

OPEN UP NEW POSSIBILITIES
↑ GENERATIVE AI ↓
OPEN UP NEW POSSIBILITIES



Navigating the sea of data, deciphering intricate clinical studies, and uncovering valuable insights—healthcare decision-making has reached a remarkable milestone.

It's not merely about processing information; AI brings a human touch, enhancing the quality of customer care. It acts as a proactive guardian, detecting genetic indicators and alerting you to potential health challenges before they surface.

Yet, the core challenge rests in ethically harnessing AI's power in healthcare—a moral puzzle demanding our responsible navigation.



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EDITOR'S NOTE

Taking the leap

In the dynamic realm of technological advancement, businesses tread varying paths when embracing generative AI—some with fervor, others exercising judiciousness. Particularly within the pharmaceutical sphere, renowned for its stringent regulatory framework, a measured approach prevails towards novel innovations.

Yet, there exists a compelling harmony between caution and audacity. Across industries and locales, the potential for leveraging this technology resonates universally. In this ai:sight volume, we meticulously explore these opportunities, focusing on the pharmaceutical landscape while extending insights applicable across diverse sectors.

The evolving landscape of work, a focal point of recent years, demands a recalibrated approach. Michelle King, a seasoned observer of organizational culture for over two decades, underscores the imperative of adeptly collaborating with individuals from diverse backgrounds. Her elucidation on the significance of social acumen in navigating this transformed professional terrain offers a compelling perspective on achieving profound fulfillment amid change.

Moreover, the volume offers an extensive array of compelling interviews and perspectives. Fractal experts contribute invaluable insights spanning healthcare to quantum computing, enriching our discourse with multifaceted knowledge cutting across distinct domains.

I hope you enjoy the read.



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Why we're prescribing:

by fractal

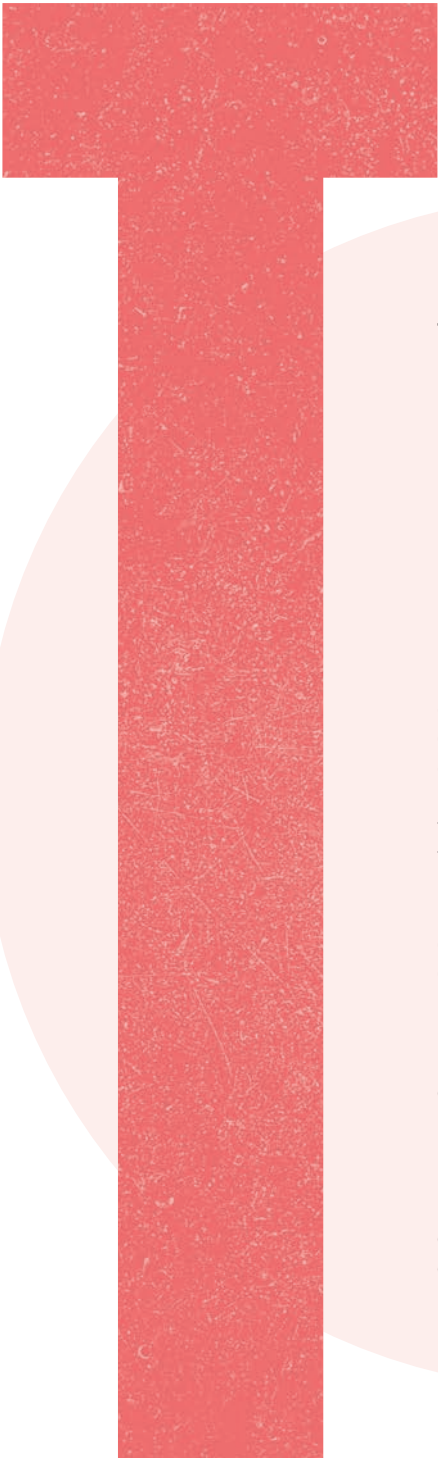
AI for pharma

**Take daily to enhance growth.
If problems persist, consult an
expert. Keep out of reach of
compliance issues.**

16 Tablets
500mg



Generative AI (GenAI) is thriving, with daily reports highlighting its role in optimizing business operations across various industries, ranging from healthcare and consumer goods to financial services, media, and technology. Concurrently, conversational chatbots are orchestrating customer-centric, personalized experiences. 



he allure of potential benefits from cutting-edge technologies is undeniable in diverse organizations. However, when it comes to the highly regulated pharmaceutical industry, the stakes are exceptionally high. A misstep in this arena can result in excessive costs and profound consequences.

Imagine, for instance, a chatbot providing inaccurate information to patients or a clinical study marred by bias favoring a particular group of participants. These scenarios encompass a broad spectrum of potential pitfalls, including substantial fines, arduous struggles to secure product approval, and tarnishing a meticulously cultivated reputation. Given these formidable challenges, pharmaceutical firms are approaching the realm of GenAI with a blend of eager anticipation and measured caution.

"Since ChatGPT took over the world, company leaders have been pushing to find out what GenAI can do for them," said Ashok Vardhan, client partner for pharma practice at Fractal. "However, pharma companies are generally more focused on data security and other regulatory

and legal guidelines that affect the industry. Their key challenge is ensuring they apply the technology legally and competently. Pharma companies are starting to explore multiple use cases for GenAI, but they want to fully understand the risks of each one, as well as the benefits, before they deploy it."

So, where can pharma firms find GenAI's low-hanging fruit? Conversations with companies across the industry are helping Fractal to point the way.

"In recent years, we have evolved our capabilities across the pharma value chain, including marketing and sales, supply chain analytics, data engineering, and AI," said Sagar Shah, head of pharma practice at Fractal. "As part of that work, we are developing key GenAI use cases that can bring immediate gains for pharma companies. Some of these focus on low-risk areas like boosting internal employee productivity. Others bring an ethical and responsible approach to include GenAI in the healthcare professional (HCP) and patient experience."

Let's look at some of those use cases.

Getting more done

One colossal challenge looms in the pharmaceutical industry's relentless data landscape: the sheer volume of information. Amid the chaos of documents and decisions, busy teams often get bogged down. Enter GenAI, the solution they've been waiting for.

"GenAI can accelerate our time to delivery in our core business processes," shares Jeevaka Kiriella, director of global data science at Merck. "One fundamental way to do that is by leveraging its generative aspect as a starting point or foundation. For instance, in the realm of clinical trial operations, one use case involves the creation of protocols and related study documents. In this upstream activity, by providing sufficient information as input to a large language model (LLM), the LLM can generate initial protocols and documents that fit the purpose. This should decrease the time needed to create and revise such documents, ultimately expediting the initiation of a trial."

Kiriella also sees GenAI helping to improve product availability and increase product yield.

"GenAI allows us to access insights more quickly, benefiting the entire pharmaceutical supply chain, including research, trials, manufacturing, and commercialization. This enables faster decision-making, ultimately leading to improved product availability. The pharmaceutical industry is actively investing in computational drug discovery powered by GenAI, resulting in significant advancements in research."

"Another area that can benefit from large foundational models is clinical operations. By optimizing this process, we can swiftly evaluate viable therapies. Once a therapy is identified,

we can further optimize manufacturing processes using interactive LLMs to identify bottlenecks and enhance product yield. Additionally, in the commercial sphere, foundational models can be utilized for tasks such as target identification, generating promotional materials, and gaining assisted access to primary market research insights."

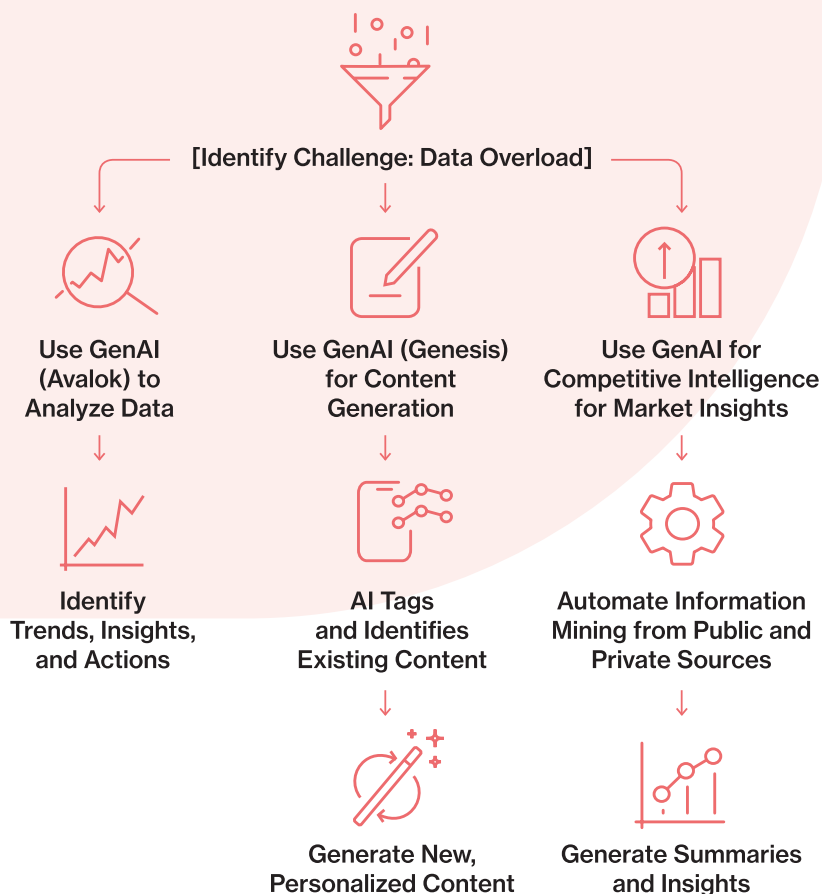
As individual organizations identify the use cases that best suit their business, GenAI's transformative effects are already extending across the industry.

"Our industry has taken a significant leap forward in applying AI/ML with the adoption of foundational models," Kiriella reveals. "This shift allows for a drastic reduction in the time needed to develop AI applications, leading to faster realization of benefits. With the release of LLMs, AI is now accessible to

users throughout the company. In the pharmaceutical sector, we have a unique opportunity to harness this potential due to our investments in data and analytics."

Kiriella identifies some key considerations that will help pharma companies ensure long-term success with the technology.

"Organizations should promptly assess and address the potential impact of GenAI. In addition, they must responsively meet the specific requirements of GenAI in the pharmaceutical field. For instance, this may involve securely integrating commercial foundational models to mitigate compliance risks or effectively processing large amounts of internal data to drive foundational models with efficiency. It is also crucial to remain open to different models, leveraging the most suitable one for each use case."



Fractal GenAI platforms in action

Fractal's Avalok is a GenAI solution that slices through complex data from various sources, including intricate clinical studies. It doesn't just process numbers; it extracts trends, unveils insights, and delivers actionable advice. Imagine it as your personal data maestro, constantly digesting information and presenting it in a format that powers swift, accurate decisions.

GenAI's prowess extends to marketing, rewriting the rules of content creation. It begins with AI-driven tagging and identifying content elements like headlines, summaries, and images. Take Fractal's Genesis platform for pharma, a GenAI marvel that uses these tags to create personalized marketing materials on demand.

Need fresh content for an HCP conversation? No problem—prompt the GenAI, and it instantly crafts content based on previously approved marketing strategies.

Shah shares, *"Currently, most pharma companies deploy competitive and market intelligence analysts to mine information for insights. We've developed Competitive Intelligence on the Genesis platform for Pharma to automate that process. It takes information from public resources, including blogs, research papers, journals, and private sources where appropriate. Then, it summarizes what's happening in a particular area. That could be a view of the pipeline across multiple companies targeting a particular disease or focusing on behaviors or clinical studies. It will zero in on anything the brand team needs to know about."*

**GenAI
adds the
secret
sauce by
delivering
the bits
each user
wants.**

Clicking with customers

Another big focus for pharma organizations is the customer experience.

Privacy is the top agenda when your end users are healthcare professionals and patients. It's also important that every piece of information you give them is accurate, unbiased, and compliant. Using existing materials to generate personalized answers – while steering clear of sensitive, personal information – provides a safe and effective way to personalize those customers' experiences. Pharma firms can use GenAI in different ways to do this.

One idea is to create an 'HCP-Assist' tool trained on internal data. It can behave like a virtual sales representative, providing conversational answers to questions about anything from how to store a specific drug to potential side effects.

Similarly, patients can benefit from a GenAI-powered tool that offers on-demand information about drugs, vouchers, copay assistance, and available discounts. It puts the power of knowledge at their fingertips, ensuring they have the information they need when they need it.

GenAI goes further by assisting medical experts in crafting their content. Analyzing and summarizing data and documents across the pharmaceutical organization equips healthcare professionals with precise insights to share with their peers. It's like having a trusted research assistant at their side.

GenAI draws from existing, approved content in each scenario but doesn't stop there. It adds the secret sauce—personalization—by delivering the exact information that each user seeks. GenAI is the catalyst, making the customer experience in the pharmaceutical world not only personalized but also precise and powerful.

Fractal's pharma-focused use cases are much more than a futuristic vision. Leading pharma companies are putting GenAI to use now.

Making the vision real

Fractal's pharma-focused use cases are much more than a futuristic vision. Leading pharma companies are putting GenAI to use now.

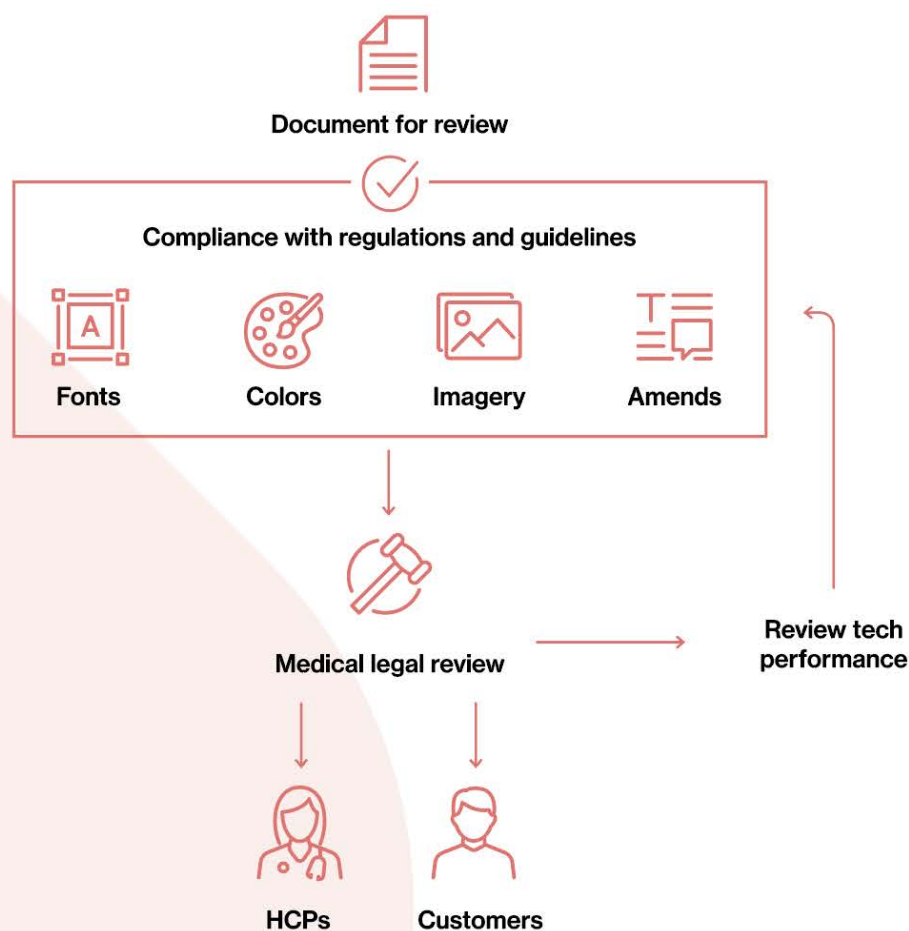
A US multinational pharmaceutical giant is collaborating with Fractal to revolutionize their medical legal review (MLR) process. MLR, a critical step in ensuring compliance with regulations and guidelines, has traditionally been a complex and time-consuming endeavor. Every piece of content, from promotional flyers to email campaigns, undergoes rigorous scrutiny by the MLR team. They meticulously examine wording, fonts, colors, and imagery, often resulting in multiple rounds of revisions and exchanges between content creators and the MLR team.

This is precisely where GenAI shines.

According to Vardhan, "GenAI can alleviate much of the MLR back-and-forth. An MLR GenAI tool can automatically review crucial elements like font size and color, ensuring they adhere to standards. It can even implement necessary adjustments, including incorporating new images generated by the Imagine AI platform, before submitting the updated version for review. This empowers the MLR team with a more compliant document, allowing them to focus on more intricate aspects."

Crucially, a people-centered approach lies at the heart of this transformative project.

[Identify Challenge: Long Review Process]



The pharmaceutical company's MLR team is pivotal in continuously evaluating the technology's performance. The objective is clear: to ensure that GenAI genuinely enhances their workflow rather than adding complexity.

Vardhan emphasizes, "In pharma, involving humans in the loop is pivotal to GenAI's success. Even use cases

aimed at internal processes require substantial input from employees. They serve as the ultimate judges, reviewing the solution and offering constant feedback on its efficiency gains or any challenges it may pose. Consequently, automation evolves, sculpted by user feedback during its formative stages. As the language model matures, human effort can be progressively reduced."

Ethics in the frame

The world of medicine is on the brink of going big with GenAI. Imagine a future where GenAI helps pharmaceutical companies find the perfect candidates for clinical trials or discovers ground-breaking compounds to treat diseases. But here's the catch – the impact of GenAI, whether it's a force for good or not, depends on how we handle it.

Above everything else, GenAI should be about making life better for the folks who use it. That means it has to play by the rules that pharma companies are most concerned about, like keeping your data private, getting things right, following the rules, and not having any sneaky biases. Just like how ethics and accountability are built into the DNA

of the pharmaceutical industry, they need to be part and parcel of GenAI tools. That's why we're discussing a Responsible AI (RAI) framework for any GenAI project.

According to Shah, *"It's super important to keep records of everything, from the data we use to build AI models to the fancy algorithms our data scientists choose. If we don't, pharma companies could end up in hot water, dealing with regulations like the AI Bill of Rights in the USA."*

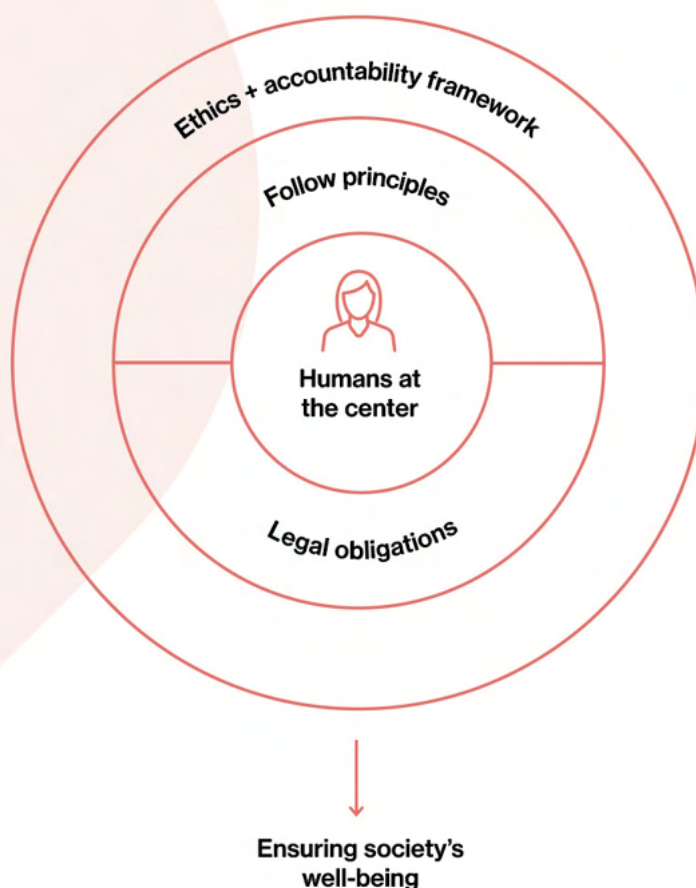
But wait, there's more! Since GenAI's recommendations can impact real people, it's got to keep humans front and center. That means every suggestion it makes, whether telling you to call a doctor or recommending a

specific medication for a health issue, needs to pass the "does this solve a problem or at least not make things worse" test. Safety and fairness are the name of the game. This people-first RAI philosophy perfectly aligns with the pharmaceutical industry's rock-solid principles and legal duties. Its only goal is to ensure society stays safe and sound.

Imagine a future where GenAI helps pharmaceutical companies find the perfect candidates for clinical trials or discovers groundbreaking compounds to treat diseases.

Its potential for good – or harm – is limited only by the framework we put around it.

In the ever-evolving world of medicine, GenAI has some incredible potential. But it's up to us, with a thoughtful, ethics-driven framework, to make sure it's a force for good and never takes a wrong turn down the dark alley of harm.



Jeevaka Kiriella
Director,
Global Data Science, Merck



Sagar Shah
Head Of Pharma Practice,
Fractal



Ashok Vardhan
Client Partner,
Fractal



SIMULATING NATURE

EVOLVING BEYOND BINARY: NATURE-INSPIRED COMPUTING

In the ever-evolving landscape of technology, quantum computing has emerged as a revolutionary force, poised to reshape our understanding of computation.

While classical computing has brought us AI, machine learning, and simulations that have transformed various industries, it falls short when exploring the intricate realm of molecular-level processes. As the renowned theoretical physicist Richard Feynman once said, "Nature isn't classical ... if you want to make a simulation of nature, you'd better make it quantum mechanical."

Enter the quantum computer – a machine that moves beyond the binary nature of classical bits. It uses subatomic particles, such as electrons or photons, to store and manipulate information in units called qubits. Those qubits can exist in different states simultaneously and respond to each other across

vast distances. As a result, they can run complex probabilistic interpretations and create multidimensional computational space.

In essence, quantum computing has the potential to perform tasks that classical computers can only dream of. While it may sound like science fiction, small-scale quantum computers already exist and are advancing rapidly.

Quantum computing in the real world

The research team at Fractal has dedicated several years to exploring how quantum technology can be applied to real-world challenges. Their findings suggest significant potential and applications in key sectors.

1 Unraveling the mysteries of disease

Managing complex diseases like Alzheimer's, Huntington's, Parkinson's, cancer, and even COVID-19 hinges on understanding the molecular structure of proteins and how they fold. Classical computing struggles to simulate these processes, leading scientists to rely on slow and costly laboratory experiments. Quantum computing offers an alternative.

Using a variational quantum eigensolver (VQE) algorithm, Fractal's team simulated a portion of the Alzheimer's molecule folding into various configurations. The results were compared with DeepMind AlphaFold, a cutting-edge classical computing AI system for protein structure prediction. Surprisingly, even with a small quantum processor and modest settings, the quantum algorithm matched AlphaFold's accuracy.

2 Quantum-powered drug discovery

Another area of exploration involves the application of quantum generative AI to create molecules for medicinal drugs. Fractal developed a quantum version of a generative adversarial network (GAN), a machine learning algorithm where two neural networks compete to enhance their predictions. These quantum GANs (QGANs) were compared with state-of-the-art architectures and demonstrated exceptional performance, yielding the most promising drug candidates.

3 Quantum computing in finance

Fractal built a hybrid quantum neural network in finance that combines classical and quantum layers. Using housing data to predict property prices in Boston, USA, this hybrid network showcased superior accuracy and generalization capabilities compared to classical counterparts. As quantum technology matures, hybrid approaches like this could offer significant advantages to financial organizations.

The quantum ^{leap} forward

Fractal's research illustrates that, even with current quantum computing capabilities, it is:

Faster than classical computing.

As accurate as or even more accurate than classical computing.

Capable of tackling complex, molecular-level tasks that classical computers deem impossible.

However, this is merely the dawn of the quantum computing era. Nurturing talent and establishing standards are crucial to driving this technology forward for the greater good. Fractal's commitment to mentoring and collaborating with external organizations, including the IIT Mumbai, Quantum Open Source Foundation, and various quantum initiatives, underscores its dedication to building a global pool of quantum computing expertise.

As quantum computing advances astonishingly, the future holds exciting possibilities. Research is already showing us how even the smallest quantum computer can surpass the capabilities of classical ones. Just four years ago, molecular simulation was impossible, but today, we can simulate and dissect atomic-level processes like protein folding on a computer. Breakthroughs in quantum AI could revolutionize industries from energy production to geopolitics. It's foreseeable that quantum computing will be applied to real-world problems within the next decade, and organizations must prepare to harness its potential.

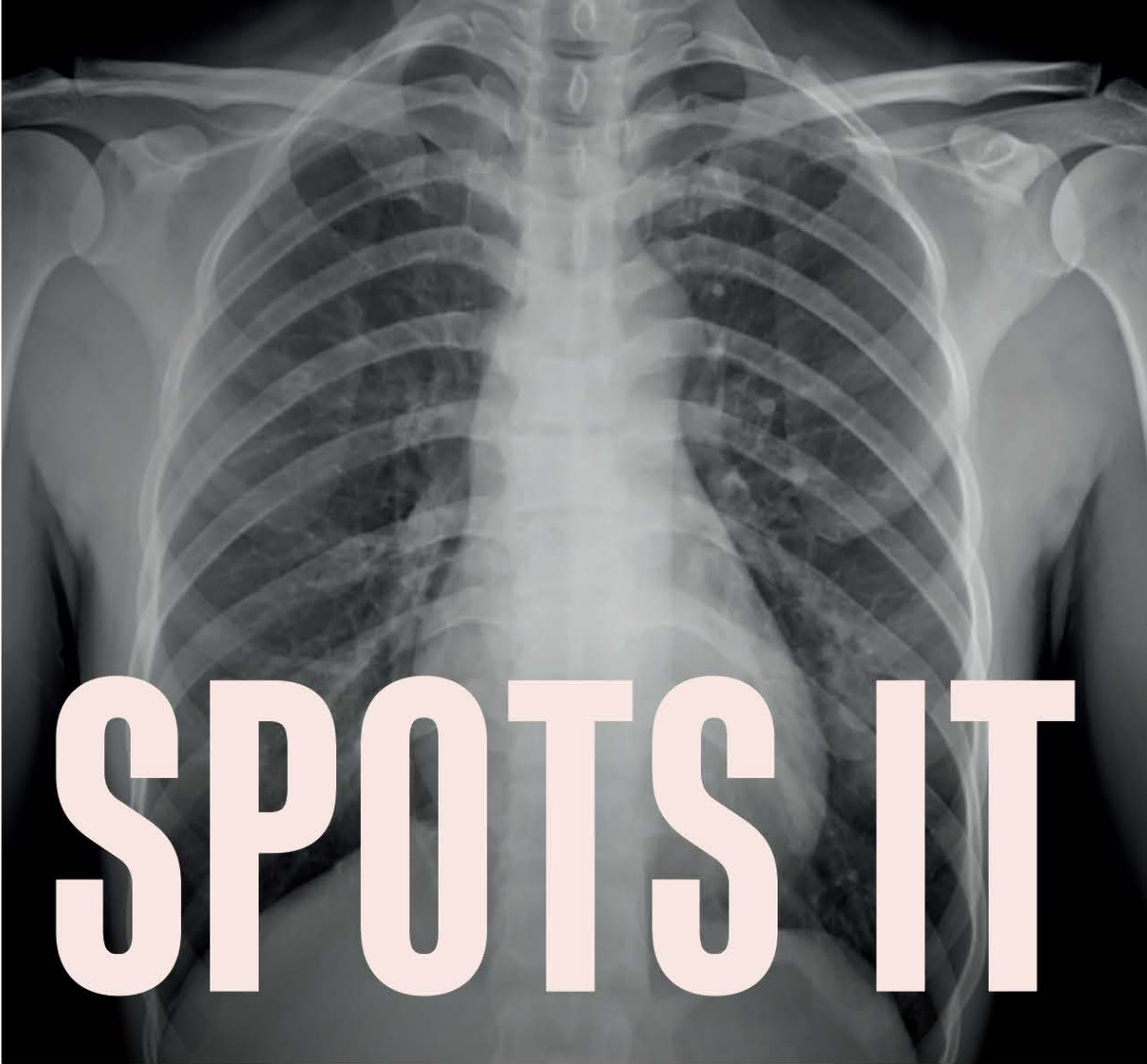
In conclusion, the age of quantum computing is upon us, and the opportunities it presents are limitless. It's time for organizations to embrace this transformative technology and chart their course toward a future powered by quantum computation.

**Want to learn more about the publication.
Read the paper here:**



Prateek Jain
Lead Architect, AI@
Scale, Machine Vision and
Conversational AI, Fractal

Prateek combines an inquisitive mind with a lifelong passion for science and deep experience in AI and machine learning. As a founding member of Fractal's quantum computing research team, he is focused on helping to build the knowledge and nurture the talent that will drive this new chapter in technology.



AI SPOTS IT

In today's tech-savvy world, AI is making waves right from making web searches easier to sort your photos. Yet, there's a new frontier where AI is making an extraordinary impact – healthcare, and Qure.ai is showing us how.

Qure.ai started as a brilliant idea: how can AI make healthcare better? It found the answers in medical imaging, like X-rays and CT scans. Today, its AI is at work in over 1,600 hospitals across 75 countries, improving lives.



Tuberculosis, or TB, is a big problem in many countries. It is a major cause of death in low and middle-income countries. But diagnosing it can be tough when there aren't enough experts around. One of Qure.ai's first customers used X-ray-equipped vans to run mobile TB screening camps across the Philippines. No radiologists could travel with the screening teams, so the chest X-rays would only be collected for interpretation when the vans returned to base. That could mean weeks of delay before some patients could start treatment.

Today, it takes under 60 seconds for AI to automatically interpret those X-rays on the spot. Patients get treatment right away, and TB screening is reaching even more places, helping 40 countries.



Lung cancer presents a unique diagnostic challenge, with approximately 85% of cases detected in the late stages. AI is changing that narrative. With 1.3 billion chest X-rays taken globally each year, the potential for early lung cancer detection is staggering. Qure.ai collaborated with the UK's National Health Service and AstraZeneca, demonstrating AI's ability to identify early-stage lung cancer nodules in X-rays, subsequently confirmed by CT scans. This breakthrough promises earlier diagnoses and improved outcomes.

These capabilities also impacted early in the COVID-19 pandemic. With testing resources in short supply, their AI triage solution recognized abnormalities in chest X-rays, facilitating PCR testing and monitoring infection rates. It provided critical support in managing patient discharges from hospitals, showcasing the adaptability of AI in crises.

A GLIMPSE INTO THE FUTURE OF AI IN HEALTHCARE

FASTER



Stroke is another condition where every minute counts. Medics have two choices. If no bleeding is involved, they can give anticoagulant drugs in the emergency room to dissolve clots. They can coordinate the resources to send the patient for more complex surgery if bleeding is present. Ruling out bleeding is crucial before deciding which treatment to give, but this can take hours to do manually.

Qure.ai's artificial intelligence can swiftly interpret CT scans to rule out bleeding, ensuring that more stroke patients receive prompt, accurate treatment, ultimately improving their chances of full recovery.



Prashant Warier
Founder & CEO, Qure.ai

Qure.ai's innovative approach extends beyond diagnosis. Areas they're looking at include the early diagnosis of **heart failure**. A recent study has shown that recommendations from the Qure.ai algorithm helped identify 50 new heart failure patients from 5,000 routine chest X-rays.

They're pioneering models that organizations can employ to create solutions, potentially giving medics access to AI-powered insights about medical images. Patients may even have the option to obtain AI-generated reports alongside those from radiographers.

As regulations progress, we anticipate fully automated screening processes for X-rays and blood tests, diminishing the necessity for manual valuation or medical professional sign-offs.

Presently limited to TB screening, this innovation foreshadows a future where broader areas embrace automated diagnostic protocols, reshaping healthcare procedures.

Right now, though, our biggest priority is to extend our solutions to more people worldwide. We've already touched about **25 million patients and aim to reach a billion in the next five years**. This is AI for good, transforming the path to treatment for some of our biggest public health challenges.

Prashant has deep expertise in AI, data science, and optimization. He joined Fractal as chief data scientist in 2015 when it acquired its own AI company, which provided targeted advertising for e-commerce firms. He incubated Qure.ai within Fractal to apply AI healthcare, especially in interpreting images like X-rays and CT scans.'

PROGRESSIVELY HEALING THE WORLD



**1970s-
1980s**

The Rise of AI in Healthcare

MYCIN emerged as a formidable ally for AI in healthcare, combatting bacterial foes, and shaping the future of healthcare. Expert systems and AI algorithms became indispensable, much like the precision tools in a surgeon's arsenal. Machine Learning and AI stepped sure-footed into healthcare.



1986

Empowering Community Healthcare with the Ekalavya Program

H.N. Mahabala and his visionary team at IIT Madras launched the Ekalavya program in India. Akin to a digital healthcare assistant, Ekalavya emerged as a north star, empowering community health workers to pursue precise medical diagnoses for toddler ailments.



1959

The Diagnostic Pioneers

Imagine Robert Ledley and Lee Lusted as trailblazing diagnosticians who introduced AI to healthcare with their groundbreaking paper on medical diagnosis, ushering in a new era.



1965

The Era of Computer- powered Diagnosis

Edward Feigenbaum, Bruce G. Buchanan, Joshua Lederberg, and Carl Djerassi, with their brilliant research associates and students, left an indelible mark on medical history. As pioneers of the DENDRAL project, they wielded algorithms as their scalpel, reshaping medical diagnosis.

**THE
EVOLUTION
OF AI IN
HEALTHCARE**



1990s-2000s

Healthcare glimpses into the future with Deep Learning and AI in Radiology

Step into the era of deep learning, AI in radiology, decision support systems, electronic health records, and machine learning advancement (to name a few), ushering into a new era of healthcare.



2010s

Evolving Deep Learning and NLP Transform Healthcare Diagnosis

Maturing deep learning, Natural Language Processing (NLP), and personalized treatment plans reshape healthcare with diagnostic precision.



2012

AI Triumphs Against Cancer

IBM Watson doctors partner with those of Memorial Sloan Kettering Cancer Center, wielding AI as a potent diagnostic weapon against cancer.



2018

AI Illuminates Diabetic Retinopathy

The Food and Drug Administration (FDA) approved the first AI algorithm for spotting diabetic retinopathy, a healthcare hero in diagnosis.



2019

DeepMind Foresees Kidney Injuries

DeepMind unveils predictive prowess, anticipating kidney injuries with near-magical diagnostic foresight.

PathAI Empowers Pathologists

PathAI's medical device software supports pathologists, emerging as dependable AI-ally in healthcare diagnosis.



LATE 2010s-2020

AI's Ongoing Diagnostic Evolution

AI dons a virtual lab coat, expanding into genomics, flourishing into evolving AI-driven surgical robots and systems, and accelerated rehabilitation and AI-powered drug discovery, becoming an integral part of healthcare diagnostics.



2020

AI Detects Heart Rhythm Irregularities

The FDA sanctions an AI-powered device with diagnostic precision in detecting heart rhythm irregularities.



2019-2021 ONWARDS

AI Reveals Protein Secrets, Detects Diseases, and Offers Personalized Health Insights

AlphaFold and AlphaFold 2 unveil protein structures, demystifying diseases like a diagnostic detective. AI algorithms predict neurodegenerative diseases like Alzheimer's and Parkinson's, enabling early intervention. Developing AI chatbots and virtual health assistants deliver personalized medical information with diagnostic finesse.

....And the journey of AI in healthcare progresses towards the promise of a future where AI and human expertise will continue to heal the world harmoniously, one breakthrough at a time.



INTERVIEW: MICHELLE KING

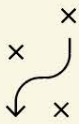
THE NEW

RULES

OF WORK

The old playbook that helped your boss rise to the top is exactly what is holding you back, according to organizational culture expert Michelle King. She says new rules govern today's workplace – informal, unspoken, and often invisible rules that we must all learn to recognize, decipher, and implement to get ahead.





Michelle King has brought together 20 years of research into corporate culture in a new book, *How Work Works: The Subtle Science of Getting Ahead Without Losing Yourself.* Speaking with ai:sight, she tells us why, when it comes to working life, what you see is not always what you get.

Scan to listen on Spotify



What do you believe most commonly holds people back from progressing in their careers?

For me, it's navigating the formal side of working life. We know that workplaces have changed. In the past, we'd go to work, sit at a desk, do our tasks, and then go home. The best way to lead and succeed in that environment was to be quite transactional – it was a case of command and control your employees in a dominant, aggressive, and maybe even a little bit exclusionary way. That approach doesn't work today. Most of us must work with other people to achieve outcomes: about 82% of jobs require some form of collaboration. Many leaders have yet to catch on to this, but now our ability to succeed requires knowing how to work with people who maybe don't share our background – and that requires social skills.

Our research has found that 75% of career success depends on advanced social and emotional skills, and only 25% depends on technical know-how. That's because you can learn those hard skills, but acquiring the social and emotional skills requires much more effort. That's why I wrote the book.

Please give us some examples of 'the new rules of work'. How do these rules impact the way we work together?

First, I want to explain the new world of work. Of course, new technologies such as AI and automation are changing many jobs. But there's also the rise of demographic diversity as we work in an increasingly global field. These changes impact the nature of how we work and our

work environment. We're seeing organizational structures that are flatter – where companies are shifting towards self-managing teams. This type of social work environment requires a new way of working.

In the book, I offer four areas that we can look to improve. The first is building informal networks. In the past, we've gotten away with only really networking with people that look like us. It's the basis of the old boys' club. Today, that's one of the worst things you could do. That's because, by 2044, half of all Americans will be part of an under-represented group in an organization. And many studies have now found that the top 20% of high-performing individuals have a diverse network. So, building and navigating an informal network will serve you when it comes to employability.

The second area that I mention in the book is informal information sharing. People who give you access to information help build your self-awareness and awareness of others. And that's super important when it comes to managing our interactions.

The third area is around how we navigate our informal development. 70% of all learning happens on the job, so we've got to learn and up-skill continually.

The final piece is that there is no one career ladder. You don't just advance from job to job. So how, do you actively manage your career? And how do you manage your advancement? And, importantly, how do you find meaning in what you do? So, those are the four areas that I cover in the book.

75% of career success depends on advanced social and emotional skills

Each has a set of rules, findings, and recommendations about what you can do to manage those areas more successfully.

What benefits might we realize by successfully navigating these new rules of work?

I think the greatest benefit is in the book's final chapter: achieving meaning and fulfilment at work.

The reality is that nine out of 10 of us would trade a significant portion of our income for greater meaning at work. But how can we develop that? Well, there's one practice that I can share that makes a big difference to your sense of meaning at work: the notion of paying it forward. It's about taking the time to support your peers. For me, that doesn't just mean random acts of kindness. It means actively supporting them by sharing information, helping their development, and advocating their advancement.

The best thing about this is that if you go out of your way to connect with me, for example, and somebody else observes you making the effort to get to know me, not only will you feel good for having done that, but I'm going to respond positively, and the people around me are going to respond positively too. As a result, everyone around you will want to pay it forward – and that's why it's such a powerful practice.

Can you explain what you mean by 'reading the air' and its importance in the workplace?

In the book, I share the true story of a Japanese businessman who met a potential client. After a while, the client commented on how he liked

... the businessman's watch. At first, the man just looked at his watch and continued with what he was saying. But then he realized the client wanted him to look at his watch, see what time it was, and wrap up the meeting.

The Japanese have a term for understanding the how of work or reading the shared norms of social situations, "*Kuuki o yomu*," which translates to "read the air." Likewise, every country has different versions of this, where we talk and say things in a way between the lines. We don't say what we mean because it might come across as aggressive, or we might embarrass someone. It's called different things in different cultures – sometimes 'reading the room,' sometimes 'reading the air,' but it's an important skill to have, especially when it comes to navigating the changes in the workplace.

Can you give us a sneak preview of one of your actionable tips that might help our readers do better at work?

I will start with a tip about self-awareness, which is the gap between how you see yourself and how others see you regarding your thoughts, behaviors, and feelings. The challenge here is that there's a major self-awareness gap. 90% of people lack self-awareness. The problem is that most people think they're self-aware when they're not. The higher up an organization you go, the more the problem is demonstrated.

90% of people lack self-awareness.

We call it the CEO disease because leaders typically do not have access to honest feedback, so they can't close the gap. But self-awareness is important.

There are two ways you can lack self-awareness. You can either consistently overestimate how awesome you are, or you underestimate it. If you tend to

overestimate, you will likely be quite difficult to work with. Having someone like this on your team can reduce your team's performance by 50%. That's because they are not open to feedback.

So, how do we close the gap? One study found that if you don't have access to direct and honest feedback, you can increase your

Can you share a few examples of informal or invisible rules within the workplace?

When it comes to the four informal systems of work – networks, information sharing, development, and advancement – the rules have changed. Here are some of the main examples.

× OLD vs NEW	
Invest in building relationships with people similar to themselves (in terms of demographic characteristics).	Invest in building relationships with demographically diverse people.
Exclude co-workers (who are demographically different) from accessing informal networks as a way to preserve power over others.	Develop a range of diverse, informal networks with a mix of close relationships and acquaintances.
Rely on small, closed networks.	Develop mutually beneficial relationships.
Hoard informal information to maintain power. This includes withholding important information or sharing it selectively.	Share informal information with a wide range of people to build self-awareness, other awareness, and organizational awareness.
Exclude people who are different (from them) by not sharing important information.	Support their co-worker's development by providing advice, support, and guidance.

INDIVIDUALS WILL ONLY INVEST IN CULTIVATING RELATIONSHIPS WITH THOSE THEY TRUST IMPLICITLY.

self-awareness by as much as 23% by simply taking 15 minutes a day for 10 days to consider the following three questions: What worked well today? What didn't go so well today? And what could I do differently? You want to avoid asking 'why?' because that's not helpful. For anyone else, it's important to seek out regular feedback. That feedback is data and information on your gap. If you disagree with the feedback, lean into it to help you close the gap even further.

What do you mean by informal networking, and how is it as important as formal networking?

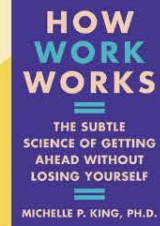
In my extensive research, a compelling revelation has emerged: within professional teamwork, forming informal networks or social groups is pivotal in fostering effective collaboration. These informal networks encompass the myriad relationships individuals cultivate and nurture within the workplace, yet these connections do not adhere to the rigid structures dictated by organizational hierarchies. They transcend the formal affiliations we maintain with our superiors, colleagues within our team, or even associates beyond the immediate workspace.

The lifeblood of any organization, these informal networks encompass all the spontaneous connections – think of employee-to-anyone relationships – that evolve within

the workplace environment. Such relationships are not restricted by the predefined channels of the corporate hierarchy, such as the employee-manager dynamics. Rather, informal networks encompass the individuals you regularly engage or socialize with, recognizing that these connections hold mutual benefits.

Consider, for instance, scenarios where you seek support for a project, seek consensus on pivotal decisions, require introductions to influential figures, or yearn for support in advancing your career. In such instances, comprehending the functioning of these informal networks becomes paramount, as does the ability to manage them. It is essential to grasp that without access to these informal networks, attaining the necessary information, guidance, and support for career progression becomes exceedingly arduous.

Contrary to popular belief, establishing an informal network is not a product of mere attendance at formal events, nor does it hinge on exchanging business cards during a casual cocktail hour. No matter how many formal networking or leadership development gatherings one may attend, individuals will only invest in cultivating relationships with those they trust implicitly. Trust emerges as the linchpin upon which the foundation of these invaluable informal networks is built.



King's book '*How Work Works: The Subtle Science of Getting Ahead Without Losing Yourself*' are available from all good booksellers now.



About the Author:

Dr. Michelle P. King is a globally recognized inequality and organizational culture expert. Based on over a decade of research, Michelle believes we need to learn how workplaces work to make them work for everyone. She is the host of a popular podcast called The Fix.

Michelle is an award-winning academic with five degrees, including a Bachelor of Arts in Industrial Organizational Psychology, a Master of Arts in Industrial-Organizational Psychology, a Master of Business Administration, a Postgraduate Degree in Journalism, and a Ph.D. in Management. Michelle is pursuing a post-doctoral research fellowship with Cranfield University in the United Kingdom.





INTERVIEW: BRAD DEUSTER

Truth leads to progress

According to Brad Deuster, business leaders have a unique opportunity to overcome the growing divide between managers and their employees by fostering a sense of belonging. But how? It starts with insisting on 100% of the truth, 100% of the time.



Many people believe that you must agree to belong. Yet our work shows that it's quite the opposite.



An expert in creating spaces and leadership capacity for belonging and inclusion, Brad Deutser is recognized for navigating complex, contentious, ambiguous business and people challenges inside and outside organizations. He is the visionary leader behind Deutser and the Institute for Belonging and has established leadership learning labs in Houston, New York, Bermuda, Arizona, and Austin. His unique insights and original approach to affecting a human approach to sustainable organizational change have impacted top businesses, leading universities, professional sports franchises, and cause-based organizations worldwide.

What does 'belonging' mean to you?

There are so many different definitions. To me, belonging is where we hold space for something of shared importance. It is where we come together on values, purpose, and identity, a space of acceptance where agreement is not required but a shared framework is understood; where there is an invitation into the space, an intentional choice to take part in, something vital to a sense of connection, security, and acceptance.

From an organizational perspective, many parts of this definition are critical yet often missing. For example, the idea that agreement is not required. So, many people believe that you must agree to belong. Yet our work shows that it's quite the opposite.

One of our rules is demanding 100% of the truth. That's because, according to our research, most companies operate in the 80% of the truth range, which means there's a 20% truth gap. This causes problems. It means important conversations aren't being had. The greatest leaders and the strongest organizations are the ones who close that gap and create the space to allow these conversations to happen. They make it OK for people to re-engage in conversation in a safe way.

Why is belonging so important for organizational success?

When there's a lack of belonging, it not only diminishes employee commitment but also engagement and satisfaction – all of which impact the bottom line.

Research shows that the workforce is speaking loudly about how critical it is to belong. One of our studies found ●●●

... that nine out of 10 employees believe that experiencing belonging at work is important or extremely important – more important than strategy or culture. Not only that, but people are willing to take less pay for increased belonging.

Employers don't always need to throw more money at their employees. Just stepping back and providing a bigger conversation space can make a huge difference. Those employers that can increase belonging can get more effort from their employees and increase satisfaction, engagement, and positivity.

How can a sense of belonging help leaders with difficult conversations with colleagues?

Leaders need to have challenging conversations but often don't know how to do it because of the sensitivity of the conversation and the challenging times in which we lead. My five rules (see box) create a framework so people can have those conversations.

A significant part of this is being very clear on our expectations. When I have a difficult conversation, for example, I am explicit that it's not about you versus me or me beating you up or pushing you out – if I do that, I have failed as a leader. It's about us working together to achieve a positive outcome. I may disagree with you. I may be coming to you and

saying, "hey, we have a different point of view on this." But you're not an adversary. We're here together, trying to create a shared outcome.

I also encourage leaders to eliminate the 'why'. Why did you do that? Why did you say that? Why are our numbers the way they are? Asking why creates a division at a time when we're trying to create a connection to bring people together. Instead, I encourage leaders to invite their employees into the difficult conversation. They need to show they want to hear them. They want to set them up for success instead of setting them up for failure.

Something else that is important is where those challenging conversations are had. With this in mind, we've done much work to create effective office spaces. For example, we have a 100% truth table and a challenge everything table with a bunch of sticky pads for sticky conversations. By having uncomfortable conversations in these places, both people are more psychologically prepared, and we can come to a resolution much faster.

At a time when we are moving towards more hybrid ways of working, how important are workspaces when it comes to making strategic decisions?

For many companies, remote or hybrid options make perfect sense. However, we are seeing a major

shift when it comes to creating a human connection. There's a great disconnect between people and their organizations and society, leading to an epidemic of loneliness and making it difficult for managers to review performance and for people to rise through the ranks.

This needs to be addressed. We need to create what we call 'intentional collisions' and intentional spaces. If an organization invites their employees into a purposeful space with intention, they will find that people want to return to the office.



Brad's five rules that help build unity and foster importance

Here are five things that leaders must consider each and every time they make decisions for themselves and their company:



1 Turn into the power

Meet the demand for direct and intentional forays into the heart of power structures, forces, and accepted traditions.



2 Listen without labels

Hear what is spoken without judgment while engaging the unspoken with humanity and heart.



3 Choose identity over purpose

Create an ecosystem that recognizes identity's complexity and wholeness, defining the space for inclusion.



'Hey, we have a different point of view on this.' But you're not an adversary. We're here together trying to create a shared outcome.

Can you share any tangible results that organizations have achieved having implemented your five rules?

There are so many different industries that we get to impact. We have one company that's a leader in the aviation space. By implementing the rules, they have changed their approach to safety. It's changed how they talk about safety and how they think about safety in an industry where the norm was seriously injuring or killing somebody every 90 days.

As a result, that hasn't happened in more than 15 years. So that's what we're proud of, that people – sons, daughters, moms, dads and grandparents – go home to their families.

We've also worked with a hedge fund in New York that decided to go against the grain and focus its business on culture and creating spaces for belonging, growth, and development. By creating a space where people want to be, they have retained their key leaders and 95% of their employees.

By implementing the rules, we see leaders change to become very human-centered – more vulnerable leaders who are more open and who are more willing to bring people into the conversation instead of shouting them down from above. What's more, we're seeing the workforce change for the better because of it.



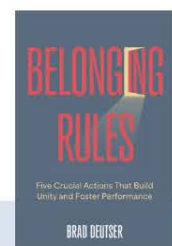
4 Challenge everything

Promote an open environment for inquiry, free of conflict, devoid of oppositional energy and driven by a positive spirit of curiosity.



5 Demand 100% of the truth

Reject the more typical 80% of the truth in modern business and instead require 100% of the truth, 100% of the time.



Brad Deutser's latest book: *BELONGING RULES: Five Crucial Actions that Build Unity and Foster Performance* is out now in all leading book stores. Get your copy today.



Get more cutting-edge insights with ai:sight



Why we're prescribing AI for pharma

GenAI transforms pharmaceuticals, emphasizing ethics and personalized interactions for responsible integration.



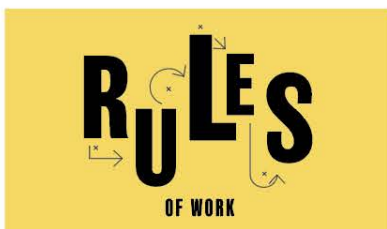
Simulating nature

Quantum computing redefines medicine, drug discovery, and finance, highlighting rapid progress and producing global quantum expertise for ground-breaking possibilities.



AI spots it faster

Quantum computing redefines medicine, drug discovery, and finance, showcasing rapid progress and fostering global quantum expertise for ground-breaking possibilities.



The new rules of work

Michelle King's book advises on navigating today's workplace with self-awareness, diverse networks, and informal relationships, fostering success and fulfillment.



Truth leads to progress

Brad Deutser, an authority on leadership, underscores the significance of truth and belonging in bridging workplace divides, offering five rules to enhance unity and performance.

Brake Habits

We understand that even good drivers have bad days.

For 150,000 drivers in India each year, their destination becomes all too final. With road fatalities mounting at speed, Fractal took action. Lives depended on it.

By blending AI with behavioral science we were able to identify & predict blackspots, influence risk perception and change the way drivers think and behave.

On India's National Highway 24, serious accidents have already fallen by 60% — but our journey is only just beginning.

Fractal: we don't tire of making positive change.

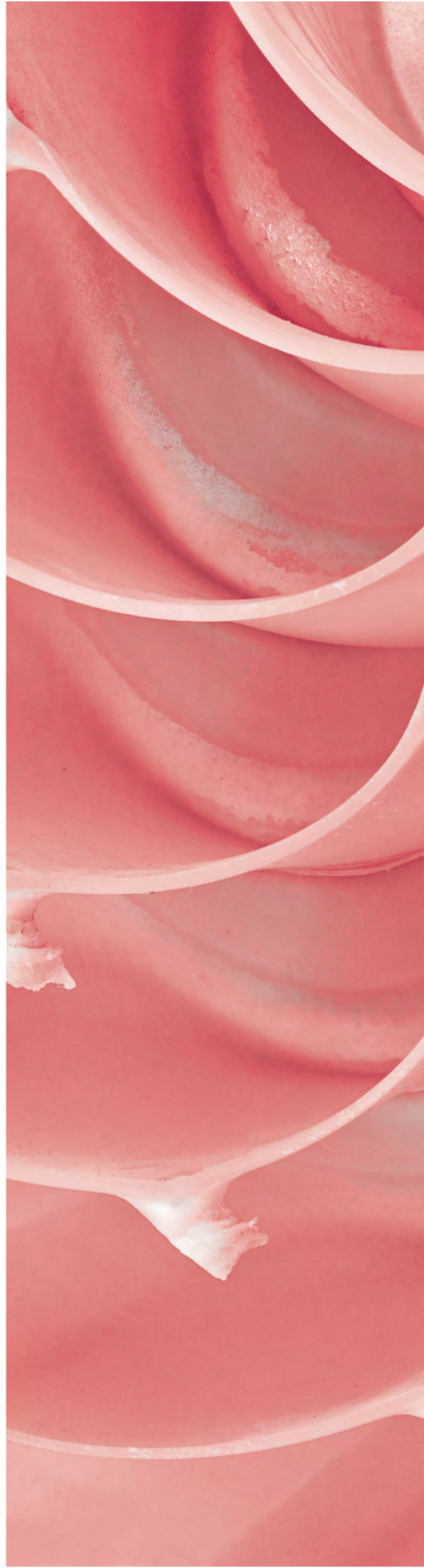


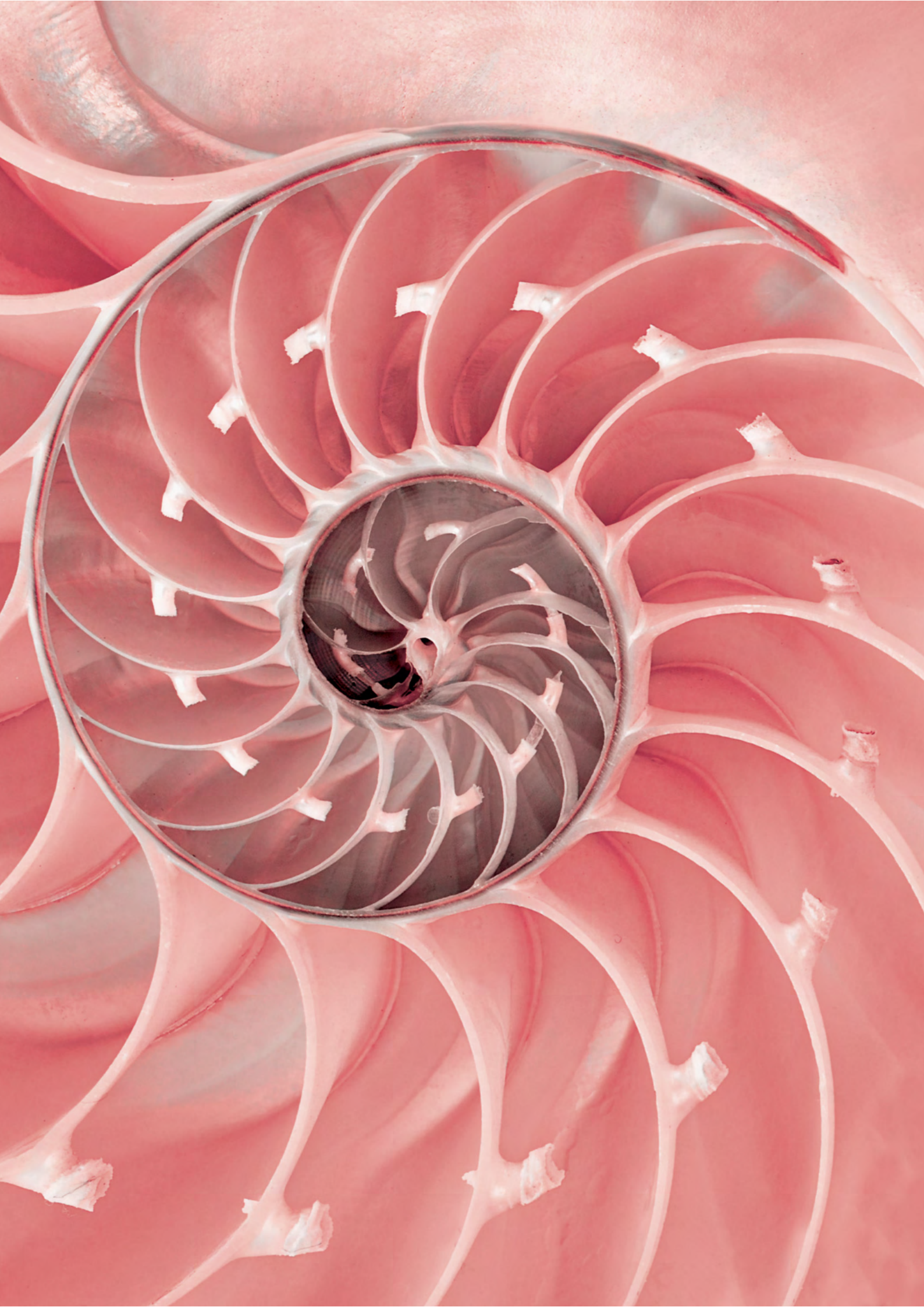
fractal

**Knowingly or unknowingly, we've
always been surrounded by fractals.**

**It's a complex shape that repeats
to form an intricate pattern.**

**As you zoom into it, you'll still achieve
the same shape – that's how magical
the concept of a fractal is.**







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