a company prioritizes suppliers that intentionally hire and provide career development opportunities to people with otherwise limited prospects for formal employment. Impact sourcing is often tailored to a local context but some examples include the targeting of women, differently-abled individuals, unemployed youth and those from rural areas. These employees are frequently educated, skilled individuals who, notwithstanding their talent, remain unemployed because of economic and societal barriers to work. Through the provision of employment to these pools of previously untapped talent, impact sourcing allows these individuals, participating businesses and ultimately, society, to all benefit.



## Benefits of Impact Sourcing

Though impact sourcing is a socially-conscious practice, by no means does it amount to charity or CSR on the part of companies who partake. The benefits of impact sourcing can be seen by both buyers and the suppliers.

### *Diverse Talent*

Impact sourcing allows companies to access diverse, previously untapped pools of talent. In contrast to traditional outsourcing providers, who often draw from a recycled pool of the same resources, impact sourcing focuses on bringing fresh talent into the workforce and leveraging their wide-ranging skills and willingness to learn and adapt. For many employees, this is their first well-paying job in a professional environment. As a result, impact sourcing employees report higher

levels of motivation and a dedication to completing their tasks in a timely, dedicated manner.

### *Quality*

This diverse talent pool also means that impact sourcing suppliers can provide consistent, high-quality work that often exceeds that of traditional outsourcing providers. By paying employees a fair wage and providing access to training and career development opportunities, impact sourcing firms are able to better retain and nurture their workforce. As a result, they **report** employee attrition rates that are 15-40% lower than traditional outsourcing firms. Over time, these employees are thus able to refine and grow their skills, translating to greater proficiency and improved quality for buyers. And these long-term relationships also mean that companies are able to work with suppliers on more complex, specialized tasks and projects.

### *Cost*

While the base-cost is often comparable to that of traditional BPO hiring models, impact sourcing firms are able to reduce long-term costs to companies by investing in their employees. Because of low-turnover and high job-satisfaction, impact sourcing firms spend less time and money continually recruiting and training new employees. This translates into **long-term cost savings** that they are able to pass on to client companies.

### *Social Impact*







The clear and overwhelming benefit of impact sourcing is the sustainable, transformative impact that this practice has on the lives of employees, their families and their communities. By bringing new employees into the workforce and providing them with a meaningful job, competitive salary and opportunities for skill development, impact sourcing firms empower employees with the means to transform their own lives. And through a **value chain** that includes employees' families and their communities, impact sourcing creates a long-term economic impact in the lives of everyone it touches. By promoting responsible supply chains and social equity, companies that practice impact sourcing are able to use their business for good.

## **Beyond Business Processes**

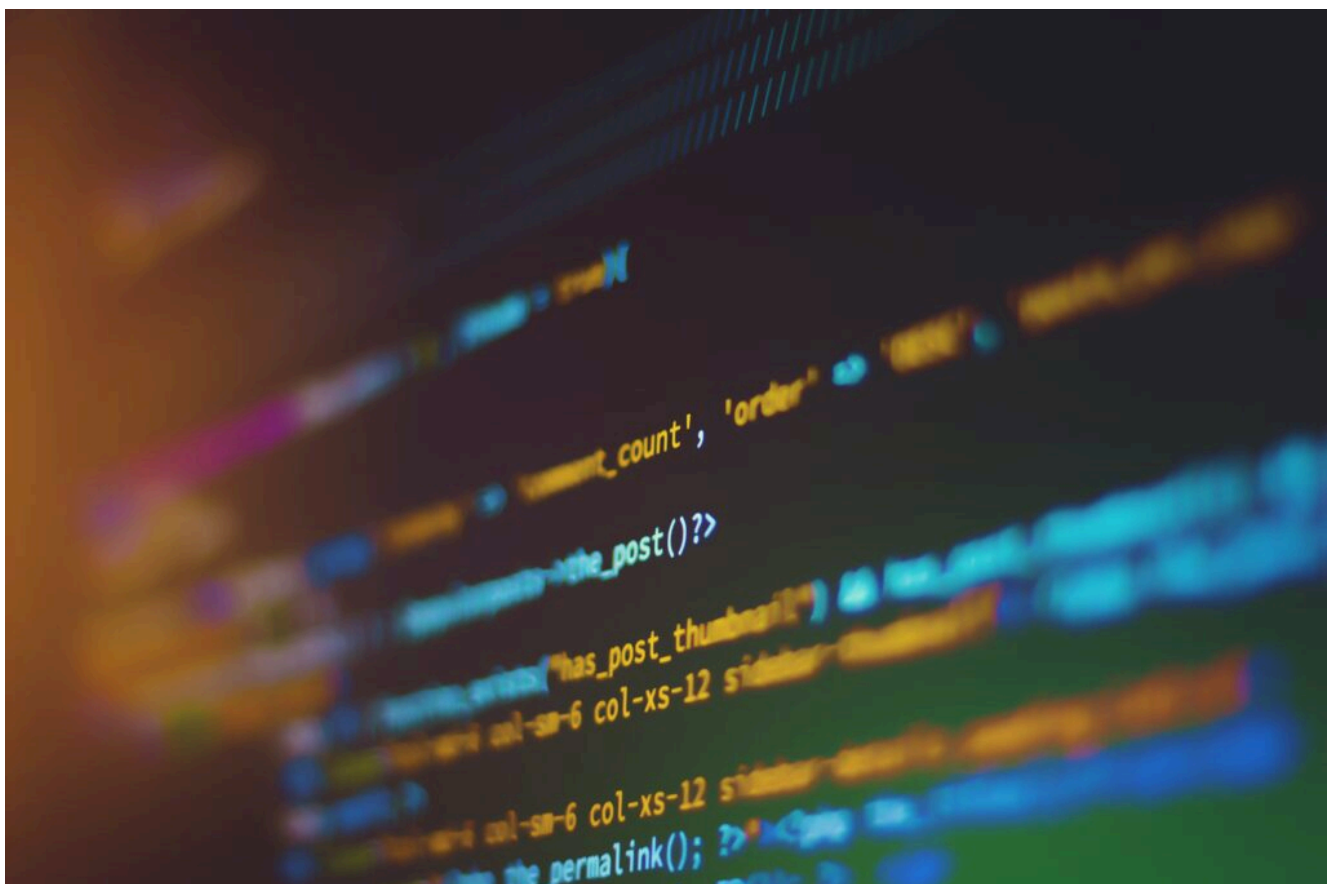
Though the BPOs were once known exclusively for its association with call-centers, customer service and other basic business functions, the industry has undergone a transformation over the last few years. The rise of artificial intelligence and increasing usage of data by tech and non-tech companies alike has created a demand for skilled microworkers who can train algorithms and annotate data. Today's impact sourcing providers are more likely to be found working on a range of digital solutions for companies including ecommerce cataloging, natural-language processing and data annotation for machine learning.

## **How Does Impact Sourcing fit into a Post-COVID society?**

The COVID-19 pandemic has exposed a need for innovative new ways of doing business and work. Through its reflection of market trends and emphasis on resilience across the supply chain, impact sourcing is a promising model for the

future.

While the increasing penetration of artificial intelligence and machine learning systems into large swaths of daily life was already well under way before the start of the pandemic, the last few months have greatly accelerated existing technology trends. Many firms **predict** AI technologies, such as those that increase production, augment human workforces and deliver hyper-personalized products to consumers, will be key to private-sector recovery and adaptation after the virus. And according to a 2019 **report** from research firm Cognilytica, data preparation and engineering tasks account for more than 80% of the time involved in most AI and machine-learning projects. Impact sourcing firms are well-equipped to take on new projects and enhance their existing capabilities in data-labelling and other AI-services. The global market for AI and machine-learning relevant data preparation solutions is **expected** to reach \$1.2 billion by the end of 2023, from about \$500 million in 2018. Skilled digital microworkers will be key to the increased impact of this industry.



COVID-19 has also changed the nature of work. In an effort to cut costs and increase the resilience of their personnel to national and international crises, many businesses are looking to diversify their workforces across geographies and functions. A recent report from global research firm, Gartner, **found** that 32% of organizations are replacing full-time employees with contingent workers. Impact sourcing provides businesses access to a flexible, capable pool of talent without the need to compromise on quality of delivery. Technology firm NTT also conducted a **survey** of 1,250 executives in 29 countries including India, and found that particularly in the IT industry, 45% organisations will outsource more than insource in the next 18 months. In this environment, impact sourcing firms that can ensure the security and consistency of their IT-enable services will be able to play an important role in helping businesses recover and rebuild strength for the coming years.

Finally, impact sourcing provides a prime opportunity for businesses to address the major social fallout from the COVID-19 pandemic. The last few months have completely uprooted our societies, leaving millions around the globe facing mass unemployment, dislocation, hunger and poverty. In India alone, unemployment **remains** at almost 13%. This down from a high of 26% a month earlier, however the pathway toward economic recovery remains very uncertain. By choosing to work with impact sourcing providers, businesses have the opportunity to directly address the needs of some of the most vulnerable members of society and provide those most in need of work with an opportunity to improve their circumstances.

## **The Future Vision**

The future of business and society after the fallout of the COVID-19 pandemic remains very unclear. What is clear, however, is the promise of impact sourcing to create more sustainable and inclusive supply chains of talent around the globe.