Creating Value THROUGH INNOVATION

The ability to increase business value through innovation is a critical success driver for most organizations.

alk of innovation is in the air. No matter where one turns there are reports, studies, conferences, etc. dedicated to the topic — and for good reason. Innovation has been at the center of the life-sciences industry since the beginning, but there is a renewed focus on creating value and developing a culture of innovation today. Companies — large and small — are looking to derive as much value as possible from their investment and defining innovation in their own way. "Our definition of innovation is generating something new or novel that creates new value for the enterprise," says Shideh Sedgh Bina, co-founding partner of Insigniam. "It's any kind of new value, not just in what a company makes but how it makes it, how it makes it available, and every other piece that goes into the system."

Mike Rea, CEO of IDEA Pharma, concurs that innovation is about delivering value, and from his perspective it's about delivering value to patients.

"In our industry, innovation is essentially what companies can bring to patients," he ex-



There is another broader value to the business that is often overlooked, and that is that innovation can create a culture and environment that excites and empowers colleagues about the contributions they can make to the business.

WENDY MAYER Pfizer plains. "A lot of people talk about innovation, but it's unclear what they mean, and I think in many cases, what they mean is invention. There's a lot of real inventiveness about our industry, but this doesn't always deliver value, products sit on the shelf or die somewhere in the pipeline. We don't regard that as innovation; we regard that as invention, which is nice but the two should go hand-in-hand.

"The companies that are rising at the moment are the ones that are developing and launching products against a real unmet need," Mr. Rea continues. "Companies such as Gilead, for example, are challenging the commercial model. I think the value is competitiveness. The new competition in our industry is significant and I think that the freshness of a portfolio means that companies need to think



Only through innovation can pharma address the major issues it is facing.

KEITH MURPHY Organovo

Five Key Questions

When it comes to delivering full value through innovation, PwC believes there are five key questions an organization needs to address if it's to become genuinely innovative and generate full value from its investment:

- Does the way you innovate (collaboration, employee empowerment, customer engagement, time horizons etc.) reflect your vision and appetite for innovation?
- How effectively are you articulating your vision and appetite for innovation to employees, investors, and partners?
- 3. Do your employees see creating, promoting, and executing new ideas as a crucial part of their job description?
- 4. Are the processes for decision making and organizational mobilization quick enough to bring new innovations to market ahead of your competitors?
- 5. How effectively do you measure and track the return on investment and ability to meet customers' changing expectations?

Source: PwC

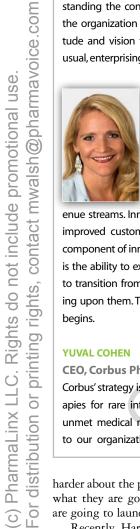


ROMIYA BARRY

Clinical Trials Manager, CeOur

organization that An over-processes operations and isolates within boundaries is at risk for ignoring the

relationships between the tasks, responsibilities, and decision-making structures supporting progress toward meeting the needs of patients at every level. Innovation is bred in an environment that rewards curiosity by providing opportunities for learning and fosters respect for people by leveraging individual's unique talents, skills, and knowledge. Embracing a diversity of thought and action strengthens the ability to challenge tenets of status quo in life-sciences development. Understanding the configuration of knowledge within the organization requires a transdisciplinary attitude and vision to mobilize others through unusual, enterprising efforts.



WENDY BLACKBURN

Executive VP, **Intouch Solutions** The obvious benefits of innovation include new products, services, partnerships, processes, or other new rev-

enue streams. Innovation can also translate to an improved customer experience. But one critical component of innovation that is often overlooked is the ability to execute. Teams must be prepared to transition from talking about big ideas to acting upon them. That's where the hard work really begins.

YUVAL COHEN

CEO, Corbus Pharmaceuticals

Corbus' strategy is to clinically develop novel therapies for rare inflammatory diseases with clear unmet medical needs. We seek to deliver value to our organization as well as the patients we

harder about the products in their pipeline and what they are going to launch and how they are going to launch them."

Recently, Harvard Business Review (HBR) interviewed more than 130 executives from more than 30 multinational companies in



hope to treat by leveraging an innovative business model that expands a clinical pipeline by acquisition, expertly develops drugs in the clinic, and has a specialized focus on a niche family of chronic inflammatory

rare diseases. We are currently in Phase II studies in three rare inflammatory diseases - cystic fibrosis, systemic sclerosis, and dermatomyositis.

KELLEY CONNORS President, KC Health



Innovation can deliver value in healthcare today by focusing on what directly impacts patient outcomes and greater self-care. In my opinion, this is primarily

via closing the doctor-patient communication gap. Surprisingly, or not, innovations that improve communications between a doctor and patient may not rely solely on technology. For example, electronic medical records have not been the solution that was intended though I am not suggesting there is no value. Companies that support how doctors and patients interact, with a shift on the HCP side toward empathy via motivational interviewing and a shift on the patient side toward internal agency and taking more responsibility for self care will be successful. This has been proven in research to improve the "care" for chronic disease patients.



While most organizations believe that innovation is the cost of entry — and it certainly is

far exceed the investment. By applying innovation to solve challenges and ultimately simplify our customers' daily tasks and lives, we embolden relationships and much more deeply connect with targets than

North America and Europe. They also surveyed 4,000 nonexecutive employees in 15 multinational companies, and analyzed innovation effectiveness in 120 new-product-development projects and 100 corporate venturing units. The results demonstrated that the inno-

ever before. This is underscored even further as many organizations move to a franchise offering and innovative products need the pairing of innovative services to truly enable deep brand affinity. Let's also not forget about the positive cultural impact that a more challenged, motivated, valued, and fulfilled team offers.



ELISA DEL GALDO Head of Customer Experience, Blue

Latitude Health Innovation doesn't just occur; it emerges from knowledge, skill, creativity, and embrac-

ing risk — attributes that deliver value. Innovation is rarely an isolated ah-ha moment; instead it's the result of a process that includes insight, design, and evaluation. Any organization supporting a culture of innovation must be obsessive about customers and their needs, have a deep understanding of the problem, create design artifacts, use concepts to illustrate ideas, use failure positively, understand that designs evolve, and show restraint. An innovative culture adds value to an organization by delivering products and services that solve problems, delivering solutions for customers and ultimately, profits.



HEATHER GARTMAN

Regional Managing Director (DC), **Chandler Chicco Agency** Innovation can deliver value when it has a meaningful impact on business and

creates a sense of purpose for employees. In healthcare, that innovation is a new willingness to include patients. Companies are embracing patient-centricity earlier in development, helping address historically low trial recruitment and retention. When companies incorporate patients early, products have critical end-user input and

vation value chain view presents innovation as a sequential, three-phase process that involves idea generation, idea development, and the diffusion of developed concepts. Across all the phases, managers must perform six critical tasks — internal sourcing, cross-unit sourcing,

ERIC DALY Managing Director, **Firsthand** the derived mutual benefits can more effectively meet the needs of patients. In addition to time and cost-efficiencies for organizations, this increased focus on the patient gives employees a new connection with their end user and an invaluable sense of purpose.



MIKE HODGSON Chief Creative

Officer, Cambridge BioMarketing When we hear the word innovation, we immediately think of technology. But innovation

is so much more than just the latest technology development. Innovation is about seeking new approaches, discovering new methods of thinking, pushing fresh ideas, and supporting original creativity. Technology can propel an idea to go further than we ever imagined, but if an idea isn't inherently innovative to begin with, no amount of tools or solutions will help. Innovation isn't just about delivering value; innovating is valuable for any organization. Being innovative is critical to any organization's sustainability and growth.



GARY HUTCHINSON President,

Modality Solutions Pharmaceuticals are the most vulnerable during transport. Significant cumulative environmental hazards — tem-

perature, shock, vibration, pressure and humidity - will require the entire supply chain to innovate to deliver value to patients. The cumulative effects of these factors on drugs are essentially unknown. Innovative companies are adding value by determining degradation pathways with simulated transport studies. Once these degradation pathways are understood, the required shipping conditions, appropriate handling techniques, specialized packaging are used in the controlled-logistics network. Appropriate proactive control and monitoring can be implemented once the potential hazards are understood.

JAMES HYDE-DUNN, PH.D.

VP, Business Development, **Cello Health**



Innovation must deliver value or it is merely invention. Increasingly stringent regulatory requirements and complex, rapidly evolving treatment landscapes, call for innovative approaches to drug development.

For example, to optimize an organization's likelihood for commercial success, we've seen value in using validated methodologies such as adaptive conjoint market research and early inclusion of patient, payer, and physician voices to drive clinical trial design. Using situational analysis and leveraging forecasting models of market entry and new treatment adoption, it's possible to devise a clinical development plan that mitigates risks, increases the probability of timely patient enrollment, and positively impacts commercially meaningful trial endpoints.



RAJ INDUPURI CEO,

eClinical Solutions

Frankly, I think the term innovation may be being misused within our industry. The term innovation in its purest form

means change and while there are many technical advances taking place, it is difficult to find many examples of whole-scale change as a result of technology. There are three key reasons that our industry moves more slowly. First, while many participants understand that they are not working optimally, they are averse to changing from what worked for them in the past. Second, oftentimes a technology solution is justified by demonstrating the number of FTEs that it replaces instead perhaps of being pushed as a means of working more efficiently. Lastly, truly disruptive innovation is not just about developing a great product or solution but developing a product or solution that is affordable for everyone, thereby truly having the potential to change an industry and not just limited to a select subset of early adopters or companies with the means to make major investments. Innovation when embraced should do all of those things. It should change the work patterns for the better. We would recommend that innovation is pursued as a fundamental change and a way of helping teams be more effective than as a substitute or a validation for reductions in workforce. And

finally, innovation should be something that can be accessed without a drastic investment, but instead takes advantage of the efficiencies of opportunities such as cloud computing, which remove the need for expensive upfront infrastructure investments.



KELLEY KENDLE President, Synchrogenix, a Certara company The use of artificial intelligence (AI) technology will dramatically revolutionize

the life-sciences industry over the next decade and is already a proven tool in journalism. As biopharmaceutical companies seek to gain access to new markets, an AI-enabled regulatory writing solution brings efficiency and risk mitigation to the process of retrofitting approved dossiers for global submission.



RUSSELL KERN, PH.D.

Chief Scientific Officer, **International Stem** Cell Corp.

Innovation in biotechnology drives researchers and companies to solve mankind's

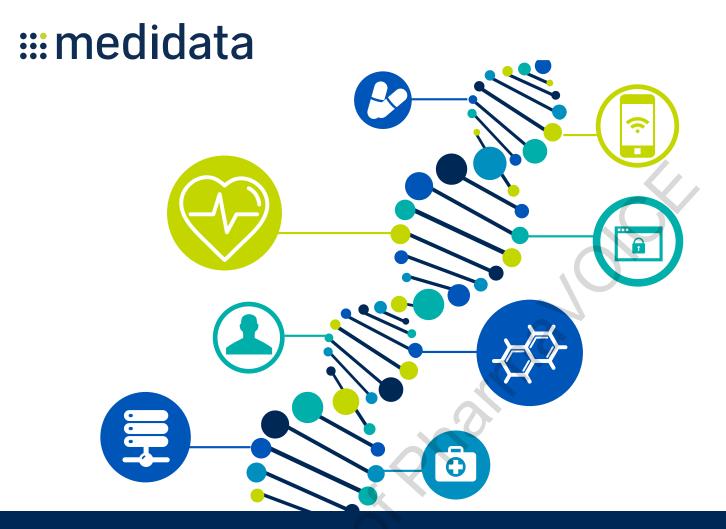
worst issues. Patients diagnosed with Parkinson's suffer from multiple symptoms, including stiffness and slurred speech, which may progress to a complete loss of locomotion and even the inability to stand. According to the Parkinson's Disease Foundation, an estimated 7 to 10 million people worldwide live with Parkinson's. Our lead candidate is a potential therapy for Parkinson's disease.



MARLA KESSLER

VP of IMS Consulting Group & Marketing Lead, Global Services, **IMS Health** Innovation delivers value at

radiated inspiration. Yes, I innovated that term. At the most fundamental level, innovations can deliver financial and operational results as well as increased satisfaction. But the real value is in



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showing people a new path: that the future is brighter than the past and that thinking differently about a problem is key to solving it. Einstein was right: "We cannot solve our problems with the same thinking we used when we created them."



ANDREA LAFOUNTAIN CEO, Mind Field

Solutions The natural product life cycle in any business follows a predictable awareness, growth, peak, steady state, decline,

obsolete curve. Innovation is the catalyst that breaks the flow during steady-state to create a new growth-peak phase. It is the new high points driven by innovation that create the greatest return on investments in R&D, product development, delivery, and patient care.



THOMAS LARGE, PH.D.

Senior VP, Discovery and Preclinical Research, Sunovion Pharmaceuticals

In discovery research, we are aiming for innovation that

disrupts entrenched ways of thinking and leads to big breakthroughs. To deliver value, we have replaced the standard drug target-based discovery model of the last 30 years with a unique approach that takes a target-agnostic view. We have pioneered a systems-based approach to finding new drug candidates. It is a unique approach to discovery in the CNS space based on a systems neurobiology platform that also helps us to facilitate rapid clinical development.



MAHMOOD IBRAHEEM (IBS) President and CEO, DrugDev

Organizations like the Investigator Databank and Trans-Celerate are driving change by changing the way clinical

trials are run, and we're pleased to be a part of that movement. They and other progressive companies are starting with the end goal of delivering more new medicines to the global population, and they're building a new process from the ground up. If we start with the patient and investigative site at the core of clinical trials and work from there we will make true strides toward bringing more treatments to patients. I can't think of a greater way innovation can add value.

WENDY MANTEL

Innovation & Leadership Coach, Mantel Coaching Innovation delivers ex when an organization

Innovation delivers extra value when an organization taps the full creative potential of its workforce. Creativity and knowledge drive innovation;

there are people in any company who are considered creative and innovative. But what about the employee whose creativity isn't recognized or who doesn't recognize it in him or herself? What if companies could identify employees whose creative and innovative potential have not yet been tapped, and bring them into the conversation? Imagine the firepower. Creativity and innovation can be coached under the right circumstances. We all have the potential. Everyone has a spark. Some just haven't been discovered yet.



GARY MCWALTERS President,

TGaS Advisors

As we've learned, innovation not carefully thought through or fully resourced does not deliver value but is just a form of enter-

tainment. We followed a highly disciplined process in creating our Emerging Life Sciences Network and TGaS Insights divisions. We defined the strategic business need; conducted a ruthless evaluation of potential value and success; elicited ideas from throughout TGaS; and committed the focus and resources required to make it successful. This process delivered value not only for the enterprise, but for our entire organization.

GEOFF MELICK

Chief Innovation Officer, Sandbox

Organizations that consistently deliver positive yearly growth seem to have cultures that sustain satisfied and happy employees. While innovation helps



companies create competitive products that grow business, having a culture that encourages employees to think innovatively can provide bigger value that really drives the bottom line. A

company culture that encourages employees to speak their minds, to ideate, and share those ideas, will create a sharp-minded, ear-to-theground workforce that thinks innovatively about everything they do. Whether they are ideas that lead to new products, improved manufacturing, or even how cafeteria food is served, employees with innovative mindsets help companies maintain growth and future sustainability.



TIM MORAN

Product Manager, Life Science Research, Dassault Systèmes Biovia

Innovation implies a new or different product or service

that delivers value by enhancing the end user's experience. This kind of innovation can drive uptake of products or services to increase revenue, while also improving brand awareness and reinforcing an organization's position as an industry thought leader. Innovation that enhances end user experiences within an organization also delivers immense value. For example, the enterprise digitization of research and development processes has accelerated time to market, lowered costs, improved decision making, reduced errors, and enhanced quality processes within numerous organizations that have gone paperless.



GREG MORRIS

Chief Commercial Officer, VirMedica The complexity and diversity of our healthcare delivery system does not bode well for delivering a high-quality

user experience. However, today's technology can help organizations create a more simplified, common customer experience — one that ensures a patient has access to services and

Emerging markets offer new opportunities in research and development but come with unique challenges. Global logistics experts provide the knowledge in local customs that prevent delays, while a worldwide network of over 140 offices in more than 50 countries ensures that products reach clinical trial sites on time. Increasing supply chain efficiency takes seamless systems operations. It takes recognizing opportunity. It takes AmerisourceBergen.



ItTakesAmerisourceBergen.com

potentially life-enhancing biopharmaceutical products, regardless of the complex delivery system matrix. Embracing a gateway technology that simplifies provider workflows, instantly connects stakeholders with data and is agnostic to the reimbursement path will result in greater convenience, efficiency, and cost-savings for today's time and resource-constrained providers, as well as the increasingly empowered healthcare consumer.



NIKLAS MORTON

Senior VP of **Global Biostatistics**, **Programming and** Medical Writing, and **Clinical Innovation** Lead, PPD

Time, cost, and resources required for traditional drug development research continue to increase and are unsustainable. It is important that we identify and implement more informative, efficient clinical trial methodologies to help get products to market faster and less expensively to benefit patients. Innovative adaptive trial designs, for example, offer the opportunity to ensure trials are modified to what the accumulating data is telling us about the populations, endpoints, treatments or doses of interest to ensure we are advancing only the most appropriate therapies/doses in the strongest study designs. In addition, digital technology innovations offer the opportunity to improve data quality and operational efficiency. As we work to establish more innovative approaches, the benefits companies obtain by reaching faster and improved portfolio decisions allow funds to be redirected to the most promising therapies. Innovation is an essential part of that equation.

FASIAL MUSHTAQ

Director, Payer & Life Sciences Marketing, Allscripts Innovation is the only way an organization can increase or bring new value to its customers,

external sourcing, selection, development, and companywide spread of the idea. Each is a link in the chain. Along the innovation value chain, there may be one or more activities that a company excels in — the firm's strongest links. Conversely, there may be one or more



especially in a rapidly changing regulatory environment. Life-sciences organizations have long been innovative in their approach to developing new offerings — they are, after all, scientists solving some of the

most complex issues facing health and wellness. The changing business of healthcare, transition to value-based care, and increasing public perceptions of runaway pharma profits is forcing life-sciences companies to innovate in the way they deliver those products and their value proposition to patients.



ANDREW PARECE

Consultant, Charles **River Associates** Innovation can deliver value in a myriad of ways, including increased process efficiency, product quality, and productiv-

ity — internal value metrics — as well as improving patient outcomes and quality of life - external value metrics. In the life-sciences industry, the disruptive potential of innovation is most evident in the emergence of curative therapies and therapies with vastly greater duration of efficacy than standards of care and companion diagnostics enabling targeted therapies. How the industry adapts business practices to realize the value of innovation, while addressing issues of patient affordability, will be the key to delivering value holistically.



Senior VP, Director of Marketing Innovation, **Giant Creative Strategy** From the perspective of a strategic communications company, innovation is about discovering,

creating, and delivering unique solutions that advance our clients' agendas in highly competitive and incredibly demanding markets. All too often, agen-

activities that a company struggles with the firm's weakest links. Furthermore, HBR reports that to improve innovation, executives need to view the process of transforming ideas into commercial outputs as an integrated flow. The first of the three phases in the chain is to cies apply a formulaic approach to their business, relying on repetition of deliverables and services that are well-defined and executable for a tidy profit. Stretching outside of that comfortable position introduces more risk than many agency leaders are willing to take on, yet it's the right thing to do for our clients, their customers, and the patients they serve. For agencies, innovation is the new creative product.

CHRIS PERKIN

CEO, Altasciences **Clinical Research**

In the business markets of today every company needs to continually evaluate, adapt, or change their

processes, customer interactions, products, and services if they wish to remain competitive and grow. Successful business innovation should deliver new ideas, process improvements, new products, or services that link directly to the overall success of the enterprise. The value to the organization is self-evident but to be effective it needs to be understood and embraced throughout the organization. Innovation is directly linked to risk taking because it involves changes with expected but not guaranteed outcomes and to derive the most value, an organization has to embrace a culture of change that rewards the thinking and activities related to innovation and not just the results.

MATTHEW STUMM



Principal, Creative and Media Strategy, **BBK Worldwide** As we continue to advocate

for process and technology change for improved patient

support and care, we must work to ensure that the innovation delivers true value, for the patients and the research. As evidenced across

generate ideas; this can happen inside a unit, across units in a company, or outside the firm. The second phase is to convert ideas, or, more specifically, select ideas for funding and developing them into products or practices. The third is to diffuse those products and practices.



We have to create a safe and supported space for innovators, whether inside or out of the company, to translate new ideas into real commercial opportunities that can reach the people who need them.

MELINDA RICHTER Johnson & Johnson Innovation JLABS Innovation delivers value by creating a product or service to people who had no idea they needed it and now cannot live without it.

> PAULO MOREIRA EMD Serono

The Value Prop of Pharma Innovation

To Mr. Rea's point, many companies are embracing innovation as way to deliver value to patients. One such company, Johnson & Johnson Innovation LLC recently opened JLABS @ TMC, a 34,000-square-foot life-sciences incubator to provide entrepreneurs with shared lab space, private offices, and modular laboratory suites, as well as state-of-the-art equipment and value-added operational, education, and business services. The new JLABS facility can accommodate up to 50 start ups, and opened with 21 companies that represent a range of disciplines and geographies. This first "class" of resident startups includes the four winners of the JLABS Quick Fire Challenge,

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Altasciences clinical research algorithme pharma usa other markets, inadequate and mediocre work has the potential to do more harm than good and could prohibit worthy advancements. Better understanding patient needs and wants from the beginning will help guide the development of smart, useful products — products that provide a more holistic experience for the patient and better support the research."

STEVE SWANSON

President, Imperial CEO, DAC Patient Recruitment Services Innovation can deliver value within an existing organization through several critical

paths. First, by redeploying infrastructure and assets in new ways and through new solutions. Second, by reconfiguring teams of people into more efficient and effective teams with focused resources. And, third through breakthrough process re-engineering — of which administrative processes is by no means the least important.



ARDA URAL, PH.D.

Managing Director, Accenture Strategy — Life Sciences

Novel business and technology concepts feeding any organization's innovation engine need to

be managed through a robust governance system to allow coaching of the innovators while providing funding similar to an internal VC construct. The concepts exiting this innovation funnel should be attached to a sustainable business model either as a standalone product or service revenue generator or augment the value of a company's existing portfolio. This governance mechanism should allow innovative employees to nurture internal or external concepts without choking the creativity but also provide a framework with a time-frame and measurable outcomes to scale the innovation idea.



STEPHEN WEBB

Consultant/Managing Member, SLW Holdings

Innovation can position an organization as having disruptive influence in its industry

thus providing potential competitive advantages and vision for its employees.

which awards promising early-stage innovation companies with residency at the facility.

JLABS @ TMC builds on the successful JLABS model and is the fifth JLABS facility to open in the United States. The Houston site is the first to open with a medical device prototype lab, featuring a 3D printer, which will provide entrepreneurs access to highly specialized tools, as well as skills building programs to design and develop smart health technologies.

"For us at Johnson & Johnson, innovation transforms lives," says Melinda Richter, head, Johnson & Johnson Innovation JLABS. "Our commitment is to improve the health and wellness of people all over the world and to do that, we have to create a safe and supported space for innovators, whether inside or out of the company, to translate new ideas into real commercial opportunities that can reach the people who need it. Our goal, therefore, is to inspire, to empower, and to enable genius."

Brent Saunders, CEO and president of Allergan, agrees that innovation is critical to any organization committed to delivering long-term value — for patients, for medical professionals, for shareholders, and for society.

"But a commitment to innovation begins at the top," he says. "Organizations with a strong commitment to innovation are more collaborative and open to new perspectives that incubate and deliver new ideas. This approach, which at Allergan we call open science, allows the best ideas to rise to the top, no matter their origins, and puts us in a stronger position to deliver our ultimate goal — new medicines that change lives."

Quite simply, Paulo Moreira, VP, head, global clinical operations, external innovation, at EMD Serono, believes innovation delivers value by creating a product or service to people who had no idea they needed it and now cannot live without it.

"Innovation is not prescriptive," he adds. "Innovation is a state of mind; it's an attitude that is embedded so deeply, it becomes the culture of the organization. However, many companies do not succeed because they choose to tackle the challenge of innovation as a process that they need to create."

At the same time, it's only through innovation that pharma can address

the major issues it is facing, including increasing drug development costs and less robust pipelines, says Keith Murphy, chairman and CEO, Organovo.

society.

Allergan

BRENT SAUNDERS

"We have to reduce late-stage drug failures and safely expedite the right molecules through development," he says. "Innovations that improve models of human biology offer greater predictability of drug safety and efficacy before clinical trials, which leads to greater value to pharma companies and the patients they serve. Pharma R&D teams, working in concert with



key innovation partners with next level disease modeling capabilities, can reshape the drug development process to improve success rates and decrease timelines and costs."

Bringing in new ideas or opportunities that can add growth to the business is one obvious benefit of innovation says Wendy Mayer, VP, worldwide innovation, Pfizer, adding that there is another broader value to the business that is often overlooked.

"Innovation can create a culture and environment that excites and empowers colleagues about the contributions they can make to the business, and enables them to get involved with new concepts that can transform the business," she says.

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